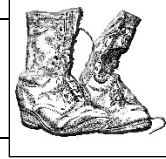


# 1 – Overview and Program Directives



## Introduction

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### Scope

These standards apply to the Bureau of Land Management (BLM). They are designed to provide basic standards for safe, effective, and efficient fire operations. This document will be reviewed annually and updated as needed.

### Purpose

The purpose of this document is to provide updated operational policies, procedures, and guidelines for the management of wildland fire. The standards present fundamental information to field offices on required procedures and practices.

### Overview

Safe, effective, and efficient wildland fire operations require a thorough understanding of many policies, principles, and procedures. They also require a personal commitment to safety and excellence. This document strives to provide you with a ready reference of policies, procedures, and guidelines necessary to enhance the safety and effectiveness of the Bureau's fire operations.

## Policy

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The following policies are accepted and endorsed by the Secretaries of Agriculture and Interior. They provide for consistency and compatibility of fire management practices among federal wildland fire management agencies and will guide BLM fire operations.

### **Safety**

Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment:

- All fire personnel will meet appropriate training, experience, and qualification requirements for incident assignments. (See NWCG 310 1 and DOI Incident Qualification and Certification System).

- All fire personnel will be equipped with approved personal protective equipment.
- All BLM personnel assigned to fireline duties will complete annual refresher training.
- All wildland fire entrapments and fatalities will be reported using current NWCG Initial Entrapment/Fatality Report Form.
- All wildland fire serious accidents will be investigated using the Interagency Wildland Fire Serious Accident Investigation procedures.
- Follow all safety standards and guidelines identified within the Interagency Incident Business Management Handbook, Fireline Handbook, and those outlined in BLM Standards for Fire Operations.

### **Planning Policy**

Every area with burnable vegetation must have an approved Fire Management Plan. Plans must be consistent with firefighter and public safety, values to be protected, and land and resource management plans; and they must address public health issues. Fire Management Plans must also address all potential wildland fire occurrences and include the full range of fire management actions. Plans must also promote the interagency approach to managing fires on an ecosystem basis across agency boundaries.

- Until a Fire Management Plan is approved, BLM units must take an aggressive suppression action on all wildland fires consistent with firefighters' and public safety and resources to be protected.
- Without an approved Fire Management Plan, resource benefits cannot be a primary consideration influencing selection of a management strategy although resource impacts of suppression alternatives can be considered in the decision.

### **Wildland Fire**

Fire, as a critical natural process, will be integrated into land and resource management plans and activities on a landscape scale, across agency boundaries, and will be based upon best available science. All use of fire for resource management requires a formal prescription. Management actions taken on wildland fires will be consistent with approved Fire Management Plans.

**Fire Use**

Wildland fire will be used to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role.

- All planned ignition projects will have an approved burn plan.
- All burn plans will contain measurable objectives, predetermined prescription, and environmental compliance requirements documented.
- Contingency actions must be described in the event the prescription is exceeded.

**Preparedness**

BLM managers will ensure their capability to provide safe, cost-effective fire management programs in support of land and resource management plans through appropriate planning, staffing, training, and equipment.

- Preparedness planning must be accomplished annually at all organizational levels.
- When conditions exceed those of the normal fire year, severity planning must be developed considering agency and interagency needs, on local, geographic, and national bases.
- Annual operating plans, and unit operating procedures will be updated annually.
- Readiness reviews will be conducted annually to determine the level of preparedness.

**Suppression**

Fires are suppressed at minimum cost, considering firefighter and public safety, benefits, and values to be protected, consistent with resource objectives.

- Management of fires will be based on, firefighter and public safety, cost-effectiveness, benefits, and values to be protected, consistent with resource objectives, using the full range of strategic and tactical options as described in an approved fire management plan. Without an approved plan an aggressive suppression action must be taken.
- All BLM units will utilize a decision making process that evaluates alternative management strategies against selected environmental, social, political, and economic criteria.

**Prevention**

BLM will work together and with other affected groups and individuals to prevent unauthorized ignition of wildland fires.

**Protection Priorities**

Protection priorities are 1. human life and 2. property and natural/cultural resources. If it becomes necessary to set priorities between property and natural/cultural resources, this is done based on relative values to be protected, commensurate with fire management costs. Once people have been committed to an incident, these resources become the highest value to be protected.

**Interagency Cooperation**

Fire management planning, preparedness, suppression, fire use, monitoring, and research will be conducted on an interagency basis with the involvement of all partners.

**Economic Efficiency**

Fire management programs and activities will be based on economic analyses that incorporate commodity, non-commodity, and social values.

**Wildland/Urban Interface**

The operational role of Federal agencies as a partner in the wildland/urban interface is wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical assistance. Structural fire protection is the responsibility of Tribal, State, and local governments. Federal agencies may assist with exterior structural suppression activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding. (Some Federal agencies have full structural protection authority for their facilities on lands they administer and may also enter into formal agreements to assist State and local governments with full structural protection.)

**Administrator & Employee Roles**

Employees who are trained and certified participate in the wildland fire program as the situation demands; employees with operational, administrative, or other skills will support the wildland fire program as needed. Administrators are responsible and will be accountable for making employees available.

## **Fire Management Objectives**

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The objectives of the wildland fire management program are to:

- 1 Protect human life and property and natural/cultural resources both within and adjacent to Bureau-administered lands.
- 2 Minimize damages and maximize overall benefits of wildland fire within the framework of land use objectives and resource management plans.
- 3 Manage the wildland fire program in accordance with Congressional intent as expressed in the annual appropriations acts and comply with applicable Departmental Manual and BLM policies and procedures.
- 4 Promote an interagency approach to managing fires on an ecosystem basis.
- 5 Employ strategies to manage wildland fires that provide for firefighter and public safety, minimize cost and resource damage, consistent with values to be protected and management objectives.
- 6 Prevent unplanned human-caused ignitions.
- 7 Restore and rehabilitate resources, and improvements lost in or damaged by fire or suppression activities.
- 8 Minimize and, where necessary, mitigate human-induced impacts to resources, natural processes, or improvements attributable to wildland fire activities.
- 9 Promote public understanding of fire management programs and objectives.
- 10 Organize and maintain a fire management capability which consistently applies the highest standards of professional and technical expertise.
- 11 Encourage research to advance understanding of fire behavior, effects, ecology, and management.
- 12 Integrate fire management with all other aspects of resource management.
- 13 Aggressively investigate all human-caused fires.



## **2 – Program Roles & Performance Standards**

### **Agency Administrator's Roles**

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#### **Director**

The Director of the Bureau of Land Management is responsible to the Secretary of the Interior for fire management programs on public lands administered by the Bureau of Land Management. The Office of Fire and Aviation is responsible to the Director for policy formulation and program oversight. The Director will meet the required elements outlined in the Fire Program Management and Accountability Matrix.

#### **State Director**

The State Director is responsible to the Director for fire management programs and activities within their state. The State Director will meet the required elements outlined in the Fire Program Management and Accountability Matrix.

#### **Field Office Manager**

The Field Office Manager is responsible to the State Director for the safe, effective, and efficient implementation of all fire management activities within their unit, including cooperative activities with other agencies or landowners in accordance with delegations of authorities. The Field Office Manager will meet the required elements outlined in the Fire Program Management Accountability Matrix.

### Management Performance Requirements for Fire Operations

Performance Required	Directorate	State Director/ Associate	Field Office Manager
Ensure Fire Management Officers (FMOs) are fully qualified.	•	•	•
Provide a written Delegation of Authority to FMOs that provides an adequate level of operational authority. Include Multi-agency Coordinating (MAC) Group authority.	•	•	•
Identify fire management objectives, protection standards and suppression activity constraints to ensure they are in compliance with Department of the Interior (DOI) and BLM fire policies and that they do not compromise firefighter or public safety.		•	•
Maintain a current Fire Management Plan (FMP) which identifies an accurate and <u>defensible</u> Most Efficient Level (MEL) of funding and personnel		•	•
Ensure use of fire funds is in compliance with DOI and BLM policy.	•	•	•
Manage full-time equivalent (FTE) ceilings to ensure firefighter safety is not compromised.	•	•	•
Include a review of fire and aviation policies and safety procedures during a management team meeting each year prior to fire season. Discussions should include specific issues that could compromise safety and effectiveness during the upcoming season.	•	•	•
Ensure timely follow-up actions to Program Reviews, fire preparedness reviews, fire & aviation safety reviews, fire critiques and post-season reviews.	•	•	•
At least once each year, meet with field fire and aviation personnel to review safety policies, procedures and concerns. Specifically address procedures to ensure oversight and management controls during critical transition periods.			•
Ensure fire and aviation preparedness reviews are conducted in all Field Offices each year. <u>Personally</u> participate in at least one inspection, annually.		•	•



Performance Required	Directorate	State Director/ Associate	Field Office Manager
Annually meet with major cooperators and review Interagency Agreements and Memoranda of Understanding (MOUs) to ensure their continued effectiveness and efficiency.		•	•
Ensure that an Escaped Fire Situation Analysis is completed on all fires that escape initial attack.			•
Personally visit an appropriate number of fires each year.			•
Ensure fire reviews are conducted on escaped fires. Personally attend critiques on Type 1 and 2 fires.			•
Maintain a daily awareness of fire activity, burning conditions and weather forecasts.		•	•
Assign a resource adviser to all escaped fires.			•
Make non-fire personnel available to serve in fire or support roles.	•	•	•
Participate in a post-season fire review or a fire preparedness meeting each year.		•	•

Reprinted from the Approved BLM Fire and Aviation Program-wide Review

## Fire Management

### National Office

The Bureau of Land Management's wildland fire management program will be coordinated by the Office of Fire and Aviation. Its Bureau-wide function is to assist states and districts with the development and implementation of a safe, effective, and efficient fire management program that meets management's objectives.

The Office of Fire and Aviation is located in Boise, Idaho at the National Interagency Fire Center (NIFC). The Office of Fire and Aviation works with their interagency cooperators to coordinate, reduce duplication, and increase efficiencies in the management of wildland fire.

### State Office

The State Fire Management Officer (SFMO) is responsible for negotiating interagency agreements and providing planning, coordination, training, technical

guidance, evaluations to the field office fire management programs throughout the State. The State Fire Management Officer also represents the State Director on interagency geographic coordination groups and Multi-agency Coordination (MAC) groups.

