



# 14 - Reviews & Investigations

There are four general types of reviews; program management, preparedness reviews, specific fire reviews, and fire and aviation safety reviews.

## Program Reviews

Program reviews include the following:

- Operations evaluation review.
- Bureau fire program review.
- FMP review.

### Fire Program Review

The Office of Fire and Aviation will convene an ad hoc team to review bureau-wide fire activity during any year in which significant, unusual or controversial fire activity occurs. This review team will analyze the reports from national level reviews and appropriate state/geographic area reviews to determine what, if any, policy or operational changes should be initiated.

The review team will develop findings and recommendations and establish priorities for action.

### Review Levels

Reviews are accomplished at field office, state, and national levels.

*Local Level Review* This review should be conducted by the local manager or his or her designated representative. The manager will appoint other qualified persons, including the FMO (or an official who has designated fire program management responsibilities) to be part of the review.

The purpose of this review is to provide the field office manager with information to recognize commendable actions and to take needed corrective action(s). As a minimum, an oral review will be conducted. A written evaluation, prepared by the incident commander, is required for all extra-period fires.

Costs associated with the review will be charged to the account assigned to the fire with the approval of the state FMO. A copy of the complete report will be sent to the state FMO, who will review it and, if appropriate, forward a copy to the Director, Office of Fire and Aviation.

*State Level Review* A state level review will generally be conducted for any fire that:

- Involves serious injury or significant property damage;
- Results in controversy involving another agency;
- Results in adverse media attention; or
- Results in a large expenditure of funds (\$250,000 or WFSA projections of over \$250,000).

The state level review normally will be conducted at the field office where the fire occurred. It will be convened by the state FMO or his/her designated representative. It will be attended by the field office manager, the FMO, the incident commander(s) for the fire, and other individuals agreed on by the state director and field office manager.

If possible, the review team should visit the actual fire site as part of the review. A copy of the review report will be sent to the Director, Office of Fire and Aviation. Costs associated with the review will be charged to the account assigned to the fire.

*National Level Review* A national level review will generally be conducted for any fire that involves bureau-wide or national issues, including:

- Fatality(ies) or multiple, serious fire-related injuries;
- Significant adverse media or political interest;
- Multi-regional resource response;
- A substantial loss of equipment or property;
- Large expenditure of funds (over \$500,000);
- Any other fire that the director wants reviewed.

The national level review normally will be conducted at the field office where the fire occurred. It will be convened by the Director, Office of Fire and Aviation, or designated representative. It will be attended by the field office manager, FMO, state FMO, incident commander(s) for the fire, and other individuals agreed upon by the director and state director.

The review team should visit the actual site of the fire as part of the review. All costs associated with the review will be charged to the account assigned to the fire.

### Operational Evaluations

Operational evaluations of field offices and states will include the review of fire management programs to assure compliance with established BLM standards.

## Preparedness Reviews

Pre-season preparedness reviews are intended to provide comprehensive operational inspections, evaluations, and reports on BLM fire programs. Standards for conducting fire preparedness reviews are found in the *Interagency Fire Readiness Review Guide, 1996* and the *BLM Fire Preparedness Review Guide 1998*. State offices must ensure reviews of all field offices with fire programs are done annually. The reviews should take place at the beginning of the fire season. Involvement of line management, and cooperators where applicable, is critical. The Office of Fire and Aviation must be notified once inspections are completed. Notification should include assistance needed to correct any critical deficiencies.

### Purpose

The purpose of the fire preparedness review is to assist the agency administrator in preparing for and operating during the fire season. It also serves as a mechanism to identify deficiencies, recommend corrective actions and establish the need for follow up to the corrective actions.

### Objective

The objective of the fire preparedness review is to provide a comprehensive evaluation and report on BLM fire preparedness.

Preparedness reviews are required to be conducted annually.

### Policy

#### Elements

The following major elements must be considered when conducting a fire preparedness review. Safety considerations are the most important aspect of the review. Standard elements required to be addressed in the review are as follows:

- Management direction and consideration (line management and fire)
- Fire operations and procedures
- Fire business management and administration support
- Fire equipment
- Fire dispatch operations
- Fire safety
- Fire facilities
- Training
  - Fire
  - Physical
- Organization and staffing
- Fire management planning level
- Fire air operations
- Prescribed fire operations

## Review Teams

As a minimum, participation should include expertise in the areas of:

- Line management
- Fire operations
- Fire management
- Fire business management practices
- Dispatch/logistics
- Aviation

This expertise can be internal, interagency, or contract. Including expertise from other states is encouraged and would facilitate exchange of ideas. Managers will determine the makeup of the review teams when the preparedness reviews are conducted at the field office level. The state director shall determine the makeup of the review teams when reviews are conducted as part of a statewide preparedness review. The Director, Office of Fire and Aviation, will determine the makeup of the review team for national reviews.

## Frequencies

Field office managers will conduct preparedness inspections on an annually. State directors will conduct preparedness reviews to evaluate all field offices within two years. The Director, Office of Fire and Aviation, will conduct preparedness reviews annually so all states are reviewed within a three-year period.

***Fire Preparedness Standards*** State offices are responsible for conducting fire preparedness evaluations of all BLM offices in their state. BLM fire preparedness review standards are found in the *BLM Fire Preparedness Guide*.

- A final report for each field office will be prepared and routed through the state director to the field office manager.
- A copy of each report will be sent to the national office by July 15 of each year, with any notification of assistance required to correct identified critical deficiencies.
- When performing reviews of interagency dispatch centers, the review team will conduct a close-out meeting with the local interagency management group.

## Fire Reviews

### Purpose

The purpose of fire reviews is to examine all or part of the operations on an individual fire. Generally they occur because of a safety concern, large financial expenditures or operational deficiency. Fire reviews should also be conducted on well managed and efficient fires in order to document efficient procedures for future use.

### Objectives

Each review will help determine facts related to the specific fire or fire management program. The review will identify commendable actions, techniques, and decisions as well as areas that need improvement. **Reviews are intended to resolve operational issues, not impose punitive actions.**

### Policy

All wildland fires and fire-related incidents will be reviewed. The approving signature on a DI-1202 will serve as sufficient documentation of an informal review on simple fires involving small acreage and in which no unusual events occurred.

