IDAHO DEPARTMENT OF LANDS

HARRIS RIDGE – FIRE #18
INVESTIGATION TEAM REPORT

I. Result of the Accident

The accident resulted in the deaths of two State employees, Russell Allen and Gregory Heathco.

II. Accident

Both men were killed while fighting the Harris Ridge fire near Kooskia, Idaho, on August 11, 1972, at approximately 1524. Allen's death was apparently caused by a combination of falling from a 30-foot high bluff, followed by suffocation and burning.

The cause of Heathco's death is less evident, but was apparently caused by suffocation and burning.

III. Cause

There are an endless number of reasons for an accident. However, studies show that each reason can be grouped into one of three specific categories: physical defect, lack of knowledge or skill, or unsafe attitude.

The primary cause of the fatalities was lack of knowledge or skill on the part of both firefighters and their supervision.

Contributing factors are:

A. Lack of line supervision and foremanship ability.

B. No line organization in place.

C. Tactics (tying line to an anchor point, etc.).

D. Approaching thunderstorm and related wind.

E. Topography – draw, bluff, steep slope.

F. Insufficient training in safety, communication, and escape routes.

A chronological description of events that led up to the fatalities follows as near as could be ascertained from talking to other firefighters who were in the vicinity at the time, and two on-the-ground investigations.

Heathco was one of a State thinning crew that normally worked out of Orofino. Rex Wicks was foreman of the crew; other members were Ned Cannon and George Hollenbeck. Russell Allen worked closely with the crew locating work areas and marking trees.

The crew was called from their job near Orofino and arrived at the base of the draw involved at about 1400 August 11, 1972. There they received instructions to move into an area on the west side of the draw and build fireline underneath the fire that was creeping down the hill to try to tie into other people, mostly local volunteers, building line down from the top. This crew went to the area on the fire which was approximately 150 to 200 yards above the Lochsa Highway and proceeded to build fireline both ways from the point where they reached the bottom of the fire. Several bluffs and cliffs are present in this area, and it soon became apparent that the crew would have to split.

Rex Wicks sent the two men, Allen and Heathco (though by his statement he only asked Heathco) to build line to the east and tie in with people coming down. Allen went with him, apparently without specific instruction, and Wicks didn't feel it was worth calling him back. Hollenbeck, Wicks, and Cannon then stayed along the western edge of the fire where they were building line and were soon separated from view of Heathco and Allen by bluffs.

Allen and Heathco constructed line along the ground approximately 50-75 yards to a point where they tied in with a crew of local volunteers building line down the hill. Here they talked to Carr and Winberg, two local people, who had worked down from the top. Carr and Winberg went on down the hill to the highway as they were concerned about the fire building up to their west caused by unsecured line near the highway.

The fire forced Ned Cannon back into the burn, as Carr and Winberg proceeded down the hill. Wicks and Hollenbeck apparently left by the same route. Allen and Heathco constructed another 50-75 feet of line east toward the draw, at which time they abandoned that effort. When last seen by Carr and Winberg, they were in a safe position in relation to the burned-out area above them.

Allen and Heathco crossed the draw and proceeded to the east. Immediately after crossing the draw, they ran into a bluffy area and apparently in an attempt to gain elevation, one or both went up the hill on the north side of the small bluff and, evidently, near the top tripped on a down barbed-wire fence which, in turn, loosened a down snag that can be identified in the photo. It's evident that the snag rolled down the hill. In their attempt to avoid it, Allen either ran off the cliff not realizing the position he was in, or was knocked off by the snag. It was less evident what happened to Heathco, but he had to have been in the same vicinity. Allen landed approximately 37 feet below the foot of the cliff with considerable force, and was partly impaled on a 1 1/2-2" broken-off piece of brush. Heathco was lying on his back 33 feet above him. It didn't look particularly like he'd fallen off the cliff, although it's possible that he did also. It appears that both were either dead or unconscious when the fire did burn through the area.