### Field Office

The District Fire Management Officer (DFMO) is responsible for planning and implementing a safe, effective, and efficient fire management program to meet management objectives within their District. They coordinate with field managers to determine the level of program required to implement the land use decisions and to meet management objectives. They take appropriate action on all wildland fires occurring on or adjacent to national resource lands, apply fire to the landscape to meet management objectives, and act to prevent or reduce the adverse impacts of wildland fires.

### Fire Management Staff Performance for Fire Operations

Performance Required	D-F&A	SFMO	FMO
1 Create, instill, and maintain the operational doctrine of safety in all aspects of fire and aviation management.	•	•	•
2 Ensure a hazard analysis for fire and aviation activities is completed and mitigation measures are taken to reduce risk to employees.			•
3 Ensure Work-Rest and R&R guidelines are followed during large fire and initial attack operations for all personnel. Any deviations are approved and documented.		•	•
4 Ensure that only trained and fully qualified personnel are assigned to fire and aviation management duties.	•	•	•
5 Analyze, develop, implement, and evaluate fire and aviation training program to meet current and anticipated needs.	•	•	•
6 Establish an effective process to gather, evaluate, and communicate information to managers, supervisors, and employees that keeps them informed on issues, activities, and emergencies.	•	•	•
7 Develop and maintain an open line of communication with publics and cooperators.	•	•	•

Performance Required	D-F&A	SFMO	FMO
8 Ensure that the fire and aviation management staff understands their role, responsibilities, authority, and accountability.	•	•	•
9 Ensure new hires meet or exceed the Fire Management Positions Qualifications Standards. An Individual Development Plan must be provided for incumbents who do not meet the new standards.		•	•
10 Based on allocated funding level, ensure adequate resources are available to implement the Fire Management Plan (FMP). If not, make adjustments to provide the most efficient, effective, and safe fire protection and use program.		•	•
11 Organize, train, equip, and direct the most qualified work force possible to ensure safe, effective, and efficient fire and aviation activities.	•	•	•
12 Ensure BLM and DOI fire and aviation policies are understood and followed.	•	•	•
13 Use a system which provides for increased levels of oversight on specific fires and multiple fire situations.	•	•	•
14 Organize, conduct, and/or participate in fire management related evaluations, reviews, critiques, and inspections.	•	•	•
15 Provide for and personally participate in periodic site visits to individual incidents and projects.	•	•	•
16 Utilize a complexity analysis process to ensure the proper level of management is assigned to all incidents.			•
17 Review and evaluate performance of the fire management organization and take appropriate actions.	•	•	•
18 Ensure incoming personnel and crews are briefed prior to fire and aviation assignments.			•
19 Ensure an Wildland Fire Situation Analysis (EFSA) is completed and retained for all fires that escape initial attack.			•

Performance Required	D-F&A	SFMO	FMO
20 Monitor fire season severity predictions, fire behavior, and fire activity levels. Take appropriate actions to ensure safe, efficient, and effective operations.	●	●	●
21 Ensure that you have adequate resources available to implement suppression strategies on active fires. If not, make needed adjustments to provide for safe, effective, and efficient suppression operations.			●
22 Provide dispatchers with adequate guidance, training and decision-making authority to ensure timely decisions.		●	●
23 Ensure that a qualified Incident Commander is assigned to all incidents commensurate to incident complexity.			●
24 Ensure effective transition of incident management occurs and oversight is in place.		●	●
25 Develop agreements and operating plans on an interagency basis to increase effectiveness and efficiencies.	●	●	●
26 Effectively represent fire and aviation management in interdisciplinary planning efforts.	●	●	●
27 Work with cooperators to identify processes and procedures for providing fire safe communities within the wildland urban interface.		●	●
28 Develop, maintain, and annually evaluate the FMP to ensure accuracy and validity.	●	●	●
29 Develop and maintain current operational plans.		●	●
30 Ensure that reports and records are properly completed and maintained.	●	●	●
31 Ensure fiscal responsibility and accountability in planning and expenditures of allocated and emergency funds.	●	●	●
32 Ensure budget requests and allocations reflect MEL in the FMP.	●	●	●
33 Represent management on interagency coordination groups and MAC groups.	●	●	●

## Requirements for Fire Management Positions

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The following lists show the minimum operational experience required for BLM fire management positions.

### **District Fire Control Officer or Assistant District FMO**

- Type 3 Incident Commander (currently qualified)
- Working knowledge of dispatch operations
- Working knowledge of fire aviation operations
- Working knowledge of fire equipment
- Working or demonstrated knowledge of fire danger rating systems
- Prescribed Fire Burn Boss (RxB2)

### **District FMO:** All of the above, except currency, plus

- District Fire Control Officer (FCO) or Assistant District FMO or Area FMO or Lead Dispatcher/Center Manager
- Working knowledge of Incident Command System as it relates to incident management teams functions and roles
- Division Supervisor or Unit Leader
- Working knowledge of long-range fire behavior predictive systems

### **Assistant State FMO or State Fire Operations Officer:**

- District FMO, Geographic Area Coordinator
- Division Supervisor or Unit Leader
- Working knowledge of the coordination system and fire aviation operations
- Prescribed Fire Manager (RxM2) or Prescribed Fire Burn Boss 1 (RxB1)
- Working knowledge of NFDRS & long-range fire behavior predictive systems

### **State Fire Management Officer:**

- District FMO or State or national Fire and Aviation Staff
- Performed at Command and General Staff level on a type 1 or Type 2 incident
- Working knowledge of Coordination Center operations
- Working knowledge of fire aviation management

### **Notes and Exceptions**

- 1 "Equivalent" experience in positions in the Alaska Fire Service (AFS), NIFC, other Federal, state and local agencies will be given full credit.
- 2 Other "equivalent" experience will be considered on a case-by-case basis. An example of this would be that an Area Manager or District Operations Chief may meet the requirements for State fire positions, if they have the minimum fireline experience listed above.

- 3 Extended details can be considered, if they were equivalent to a season of experience.
- 4 Experience requirements for positions in AFS, O&C Districts, NIFC, National Office and other fire management positions in Districts and State Offices will be established as vacancies occur, but will be commensurate with the position's scope of responsibilities.
- 5 State and District FMO positions will not be filled with trainees. However, positions which are subordinate to State or District FMOs may be filled with trainees with the following conditions:
  - a The selected trainee can realistically meet full qualification experience requirements within two years.
  - b The trainee will be given a reduced level of operational responsibility which is commensurate with their experience.
- 6 Individuals currently incumbering FMO positions who do not meet these experience requirements can be waived of these requirements if they have performed satisfactorily during the past fire season(s).

## **Delegation of Authority**

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### **Delegation For State Fire Management Officers**

In order to effectively perform their duties, a State FMO must have certain authorities delegated from the State Director. This delegation is normally placed in the State Office Supplement to BLM Manual Section 1203. Elements to include in the Delegation of Authority include:

- Serve as the State Director's authorized representative on Geographic Area Coordination Groups including Multi-agency Coordination (MAC) groups.
- Coordinate and establish priorities on uncommitted fire suppression resources during periods of shortages.
- Coordinate logistics and suppression operations Statewide.
- Relocate Bureau pre-suppression/suppression resources within the State based on relative fire potential/activity.
- Correct unsafe fire suppression activities.
- Direct accelerated, aggressive initial attack when appropriate.

- Enter into agreements to provide for the management, fiscal, and operational functions of combined agency-operated facilities.
- With concurrence of agency administrator, close areas under the administration of the Bureau during periods of high hazard to prevent fires (43 CFR 8364.1).
- Enforce closures and prohibitions against burning on BLM-administered land (43 CFR 4140; 43 CFR 4170).
- Suspend prescribed fire activities when warranted.
- Approve hiring of EFF personnel for up to 14 days for pre-suppression/suppression work, in addition to training.
- Approve emergency fire severity funding expenditures not to exceed the \$50,000 annual authority of the State Director.

### **Delegation for District Fire Management Officers**

\_\_\_\_\_, Fire Management Officer for the \_\_\_\_\_ District, is delegated authority to act on my behalf for the following duties and actions:

1. Represent the \_\_\_\_\_ BLM in the \_\_\_\_\_ Multi-agency Coordinating Group in setting priorities and allocating resources for fire emergencies.
2. Coordinating all prescribed fire activities in the \_\_\_\_\_ District and suspending all prescribed fire and issuance of burning permits when conditions warrant.
3. Assure that only fully-qualified personnel are used in wildfire incidents under \_\_\_\_\_ District administration, protection agreements or requested assistance.
4. Coordinate, preposition, send and order fire and aviation resources in response to current and anticipated zone fire conditions.
5. Oversee and coordinate the \_\_\_\_\_ Interagency Logistic Center on behalf of the BLM.
6. Request and oversee distribution of Severity funding for District Fire and Aviation.
7. Approve District Fire Program requests for overtime, hazard pay, and other premium pay.
8. Ensure all incidents are managed in a safe and cost-effective manner.

- 9. Coordinate and provide all fire and prevention information needs to inform internal and external costumers with necessary information.
- 10. Coordinate all fire funding accounts with the District Budget Officer to assure District Fiscal guidelines are adhered to and targets are met.
- 11. Approve and sign aviation request forms.

\_\_\_\_\_  
District Manager

\_\_\_\_\_  
Date

**Delegation for Interagency Dispatch Center  
Managers**

RESERVED



## 3 – Interagency Coordination and Cooperation



Interagency cooperation is vital to attain the full realization of the Bureau of Land Management's fire management program objectives. The ability of a single agency to implement a fire management program of any complexity is limited without coordination with and assistance from other organizations. Interagency cooperation and the coordination of shared resources and common activities is imperative at all organizational levels. A clear understanding of the roles each agency has at each organizational level is necessary to maximize the benefits of interagency coordination and assure the fulfillment of agency responsibilities.

### Interagency Assistance

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The authority for interagency agreements is found in "Interagency Agreement Between the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Fish and Wildlife Service of the United States Department of the Interior and the Forest Service of the United States Department of Agriculture" (1982).

The authority for rendering emergency fire or rescue assistance outside of the Bureau of Land Management is the Reciprocal Fire Protection Act of May 27, 1955 (69 Stat. 66), and the Departmental Manual, 910 DM.

