

14 - Reviews & Investigations



Introduction

Reviews and investigations are two methods used by wildland fire and aviation managers to ensure or improve safety and efficiency, determine if any policy or operational changes should be initiated, and identify any management system failures. Reviews are usually based on improving performance and increasing safety, while investigations are conducted when an accident or incident with potential for injury or fatality occurs.

Depending on the complexity and severity, reviews and investigations may be conducted at the local, state, or national level.

Policy

Department of Interior and Bureau policies require investigation or review of all fires with entrapments and/or fire shelter deployments, multiple injuries, fatalities, escaped prescribed fires, and property or equipment damage of more than \$250,000 or fires with projected large expenditures of more than \$250,000.

Policy also requires each field unit to have on site a current copy of the *Prescribed Fire Handbook*, *Standards for Fire and Aviation Operations*, *Investigating Wildland Fire Entrapments* (Missoula Technology and Development Center), *Fireline Handbook*, and BLM Manual 1112-2, *Safety and Health for Field Operations*.

Program Reviews

Reviews address all or any aspects of wildland fire and aviation management. Reviews may focus on program oversight, safety, leadership, operations, specific incidents, preparedness, training, staffing, business practices, budget, planning, interagency cooperation, and linkage between fire and other BLM programs. Review teams will develop findings and recommendations and establish priorities for action.

Reviews may be conducted in the form of Preparedness Reviews, Fire and Aviation Safety Team Reviews, Individual Fire Reviews, or program specific reviews.

Preparedness Reviews

Wildland fire and aviation preparedness reviews are conducted prior to the fire season to help the field unit prepare for the fire season, identify operational, procedural, personnel, or equipment deficiencies, and recommend corrective actions. Standards for preparedness reviews are based on the BLM's *Standards for Fire and Aviation Operations* and conducted according to the *Interagency Fire Preparedness Review Guide*.

Preparedness reviews consist of several major elements of which safety is the most important. These elements include the following:

- Management Direction and Consideration
- Fire Operations and Procedures
- Fire Business Management and Administrative Support
- Equipment
- Dispatch Operations
- Safety
- Facilities
- Training
- Organization and Staffing
- Planning
- Aviation Operations
- Prescribed Fire

Review teams should include line and fire managers, fire and aviation operations specialists, dispatch and logistics specialists, fire business management specialists, and other technical experts as needed (i.e., safety & occupational health specialists, contracting officers). This expertise may be internal, interagency, or contract, and include members from other states. Local-level review team membership is determined by the field manager; state-level review team membership is identified by the state director; and national review teams are identified by the Director, Office of Fire and Aviation.

14 Field office preparedness reviews will be conducted annually. State-wide preparedness reviews are conducted every two years. National-level reviews of

each state are evaluated every four years.

Copies of preparedness review reports will be distributed to the Director, Office of Fire and Aviation and to the reviewed field office through the state director, by July 15 with notification of assistance required to correct identified critical deficiencies.

Fire and Aviation Safety Reviews

Fire and Aviation Safety Teams (FASTs) assist agency administrators during periods of high fire activity by assessing policy, rules, regulations, and management oversight relating to operational issues. They can also do the following: 1) provide guidance to ensure fire and aviation programs are conducted safely; 2) review compliance with OSHA abatement plan(s), reports, reviews and evaluations; and 3) review compliance with the *Standards for Fire and Aviation Operations*.

FAST reviews can be requested through geographic area coordination centers to conduct reviews at the state and field office level. If a more comprehensive review is required, a national FAST can be ordered through the National Interagency Coordination Center.

FASTs generally include a team leader, who is either a line officer or fire program lead with previous experience as a FAST member, a safety and health manager, and other individuals with a mix of skills from fire and aviation management.

The team's report includes an executive summary, purpose, objectives, methods/procedures, findings, recommendations, follow-up actions (immediate, long-term, national issues), and a letter delegating authority for the review. As follow-up, the team will gather and review all reports prior to the end of the calendar year to ensure identified corrective actions have been taken.

Individual Fire Reviews

Fire reviews examine all or part of the operations on an individual fire. The fire may be ongoing or controlled. These evaluations may be a local, state, or national review, a "hotline" review, an incident management team closeout and review, a wildland fire review, or an escaped prescribed fire review.

Local Level Review Should be conducted by the local manager (or designated representative) to provide the agency administrator with recommendations or accommodations pertaining to its fire program or operations.

State Level Review Convened by the state FMO (or designated representative). This review is generally conducted for any fire that results in controversy involving another agency, adverse media attention, or in large expenditures of funds (\$250,000 or more).