IV. Background Factors

The Harris Ridge fire started next to the highway at approximately 0948 on August 11, 1972. Estimations of size at 1430 were approximately 50 acres. Final size was about 1200 acres when declared controlled on August 12. This fire is typical of fires on State protected land in this area. It was primarily a grass fire with brush draws and some timber on the slopes.

Burning conditions on August 11 were quite severe as shown by the weather reports taken at 1600 in Kamiah and Kooskia. The fuel moisture, spread index, and build-up index all indicate dangerous burning conditions.

Predicted weather for the day indicated a probability of thunderstorms. Cottonwood Butte Lookout reported a thunderstorm approaching the area at approximately 2:00 pm.

The specific fire behavior that caused all line workers in the vicinity to abandon their efforts resulted from the fire moving east near the highway. It burned up-slope west of the draw initially, then within a few minutes probably burned up-slope east of the draw where Allen and Heathco were found. The bottom of the draw did not burn out in the vicinity of the bodies, but did burn out laterally below them. The char patterns and leaf direction in the vicinity of the bluff above the bodies indicates a moderately fast moving, but not excessively intense up-slope fire.

There is no record of previous fire line fatalities, or investigations of near misses, that we could find within the Department of Public Land records.

An obvious problem in this type of fire is the loose organization in the initial stages when the forces of both State and volunteer labor converge on the fire and more-or-less hotspot in any place they think are needed.

On August 11, an estimated total of 70 men were on the fire. The four-man Kamiah brush crew, the State thinning crew, and about six smokechasers and other State personnel were the only personnel organized for firefighting.

Evolution of the fire organization from ignition at 0948 follows:

Kamiah Smokechasers	Godwin & Kirsch	1000
Kamiah Brush Crew	Brown, Foreman + 4	1000
Marion Smith, Asst. Fire Warden, Maggie Creek	Assumed Command	1200
Richard Bovey, Warden, Maggie Creek	Assumed Command	1300
John Preston, Asst. Area Supv., Clearwater Area		1300

When Richard Bovey arrived, it was assumed, by John Preston and other State personnel, that Bovey was Fire Boss.

At the time of the accident, the attention of the State overhead was focused on the west and north side, without too much thought or concern about this particular area on the east side.

The personal sketch of the people involved in this accident, or in the fire as overhead, indicates that almost all (with the exception of John Preston and Luke Aldrich) had no appreciable fire experience. Training efforts of the Clearwater Supervisory Area State organization in 1972 consisted of a two-day statewide session for Wardens and key permanent personnel to discuss fire plans, training plans and needs and other related items. On June 26, the Clearwater Area held a one-day training session for all temporary personnel, Wardens, and Assistant Wardens. All aspects of fire control were on the agenda of this single-day session. The thinning crew had no further follow-up training. In addition to this training, the Department sends men to other agency training sessions on an invitation basis.

As previously mentioned, there was no organization plans under way, nor anyone looking at organization and how the manpower on the fire was performing at the time of the accident. It was still a hot-spotting situation, and there was no real concern about future spread except to keep the fire out of Maggie Creek. Richard Bovey, the Fire Boss, did not feel that he

really had a project fire and thought they were getting the situation under control. Consequently his direction to people was little more than go to this area and build line. This was the instruction Rex Wicks and crew received when they arrived at the trailer camp.

The key factor overlooked by the overhead was the lack of a tie and anchor to the bottom portion of the line. The fire had already crept into the brushy area below where they initially went to work and was spreading laterally to the east all of the time they were there. Wicks was not aware of this as a potentially serious problem. When the fire began to generate below them, Wicks sent Nick Cannon down to contain the hot spot. Cannon was not successful and had to abandon the effort and move to the west into burned area. Wicks and Hollenbeck left their position on the line, crossed the draw and went to the trailer camp. Wicks had no communication or contact with Allen or Heathco and probably could not have been heard had he tried to yell. This occurred at approximately 1500.

Wicks noticed Ned Cannon walking up the hill soon after he arrived at the trailer court. He and Hollenbeck then worked on the southeast edge of the fire until about 1800 before initiating a search for his other three crewmen along the perimeter of the fire. Cannon was located that night, but the others were not. On August 12, a search effort was initiated by Luke Aldrich at approximately 0800. The bodies were found by Aldrich while making an aerial search with a helicopter. Luke called the coroner and ambulance. They recovered the bodies at approximately 0900, August 12, 1972.