Sufficient information on all other fires will be provided to allow the state FMO, in consultation with the field office, to recommend the appropriate level of review, if any. This must be done within 30 days after the fire has been declared out. The field office manager and/or state director will act on that recommendation and schedule the review.

Fire reviews include the following:

- "Hotline" review;
- Incident management team closeout and review;
- Wildland fire review;
- Prescribed fire review;
- Entrapment and/or fire shelter deployment review.

*"Hotline" Review* The purpose of the hotline review is to examine the progress of an on-going fire incident, regardless of size. The review will provide a confirmation of the decisions being made daily in the WFSA or determine where the decision process has been faulty and corrective actions are needed.

The "hotline" review is normally conducted by the FMO (or an official who has designated fire program management responsibilities) in conjunction with the incident commander on the fire.

These reviews require no special reporting. Documentation of "hotline" reviews should be included in the normal fire report narrative.

*Incident Management Team (IMT) Closeout and Review*

The agency administrator will conduct a close-out review with the IMT prior to its release from the fire incident. The purpose of this review is to ensure complete transition of the incident management back to the local unit, to evaluate the status of any incomplete fire business, and to bring forward any issues, whether positive or suggested improvements.

*Wildland Fire Review* These reviews are conducted to examine the progress of an on-going fire incident and to confirm effective decisions or correct deficiencies; to identify new or improved procedures, techniques or tactics; to compile consistent and complete information to improve or refine field, state, or national fire management programs; to examine anomalous fire-related incidents in order to determine cause(s), contributing factors, and where applicable, recommend corrective actions (if negligence is indicated, the circumstances will be reported and investigated in accordance with applicable regulations, policies or guidelines); and to determine the cost effectiveness of a fire operation.

*Prescribed Fire Review* A prescribed fire that escapes and requires an expenditure of suppression funds or results in injuries or fatalities will be investigated. *BLM Manual 1112, Safety, Paragraph .22* outlines accident investigation procedures. The following guidelines apply to escaped fire reviews.

The objectives of the prescribed fire review are:

- To prevent future escapes from occurring and to establish accountability.
- To determine if the prescribed fire plan was adequate.
- To determine if the prescription, actions, and procedures set forth on the prescribed fire plan were followed.
- To determine if overall policy, guidance, and procedures relating to prescribed fire operations are adequate.
- To determine the level of awareness and understanding of procedures and guidance of the personnel involved.
- To determine the extent of prescribed fire training and experience of personnel involved.

Responsibilities for prescribed fire reviews are:

- **Fire Management Officer** – The fire management officer is required to investigate all escaped prescribed fires either personally or through designated investigator.
- **Field Office Manager** – The field office manager ensures adequate and proper investigation of all escaped prescribed fires that result in personal injury, burn onto private or other agency land, or have expenditures of up to \$50,000 for suppression and/or property damage. The field office manager may appoint an investigation team or request that one be appointed consistent with *BLM Manual 1112*, Safety, paragraph .22D, Accident Investigations.

The field office manager will notify the state director of escaped prescribed fires meeting the criteria in the *Prescribed Fire Handbook* within 24 hours. Copies of the completed review report will be sent to the state director and SFMO.

- **State Director** – The state director ensures adequate and proper investigation of all escaped prescribed fires that result in serious or multiple personal injury, significant burned area on private or other agency land, or have an estimated expenditure of \$50,000 to \$100,000 for suppression and/or property damage.

The state director will notify the Director, Office of Fire and Aviation, of escaped prescribed fires meeting the criteria in the *Prescribed Fire Handbook* within 24 hours. Copies of the completed review report will be sent to the Director (FA-100).

- **Director, Office of Fire and Aviation (FA-100)** – The director ensures adequate and proper investigation of all escaped prescribed fires resulting in fatality(ies), injury to people not involved in the prescribed fire operation, fire shelter deployment(s), a major transportation route closure, smoke significantly impacting a major population center or causing a public health concern, or have expenditures exceeding \$100,000 for suppression and/or property damage.

The documentation required for a review is listed below. A review team will be provided with all of the **original** documents related to the incident.

- The prescribed fire plan, a chronology of events including the prescribed fire report and unit logs or individual statements, the fire investigation report, weather forecasts including any spot forecasts, RAWS data, and NFDRS data for the day of the escape for the nearest weather station, photos, and any appraisal of damages.

- Documents pertaining to the qualifications and experience of the prescribed fire burn boss, ignition specialist, holding specialist, and other key overhead. This includes red cards, training and experience records, and task books.
- Dispatch logs, radio logs, and any aviation records or logs.

### Outline for Final Reports of Fire Reviews

This format is provided to develop consistency in the BLM fire review reporting system. This format will ensure efficient review of reports at the field, state, and national levels.

Fire reviews will follow the general outline listed below. A list of subjects is included for consideration, but only commendable actions, policy issues, or correctable deficiencies identified by the team need to be included in the written report.

- **Introduction** – This section includes names, titles, agency/home units, fire qualifications and business phone numbers of review team members. Information regarding the date and place of the review is also included.
- **Summary Narrative** – This section should contain who, what, when, where, how and why, and serve as an executive summary. Unusual major events should be mentioned, but not detailed.
- **Findings and Recommendations**
- **Action Items**

### Distribution of Reviews

State FMOs will be responsible for determining specific information from fire reviews that might be of interest or concern to other areas. Such information might be specific problems or recommendations that might be applicable elsewhere. SFMOs will forward this information within 30 days to the Office of Fire and Aviation for appropriate distribution.

### Appendices

Include all documents relevant or required for the particular fire to provide a clear and detailed picture of the incident, including:

- WFSAs with all updates;
- IAPs showing incident strategy and changes in tactics;
- Map of the fire by burning periods;
- Incident status summaries (ICS-209);



- Precipitation record and NFDRS ten-day fire danger records with graph of fire danger indices;
- Weather information including previous day's forecast, subsequent daily forecasts throughout the incident, and all fire behavior predictions generated as a result of these forecasts;
- Completed Individual Fire Report, DI-1202;
- Display maps showing fuel models, transportation system, communication points, and any other information necessary to understand the incident;
- Personnel and equipment charts showing buildups by burning periods;
- Detailed financial summary of the incident.

## Fire and Aviation Safety Team

### Purpose

To assist agency administrator(s) during periods of high fire activity, the Fire and Aviation Safety Team (FAST) will provide an assessment of overall policy, rules, regulations and management oversight; ensure an effective execution of safety-related fire and aviation issues; and provide suggestions and guidance for safe and effective programs.