National Level Review Convened by Director, Office of Fire and Aviation (or designate). This review is generally conducted for any fire that involves Bureau-wide or national issues, significant adverse media or political interest, multi-regional resource response, a substantial loss of equipment or property, large expenditure of funds (more than \$500,000), and other fires the director wants reviewed.

Hotline Review Normally conducted by the FMO in conjunction with the incident commander, this review examines an **ongoing** fire to confirm decisions made daily in the WFSA, or to determine where the decision process has been faulty and what corrective actions are needed.

Incident Management Team Closeout and Review The agency administrator conducts a closeout with the IMT prior to a team's release from the incident. This ensures effective transition of the incident to the local unit, evaluates the status of fire business, and addresses issues or suggested improvements.

Wildland Fire Review Examines an **ongoing** fire to evaluate decisions or correct deficiencies; identifies new or improved procedures, techniques or tactics; compiles consistent and complete information to improve local, state, or national fire management programs; examine anomalous fire-related incidents to determine cause(s), contributing factors, and to recommend corrective actions; and determine cost-effectiveness of an operation.

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

Responsibilities of FMOs, field office managers, state directors, and the Director, Office of Fire and Aviation for prescribed fire reviews are outlined in the *Prescribed Fire Guidance*, issued through IM No. OF&A 2000-020, dated July 12, 2000. Content and organization of prescribed fire review reports can also be found in that guidance.

Investigations

The following provides guidance and establishes procedures for national-level incident/accident investigations (as defined below). Each state and local unit should have procedures in place to conduct investigations for incidents/accidents that do not require national involvement. However, the following can be used as a guide when conducting local and state level investigations. Also refer to BLM Manual Handbook 1112-2, *Safety and Health for Field Operations*, Topic 26.

Investigations of individual fires and/or incidents are conducted when entrapments and/or deployments, multiple injuries, and fatalities occur; or when incidents with potential for injury or fatality occur, or when property damage and/or operating loss of \$250,000 or more occur.

Investigations are intended to increase safety, identify preventative measures, establish responsibility and accountability, and determine management system failures. Investigations are based on national standards and guidance established by the BLM, as described in 485 DM Chapter 7, and the *Standards for Fire and Aviation Operations*.

Investigations are organized into three accident categories:

1. Entrapment – defined by NWCG as situations where personnel are unexpectedly caught in a fire behavior-related, life threatening position where planned escape routes and safety zones are absent, inadequate, or have been compromised. Entrapments may or may not include deployment of a fire shelter for its intended purpose, and they may or may not result in injury.
2. Incidents with Potential and/or Non-Serious Injury – include wildland fire-related mishaps that result in a serious or non-serious injuries involving multiple personnel, near accident (which would have resulted in a serious injury or fatality), substantial loss of property (less than \$250,000), or is so complex and fraught with operational discrepancies that it has the potential to produce an accident, serious injury, or fatality given a similar environment or set of circumstances that existed at the time of the incident.
3. Wildland Fire Serious Accident – defined as accidents where one or more fatalities occur and/or three or more personnel are in-patient hospitalized as a direct result, or in support of, wildland fire suppression or prescribed fire operations, and substantial property or equipment damage of \$250,000 or more occurs.

For more information on conducting investigations, refer to USDI, Interior 485 Departmental Manual 7, *Serious Accident Investigation*; USDA Forest Service Manual 6730, *Accident Reporting and Investigation*; *The Interdepartmental Memorandum of Understanding between the U.S. Department of the Interior and the U.S. Department of Agriculture* dated October 26, 1995; Executive Order

12196, *Occupational Safety and Health Programs for Federal Employees*; 29 CFR 1960.29, *Accident Investigation*; 29 CFR 1960.70, *Reporting of Serious Accidents*; *Investigating Wildland Fire Entrapments*; *Standards for Fire and Aviation Operations*; and the *Fireline Handbook*.

Investigation Process

Notification Agency reporting requirements shall be followed. As soon as an accident is verified, the following groups or individuals should be notified: agency administrator, public affairs, agency law enforcement, safety personnel, county sheriff, National Interagency Coordination Center, agency headquarters, and OSHA (within 8 hours and only if resulting in a fatality(ies) or three or more personnel are in-patient hospitalized).

After initial notification, the **National Interagency Coordination Center (NICC)** will advise the national fire director(s) or designee(s).

The **fire director(s)** or designee(s) will ensure notification to agency safety manager and agency DASHO.