### Coordination

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#### National Level Coordination

***The National Wildfire Coordinating Group (NWCG)*** The NWCG was formed on March 18, 1976, by cooperative agreement between the Secretaries of Agriculture and Interior. The purpose of NWCG is to improve the effectiveness and efficiency of all Federal and State wildland fire control agencies in the United States. The group accomplishes this goal by coordinating the programs of the participating agencies in order to provide a means for working together constructively. NWCG provides a formalized system through which agreement may be reached on substantive issues in fire management. Agreed-on policies, standards, and procedures are then implemented directly by each agency. The Assistant Director, Office of Fire and Aviation Management is the Bureau's representative on the NWCG.

***The Federal Fire and Aviation Leadership Council***

**(FF&ALC)** The Council, the name the FF&ALC is known by, is a self-directed group which provides a forum for discussion in which Federal issues, both short and long term, can be resolved. It is authorized based on the master agreement between the Forest Service and the Department of the Interior Bureau Directors, October 1, 1982. It is formed to improve coordination and integration of Federal fire and aviation programs while recognizing individual agency missions. The Council is proactive in dealing with long-term strategic views and fosters improved integrated operations at the national, geographic and local levels. Teams may be established as needed by the Council to deal with Federal issues.

***The Interior Fire Coordination Committee (IFCC)*** The IFCC guides and coordinates development of wildland fire policy among the four wildland management bureaus in the Department of Interior. IFCC provides leadership and advice for the development, coordination and maintenance of wildland fire management capabilities, and for the standardization of procedures, methods and practices within the Department. Bureau of Land Management units must comply with these DOI standards. The Assistant Director, Office of Fire and Aviation Management is the Bureau's representative on the IFCC.

***National Interagency Fire Center (NIFC)*** NIFC is located at Boise, Idaho, and is a complex of Federal agencies all of which have wildland fire responsibilities. The Bureau of Land Management serves as the host bureau for the National Park Service, Bureau of Indian Affairs and the Fish and Wildlife Service. The Forest Service from the Department of Agriculture and the National Weather Service from the Department of Commerce are also located at NIFC. These bureaus and agencies form an interagency partnership to provide safe, effective, and efficient policies, guidance, technical, and logistical support to the wildland fire management community.

***National Multi-Agency Coordination (MAC) Group*** During National Preparedness Levels IV and V the National MAC Group is activated and twice daily briefings are conducted to establish national priorities and provide national leadership and direction to wildland fire activities. The National MAC is comprised of the Directors of the BLM, Forest Service, BIA, NPS, FWS, State Forester Representative, and a representative of the National Weather Service.

The BLM, BIA, Forest Service, NPS, and FWS Directors at NIFC have written delegated authority from their respective agency heads to:

- Represent their agency on all matters related to wildland fire operations. This includes membership on the National MAC Group; determining national priorities and allocation/re-allocating incident resources.
- Represent the state's interests in the absence of the State Foresters' representative as established in the agreement with the National Association of State Foresters.

### **Geographic Area Level Coordination**

State offices oversee and facilitate the implementation of interagency standards and policies developed at the national level. State Fire Management Officers participate within their geographic areas to develop and implement interagency wildland fire management programs to increase effectiveness, and efficiencies. Through coordination with counterparts from other agencies, SFMOs assure that the Bureau contributes appropriately to geographic interagency fire management needs.

### **District Level Coordination**

The Fire Management Plans, preparedness plans, mobilization guides, cooperative agreements, and other supporting documents identify the necessary local sources, types, and levels of interagency coordination. They also delineate the process whereby compliance with national and geographic area policies and standards will be achieved. District Fire Management Officers and their staffs develop, maintain, and execute the cooperative interagency relationships.

## **Interagency Mobilization**

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### **National**

Mobilization tests interagency cooperation and demonstrates the value of interagency coordination. The National Interagency Mobilization Guide, which is revised annually, clearly describes interagency mobilization and dispatch procedures at all levels. Its directives will be followed by all States and Field Offices without deviation.

### **State**

BLM statewide program dispatch occurs through geographical coordination centers to meet wildland fire mobilization requirements. These centers review simultaneously occurring incidents and dispatch interagency resources on a priority basis. This resource allocation and/or priority process is done through the guidance of the Geographic Area Mobilization Plan or a Multi-Agency Coordinating Group (MAC Group). District Fire Management Officers may be called upon to provide resources or to receive requested resources based on the priorities established by the Geographic/National Coordination Center or MAC Group.

### **Local**

Local dispatch occurs through local dispatch centers, most of which are interagency in nature. Local dispatch centers are also responsible for keeping agency fire managers informed on local resource commitment and levels of fire activity. Local dispatch centers should have their own mobilization plans and expanded dispatch plans. Local MAC Groups (when activated), are composed of representatives from agencies with local jurisdiction; they set priorities for

incidents and the allocation of scarce resources. Local oversight committees, composed of representatives of the same agencies, are responsible for providing adequate funding and staffing of these dispatch centers.

## **Agreements and Contracts**

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Field Offices are responsible for developing agreements or contracts with local agencies and fire departments to meet mutual needs or contract for suppression and/or prescribed fire services. Concerns of area-wide scope should be addressed through State agreements.

All appropriate agreements and operating plans (updates) will be provided to the servicing dispatch center. The authority to enter into interagency agreements is extensive and found in BLM Manual 9200, and the Departmental Manual, 910 DM.

### **Mutual Aid Agreements**

The national agreement, which serves as an umbrella for interagency assistance among Federal agencies, is the "Interagency Agreement Between the Bureau of Land Management, Bureau of Indian Affairs, National Park Service, Fish and Wildlife Service of the United States Department of the Interior and the Forest Service of the United States Department of Agriculture" (1982). This agreement and other national agreements provide a framework for and grant substantial latitude in the development of state and local agreements and operating plans.

Besides the national agreement, State and local cooperative agreements shall be developed for mutual-aid assistance. These agreements are essential to the fire management program in each field office.

Agreements shall lead to positive interaction among the participating parties by providing for areas of interaction by addressing all potential areas of cooperation and coordination in fire management programs.

**Agreements** The following shall be used as the basis for establishing plans and reviewing existing plans. Each agreement shall strive to enhance safety, effectiveness, and efficiency in wildland fire management.

- 1 Cooperation in prevention, pre-suppression, suppression, and prescribed fire management operations.
- 2 Coordination in development and implementation of fire management plans, including fire management strategies, tactics, and methods.
- 3 Identification of parties responsible for implementing various aspects of the agreement.

- 4 **Command Structure** – In order to facilitate a cooperative effort on a wildfire incident, the Incident Command System (ICS) shall be used. If the incident involves multiple jurisdictions, a unified command should be implemented. Command of the incident may also be delegated from the agency with jurisdiction to the cooperating agency, by mutual agreement, as necessary.
- 5 **Communications** – At a minimum, there will be one common designated radio frequency used by Command and/or the Officers in Charge of the requesting and responding parties.  
  
It is hereby understood that the cooperating parties agree to the use of their assigned radio frequencies between parties. However, the assigned frequencies will only be used when the parties are engaged in common fire suppression activities or other emergency incidents.
- 6 **Liabilities/Waivers** – Each party waives all claims against every other party for compensation for any loss, damage, personal injury, or death occurring as a consequence of the performance of this agreement unless gross negligence on any part of any party is determined.
- 7 **Distance/Boundary Limitations** – The requesting party shall first call the party nearest to the wildfire incident unless the specified resources of a more distant party are required. The responding party will furnish personnel and equipment as requested and as available, and/or impose a mileage limitation from the responding party's jurisdictional boundary. Any mileage limitations will be identified and agreed to by all participating parties and shall be specified in the Annual Operating Plan.
- 8 **Time/Duration** – It shall be the responsibility of the requesting party to release the resources loaned by the responding party in a timely manner so as to ensure that the resources loaned by the responding party are not needlessly detained. If appropriate, a time limitation as to number of hours spent on any wildfire incident may be imposed. Any time limitations will be identified and agreed to by all participating parties and shall be specified in the Annual Operating Plan.
- 9 **Qualifications/Minimum Requirements** – The qualifications of fire suppression and prescribed fire personnel, minimum requirements for personal protective equipment, and fire equipment performance standards will be identified in an Annual Operating Plan by the parties to this agreement in accordance with their respective standards. The responding party will send only those resources that meet the identified qualifications, requirements, and standards.
- 10 **Reimbursements/Compensation** – Except otherwise herein specified, the requesting party shall not be liable for any compensation to the responding party for the loan of equipment or personnel. All incidents that require

reimbursement and/or compensation will be identified and agreed to by all participating parties through a cost share agreement.

- 11 Appropriation Limitations – Parties to this agreement are not obligated to make expenditures of funds or reimbursements of expenditures under terms of this agreement unless such funds are appropriated for that purpose by the Congress of the United States of America, by the Counties of \_\_\_\_\_ by the Cities of \_\_\_\_\_ and/or the Governing Board of Fire Commissioners of \_\_\_\_\_.
- 12 Annual Operating Plan – An Annual Operating Plan will be prepared and used to define and update specific operating procedures prior to each fire season.
- 13 Termination Procedure – This agreement shall remain in full force and effect unless canceled by any party to this agreement on written issuance of 30 days notice. If any party determines to withdraw from this agreement, withdrawal shall be effective on service of written notice to all other parties.

**Annual Operating Plans** Each agreement shall be accompanied by an Annual Operating Plan which shall be reviewed, updated, and approved annually prior to the fire season. The plan may be amended after a major incident as a part of a joint debriefing and review. The plan shall contain detailed, specific procedures which will provide for safe, efficient, and effective operations. The following items shall be addressed in the annual operating plan.

- 1 Responding Party – All parties should be aware that there may be many opportunities in which the Responding Party may not have the ability to provide mutual aid. Lack of response could result from limited or unavailable fire suppression personnel prior to or after fire season or multiple fires occurring during the fire season. Rural fire districts may also experience their own fire situations and/or may not have adequate numbers of qualified fire personnel or appropriate fire suppression equipment to meet the request. In this case, a secondary request for low exposure equipment, such as a water tender, may be appropriate.
- 2 Command Structure – Unified command should be used, as appropriate, whenever multiple jurisdictions are involved unless one or more parties request a single agency Incident Commander. If there is a question about jurisdiction, fire managers should mutually decide and agree on the command structure as soon as they arrive on the fire and this should be confirmed by Agency Administrators as soon as possible. Once this decision has been made, the incident organization in use should be relayed to all units on the incident as well as dispatch centers. In all cases, the identity of the IC must be made known to all fireline and support personnel.