There are two levels of fire and aviation safety reviews. Field units are encouraged to establish and dispatch FASTs through their geographic area coordination centers for reviews at the state and field office level. If a more comprehensive review is necessary a national FAST can be ordered.

### Objectives

Agency administrators should review the following before developing specific objectives for the assigned FAST. These are suggested objectives; you are not limited to them:

- Compliance with existing/current OSHA abatement plan(s), reports, reviews, and evaluations.
- Compliance with BLM's *Standards for Fire Operations* (qualifications, policies, process, procedures). Specifically address preparedness plan, work/rest, qualifications and training, adherence to 10 Standard Fire Orders and 18 Watch Out Situations, fire and aviation operations, personal protective equipment, briefings, management oversight and involvement, incident operations when appropriate, and general safety attitude in the overall program.

- Evaluate risk, management, oversight needs, and operational procedures.
- Work with agency administrators, fire and aviation staff, and safety managers to assess safety-related issues and recommend actions.

### Recommended Team Makeup

- Team leader (line officer, fire program lead with previous experience as a FAST member).
- Other members with a mix of skills—complex program fire manager, operations, safety, aviation, etc.
- Safety and health manager, depending on need.

### Roles and Responsibilities

#### **Team Leader:**

- 1) Ensure the team has an initial and closeout briefing with agency administrator(s) and staff(s) to identify concern and what is going well!
- 2) Report observations and findings to appropriate authority (national, geographic area, etc.).
- 3) Receive specific objective(s) from the appropriate authority.
- 4) Communicate with designated national FAST liaison for tracking purposes and support.
- 5) Ensure that all team members travel in one group as much as possible.
- 6) Promote good team attitude; coach for success.
- 7) Ensure coordination with aviation safety and technical assistance teams, if a separate assignment occurs.
- 8) Ensure draft report is completed prior to closeout with requesting unit.
- 9) Submit a final report within seven days.

#### **Safety and Health Manager:**

- 1) Review program for compliance with designated agency safety and health program, including OSHA standards.
- 2) Review accident reports for accident trends.

#### **National FAST Liaison:**

- 1) Participate in team selection.
- 2) Coordinate with National Interagency Coordination Center for ordering and mobilization.
- 3) Brief and coordinate with national FAST, fire directors, Federal Fire and Aviation Leadership Council, et al.
- 4) Provide general briefing, expectations, and ongoing guidance to the team. Include length of assignment and itinerary.

### Follow-up

The team will gather and review all reports prior to end of calendar year to ensure identified corrective actions have been taken.

### Report Elements

- Executive Summary
- Purpose
- Objectives
- Methods/Procedures
- Findings
- Recommendations
- Follow-up actions
  - Immediate
  - Long-term
  - National issues
- Delegation (request letter)

### Mobilization

Mobilization of a national FAST will be through the National Interagency Coordination Center. Mobilization of a geographic area FAST will be through the geographic area coordination center.

### Team Expectation

- Length of assignment will depend on complexity and objectives, usually five days.
- Equipment will include field and office clothing, laptop computer, cellular telephone or pager.
- Travel depends on location and need.
- Funding will be assigned on the resource order.
- Standard protocol will include, but is not limited to:

1. Assisting the ordering office in fire and aviation oversight.
2. At mobilization, the team will be given a briefing from the national FAST liaison. The briefing will include ordering office, funding code, overview of situation, report time, location, person to report to, general request information, and mission.
3. The team will be assigned a liaison with the national FAST.
4. On arrival at the ordering unit, the team will receive an agency administrator briefing, objectives, and (when appropriate) a delegation of authority.
5. When entering an administrative unit, check with agency administrator and fire staff. The team is there to assist and correct problems; not to review and find fault.
6. Close out with the ordering unit and submit reports.

## Fire Accident Reporting & Investigation

### Introduction

Reporting is imperative to the safe operation of any program. Accurate and timely reporting provides many benefits. Hazardous trends, unsafe conditions, and faulty equipment are identified and can be addressed and corrected.

### Policy

In fire accident reporting and investigation, BLM units will follow BLM safety reporting requirements commensurate with the specific accident. Proper application of these procedures is dependent on accurate interpretation of the accident/incident scope to ensure appropriate reporting.

*Management and Command Responsibilities* Incident commander responsibilities (in addition to those identified in ICS 410-1, *Fireline Handbook*).

On notification of an entrapment the incident commander should consider:

- Removing involved personnel from the fireline, while ensuring appropriate medical attention is received. When hospitalization or fatalities occur, relevant facilities and organizations should be advised to preserve all involved personnel's protective clothing and equipment.
- Ensuring that the entrapment or deployment scene is secured and all pertinent evidence is secured (in place if possible), particularly fire shelters

and personal protective equipment as required by the Occupational Safety and Health Act.

- Immediately notifying the agency administrator and providing details on the incident status summary (ICS-209).
- Initiating a preliminary investigation of the entrapment or deployment to determine the facts of the entrapment, if possible. The initial investigation will be completed within 24 hours of the entrapment.
- Relieving involved supervisors from fireline duty until the preliminary investigation has been completed.
- Ensuring that personnel and supervisors are available for interviews by the entrapment investigation team (EIT), defined below. "Available" means present at the incident base or nearby R&R center.
- As soon as possible, providing the results of the incident commander's preliminary investigation to the EIT. Ensure a roster of individuals involved in the entrapment is developed. The roster must, at least, contain names, employing agencies, genders, ages, addresses, incident position titles, and appropriate employee identification numbers.

*Agency Administrator Responsibilities* Upon notification of an entrapment or deployment, the agency administrator should ensure the following activities take place within 24 hours of notification:

- Convene an EIT to investigate the entrapment. The EIT will be interagency, initially requested through the geographic area coordination center, and include the following personnel:
  - Incident commander or operations section chief (Type 1).
  - Fire behavior analyst, qualified in the incident-specific fuel type.
  - Safety manager (chief investigator or with investigative expertise)
  - Wildland fire operation specialist with expertise at the peer level of the person(s) directly involved.
  - Agency representative of involved person(s).
  - Employee representative (union, peer at operations level).
  - Fire weather meteorologist.
  - Personal protective equipment specialist, from a lab such as the USDA Forest Service's Missoula Technology and Development Center.
- Instruct the EIT to arrive on scene within 24 hours.
- Advise the incident management team of the EIT's time of arrival and team composition.
- As required by the Occupational Safety and Health Act of 1970, advise the nearest office of the OSHA (federal or state as applicable) if the entrapment

involves a fatality or the hospitalization of five or more personnel. Advise OSHA that a formal investigation is being conducted by a designated EIT.