Personnel Involved Treatment, transport, and follow-up care should be immediately arranged for injured and involved personnel. A critical incident stress debriefing (CISD) should be given as soon as possible. CISD teams are available through local Employee Assistant Programs (EAPs) and the NICC. Consider relieving involved supervisors from fireline duty until the preliminary investigation has been completed. Develop a roster of involved personnel and supervisors and ensure they are available for interviews by the investigation team.

Site Protection The site of the incident should be secured immediately and nothing moved or disturbed until the area is photographed and visually reviewed. Exact locations of entrapment(s), injury(ies), and fatality(ies), and the condition and location of personal protective equipment, and any damaged property or equipment must be documented.

Investigation The **24-Hour Preliminary Brief** that contains only the most obvious and basic facts about the accident will be completed and forwarded by the agency administrator responsible for the jurisdiction where the accident occurred. In the case of an entrapment and/or fire fatality, use NWCG *Wildland Fire Entrapment/Fatality Initial Report*, NFES 0869.

Following initial notification of serious accidents, agency fire director(s) will immediately dispatch an investigation team. Team composition is as follows:

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- **Team Leader** – A senior bureau management official, at the equivalent associate/assistant regional/state/area/division director level. The Team Leader

will direct the investigation and serve as the point of contact with the Bureau's Designated Agency Safety and Health Officer (DASHO).

- **Accident Investigation Advisor** – An experienced safety and occupational health specialist or manager, who acts as an advisor to the Team Leader, to ensure that the investigation focus remains on safety and health issues. The Accident Investigation Advisor also works to ensure that strategic management issues are examined.
- **Chief Investigator** – A qualified accident investigation specialist responsible for the direct management of all investigation activities. The Chief Investigator reports to the Team Leader.
- **Technical Specialists** – Personnel who are qualified and experienced in specialized occupations, activities, skills, and equipment, addressing specific technical issues such as arson, third-party liability, weather, and terrain.

When assembled, the team 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** which provides more detail about the accident and may contain the number of victims, severity of injuries, and information focused on accident prevention.

Roles and Responsibilities

The **fire director**(s) or designee(s) of the lead agency, or agency responsible for the land upon which the accident occurred, will:

- Immediately appoint, authorize, and dispatch an accident investigation team.
- Ensure that the investigation team is promptly dispatched and that resources and procedures are adequate to meet the team's needs.
- Receive the factual and management evaluation reports and take action to accept or reject recommendations.
- Forward investigation findings, recommendations, and corrective action plan to the agency DASHO (the Bureau safety office is the "office of record" for reports).
- Convene a board of review (if deemed necessary) to evaluate the adequacy of the factual and management reports and suggest corrective actions.

- Ensure that a corrective action plan is developed, incorporating management initiatives established to address accident causal factors.

Agency Administrator will:

- Identify agencies with statutory/accident jurisdictional responsibilities for the incident; develop local preparedness plans to guide emergency response.
- Provide for and emphasize treatment and care of survivors.
- Ensure the incident commander secures the accident site to protect physical evidence.
- Conduct in-briefing to the investigation team.
- Facilitate and support investigation as requested.
- Implement critical incident stress management.
- Notify home tribe leadership in the case of a Native American fatality.

Reports

Within 45 days of the incident, a Factual Report (FR) and a Management Evaluation Report (MER) will be produced by the investigation team to document facts, findings, and recommendations and forwarded to the agency DASHO through the agency fire director(s).

Factual Report Contains a brief summary or background of the event, and facts based only on examination of technical and procedural issues related to equipment and tactical fire operations. This report **does not** contain opinions, conclusions, or recommendations. Post-accident actions should also be included in this report (i.e., emergency response attributed to survival of a victim, etc.).

Management Evaluation Report (MER) Intended for internal use only, the MER explores management policies, practices, procedures, and personal performance related to the accident. This report may contain opinions by investigators as to the cause of the accident, conclusions and observations, confidential information, and recommendations for corrective measures.

Board of Inquiry Approved in 1998, by the BLM's Director and the Executive Leadership Team, Boards of Inquiry are chaired by the Director of the Office of Fire and Aviation and used to follow up on serious situations. After determining responsibility for an incident, Boards of Inquiry can make recommendations ranging from no action to termination, or they can clear personnel of accountability or charges of wrongdoing or neglect. These boards

can also make fire and aviation program recommendations.

Each investigation requires that a Factual Report and a Management Evaluation Report be prepared. The following describes suggested content and organization of each:

Factual Report – This report contains six sections: Executive Summary, Investigation, Event Chronology, Human Factors, Equipment Factors, and Environmental Factors.