BLM will assign an agency representative (AREP) to the cooperating protection agency prior to the initiation of suppression on a mutual aid fire. This individual should be qualified (preferably) at the IC Type 4 level, or at a

minimum as a Single Resource Boss. The representative will be equipped with a radio and will be fully cognizant of fuels, terrain, weather, strategy and tactics, safety issues, procedures, etc. The representative will remain with the cooperating "Officer in Charge" to ensure that communications, strategy and tactics, and all related issues and actions are dealt with in a safe, effective, and efficient manner. With small rural fire departments, the AREP's radio may be the only communication link.

- 3 Communications – In mutual aid situations, the common designated radio frequency should be a "direct" or "line of sight" frequency. Responding and Requesting Parties should monitor for any change in weather conditions or any emerging safety or emergency situations. Once Command decisions are made, they must be transmitted and confirmed over the Responding and Requesting Parties' tactical frequencies.

Clear text should be used, and use of personal "identifiers" and non-ICS acronyms should be avoided. (For example, a BLM radio transmission such as, "Jones, Dispatch" would likely be meaningless to a mutual aid cooperator who is not familiar with "Jones.")

Radio protocol and equipment availability/capability may be that the fire departments and BLM would each be using their own tactical frequencies in fire suppression and allowing the BLM "direct" frequency to be the communication link between the Responding and Requesting Parties for Command and/or emergency situations. However, continuous use of separate frequencies could result in miscommunication; for this reason, it is important that the AREP be able to monitor multiple frequencies.

This paragraph in the Annual Operating Plan shall meet FCC requirements for documenting shared use of radio frequencies.

- 4 Distance/Boundaries – Responding and Requesting Parties should identify any mileage limitations from mutual boundaries where "Mutual Aid" is either pay or non-pay status. Also, for some fire departments, the mileage issue may not be one of initial attack "Mutual Aid" but of mutual assistance. In this situation, you may have the *option* to make it part of this agreement or identify it as a situation where the request would be made to the agency having jurisdiction, who would then dispatch the fire department.
- 5 Time/Duration – Responding and Requesting Parties should identify time limitations (usually 24 hours) for resources in a non-reimbursable status, and "rental rates" when the resources are in a reimbursable status. Use of NWCG or Geographic Area interagency equipment rates is strongly encouraged.

- 6 Qualifications/Minimum Requirements – Agreements on minimum qualifications for fire personnel, minimum requirements for PPE, and performance of fire suppression equipment may require some flexibility. The BLM, under NIIMS concept, has agreed to accept cooperator's standards, but this should not allow the compromise of safety. Larger fire departments may have the financial resources to meet current (NWCG or NFPA (National Fire Protection Association)) standards while smaller fire departments may not currently meet these standards. All fire departments that are available for dispatch to Federal or State wildland fires must meet the minimum standards as identified in the agency having jurisdiction's wildland qualification standards. These standards are generally reasonable and should be acceptable for mutual aid.

Federal (NWCG) and NFPA minimum training requirements for firefighters (FFT2): Firefighter Training (S-130) and Introduction to Fire Behavior (S-190).

In addition, Federal policy requires "Standards for Survival." This is usually taught as part of the S-130 package. Also, Incident Command System (I-100) is recommended.

These minimum training requirements may be the most difficult to attain for some of the small and rural fire departments. These departments rely on volunteer firefighters who typically receive training at monthly (weekend or evening) meetings. Adding an additional 32-40 hours of wildland fire training to their existing training may be prohibitive in the short term. To overcome this obstacle;

- Train the Training Officers of the fire departments who, in turn, could provide additional training to volunteers.
- Encourage trainees, as available, to attend Federal or State fire schools.
- Identify a consolidated wildland train-the-trainer cadre from several fire departments to reduce the number of trainers that need to be trained.
- Provide training opportunities on weekends rather than during the week. For example, training over two consecutive weekends would provide sufficient time to complete the S-130 and S-190 courses.

Wildland Fire Personal Protective Equipment Requirements: See NFPA and NWCG standards. The NFPA standards are essentially identical to those of NWCG, but may be more acceptable because of the nature of these two organizations.

Physical Fitness Requirements: Include the Step Test, 1.5 mile run, and/or a physical agility test that is in compliance with NFPA Standards 1001 or 1500.



Engines or Related Equipment: Engines and fire suppression equipment should meet NFPA standards.

- 7 Reimbursement/Compensation – Compensation should be reasonable “standard” for all fire departments in the state. The rates identified shall be used. Reimbursements could be negotiated as some fire departments may not expect full compensation but only reimbursement for their actual costs. Also, whenever possible, equipment and operators should be contracted as a unit and paid at a flat rate. Vehicles and equipment operated under the Federal Excess Property System will only be reimbursed for maintenance and operating costs.
- 8 Cooperation – The Annual Operating Plan will be used to identify how the cooperators will share expertise, training, and information on items such as Prevention, Investigation, Safety, Training.

Any agreement which obligates Federal funds or commits anything of value, must be signed by the appropriate warranted contracting officer. Specifications for funding responsibilities should include billing procedures and schedules for payment. Any agreement that extends beyond a fiscal year must be made subject to the availability of funds. Any transfer of Federal property must be in accordance with Federal property management regulations. All agreements must undergo periodic joint review and, as appropriate, revision. The best general reference on agreements is *Partnership for Efficiency Through Cooperative Agreements* by the NWCG.

### **Contracts**

Contracts may be used where they are the most cost-effective means for providing fire protection commensurate with established standards. A contract, however, does not absolve a District Manager of the responsibility for managing a District fire program. The District’s approved Fire Management Plan must define the role of the contractor in the overall program.

Contracts should be developed and administered in accordance with Federal Acquisition Regulations. In particular, a contract should specify conditions for abandonment of a fire in order to respond to a new call elsewhere.

### **Emergency Assistance**

Emergency assistance may be provided by the BLM to adjacent jurisdictions upon their request in the absence of any formalized agreements. However, to provide safe, efficient, and effective emergency response, BLM offices must enter into agreements with emergency response agencies. The National Interagency Coordination Center is delegated authority to support non-fire emergencies through several Department and Bureau manuals, interagency agreements, and memorandums.

**FEMA and the Wildland Fire Program**

Under provisions of the Robert T. Stafford Disaster and Emergency Assistance Act (P.L. 93-233, as amended) and the Executive Order 12148, Federal Emergency Management (July 20, 1979, as amended) wildland agencies provide assistance to Presidential declared disasters and emergencies nationwide. The Federal Emergency Management Agency (FEMA) is the overall coordinator of the Federal Response Plan (FRP) which guides 26 Federal agencies and the American Red Cross in response activities. The FRP is based on the fundamental assumption that a significant disaster or emergency will overwhelm the capability of State and local governments to carry out extensive emergency operations. These operations have been grouped into 12 Emergency Support Functions (ESF); and departments and agencies have been assigned primary and support responsibilities for each of these functions.

In the Federal Response Plan, the Forest Service is the primary agency responsible for ESF #4: Firefighting. The BLM has been assigned support responsibility for ESF #4 and for other emergency support activities, as requested.

## 4 – Safety

### Policy

**“Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment.”**

**Federal Wildland Fire Policy, December 1995**

### Overview

“We are committed to *Zero Tolerance* of carelessness and unsafe actions. The commitment to and accountability for safety is a joint responsibility of all firefighters, managers, and administrators. All land management plans and all suppression plans and actions must reflect this commitment. Individuals must be personally committed and responsible for their own performance and accountability.

Please join us in adopting firefighting’s code of safe practices:

Safety Comes First on Every Fire, Every Time.

The Ten Standard Fire Orders are Firm. We Don’t Break Them; We Don’t Bend Them. All Firefighters have the Right to a Safe Assignment.

Every Firefighter, Every Fireline Supervisor, Every Fire Manager, and Every Agency Administrator has the Responsibility to Ensure Compliance with Established Safe Firefighting Practices.”

*Bruce Babbitt and Dan Glickman; Secretaries of Interior and Agriculture*

“Every BLM supervisor, employee, and volunteer is responsible for following safe work practices and procedures, identifying and reporting unsafe conditions.” (Safety and Health for Field Operations; BLM Manual Handbook 1112-2.) We must promote positive safety and health attitudes among fellow employees and insist on safe practices in all activities

### Objective

The goal of the fire safety program is to provide direction and guidance for the safe and effective management of fires. Safety is the responsibility of everyone assigned to wildland and prescribed fire. Safety is an attitude which must be promoted at all operational levels from the Director, State Director, District,

and Area Manager to the employees in the field. The safety of employees and the public alike must be of prime concern during fire management activities. Line officers (agency administrators) at all levels need to stress that firefighter and public safety always takes precedence over property and resource loss. Linkage between the Fire Management Staff and unit Safety Officers is essential in achieving this objective.

## Physical Fitness

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Our concern for employee safety has prompted screening procedures to make sure only the fit are assigned to arduous fire management activities. Unfit persons can quickly become a hazard to themselves and to their co-workers.

Since 1975 federal wildland management agencies have used a step test (or 1.5 mile run) to screen wildland firefighter's fitness level. In 1994 the Missoula Technology & Development Center (MTDC) was assigned to review test procedures and revise training materials to insure compliance with new laws, regulations, and recent research findings. MTDC conducted an extensive review of the scientific literature and legal precedents related to employee selection, revised the wildland firefighter job task analysis, and compiled field comments to determine satisfaction or problems with the existing tests. The results of the review called for revisions of the current fitness tests.

At the October National Wildfire Coordinating Group (NWCG) meeting the Pack Test was approved to replace the Step Test and 1.5 mile run. **The official test for 1997 will remain the Step Test or 1.5 mile run but we encourage as many units as possible to also administer the Pack Test. The Pack Test will be fully implemented as the official method of assessing wildland firefighters fitness level by January 1, 1998.**

### Aerobic Fitness Standards and Requirements

**Step Test** The step test or the alternate test, a 1.5 mile run, will be used to determine the aerobic fitness level for those personnel in fire positions which have an identified fitness level. The step test or the 1.5 mile run should not be given to anyone who has an obvious physical conditions or known heart problems that would put them at risk. The step test requires the use of the step test calculator (NFES 1575) and the audiotape (MFES 2095) with metronome beat recorded, which are available through the Publications Management System (PMS). A bench is required on which to step, the bench height is 15¼ inches for men and 13 inches for women. A weight scale is needed to weigh each person. The audiotape provides specific direction on how to administer and determine test results.