- Arrange for a critical incident stress debriefing team for the personnel involved in the entrapment.
- Notify the home unit agency administrator of all individuals involved in the entrapment/deployment.
- Submit a copy of the EIT's final report to the BLM Office of Fire and Aviation and the NWCG Safety and Health Working Team (SHWT) within 60 days of receipt from the EIT.

#### *Entrapment Investigation Team Responsibilities*

- The EIT will conduct the investigation, identify causal factors and list findings for the entrapment situation. Recommendations for corrective actions should be included in the letter of transmittal.
- The EIT will brief the agency administrator and the incident commander of their preliminary findings prior to leaving the incident.
- Within 30 days of the EIT's dispatch, their final report and recommendations for corrective actions will be submitted to the agency administrator.

#### *NWCG Safety and Health Working Team Responsibilities*

- Within 30 days of receipt of each entrapment report, the SHWT will distribute a summary of the applicable findings to NWCG agencies and the National Fire Protection Association, per the NWCG "Safety Gram." This summary will not include any incriminating agency references or information identified as sensitive by the agency.
- The SHWT will periodically review all entrapment reports, determine trends, and incorporate findings to develop specific prevention recommendations for implementation by NWCG agencies.

*Guidelines for Fire Entrapment Investigations* These guidelines provide minimum criteria for entrapment investigations, and standardization of entrapment reports—with the intent of gathering complete and accurate data. Ultimately, the data can be used to identify trends and problems related to fire entrapments.

The guidelines are not an investigation checklist, but rather a guide to ensure that, at a minimum, the investigation process addresses items included in the guidelines.

**1. General Information**

State  
 Field office or resource area  
 Fire name and number  
 Wildland or prescribed  
 Multi-start fire - yes or no

Phase of fire:  
 Initial attack (direct/indirect)  
 Extended attack  
 Complex  
 Mopup  
 Demobilization  
 Transition

How many days into fire

Land management jurisdiction  
 Fire season (locally)--active/inactive  
 Current agency issues  
 Current political issues, including  
 review of:  
 Delegation of authority  
 WFSA  
 Severity status

**2. Incident Management**

Incident objectives  
 Strategy  
 Tactics  
 Plans (i.e., action plans)  
 Safety briefings/major concerns addressed  
 Instructions given

Team type:  
 local  
 type 1  
 type 2  
 type 3  
 type 4

**3. Entrapment Specifics**

Time of day  
 Day of week  
 Month  
 Location including latitude/longitude  
 Supervisory controls  
 span of control  
 communications  
 [Note: refer to human factors/  
 decisionmaking]

Diagrams/sketches  
 Resource availability (local/national)  
 Structures threatened  
 Resource values at risk  
 Resource objectives  
 Injury severity:  
 Number and type injuries  
 Number of people hospitalized  
 Number of fatalities  
 Direct cause of fatalities

Witness statements

Photos

**4. Fire Behavior**

Predicted vs observed  
 Topography  
 Fuels  
 Weather

Wind  
 Red flag watch  
 Red flag warnings  
 Temperature  
 Relative humidity

**5) Environmental**

Visibility  
 Smoke  
 Inversion

slope  
 Temperature  
 Other

**6. Control Mechanisms**

- Span of control
- Communications
- Ongoing evaluations
- 10 Standard Fire Orders: How many violated? Which ones?
- 18 Watch Out Situations: How many were compromised? Which ones?
- Lookout(s)-Communications-Escape Routes-Safety Zones: Identified?  
Marked?
- Downhill Line Construction Guidelines: Followed? If not, why?
- Number of documented reports of unsafe working conditions
- Any previous situations with entrapment potential on this incident? If so, what were they?
- Medical logs reviewed (if applicable)
- Protective measures (refuge)
- Communications issues:
  - Any language barriers?
  - System breakdown, i.e., information did not get to crew.
  - Communication system adequate, or a contributing factor?
  - Type of communications (radio or cell phone)
  - Radio frequencies
- Briefings:
  - Safety                                      Written/oral, and by whom
  - Work shift                                    Weather
  - Fire behavior

**7. Involved Personnel**

- Total people involved in entrapment
- Leadership
- Experience levels

*For the following categories, identify the number of each involved in this entrapment:*

Organization	_____	Resource Type	_____
Contractor	_____	Hotshots	_____
Rural fire department	_____	Smokeyjumpers	_____
Military	_____	Helitack	_____
National Guard	_____	Support	_____
State	_____	Engine crew	_____
Federal	_____	Water tender	_____
Tribal	_____	Dozer	_____
Other (e.g., media, volunteers)	_____	EFF	_____
14	_____	State agency Type 2 crew	_____
		Tribal Type 2 crew	_____
			=====



Regular agency Type 2 crew \_\_\_\_\_

Work/rest ratio for each firefighter:

Number of hours of sleep within 24 hours prior to entrapment.

Type of sleep environment provided.

Number of hours worked on this shift (prior to entrapment).

Number and time (minutes) of breaks per hour provided prior to entrapment.

Most recent day off for each firefighter.

Occupational series

Function/assignment on fire

Crews' home base or hiring office (EFF)

Chronic personal health issues, i.e., asthma, heart disease, diabetes

Health complaints on this incident

Injuries reported

Hydration/nutrition (last 24 hours):

Number of meals

Type of food provided

Amount and type of drink provided

Miscellaneous snacks provided

Critical incident management followed?

Training/qualifications/experience:

Current training/qualifications for the job they are doing

Date of training

Amount of training

Red card qualifications

Physical fitness (WCT)

Medical clearance

Was PT available to involved personnel?

Total fire experience

Experience in current assignment

Currency in current assignment

#### **8. Human factors/decision making:**

What were the assignments prior to the entrapment?

Did the assignment coincide with incident action plan? Why or why not?

Was work being performed safely or were compromises made to accomplish the mission?

Were direct orders followed prior to entrapment?

Were instructions/orders clear and understood prior to entrapment?

What decisions were made prior to entrapment?