- **Executive Summary:** Describes in one page exactly what happened (does not go into why). Includes dates, locations, times, name of fire, jurisdictions, numbers of individuals involved, etc.
- **Investigation:** Describes the objectives and scope of investigation; how the factual and technical investigation was organized and conducted; how information was obtained; interviews; records; who was contacted; team's roles and responsibilities; statement on delegation of authority; coordination with other agencies/entities such as NTSB, OSHA, FAA, unions, and law enforcement; and incorporates policy and guidance for background information if necessary.
- **Overview:** Describes in detail and with time references the events that took place prior to, during, and after the mishap. Provides background on fire or project (resource objectives or suppression), phase and length of incident, and may include agency or political issues pertaining to fire/project. Includes safety briefings, and instructions given to and actions taken by personnel. Personnel injuries or fatalities will be described, as well as post accident actions. Describes actions taken on the scene prior to the arrival of the formal investigation team (i.e., notifications, site security and protection, witness identification and statement preparation, records and document acquisition, and on-scene photography). This section may also include facts related to contractor performance, records management, operations inspections, and rescue operations. Diagrams, sketches, and photos should be included. An event timeline should be included as an appendix.
- **Human Factors:**
 - **Training, Qualifications and Experience:** Address whether personnel involved were trained, qualified, and experienced for the positions to which they were assigned and/or performing.
 - **Physical Fitness and Health:** Address whether personnel involved met physical fitness standards to act in the capacity to which they were assigned and/or performing. Address whether personnel involved had met work/rest ratio requirements, were properly hydrated and nourished, and had been ill recently.

- **Leadership/Decision-making:** Relate decisions and assignments that were made prior to, during, and after the accident, and whether they were clear and understood. This would include decisions made by both victims and others involved.
 - **Medical Reports:** Include any autopsy or toxicology reports.
 - **Communications:** Address communication system failures or overloads, types of communications, language barriers.
 - **Compliance with Established Standards and Guidance:** Address whether actions and decisions met established national standards and guidance.
 - **Management Oversight:** Address whether management was aware of or approved action plans, fire management plans, personnel qualifications and experience, etc.
- **Equipment Factors:** Addresses equipment suitability and performance, aircraft worthiness, laboratory analyses, maintenance records, and mechanical evaluation reports.
 - **Environmental Factors:** Addresses topography, weather, fuel conditions, fire behavior (including predicted and actual, NFDRS data, Red Flag Warnings, Fire Weather Watches, and fire weather forecasts), and working surfaces and environment.
 - **Appendix:** May include investigation team's delegation of authority, environmental assessments, fire activity logs, maps, burn plans, project permits, weather forecasts, fire behavior analyses, incident action plans, and organization assignments.

Management Evaluation Report(MER) – While the Factual Report explains *what* happened, the MER explains *why* it happened. This report contains the team's findings, conclusions, and recommendations and is intended for internal use only. It is divided into five sections: Findings, Causal Factors, Contributing Factors, Circumstances (if applicable), and Recommendations. An investigation process of the fault tree analysis, or equivalent, will be utilized to determine causal factors.

Findings – Findings are based on the weight of the evidence, professional knowledge, and good judgement. They are arranged in chronological order. Each finding is an essential step in the mishap sequence, but is not necessarily causal.

- Each finding is a single event or condition. Do not include any more information in each than is necessary to explain the event occurrence. Be

specific and number the findings consecutively. Precede each number with the word "Finding."

- Each finding must have a logical connection to the preceding finding. If no logical relationship exists, the sequence of the mishap has not been correctly described. Ensure that critical events required to sustain the mishap sequence have not been omitted.
- The location of the information which supports each finding must be clearly identified. Identify the appropriate page number(s) of supporting data after each finding.
- Opinions and observations can be used as findings, if confirmation from another source can be obtained.
- **Only** findings relevant to the accident should be included into the written report.

Direct Causes (the contact with energy or hazardous material which is considered to be the force resulting in injury or other damage):

- Any behavior, act or omission, which starts or sustains a mishap occurrence.
- Base causal factors on the findings. Although the findings are significant, not all of them relate to the cause of the mishap.
- A short statement should indicate which findings were used and explain the rationale for their selection.

Indirect Causes (the unsafe [substandard] practices or conditions that allow the contact. Indirect causes do not inflict injury or cause property damage or equipment failure. Indirect causes are symptoms of basic causes.):

- Any behavior, act or omission, which contributes to but does not directly cause a mishap occurrence.
- Management actions, failures, and behavior frequently contribute to a mishap scenario, but by themselves do not cause the mishap to happen.
- Base contributory causal factors on the findings discovered during the investigation. A short statement should indicate which findings were used and explain the rationale for their selection.