**1.5 Mile Run** The 1.5 mile run requires a flat area on which to run and a stop watch for recording the time for each individual. A table is required for converting running time to the equivalent step test score. A table is provided as a quick

reference. The following conversion information is found in both the *Fit to Work?* and the *Fitness and Work Capacity* publications. The running time for the 1.5 mile run is converted to a step test score using the following table:

TIME Minutes	Seconds			
	0	15	30	40
8	64	62	60	58
9	57	56	55	54
10	53	52	50	49
11	48	47	46	45
12	44	43	42	40
13	39	38	37	36
14	35	34	33	32
15	31	30	29	28
16	27	26	25	24

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1. No age correction
2. No differences in sexes
3. Altitude adjustment – seconds subtracted from time
  - <5000 ft: 0
  - 5000 ft: 30
  - 6000 ft: 40
  - 7000 ft: 50
  - 8000 ft: 60

**Job-Related Work Capacity Tests for Wildland Firefighters (PACK**

**TEST)** Three tests have been developed to determine the level of fitness of wildland firefighters that correspond to the three levels of fitness requirement, arduous, moderate, and light.

Work Category	Test	Distance	Pack	Time
Arduous	Pack Test			45 min
Moderate	Field Test			30 min
Light	Walk Test			16 min

**Pack Test** The test consists of a three mile hike with a 45-pound pack over level terrain. A time of 45 minutes, the passing score for the test, approximates a step test score of 45 (ml/kg.min), the established standard for wildland firefighters. The test is a valid, job-related test of the capacity for arduous work, defined as: "Duties involve field work requiring physical performance calling for above-average endurance and superior conditioning. These duties may include an occasional demand for extraordinarily strenuous activities in emergencies under adverse environmental conditions and over extended periods of time. Requirements include running, walking, climbing, jumping, twisting, bending, and lifting more than 50 pounds; the pace of work typically is set by the emergency condition." The energy cost of the test is similar to that demanded on the job. The

**Pack Test** is correlated to measures of aerobic and muscular fitness, as well as performance in field tasks such as working with hand tools, or carrying loads over rough terrain. The duration of the test insures that capacity to perform prolonged arduous work under adverse conditions, with a reserve to meet emergencies. Pack Test scores are not adversely influenced by gender, ethnicity, age, height, or weight.

**Field Test** A two mile hike with a 25-pound pack in 30 minutes, approximates a step test score of 40. A job-related test of work capacity designed for those with moderately strenuous duties: "Duties involve field work requiring complete control of all physical faculties and may include considerable wading over irregular ground, standing for long periods of time, lifting 25 to 50 pounds, climbing, bending, stooping, squatting, twisting, and reaching. Occasional demands may be required for moderately strenuous activities in emergencies over long periods of time. Individuals usually set their own work pace."

**Walk Test** This one mile walk test approximates a step test score of 35 is a test to determine the ability to carry out light duties: "Duties mainly involve office type work with occasional field activity characterized by light physical exertion requiring basic good health. Activities may include climbing stairs, standing, operating a vehicle, and long hours of work, as well as some bending, stooping, or light lifting. Individuals almost always can govern the extent and pace of their physical activity."

**The Course** – Course must be essentially level and have a firm, relatively smooth, walking surface. Course length must be accurate; double-check measurements. Use a measuring wheel or a calibrated bicycle computer. Vehicle odometers are not sufficiently accurate.

Loop or out-and-back courses are preferable. Avoid one-way courses where unfavorable conditions (wind, grade) are not offset. A moderate grade (2-3%) is acceptable, if the course starts and finishes at the same place. Have lap counters available for multi-loop courses. Use course monitors when needed.

Candidates must be informed of the course layout (use a map or sketch of the course). Use distance markers (e.g., 1, 1.5, 2 miles) to aid candidates. Use hazard and traffic markers as needed.

**Equipment** – Packs: The 5-gallon backpack pump water bags (NSN8465-01-321-1678, cost \$35.23) used in test development are recommended. If other packs are used, the test administrator must ensure the correct weight (45 lbs).

Pack liners: (NSN8465-01-321-1679, cost \$6.51). Have at least one extra liner for each pack.

Canteens: (NSN8465-00-102-6381, cost \$0.43). If needed, use up to two in pack pocket to obtain proper weight (45±½ lbs).

Safety Vests/Route Markers: As needed.

Distance Markers: Use mile and mid-point markers so candidates can maintain proper place.

Stop watches: Utilize two watches to provide back-up timing.

Vehicle: Bicycle or other vehicle to monitor candidates on the course.

Radios: As needed for monitoring and safety.

Scale: An accurate hanging style spring scale is recommended for weighing packs.

**Altitude** – Use this chart to adjust for tests administered at elevations above 4,000 feet. Add correction to required test time (e.g., Pack Test at 6-7,000 feet, add 60 seconds to test standard (45 minutes) for altitude-adjusted standard of 46 minutes).

Altitude Corrections for Work Capacity Tests

Altitude feet	Pack Test	Field Test	Walk Test
	seconds		
8-9,000	90	60	30
7-8,000	75	50	25
6-7,000	60	40	20
5-6,000	45	30	15
4-5,000	30	20	10

The altitude adjustment assumes that the candidate has had an opportunity to acclimate to the altitude of the test site. If a candidate doesn't meet the required standard, even with adjustment, he or she should be encouraged to train at the altitude and retake the test within a week.

**Training for the Pack Test** – Begin at least four to six weeks before you report for duty. Train by hiking or power walking, using the ankle height footwear you will use in the test.

- Hike a three mile flat course without a pack.
- When you can cover the course in less than 45 minutes, add a pack with about 25 pounds to your training hikes;
- Increase the pack weight until you can hike 3 miles in 45 minutes with a 45 pound pack. Also:
  - ♦ Hike hills (w/pack) to build leg strength and endurance

- ♦ Jog the flat course (w/o pack) to build aerobic fitness
- ♦ Hike/job over distance for stamina
- ♦ Engage in cross-training (e.g., mountain biking, weight lifting)

Finally, do job-specific tasks and training to become work hardened for the coming season. Wear work boots on extended hikes. Work with hand tools to prepare trunk and upper body muscles for prolonged work. Work hardening insures that the hands, feet, muscles, tendons and ligaments used on the job are tough and ready to go.

### **Muscular Fitness Recommendation**

Muscular fitness is an essential component of firefighter fitness. However it is not measured through our current fitness screening process. (Step Test or 1.5 Mile Run). The following recommendations are identified in two NWCG publications *Fitness and Work Capacity*, and *Fit for Work?*. Muscularly fit workers perform tasks better, are less likely to suffer from back injuries and miss fewer days of work.

Firefighter	>170lbs = 4	Sit-ups	30 in 60 seconds
Chinups	135-170lbs = 5	Push-ups	20 in 60 seconds
	110-135lbs = 4	Curl	50 lbs
	< 110lbs = 7	Bench press	120 lbs
		Leg press	350 lbs

### **Physical Training**

The safety of employees on the fireline is our number one priority. Significant factors in fireline safety are attitude, qualifications, and fitness. Physical fitness plays an important role in improving fireline safety and effectiveness; unfit persons can quickly become a hazard to themselves as well as others. Therefore, it is the Bureau's policy that each employee available the serving in a wildfire or prescribed fire position requiring physical fitness rating of arduous is authorized one hour a day for fitness conditioning. **Furthermore, individuals who have a qualification with an arduous physical requirement may be periodically tested during the fire season to insure they are retaining the required level of fitness and conditioning.**

Fitness conditioning periods will be identified and structured to include aerobic and muscular exercises that will meet the recommendations listed above. Team sports are not authorized for fitness conditioning.

### **Physical Examinations for Fire Management Positions**

The Office of Personnel Management has concluded that agencies have the right to require physical examinations for positions with specific medical standards or physical requirements. The Bureau has determined that certain designated fire management positions require physical examinations prior to appointment.





I certify that the above information furnished by me is true and correct to the best of my knowledge.

Employee's Signature: \_\_\_\_\_

**NOTE:** If the answer to either question 5 or 6 is "yes," then the test will be rescheduled.

Tell each employee:

- A. "If at any time during the test you experience nausea, extreme fatigue, breathlessness, pounding in the head, or chest pains, stop the test and tell me."
- B. "In order to comply with the Privacy Act, this record will be filed in a separate medical folder within your personnel folder. Only your name, this date, and your fitness level attained will be supplied to verify your fire qualifications."

Employee's initials: \_\_\_\_\_

Pre-test Data:

Age \_\_\_\_ Sex \_\_\_\_ Height (ft) \_\_\_\_ (inches) \_\_\_\_ Weight \_\_\_\_

Blood Pressure (optional): \_\_\_\_\_

Pre-test pulse (15) seconds \_\_\_\_\_ Post-test pulse \_\_\_\_\_

Resultant Fitness Level \_\_\_\_\_

Test Administered by \_\_\_\_\_ Date: \_\_\_\_\_

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Physical examinations are required for the following:

- All new hires
- As required by manager

- Physical examination shall use SF-78, Certificate of Medical Examination, specific to arduous duty fire suppression activities and Form 1400-108, Physical Requirements for Firefighter and Smokejumper Positions (Supplement to SF-78).
- Examinations may be at government expense and can be charged against the 2812 subactivity.
- Completed physical examination forms requiring a second opinion are to be submitted through the HRM Office to the Chief, Division of Medical and Health Services, at the Department for certification of an employee's fitness for duty.

**The Standard Form 78 (SF-78) and Standard Form 1400-108** These forms are used to determine the employee's capability to perform arduous work. The forms are submitted to the examining physician for completion.

## Food and Nutrition

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Nutritious food is not only a morale booster; but more importantly, it fuels the muscles for hard work and the internal organs for health and fitness. Remember, a firefighter may burn 5,000 to 6,000 calories a day. These must be replaced to avoid cramping, fatigue, and impaired judgement. Government-provided food must be low in fats and high in complex carbohydrates. A good diet for any hard work is 60% carbohydrates, 25% fat and 15% protein. Drinks provided must replace essential fluids lost from the body during exercise. Firefighters must replace 1 to 2 quarts of fluids per hour. Water is an excellent way to replace this fluid loss. Natural juices and sport drinks contain energy-restoring glucose. Avoid caffeinated, carbonated and "diet" drinks. On a normal fireline assignment, firefighters must replace 12 or more quarts of fluids a day.