V. Chronological Description of Investigation

A. Luke Aldrich started by immediately taking photographs, interviewing firefighters and getting written statements.

B. On Monday, August 14, Land Commissioner Gordon C. Trombley designated a team to investigate the accident. Serving on the team were Jones Abbott, USFS employee; Vern Erickson, retired forester; John Crumb, Department of Public Lands, Division Chief Forest Fire Protection; and Idaho State Insurance Fund Northern Idaho Field Representative, Charles T. Larson.

C. Team visited the site on Tuesday afternoon, August 15, and laid out procedure.

D. Team interviewed fire overhead, crew foreman and members; and reviewed written statements obtained by Aldrich. Started work on getting blow-ups of aerial photos, maps, etc. of site. Those persons interviewed were:

Cecil “Luke” Aldrich	Orofino	Clearwater Area Supervisor, IDPL
Richard Bovey	Kamiah	Forest Warden, IDPL
Ned Cannon	Orofino	Thinning Crewman, IDPL
Don Carr	Kooskia	Rancher, Volunteer Firefighter
George Hollenbeck	Orofino	Thinning Crewman, IDPL
Arthur “Bud” Marsh	Orofino	Mechanic, IDPL
Ed Metcalf	Grangeville	Idaho County Deputy Sheriff
Fred Noland	Grangeville	Mortician
John Preston	Orofino	Asst Area Supervisor, Fire Control
Mark Snyder	Kamiah	Brush Foreman
Rex Wicks	Orofino	Thinning Crew Foreman
Ron Winberg	Kooskia	Rancher, Volunteer Firefighter
Leo Whitcomb	Grangeville	Idaho County Coroner

Plus numerous others whose information can be generally considered as hearsay and/or second hand.

E. On August 17 the team again visited the site, accompanied by Bovey, Carr and Winberg.

F. Individual members of the team reviewed information in preparation for write-up.

G. Team met on August 28-30, and prepared report.

VI. Findings

The following four areas categorize personnel action as directly concerns the fatalities. We see these as facts based on our investigation.

A. Training

1. The Clearwater Supervisory Area had conducted minimal fire training for all size classes of fire.
2. Large fire training was inadequate, especially in organization and tactics.
3. Training in the principles of fire safety was not adequate. The following were not thoroughly covered:
   a. *Ten Standard Orders.*
   b. Escape routes.
   c. *13 Situations that Shout "Watch Out"*.
4. Allen was not wearing a fire resistant shirt. This was not related to the fatality, but is indicative of a missing item in training or follow-up.
5. Local district personnel lacked fire experience and training commensurate with a fire of this complexity and size.
6. Local area fire school was too brief to adequately cover subjects and was limited to classroom lectures. Example: Six safety items were allowed twenty minutes on the agenda.
7. The TSI crew received no follow-up fire training.
8. No training program implemented for permanent personnel except selected people (example: Foresters).
9. The Area fire school made little use of available instructional aids or lesson plans.
10. There has been limited participation in other agency training.

B. Fire Tactics

1. Emphasis on attack was on the west and north sides of fire with a lack of concern for the east side.

2. There was a failure to recognize the danger points in the draw and the chimney to the west of the draw.

3. Construction of fireline half-way up a chimney and improper use of direct attack.

4. No anchor at the bottom of the slope.

    a. Volunteers working downhill from top.

    b. State crew worked above anchor point.

5. The fire was already burning into the area below where the crew began work.

6. The overhead had knowledge of an approaching thunderstorm but had no definite plan to cope with it.

C. Fireline Organization

1. There was no clear cut Fire Boss assignment until late Friday night.

2. No specific line organization assignments were made. Example: Sector, division points, etc.

3. Overhead were working with shovels, pumpers, etc. rather than organizing and directing fire control effort.

4. There was an apparent lack of personnel accountability. Example: Identification of volunteers; State crews worked as individuals.