Were decisions made under stress sound ones?

(See Appendix A for further detail regarding human factors.)

#### **9. Equipment/PPE**

PPE/attire: provided, condition, carried

Trained in use? In use? Being used properly?  
Shelters deployed: yes\_\_\_ no\_\_\_  
How many shelters deployed?  
Were shelters effective?  
Type of equipment (engine, handtool, etc)  
Failure/breakdown (engine, shelter, etc)

## 10. Narrative

*Background, summary, comments, abstract, conclusion*

*Human Factors* The purpose of this section is to assist investigators in determining why certain actions were taken and decisions were made before, during, and after an entrapment. In following the question “why” during an investigation, the team can gather accurate and thorough information that may prevent a future entrapment.

Entrapment investigators should use the six-step process shown below as an interview guide to help determine events that led up to the entrapment. The interview process, conducted by a trained investigator, should follow standard protocol (interview witness individually, utilize control questions, use no leading questions, etc.) should create a timeline of the incident, action-by-action.

During the interview process, the investigator should ask the interviewee to specify action-by-action what he/she did during the time leading up to, during, and following the incident. The interviewee should be asked to describe why he/she took a particular action. The model shown in Figure 1 can assist in this information gathering process.

### Step 1: Perceiving the state of the world.

For example:

- Visibility was either adequate or inadequate for the firefighter to identify the threat. If the answer is “inadequate,” ask why. What caused the poor visibility? Ask why firefighter was kept in a low-visibility area.
- Radio communications either did or did not occur to keep the firefighter abreast of the unfolding situation. If the answer is “did not,” ask why. Why weren’t radio communications keeping the firefighter up to date?
- A lookout was or was not posted to gather information. If no lookout was posted, ask why. Also determine why the particular lookout post or individual was selected. Evaluate the lookout’s training and expertise.

### Step 2: Interpreting and evaluating the perceived information according to what is expected.

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After determining whether or not the firefighter was able to accurately perceive the state of the world, the investigative team should begin to address how the

firefighter interpreted and evaluated the information gathered. When people interpret and evaluate information, they compare it with what they expect, given their knowledge of the area and the unfolding situation. For example, investigators need to determine if:

- Interpretations were consistent with those outlined in training. If not, ask why.
- Radio communication patterns indicated that the firefighter correctly interpreted and understood the incoming information. If transmissions indicated the firefighter *did not* correctly interpret incoming information, ask why.

### **Step 3: Setting goals.**

After the investigative team has determined whether or not the firefighter was able to accurately interpret and evaluate gathered information, it should address how the firefighter set goals to deal with the unfolding situation. For example, investigators need to determine if:

- Radio communication patterns indicated the firefighter knew the correct mode of behavior given the unfolding situation. If not, ask why.
- The firefighter received feedback following each transmission, confirming or questioning her/his goals. If these acknowledgments did not occur, ask why.

### **Steps 4 and 5: Developing an intention to act and deciding on an actual sequence of actions.**

After the investigative team determines whether or not the firefighter was able to accurately interpret and evaluate gathered information, it should address how the firefighter set goals to deal with the unfolding situation. For example, investigators need to determine if:

- Radio and other communication patterns indicated the firefighter selected an appropriate objective as well as an appropriate means to achieve it. If he/she did not, ask why. Did the firefighter understand the local terrain well enough to make a good action plan? Did the firefighter receive a briefing? If so, what was the content of that briefing?
- The firefighter searched for and evaluated alternative courses of action. If the firefighter did not, ask why.

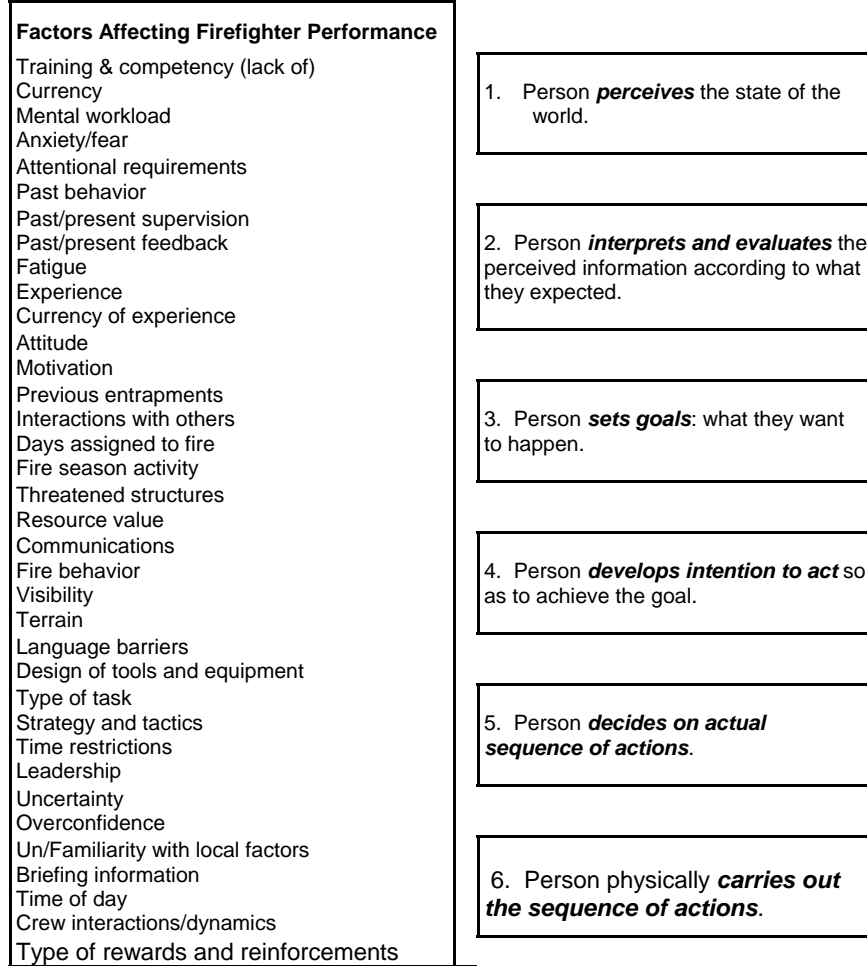
### **Step 6: Carrying out the sequence of actions.**

After the investigative team has determined whether or not the firefighter was able to establish an action plan, it should address how the firefighter actually carried out the actions. For example, investigators need to determine if:

- Radio and other communication patterns indicated that the firefighter monitored her/his progress while carrying out the actions. If not, ask why.
- The firefighter received feedback following each transmission, confirming or questioning his/her progress in carrying out the actions. If these acknowledgments did not occur, ask why.