## Fatigue

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Firefighting is hard work, dirty and inherently dangerous. The fire itself creates much of that danger. But there is a less visible threat – fatigue. Without enough sleep and rest, after long hours in heat and smoke, or stressful office settings, even the fittest worker tires. Fire Management Staff, dispatchers, and support personnel are subject to long hours and high levels of stress. Tired people can make mistakes. In fire activities, mistakes often mean accidents and injuries. Managers and fire management personnel can take actions to lower the stress that causes fatigue. Here are three keys to controlling the fatigue-related stresses of wildland fire activities.

### Work & Rest

Sleep is a prime factor in controlling fatigue. It is possible to force tired muscles to keep on working, but the brain can't function properly without sleep. Accidents and injuries result among those pushed too much. NWCG has established work and rest guidelines for incident management. However, these are not evenly applied by managers of initial attack crews. For this reason managers and incident management teams should establish work and rest schedules that minimize fatigue in the following ways:

- Establish record-keeping systems that track crew work time.
- Plan and strive to provide one hour of sleep or rest for every two hours worked.
- When deviating from work-rest guidelines, Agency Administrator or Incident Commander must approve in writing.

- Start each operational period with rested crews.
- Provide an adequate sleep environment.
- Breaks during fire operations should be from 10 to 30 minutes in length.
- Frequent breaks of between 10 to 30 seconds should be encouraged.

The pulse is a good way to gauge fatigue. Your pulse should recover to less than 110 beats per minute; if not, you need a longer break. A firefighter's wake-up pulse can signal potential problems. If it is 10% or more above normal, it can mean fatigue, dehydration, or even a pending illness.

### **Heat Stress**

Heat becomes a problem when humidity, air temperature, and radiant heat combine with hard work to raise body temperature beyond safe limits. There are three forms of heat stress. The mildest is heat cramps. Heat stress can progress to heat exhaustion and heat stroke. At the first sign, stop work, get into the shade, and begin drinking fluid. **HEAT STROKE IS A MEDICAL EMERGENCY!** Delayed treatment can result in brain damage and even death. Sweat is your main defense. Everyone on the fireline must understand the importance of drinking often. Firefighters must replace 1 to 2 quarts of fluids per hour; water is an excellent way to replace this fluid loss. Natural juices and sports drinks contain energy-restoring glucose. Avoid caffeinated, carbonated and "diet" drinks. On a normal fireline assignment firefighters must replace 12 or more quarts of fluid per day.

### **Smoke and Carbon Monoxide**

Unlike work/rest cycles and heat stress, which are more controllable, smoke and carbon monoxide present a bigger challenge to managers and firefighters. Heavy smoke and carbon monoxide present greater danger for the firefighter. Heavy smoke and carbon monoxide are often present on wildland fires. Some exposure is avoidable. Our objective must be to limit exposure. Smoke and carbon monoxide reduce work capacity and impair performance and decision making. The following suggestions guide a manager in reducing exposure:

- Provide crew rest breaks out of smoke.
- Rotate crews between high exposure and lower exposure assignments.
- Keep shifts short in heavy smoke.
- Locate camp and sleeping areas in smoke-free areas.
- Consider providing CO detectors to monitor carbon monoxide levels.

## Personal Protective Equipment

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All firefighting personnel must be equipped with the proper personal protective equipment (PPE); operational personnel on wildfires and prescribed fires are required to use PPE. Common permanent-press materials are not to be worn, as they melt and stick to the skin when exposed to flame or heat. Required PPE includes:

- 8" high laced leather boots with lug soles (Condition of Hire)
- Fire shelter
- Hard hat with chin strap
- Goggles
- Ear plugs
- Aramid shirts
- Aramid trousers
- Leather gloves
- Individual first aid kits

Special PPE and a Job Hazard Analysis is required for operations involving alum-gel, aircraft (particularly helicopters), and felling. These include:

- Chainsaw chaps
- Earmuffs or earplugs
- Face shield or goggles
- Flight helmet
- Dust masks
- Alum-gel mixing crew must be equipped with eye protection, fire retardant anti-static or 100% cotton coveralls, gloves, and breathing apparatus.

Use of safety equipment is required of all personnel exposed to fireline hazards including prescribed fire operations. Employees must be trained to use safety equipment effectively.

### Head Protection

Personnel must be equipped with hard hats and will wear them at all times while on the fireline. Hard hats must be equipped with a chin strap which will be fastened while riding in, or in the vicinity of, helicopters.

Helicopter crew persons and helitack crews will be issued and wear flight helmets with chin strap securely fastened when riding in helicopters. All contract helicopter personnel must comply with this standard.

Acceptable helmets for fireline use are: "Helmet, safety, wildfire" NSN 8415-01-055-2265 listed in GSA's Wildfire Protection Equipment and Supplies Catalog or equivalent helmet meeting ANSI Standard Z89.2-1986 and ANSI Standard electric non-conductor.

## Eye and Face Protection

The following positions require the wearing of goggles: nozzle person, chainsaw operator, heliport and ramp personnel, and retardant mixing crew members. Other personnel in the immediate vicinity of these operations may also require eye protection. Full face protection offered by face shields must be worn by tool sharpeners using power sharpeners and Terra-Torch® nozzle operators.

## Hearing Protection

Personnel who are exposed to a noise level in excess of 90 db must be provided with, and wear, hearing protection. Seasonal fire suppression personnel must be issued two pairs of earplugs, either universal or fitted type, at the beginning of the fire season. Other fire crew members must be issued earplugs upon fire assignment. Personnel must be trained in the use and cleaning of earplugs to prevent hearing damage and hygiene problems. Hearing protection may be required on helicopter flights.

Earmuffs will be issued to the following positions:

- Chainsaw and portable pump operators
- Helibase and aircraft ramp personnel
- Retardant mixing personnel
- Any other personnel exposed on a regular basis to damaging noise levels. Intermittent saw and pump operators may use earplugs.
- Engine operators.

National Fire Equipment System kits contain earmuffs for the above positions. Any kits maintained on a District for these positions must also comply with the kit's hearing protection standards.

## Body Protection

Employees engaged in wildland fire suppression or prescribed fire operations must wear fire resistant clothing consisting of aramid shirt, aramid trousers, or aramid coveralls and leather gloves. Because most synthetic fibers melt when exposed to flame or extreme radiant heat, personnel should wear only undergarments made of 100% cotton, aramid, or other fire resistant material. Fixed and rotary wing aircraft crews and aircraft support personnel must wear all aramid outer clothing and gloves or leather gloves. Wool and/or cotton outer garments are not acceptable for aircraft use.

Aluma gel mixing crew must be equipped with eye protection, fire retardant anti-static or 100% cotton overalls, gloves, and breathing apparatus. Clothing that becomes sprinkled or soaked with fuel must be thoroughly rinsed with water prior to removal, and the individual must be grounded to dissipate any potential static buildup. One person must standby with a fire extinguisher while the individual removes contaminated clothing.

### **Leg Protection**

Chainsaw chaps must be worn by all chainsaw operators. Pants should be bloused or secured at the ankle, if there is danger from burns by stepping in ash pits.

### **Foot Protection**

Personnel assigned to fires must wear heavy duty, all leather, lace type work boots with non-slip (Vibram type) melt resistant soles and heels. The leather top must be at least 8 inches in height, measured from the top of the heel. (Alaska exempt) The boots are a condition of hire for firefighting positions and are purchased by the employee prior to employment.

### **Fire Shelters**

Fire shelters will be issued and worn by all line personnel. They will be inspected regularly, and “training” shelters will be deployed annually at required refresher safety training. The shelter is to be viewed as a **last resort**, and will not be utilized as a tactical tool. Supervisors and firefighters must never employ fire shelters instead of using well-defined and pre-located escape routes.

## **Fireline Safety**

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All fire suppression actions must be undertaken in compliance with the “Standard Fire Orders” and “18 Watch Out Situations.”

### **Briefings**

The fire manager, through the Incident Commander (IC), must ensure that safety factors are covered with incident personnel at all operational briefings and that safety briefings are occurring throughout the fire organization. The identification and location of escape routes and safety zones must be stressed. The IC, safety officer, fire behavior analyst and remainder of the command and general staff will use Standard Fire Orders, Watch Out Situations, and ICS 215-A (L.C.E.S.) for guidance at strategy meetings, during briefings and when developing the incident action plan, safety message, and medical plan.

### **LCES Key to Safety in the Wildland Fire**

#### **Environment**

- L – Lookout(s)
- C – Communication(s)
- E – Escape routes
- S – Safety zone(s)

***LCES is a System for Operational Safety*** In the wildland fire environment where four basic safety hazards confront the firefighter—lightning, fire-weakened timber, rolling rocks, and entrapment by running fires—LCES is key

to safe procedure for firefighters. LCES stands for “lookout(s),” “communication(s),” “escape routes,” and “safety zone(s)”—an interconnection each firefighter must know. Together the elements of LCES form a safety system used by firefighters to protect themselves. This safety procedure is put in place before fighting the fire: Select a lookout or lookouts, set up a communication system, choose escape routes, and select safety zone or zones.

In operation, LCES functions sequentially. It’s a self-triggering mechanism: Lookouts assess—and reassess—the fire environment and communicate to each firefighter threats to safety; firefighters use escape routes and move to safety zones. Actually, all firefighters should be alert to changes in the fire environment and have the authority to initiate communication.

**Key Guidelines:** LCES is built on two basic guidelines:

- Before safety is threatened, each firefighter must be informed how the LCES system will be used.
- The LCES system must be continuously reevaluated as fire conditions change.

“Safety is defined as freedom from exposure to danger, exemption from injury, and to protect from accident.” Safety requires knowledge and skill in methods of avoiding accidents, injury and exposure to danger. As such, it requires an ability and attitude that grows with experience and training. In fire management activities there are subjective hazards that we create, and objective hazards such as: fire entrapment, snags, rolling debris, and terrain. The subjective hazards, we have control over just by using our attitudes and abilities. The objective hazard we cannot eliminate, these are the risks inherent to fire management activities. The possibility of injury or entrapment is always there, the probability may be large or small. We must take steps to reduce the risks associated with our actions. By using a set procedure during each operational period, we can ensure our safety by taking the following steps to minimize our exposure to hazards:

- Define the assignment.
- Identify the hazards.
- Analyze the situation as it changes.
- Re-analyze the situation as it changes.

Regarding the following “Risk Analysis” section, answer each question for the Watch Out Situation by checking the appropriate column. For each question answered with a no, the Fire Orders and LCES become important responses to reduce the risk of entrapment.