Basic Causes (The personal and job factors that allow the unsafe [substandard] practices or conditions to occur.)

- Attitudes of personnel
- Attention to detail
- Complacency
- Equipment utilization
- Organizational deficiencies

Recommendations—Includes feasible solutions related to the causal and contributing factors of the mishap sequence of events. Every causal and contributing factor does not need to have a recommendation.

Fire Investigation & Trespass

Introduction

Bureau policy requires any wildfire to be investigated to determine cause, origin, and responsibility. Accurate fire cause determination is a necessary first step in a successful fire investigation, and successful fire investigations are necessary in preventing unwanted wildfires. Proper investigative procedures, which occur concurrent with initial attack, more accurately pinpoint fire causes and can preserve valuable evidence that would otherwise be destroyed by suppression activities.

The Bureau, or its employees, must pursue cost recovery or document why cost recovery is not initiated for all human caused fires on public and/or other lands under protection agreement.

Fire trespass refers to the occurrence of unauthorized fire on Bureau-protected lands where the source of ignition is tied to some type of human activity. For all human-caused fires where liability can be determined, trespass actions are taken to recover cost of suppression activities, land rehabilitation, and damages to the resource and improvements. Only fires started by natural causes will not be considered for trespass and related cost recovery.

Policy

The Bureau will pursue cost recovery, or document why cost recovery is not required, for all human-caused fires on public lands. The Bureau will also pursue cost recovery for other lands under fire protection agreement where the Bureau is not reimbursed for suppression actions.

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For all human-caused fires where liability can be determined, trespass actions are to be taken to recover cost of suppression activities, land rehabilitation, and

damages to the resource and improvements. Only fires started by natural causes will not be considered for trespass and related cost recovery.

The determination whether to proceed with trespass action must be made on "incident facts," not on "cost or ability to pay." Trespass collection is both a cost recovery and a deterrent to prevent future damage to public land. Therefore, it is prudent to pursue collection of costs, no matter how small. While it may not be monetarily cost-effective, it is an effective prevention measure. In fact, in the long term, the Government will save money. This determination must be documented and filed in the field office's official fire report file.

The field office manager has the responsibility to bill for the total cost of the fire and authority to accept only full payment. On the recommendation of the State Director, the Solicitor may compromise claims of the United States, up to the monetary limits (\$100,000) established by law (31 U.S.C. 3711[a], 4 CFR 103-104, and 205 DM 7.1 and 7.2). Suspension or termination of the amount, in excess of \$100,000, exclusive of interest, penalties, or administrative charges, will be referred by the Solicitor to the Department of Justice.

Unless specified otherwise in an approved protection agreement, the agency that has the land management jurisdiction/administration role is accountable for determining the cause of ignition, responsible party, and for obtaining all billable costs, performing the billing, collection, and distribution of the collected funds processes. The agency with the fire protection responsibility role must provide the initial determination of cause to the agency with the land management jurisdiction/administration role. The agency providing fire protection shall provide a detailed report of suppression costs that will allow the jurisdictional agency to proceed with trespass procedures in a timely manner.

Each agency's role in fire trespass billing and collection must be specifically defined in the relevant Cooperative Fire Protection Agreement. The billing and collection process for federal agencies is:

- A federal agency fire occurs on another federal agency's land and is determined to be a trespass fire. BLM provides assistance, and supplies costs of that assistance to the federal agency with jurisdictional responsibility for trespass billing. The responsible federal agency bills and collects trespass, and BLM then bills the federal agency and is reimbursed for its share of the collection.
- Where BLM administered land is protected by a State agency, the billing and collection process is:
 - The State bills BLM for their suppression costs. The BLM will pursue trespass action for all costs, suppression, rehabilitation, and damages, and deposits the collection per BLM's trespass guidance.

All fires must be thoroughly investigated to determine cause. Initiation of cause determination must be started with notification of an incident. The initial attack incident commander and the Initial Attack forces are responsible for initiating fire cause determination and documenting observations starting with their travel to the fire. If probable cause indicates human involvement, an individual trained in Fire Cause Determination should be dispatched to the fire.

All initial attack incident commanders will have basic training in wildland fire cause determination, such as the Wildland Fire Cause Determination for First Responders course (P-130).

See BLM Handbook 9238-1 for individual responsibilities of personnel at all management levels.