These kinds of questions can guide the investigative team as it interviews individuals who were working on the fireline or at the command level. Gathering this information will help determine how firefighters' actions and decisions potentially contributed to an entrapment.

Figure 1



14 *Factors that Affect Humans* The items listed in Figure 1 represent

characteristics of the individual and environment that can adversely affect the performance of firefighters. The items represent different levels of potential causal factors. Causal factors are usually not weighted the same.

Some entrapment investigations have focused primarily on causal factors of fire behavior, equipment failure, and weather. It is clear, however, the previous experience should be evaluated as well. Unsafe procedures or behavior may be reinforced when a group or individual "gets away with it" time after time. Behavior is consistent with past experience. Because behavior tends to be predictable, it is important that the investigation team consider historical aspects of the firefighters that might explain the actions preceding an entrapment.

**Maintaining Objectivity:** The trained investigator will be aware that unconscious biases and expectations on the part of the investigator and the entrapment victim can easily compromise the investigative process. It is essential that a trained investigator be a part of the team and monitor these biases to ensure objectivity of the investigation.

**Conclusion:** Addressing human factors when conducting an entrapment investigation involves understanding why a particular firefighter behaved as he/she did during the time leading up to the entrapment. While the firefighter's behavior is directly observable, the thinking that contributed to that behavior is not. A full understanding of the behavior cannot be developed unless the entrapment investigators address the thinking behind the scenes. Unfortunately, this information cannot be acquired by asking a series of pre-specified questions. Instead, investigators must collect *and* analyze information and then perhaps collect and analyze some more in an attempt to understand why the firefighter behaved as she/he did.

## Wildland Fire Serious Accident Investigation

### Purpose

This section augments *485 Departmental Manual 7* "Serious Accident Investigation," and *Forest Service Manual 6730* "Accident Reporting and Investigation." This single document complies with joint investigation obligations established in the Interdepartmental Memorandum of Understanding Between the US Department of the Interior and the US Department of Agriculture, October 26, 1995. It also results from direction received January 29, 1997, from both departmental Designated Agency Safety and Health Officers (DASHOs).

This specifies the requirements for conducting investigations involving wildland fire-related non-aviation accidents and incidents.

### Scope

This applies to accidents in wildland fire suppression or prescribed burning operations, or to personnel working in direct support of those activities, that result in one or more fatalities or the hospitalization of three or more personnel. It is strongly recommended that agencies also utilize these procedures for accidents or "incidents with potential" that have less serious results.

### Procedures

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*Notification* In addition to routine agency administrative notification procedures, the following notification process will apply in wildland fire-related accidents/incidents.

- The **National Interagency Coordination Center**, when advised by the incident and/or the local agency administrator per standard operating procedures of the interagency coordination system, will advise the national fire director(s) or designee(s).
- The **fire director(s)** or designee(s) will ensure the following notifications, as a minimum, as soon as possible:
  - agency DASHO;
  - agency safety manager;
  - OSHA (within 48 hours after the occurrence-29 CFR 1960.70);
  - chief investigator (mutually acceptable);
  - technical specialists;
  - interagency partners, as appropriate.
- The **agency DASHO** will ensure that the appropriate notifications are made, such as to the departmental DASHO and safety manager.

### *Joint Accident Investigation Responsibilities*

The lead agency DASHO or designee will:

- Immediately appoint and authorize an accident investigation team leader and the safety and health manager. The team leader will be provided a delegation of authority, investigation objectives, and briefing.
- Ensure that the investigation team leader and safety and health manager are promptly dispatched, and that resources and procedures to do so are in place.
- Receive the factual and management evaluation reports and take action to accept or reject recommendations. The DASHO will advise the agency director of the investigation findings and recommendations.
- Convene a board of review, to evaluate the adequacy of the factual and management evaluation reports and suggest corrective actions.
- Ensure that a corrective action plan is developed, incorporating management initiatives developed to address the causal factors of the accident, based on the investigation recommendations.
- Transmit the investigation factual report and the management evaluation report, together with the corrective action plan to the departmental DASHO.

### *Line Management will:*

- Identify agencies that have statutory/accident jurisdictional responsibilities for the incident.
- Develop local preparedness plans to guide emergency response to critical incidents.
- Provide for and emphasize treatment and care of survivors.
- Brief investigation team.

- Facilitate and support investigation as requested.
- Implement critical incident stress management.
- In case of serious injury or death to a Native American, immediately contact home tribe leadership.
- Ensure that the incident commander secures the accident site to protect physical evidence.

*Agency Fire Director(s) will:*

- Ensure adequate notification procedures are in place to promptly begin the accident investigation.
- Ensure that an appropriately qualified chief investigator and technical specialists and resources are available and immediately dispatched to conduct and support an investigation.

### Accident Investigation Team Composition

The accident investigation team will include (duties, responsibilities, qualifications and training identified on pages 58-62):

- **Team Leader**—a senior management official. The team leader directs the investigation.
- **Safety and Health Manager**—an experienced OSHA specialist or manager. As a team member, ensures the investigation focus remains on safety and health issues.
- **Chief Investigator**—a qualified accident investigation specialist responsible for managing investigation operations. This person should be mutually acceptable to involved fire directors in a co-lead investigation.
- **Technical Specialists**—experienced personnel to address specific technical issues (weather, fuels, equipment, etc.).  
\* Entrapments will be investigated by an Entrapment Investigation Team.
- Administrative support personnel should help gather information and evidence, and to assist in document preparation and briefing materials.

### Wildland Fire Accident Investigation Process

The **24-Hour Preliminary Brief** will be completed and forwarded by the agency administrator responsible for the accident. This brief is intended to give only the most obvious and basic facts about the accident. The factual brief based on preliminary findings may be widely distributed to managers and used to enhance accident prevention. The brief may be only one paragraph outlining limited facts; in the case of an entrapment and/or fire fatality(ies), this brief takes the form of the NWCG "Wildland Fire Entrapment/Fatality Initial Report," NFES 0869.