**Risk Analysis**

Situation	Considerations	Yes	No
<p><b>Fight Fire Aggressively but Provide for Safety First</b></p>	<p><b>Aggressively:</b></p> <ul style="list-style-type: none"> <li>• Is the suppression method adequate?</li> <li>• Are there adequate resources and time for effective suppression?</li> </ul> <p><b>Safety:</b></p> <ul style="list-style-type: none"> <li>• Are lookouts posted?</li> <li>• Is communications prompt with crews and other resources?</li> <li>• Have escape routes been established?</li> <li>• Do you feel comfortable with your assignment?</li> </ul>		

To Reduce the Risks – Post lookouts until the fire is sized up and escape routes and safety zones are established, or **back off** if the situation is too complex!

<p><b>Initiate ALL Actions Based on Current and Expected Fire Behavior</b></p>	<ul style="list-style-type: none"> <li>• Can the resources you are replacing give you a thorough briefing?</li> <li>• Can you observe the area, use scouts?</li> <li>• Have escape routes and safety zones been thoroughly scouted?</li> <li>• Are they marked for night use?</li> <li>• Have potential dangers been located, can they be dealt with?</li> </ul>		
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To Reduce the Risks – Post lookouts, check communications, back off if the situation becomes too complex, or if you have doubts about your escape routes or safety zones.

Situation	Considerations	Yes	No
<p><b>Safety Zones and Escape Routes NOT Identified</b></p>	<ul style="list-style-type: none"> <li>• Can you identify them by scouting?</li> <li>• Are they large enough to accommodate everyone without using fire shelters?</li> <li>• Does the escape route need clearing? And marking?</li> <li>• How much warning time do you need to get to your safety zone safely?</li> <li>• Does everyone know the escape routes and safety zones?</li> <li>• Can you create a safety zone if you don't have one?</li> <li>• Have you seen the escape routes and safety zones?</li> </ul>		

To Reduce the Risks – Back off until you find safety zones or escape routes!

<p><b>In Country NOT Seen In Daylight</b></p>	<ul style="list-style-type: none"> <li>• Can the resources you are replacing give you a thorough briefing?</li> <li>• Can you observe the area, use scouts?</li> <li>• Have escape routes and safety zones been thoroughly scouted?</li> <li>• Are they marked for night use?</li> <li>• Have potential dangers been located, can they be dealt with?</li> </ul>		
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To Reduce the Risks – Post lookouts, check communications, back off if the situation becomes too complex, or if you have doubts about your escape routes or safety zones.

<p><b>Fire NOT Scouted and Sized Up</b></p>	<ul style="list-style-type: none"> <li>• Can you observe personally, or use scouts?</li> <li>• Do you know the location of the fire perimeter?</li> <li>• Do you know the direction of fire spread?</li> <li>• Does the direction of fire spread increase the risk?</li> <li>• Do you know the fuels and their condition?</li> <li>• Do topographic hazards exist?</li> <li>• Does enough information exist to establish a plan of attack?</li> <li>• Do other dangers exist?</li> </ul>		
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To Reduce the Risks – Post lookouts until the fire is sized up and escape routes and safety zones are established, or back off if the situation is too complex!

Situation	Considerations	Yes	No
<p><b>Unfamiliar with Weather and Local Factors Influencing Fire Behavior</b></p>	<ul style="list-style-type: none"> <li>• Can you ask questions of local experts?</li> <li>• Does the operational period plan give you adequate weather and information?</li> <li>• Can you get information from resources that have been on the fire?</li> <li>• Is there any other way to obtain information?</li> </ul>		

To Reduce the Risks – Base all actions on current and expected fire behavior. **Post lookouts, establish escape routes and safety zones!! Take Extra Caution.**

<p><b>Uninformed on Strategy, Tactics or Hazards</b></p>	<ul style="list-style-type: none"> <li>• Can communications be established to find out?</li> <li>• Can scouting safely identify potential hazards?</li> <li>• Have strategy, tactics or hazards changed since last informed?</li> <li>• Can you get a briefing from your supervisor?</li> </ul>		
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To Reduce the Risks – **Post lookouts, establish safety zones and escape routes.** Consider backing off until you are informed. Don't leave a staging area or briefing until you have all the pertinent information.

<b>Instructions and Assignments NOT Clear</b>	Giving Instructions	<ul style="list-style-type: none"> <li>• Did they ask questions?</li> <li>• Did they take notes?</li> <li>• Did they repeat them back?</li> <li>• Did you give all the necessary information: task, location, communications, hazards, who, when, etc.</li> </ul>		
	Receiving Instructions	<ul style="list-style-type: none"> <li>• Did you really listen?</li> <li>• Did you understand the assignment, location, and the nature and location of hazards?</li> </ul>		

To Reduce the Risks–Take the time to get it right! **You must know the location of the assignment, what** is to be done, **who** you are to report to and **how** often to report, **when** are you expected to complete the assignment, any deadlines, any hazards, communication plan, weather and fire behavior, status of adjoining forces.

<b>No Communication Link w/ Crew Members Supervisors &amp; Adjoining Forces</b>	<ul style="list-style-type: none"> <li>• Can communication be established?</li> <li>• Is the communication triangle complete?</li> </ul>		
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Only if the situation is simple and safe should operations continue without communications. **If the situation is complex – back off.**

Situation	Considerations	Yes	No
<b>Constructing Line without a Safe Anchor Point</b>	<ul style="list-style-type: none"> <li>• Can you hold the line without the fire hooking under you?</li> <li>• Are there adequate safety zones and escape routes?</li> <li>• Can you develop your starting point into an anchor point?</li> <li>• Have you posted good lookouts?</li> <li>• Do you have good communications?</li> </ul>		

To Reduce the Risks–**Start the line in another location.**

<b>Attempting a Frontal Assault on a Fire</b>	<ul style="list-style-type: none"> <li>• Has the fire been scouted and sized up?</li> <li>• Is your position defensible?</li> <li>• Are escape routes and safety zones adequate?</li> <li>• Do you have an anchor point?</li> <li>• Do you have adequate resources to complete the assault?</li> <li>• Are you informed on strategy, tactics, and hazards?</li> <li>• Is the terrain favorable to holding the fire?</li> </ul>		
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To Reduce the Risks–reassess your tactics, **post lookouts!**

<b>Building Fireline Downhill with Fire Below</b>	<ul style="list-style-type: none"> <li>• Has the area been scouted for fire perimeter and behavior?</li> <li>• Will wind direction be at your back? Will it stay at your back?</li> <li>• Is the area free of chimneys and gullies?</li> <li>• Are there adequate safety zones and escape routes as you progress downhill?</li> <li>• Can you carry your burnout downhill as you go to provide an anchor point and safety zones?</li> <li>• Have lookouts been posted?</li> <li>• Do you have good communications, especially with lookouts and crews working towards you?</li> <li>• Can the line be completed and burnt out before the fire reaches the line?</li> <li>• Do you have adequate resources to complete the assignment?</li> <li>• Is the aerial support available if needed?</li> <li>• Has everyone been briefed on the assignment, fire behavior, weather, communications, escape routes and safety zones, hazards, and tactics?</li> </ul>		
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If NO to any of these questions – consider other tactics, **provide for safety first.**

Situation	Considerations	Yes	No
<b>Unburned Fuel Between You and the Fire</b>	<ul style="list-style-type: none"> <li>• Can you see the fire?</li> <li>• Is fire spread in a direction away from you?</li> <li>• Will your position be defensible when the fire reaches you?</li> <li>• Is your line anchored?</li> <li>• Are your escape routes and safety zones adequate?</li> </ul>		

To Reduce the Risks—**post lookouts, consider a different location to make a stand.**

<b>Cannot See the Main Fire, NOT in Contact with Anyone Who Can</b>	<ul style="list-style-type: none"> <li>• Are you informed on expected fire behavior and weather?</li> <li>• Do you have safety zones and escape routes?</li> <li>• Will you receive adequate warning to go to your safety zone?</li> <li>• Are you informed on strategy, tactics, and hazards?</li> </ul>		
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To Reduce the Risks – **re-evaluate your position, limit your exposure!!**

<p><b>On a Hillside Where Rolling Material Can Ignite Fuel Below</b></p>	<ul style="list-style-type: none"> <li>• Can you locate/construct a line to prevent material rolling below?</li> <li>• Will you get enough warning of rolling material to prevent being hit by it?</li> <li>• Can you see where any material that rolls below you goes and what it does?</li> <li>• Is the area free of large amounts of flashy fuels?</li> <li>• Is the area free of chimneys, gullies and steep slopes?</li> <li>• Do you have two escape routes so you can go either way?</li> </ul>		
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To Reduce the Risks – **post lookouts**, consider locating line in a defensible position!!

<p><b>Weather is Getting Hotter and Drier</b></p>	<ul style="list-style-type: none"> <li>• Do you have a workable plan if fire behavior increases?</li> <li>• Do you have a plan if the fire reaches you earlier than expected?</li> <li>• Is the method of spread the same?</li> <li>• Are your escape routes and safety zones still adequate?</li> <li>• Will you have adequate warning if you need to use the safety zones?</li> </ul>		
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Take weather observations more frequently, **Base ALL Actions on Current and Expected Fire Behavior**. As fire behavior increases you must re-examine your plan and risk analysis. Post more lookouts, if more warning time is needed.

Situation	Considerations	Yes	No
<p><b>Wind Increases or Changes Direction</b></p>	<ul style="list-style-type: none"> <li>• Is the wind at your back? Will it stay at your back?</li> <li>• Do you know what you will do if the fire reaches you faster than expected?</li> <li>• Are escape routes and safety zones still adequate?</li> <li>• Do you still have adequate warning time?</li> <li>• Will you be able to handle any additional spotting?</li> <li>• Is there little probability of the fire hooking around you?</li> <li>• Can you still carry out your strategy and/or tactics?</li> </ul>		

Re-examine your situation. **Base ALL Actions on Current and Expected Fire Behavior!** If fire behavior increases you must re-examine your plan and risk analysis.

<b>Getting Frequent Spot Fires Across the Line</b>	<ul style="list-style-type: none"> <li>• Can you handle increased spotting?</li> <li>• Do you have a plan for long range spotting?</li> <li>• Is help available if necessary?</li> <li>• If fire behavior increases is your position still defensible?</li> <li>• Do you have more than one safety zone in case one gets cut off?</li> <li>• Do the primary lookouts have a good view of the situation?</li> <li>• Is the primary burning period ending?</li> </ul>		
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To Reduce the Risks – **Be ready to retreat.** Keep your guard up even if spotting has not occurred for a few hours.