5. The actions of the State overhead did not convey a positive “take charge” attitude.

6. The fire overhead transition from a hot-spotting to an organized effort was slow.

D. First Line Supervision

1. There was a basic lack of knowledge of the principles of foremanship. Examples:

    a. Control of men.

        1) Men understand who is foreman and their accountability to him.

        2) Foreman understands his responsibility for men.

b. Visual and audio contact lacking.

c. Foreman didn't recognize dangerous situation (inexperience).

d. Overhead assumed too much knowledge of foreman.

2. Foreman had no immediate continual concern or took no diligent action to account for men.

3. Missing men were not found until approximately 9000 the following day.

VII. Recommendations

The basis of the investigating committee's recommendations is found in the supposition that lack of knowledge and skill in the fire organization on the Harris Ridge fire is the basic human factor involved. To be specific to firefighting, four areas—training, fire organization, fire tactics, and first-line supervision—are dealt with as separate subject areas. Of paramount concern is the safety of all personnel engaged in fire control activities. Safety and efficiency should be the ultimate payoff of implementation of the following recommendations.

A. Training

1. Implement a formal system of rating personnel qualifications and identifying training needs.

2. Require fire training for all personnel who are subject to fire assignments commensurate with the level of their assignment.

3. Expand fire training for cooperators (mill crews, ranchers, rural fire districts, etc.) who are commonly involved on fires.

Although the Department has a training program on paper, there was no indication of effective implementation on-the-ground. Production pressures of various projects or Area Supervisors have relegated this training to low priority in total program planning. These recommendations considered the possibility of rearranging priorities to allow for more project contribution or increased funding to provide necessary training.

Beyond the actual training, there is a need to formalize the identification of training needs and qualifications. Closer liaison with other firefighting agencies in training, interchange of fire assignments, and cooperative use of computer systems are some areas that should be implemented. These agencies include the neighboring states, US Forest Service, and BLM.

The major source of manpower on a State fire is usually local cooperators. The organization of these people is extremely difficult, but vitally important, as the fire shifts to a project class. In the case of the Harris Ridge fire, local ranchers could have been killed as easily as the State employees. It is imperative that local State personnel plan and implement a system of training and organizing these forces before the fire emergency.

Perhaps special and creative means are needed to insure communication among fireline workers, especially volunteers.

B. Line Organization

1. Fill all fire positions with qualified personnel only.

2. People assigned that are not fully qualified work only with adequate supervision and guidance.

3. Fire overhead establish a strong line organization with definite assignments and work areas.

A strong line organization is important on all sizes and at all stages of a fire. This includes personnel accountability from the standpoint of performance and safety. In the transition from a small two- or three-man fire to a large fire, the organization and direction of all forces becomes critical. These transitions must be anticipated and accepted.

The recommendations dealing with qualifications of State personnel recognize the responsibility of management not to place people in positions beyond their experience and capability without adequate supervision and guidance. It would be better to call for help from other agencies than expect people to perform beyond their capabilities.

C. Fire Tactics

1. Fire Personnel know and adhere to the *Ten Standard Orders*.

2. Fire personnel understand the *13 Situations that Shout "Watch Out"* and take appropriate action.

The *Ten Standard Orders* have evolved as definite guidance for approaching the tactical job of controlling the fires.

Previous fatalities are the basis for each of the orders. Strict adherence to these orders would have prevented this tragedy.

The *13 Situations That Shout "Watch Out*" were developed as tactical guidelines which supplement the *Ten Standard Orders* as safe firefighting practices. An understanding of the principles and implementation as appropriate on going fires will provide a margin for safety.

D. First Line Supervision

1. All levels of the State organization recognize the responsibility of the First Line Supervisor or Crew Foreman and implement a development program that stresses accountability.

This recommendation is based on the sequence of events that occurred from the time the men were last seen until the report was made to the Boise office. All fire overhead were aware that men were missing, yet no diligent action was taken until the following morning. This failure to act indicates an apparent lack of concern for the safety of these men. Basic knowledge of foremanship or first-line supervision would ameliorate this situation.