Following initial notification of a serious accident, agency fire director(s) will immediately dispatch a chief investigator and technical specialists to the accident location to begin initial gathering of factual information and evidence. This includes photographs of the accident scene, environmental information, examination of equipment and materials, and other time-sensitive data.

The **team**, when assembled, will:

- Receive an **in-briefing** from the local agency administrator, to include the 24-Hour preliminary brief, as well as other general information about the accident.
- Produce a **72-Hour Expanded Brief**. This brief is an expanded 24-Hour brief, providing more detailed information about the accident. It may contain the number of victims, severity of injuries, and other details to further enhance accident prevention. This is the first product of the investigation team.



- Examine technical and procedural issues related to equipment and tactical fire management. The team will then produce the **Factual Report**. This report contains facts only and contains no opinions, conclusions, and recommendations.
- Produce a **Management Evaluation Report**. This report is for internal use only, and explores management policies, practices, procedures and personal performance aspects involved with the accident. This report may contain opinions by investigators as to the cause of the accident; conclusions and observations; confidential information; and recommendations of corrective measures to prevent future occurrences.

The factual and management evaluation reports will be completed within 45 days of the accident; extensions require departmental DASHO approval. The reports will be formatted according to the *Interagency Wildland Fire Accident Investigation Handbook*, and will be signed by the team leader, chief investigator, and safety and health manager. The reports will be submitted directly to the agency DASHO.

### Review and Recommendations

The agency DASHO will appoint a **Board of Review** before receipt of the factual and management evaluation reports. Within 21 calendar days of receipt of the two reports, the board of review will convene, and develop and forward a recommended corrective action plan to the agency DASHO. Within the same 21 calendar days, the agency DASHO will transmit the board's recommendations and the two reports to the departmental DASHO, with a statement of concurrence or nonconcurrence on the board's recommendations. The agency DASHO will also release the factual report.

In the event of a co-lead investigation, the same procedures and time limits will apply. Involved agency DASHOs will jointly appoint the board of review and jointly concur or nonconcur with the board's recommendations.

The agency safety office will be the **Office of Record** for the entire investigation file. That office will prepare an abstract of the accident for entry into the Departmental Safety Management Information System to share with other agencies, and OSHA.

The agency DASHO may make a presentation to the DASHO Council and/or other senior agency/departmental managers concerning opinions, findings, recommendations, and corrective actions included in the report.

The agency director(s) may be requested to personally brief the Secretary(ies) to explain the accident and corrective measures being implemented to prevent recurrence.

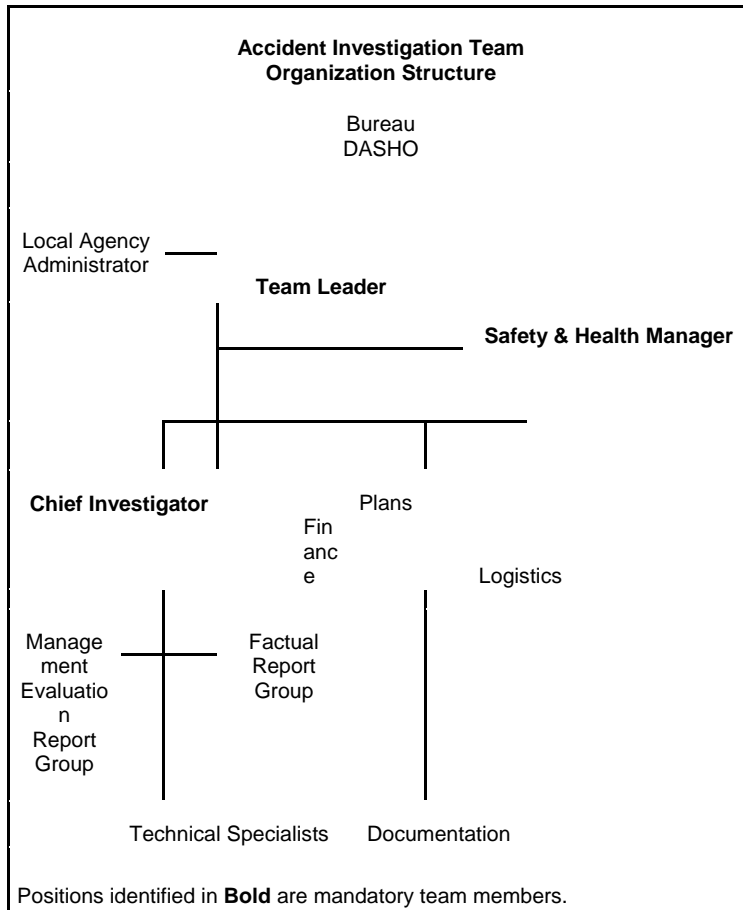
### Occupational Safety & Health Administration

OSHA should be offered the opportunity to participate in the investigation. It may choose to conduct a separate investigation of the accident. Nevertheless, all factual information and evidence will be made available to OSHA investigators.

On completion of the investigation and reports, OSHA, on its request, will be provided with appropriate information, as identified in 29 CFR 1960.29(d).

### Accident Investigation Personnel

The following qualifications and training standards follow the National Wildfire Coordinating Group approach to qualifications and standards for the incident command system and fire skill positions: identify positions, describe duties and responsibilities, define qualifications requirements and recommend training courses.



The accident investigation team organization structure follows the incident command system organization structure and philosophy. The structure may be expanded or contracted as the investigation complexity increases or decreases. Mandatory team members retain responsibility and authority for all duties assigned to their position, until the complexity of the investigation requires expansion, whereupon responsibility may be assigned to additional team members.

*Team Leader*

The team leader receives the delegation of authority and is responsible for all activities to accomplish the objectives of the investigation.

**Duties and Responsibilities**

- Represents the agency DASHO.
  - Contacts the unit that had the accident and determines the status of the investigation in progress and other pertinent information.
  - Ensures that “Just-In-Time” team orientation training is accomplished.
  - Coordinates an in-briefing with the affected agency administrator.
  - Ensures that accommodations and resources needed by the team are available.
  - Coordinates the investigation with the affected agency administrator.
  - Develops the strategy for the investigation.
  - Approves daily plans.
  - Briefs participants in the investigation.
  - Coordinates all media releases about the investigation.
  - Approves requests for resources and their release from the investigation.
  - Conducts meetings.
  - Authorizes and coordinates expenditure of appropriated funds to be charged to the agency in the official accident investigation.
  - Arranges for drug testing of personnel, analyses, medical reports and other tests as appropriate.
  - Ensures safety of the operations.
  - Establishes liaison with and involves appropriate local, state and federal officials.
  - Releases physical materials, documents, papers and other information pertinent to the investigation to the appropriate local officials when the accident investigation is complete.
  - Distributes any safety messages to the agencies identifying safety measures needed for immediate correction to prevent a similar accident.
  - Distributes an initial report of the accident within 24 hours of the team’s assembling.
- 14 ▪ Prepares, signs and transmits the factual report and management evaluation report to the agency administrator/DASHO.

**Qualifications**

- Currently is a senior management official.

**Required Training**

- Team leadership or equivalent.
- “Just-In-Time” Serious Accident Investigation training, as identified by DOI and bureaus.

**Recommended Training**

- OSHA CFR Part 29- 1960- Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters.
- I-100, “Introduction to the IC System” self study guide and video.
- “Fire Management Leadership” (national course for agency administrators).

*Safety and Health Manager*

The safety and health manager is a safety and health professional responsible for advising the team leader on occupational safety and health issues pertinent to the investigation.

**Duties and Responsibilities**

- Advises the team leader and other team members on occupational safety and health issues related to the accident.
- Advises and supports the investigation team in the identification of management failures or weaknesses which may have contributed to the accident.
- Advises the team leader in the conduct of the investigation to ensure compliance with OSHA, DOI, and bureau safety and health program requirements.
- Coordinates the availability and procurement of additional safety and health expertise and resources in support of the investigation.
- Signs the factual report and management evaluation report.

**Qualifications**

- Currently a safety and occupational health professional in the GS-018, 803, or 690 classification series. Exceptions to these identified series may occur with USDA Forest Service personnel.
- Experience in serious accident investigation, either as a member of an investigation team or through conduct of independent investigations.

**Required Training**

- Satisfactory completion of serious accident investigation course, such as the OSHA Serious Accident Investigation Course or equivalent.
- “Just-In-Time” Serious Accident Investigation training, as identified by DOI and bureaus.

**Recommended Training**

- Wildland fire experience, with commensurate fire suppression/prescribed fire training.
- Advanced safety and occupational health professional training, such as offered through the DOI Occupational Safety and Health Professional Development Program.
- I-100, "Introduction to the IC System" self study guide and video.

### *Chief Investigator*

The Chief Investigator is the qualified accident investigation specialist responsible for the direct management of all investigation activities.

#### **Duties and Responsibilities**

- Organizes, staffs and manages the resources and processes of the accident investigation to implement the investigation plan.
- Reviews work and work products of the investigation team for inclusion in the accident investigation package.
- Ensures that the investigation addresses pertinent issues and concerns.
- Coordinates the development of the factual report and the management evaluation report for the accident investigation team within agency guidelines and delivers them to the team leader.
- Reviews information presented by specialists for inclusion in the documentation package.
- Recommends release of personnel assigned to the accident investigation when their services are no longer needed.
- Signs the factual report and management evaluation report.

#### **Qualifications**

- Satisfactorily served as a team member on a serious accident investigation team.

#### **Required Training**

- I-200, "Basic Incident Command System."
- "Just-In-Time" Serious Accident Investigation training, as identified by DOI and bureaus.
- Satisfactorily completed a recognized accident investigation course, such as the OSHA Serious Accident Investigation 80-hour course or equivalent.

#### **Recommended Training**

- Wildland fire management experience, with commensurate fire suppression/management/prescribed fire training.
- Interagency accident investigation workshop participation.

## 14 *Technical Specialists*

Technical Specialists possess technical expertise or skills that support accident investigation. An example of a technical specialist is a **Human Factors Specialist**.

**Duties and Responsibilities**

- Report to the chief investigator.
- Apply skills to gather information concerning an accident for the use of an accident investigation team.
- Organize and conduct work directed by the chief investigator.
- Document, sign, and date activities and information developed during the course of the investigation.

**Qualifications**

- Currently possess the qualifications recognized by the specialty represented, e.g., NWCG qualification system, professional credentials.
- Experience in reviews, investigations or other inquiries related to the specialty.

**Required Training**

- “Just-In-Time” Serious Accident Investigation training, as identified by DOI and bureaus.

**Recommended Training**

- Interagency accident investigation workshop participation.
- I-200, “Basic Incident Command System.”

*Optional positions:**Documentation Unit Leader*

The Documentation Unit Leader, when assigned, is responsible for maintaining accurate and complete investigation files, providing duplication services, completing the accident investigation file package, ensuring appropriate security of materials, and preparing documents for the investigation team.

**Duties and Responsibilities**

- Organizes and manages the documentation package for the accident investigation formal record.
- Prepares, signs, and delivers the draft factual report and management evaluation report to the chief investigator.
- Submits the accident investigation documentation package to the chief investigator.
- Coordinates with investigation personnel to obtain documentation required.
- Establishes a system to securely maintain documentation of written, photographic, physical and other forms of information and property to maintain documentation package integrity.
- Provides information to members of the investigation team for their use in the investigation.

**Qualifications**

- Is or has been a documentation unit leader.
- Served as a trainee documentation unit leader on an accident investigation.

**Required Training**

- I-100, "Introduction to the IC System" self study guide and video.
- "Just-In-Time" Serious Accident Investigation training, as identified by DOI and bureaus.

**Recommended Training**

- I-200, "Basic Incident Command System."

## Fire Investigations

The field manager has the overall program responsibility (investigation through collection) for the wildland fire trespass program. The field manager is responsible for all fire trespass activities on public lands regardless of who provides the protection. The FMO at the field office has operational responsibility for initiating fire cause determination. If there is clearly insufficient cause determination information to proceed, the FMO completes documentation and recommends case disposition to the field manager (see H-9238-1, *Fire Trespass*). If there is sufficient cause determination information to merit further investigation, the FMO recommends to the field manager that the case be assigned to law enforcement for conducting the investigation. The law enforcement investigation report is submitted to the FMO. The FMO and the law enforcement officer are responsible to meet with the field manager to review the investigative report and other documents. Based on the strength of the case, the field manager determines whether to proceed or to close the case. The determination must be made on facts and circumstances, not on cost or ability to pay. This decision to continue or close the case must be documented and filed in the fire folder along with the official copy of the fire report (DI-1202).