<b>Terrain and Fuels Make Escape To Safety Zones Difficult</b>	<ul style="list-style-type: none"> <li>• Does the crew's condition allow for fast travel?</li> <li>• Will you get adequate warning to make it to your safety zone?</li> <li>• Can escape routes be improved to make travel faster? Marked?</li> <li>• Will posting more lookouts give adequate warning?</li> </ul>		
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To Reduce the Risks – Consider other tactics that will allow you to be in a safer location!

<b>Taking a Nap Near the Fireline</b>	<ul style="list-style-type: none"> <li>• Are lookouts posted?</li> <li>• Is the area free of hazards?</li> <li>• Are you still within agency work and rest policies?</li> <li>• Does your crew need a break? Have they been pushed too hard?</li> </ul>		
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The more "NO" answers you have, the higher the probability you have of being entrapped!! If your plan depends on everything going perfectly, ask yourself, "What if? Is something else better?" Ask yourself, "What am I protecting?" Is the value as high as the risk of exposing your crew(s) to a situation with a high possibility and high probability of entrapment?

In situations of low complexity you may be able to do your risk analysis in your head. As the situation gets more complex, i.e., more hazards or higher probabilities, you should do your risk analysis on paper to make sure you recognize the potential danger, and take proper steps to ensure safety.

## **Safety Zones**

Identification of a safety zone is one of the primary responsibilities of any wildland firefighter working on or near the fireline. One aspect of firefighter safety is safety zone size. The following can be utilized in making safety zone selection:

- Calculations indicate that for most fires, safety zones must be greater than 50 meters wide to ensure firefighter survival.
- A general rule is that a safety zone radius must be equal to or greater than three and a half to four times the maximum flame height.
- If potential for the fire to burn completely around the safety zone exists, the diameter should be twice the values indicated above.
- Factors that will reduce safety zone size include reduction in flame height by thinning or burnout operations, shielding the safety zone from direct exposure to the flame by locating it on the lee side of ridges or other geographic structures, or reducing flame temperatures by applying fire retardant to the area around the safety zone.
- Full firefighter protective clothing, helmet, and neck protection must be worn.
- Keep in mind that these guidelines do not address convective energy.

## **Common Denominators of Fatality Fires**

- Most incidents happen on the smaller fires or on isolated portions of larger fires.
- Most fires are innocent in appearance before the “flare-up” or “blow-ups.” In some cases, tragedies occur in the mopup stage.
- Flare-ups generally occur in deceptively light fuels.
- Fires run uphill surprisingly fast in chimneys, gullies, and on steep slopes.
- Some suppression tools, such as helicopters or airtankers, can adversely affect fire behavior. The blasts of air from low flying helicopters and airtankers have been known to cause flare-ups.

### **10 Standard Firefighting Orders**

- F** Fight fire aggressively, having provided for safety first.
- I** Initiate all action based on current and expected fire behavior.
- R** Recognize current weather conditions and obtain forecasts.
- E** Ensure instructions are given and understood.
  
- O** Obtain current information on fire status.
- R** Remain in communications with crew members.
- D** Determine safety zones and escape routes.
- E** Establish lookouts in potentially hazardous situations.
- R** Retain control at all times.
- S** Stay alert, keep calm, think clearly, act decisively.

### **18 Watch out Situations**

- 1 Fire not scouted and sized up.
- 2 In country not seen in daylight.
- 3 Safety zones and escape routes not identified.
- 4 Unfamiliar with weather and local factors influencing fire behavior.
- 5 Uninformed on strategy, tactics, and hazards.
- 6 Instructions and assignments not clear.
- 7 No communication link with crew members/supervisor.
- 8 Constructing line without safe anchor point.
- 9 Building fireline downhill with fire below.
- 10 Attempting frontal assault on fire.
- 11 Unburned fuel between you and fire.
- 12 Cannot see main fire, not in contact with anyone who can.
- 13 On a hillside where rolling material can ignite fuel below.
- 14 Weather is getting hotter and drier.
- 15 Wind increases and/or changes direction.
- 16 Getting frequent spot fires across line.
- 17 Terrain and fuels make escape to safety zones difficult.
- 18 Taking nap near fireline.

### **Downhill/Indirect Line Construction**

Fireline can be constructed with handtools, mechanized equipment, water or retardant. The only reliable line is one that has been cut to mineral soil, that will catch rolling material, AND that is on the fire's edge.

**As a general rule, construct line moving uphill.** If there is no practical alternative to constructing line downhill, do so with extreme caution. Many firefighters have lost their lives attacking wildland fires from above. The following are guidelines for downhill line construction. They also apply to fireline that is being constructed some distance from the fire's edge where fire behavior cannot be observed and responded to.



- The decision is made by a competent firefighter after thorough scouting.
- Downhill line construction should not be attempted when fire is present directly below the proposed starting point.
- The fireline should not lie adjacent to a chute or chimney that could burn while the crew is nearby.
- Communication must be established between the crew working downhill and crews working toward them from below. When neither crew can adequately observe the fire, communications will be established between the crews, supervising overhead, and a lookout posted where the fire's behavior can be seen.
- The crew must be able to rapidly reach a zone of safety from any point along the line, if the fire unexpectedly crossed below them.
- A downhill line must be securely anchored at the top. Avoid underslung line, if practical.
- Line firing should be done as the line progresses, beginning from the anchor point at the top. The burned out area provides a continuous safety zone for the crew and reduces the likelihood of fire crossing the line.
- Beware – avoid the Watch Out Situations.
- Comply with all Standard Fire Orders.

### **Snag Safety**

**S**ize up snag hazards in work area.

**N**ever become complacent.

**A**lways look up.

**G**et weather reports.

**S**cout out parking, sleeping, work areas and safety zones.

**A**dvice co-workers of known hazards.

**F**ace your hazard and take appropriate action.

**E**xamine work area for other hazards.

**T**ake extra caution around heavy equipment.

**Y**ou are ultimately responsible for your own safety.

### **Thunderstorm Safety**

The mature stage of a storm may be marked on the ground by a sudden reversal of wind direction, a noticeable rise in wind speed, and a sharp drop in temperature. Heavy rain, hail and lightning occur only in the mature stage of a thunderstorm. During a storm:

- Stay out of dry creek beds.
- Do not use radios or telephones.
- Put down all tools and remove caulk boots.
- Sit or lie down, if in open country.
- Avoid grouping together.
- Do not handle flammable materials in open containers.
- Stay in your vehicle. Take shelter in vehicles, if possible.
- Turn off machinery, electric motors.
- Take shelter in a building, if available.
- When there is no shelter, avoid high objects such as lone trees. If only isolated trees are nearby, the best protection is to crouch in the open, keeping the distance of twice the height of the tree away. Keep away from wire fences, telephone lines, and electrically conductive elevated objects.
- Avoid ridge tops, hilltops, wide-open spaces, ledges, rock outcroppings, exposed shelters.
- Advise crew that if they feel an electrical charge—if their hair stands on end or their skin tingles—lightning may be about to strike them. They must drop to the ground immediately.

### **Power Line Safety**

- Downed conductor on vehicle—don't leave vehicle until power company arrives. If the vehicle is on fire or fire is near—jump clear, don't hang on. Keep feet together and bunny hop away.
- Don't operate heavy equipment under power lines.
- Don't use rights-of-way as a jump or cargo drop spot.
- Don't drive with long antennas under power lines.
- Don't fuel vehicles under power lines.
- Don't stand near power lines during retardant drops.
- Don't park under power lines.
- Don't apply straight stream to power lines.

### **Unexploded Ordnance (UXO)**

Millions of acres of property in the United States contain unexploded ordnance (UXO), most of which is a result of weapons system testing and troop training activities conducted by the Department of Defense (DOD). This property includes active military, formerly used defense (FUD), and base realignment and closure (BRAC) sites. The risks posed by property containing UXO could be great depending on the types and amount of UXO present and how the property is or may be used.

Those who use and manage property with UXO, as well as those responsible for making decisions regarding the property, need information on the risks presented by UXO, options for eliminating or reducing the risks, and factors to be considered in the decision-making process.

A person's ability to recognize a UXO is the first and most important step in reducing the risk posed by a UXO hazard.

The following types of UXO are those most likely to be encountered on active DOD sites and FUD and BRAC sites:

- ♦ Small arms munitions
- ♦ Rockets
- ♦ Projectiles
- ♦ Projected grenades
- ♦ Submunitions
- ♦ Hand grenades
- ♦ Guided missiles
- ♦ Mortars
- ♦ Rifle grenades
- ♦ Bombs

UXO is found in the environment in many different ways depending in part on the specific type of ordnance, when and where it was deployed, how it was deployed, and activities that may have taken place at the locations since deployment.

UXO may also be found fully intact or in parts or fragments. All UXO, whether intact or in parts, presents a potential hazard and should be treated as such. UXO that has deteriorated presents a particular hazard because it may contain chemical agents that could become exposed.

***UXO Safety and Reporting*** UXO, whether present in an area by design or by accident, poses the risk of injury or death to anyone in the vicinity.

**“IF YOU DID NOT DROP IT, DO NOT PICK IT UP!”**

- When you see UXO, stop. Do not move closer.
- Never transmit radio frequencies (walkie talkies, citizens' band radios).
- Never attempt to remove anything near a UXO.
- Never attempt to touch, move, or disturb a UXO.
- Clearly mark the UXO area.
- Avoid any area where UXO is located.
- Keep a minimum of 500 feet away from any UXO that is on fire.

Report discovery of UXO to your immediate supervisor.

### **Standard Safety Flagging**

NWCG has established the following standard for wildland fire (prescribed and suppression) activities.

**Safety Zones/Escape Routes** lime green, florescent, biodegradable 1" wide (NFES #0258).

Note: When flagging no longer shows valid safety zones/escape routes, remove it **IMMEDIATELY**.

**Hazards** yellow w/black diagonal stripes, florescent, biodegradable 1" wide (NFES #0267)

## **Safety for Managers Visiting Fires**

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The BLM's *Fire and Aviation Program-wide Management Review Report* outlines the need for line officers to become actively involved in the management of wildfires. The report goes on to discuss the performance requirements, one of which is to "personally visit an appropriate number of escaped fires each year." In preparation for these visits, it is important to have the proper "personal protective equipment" (PPE). Listed below are a few different scenarios and the required PPE. If you have any questions, please discuss them with your fire and aviation management staff.

### **Visit to Fire Camp**

The requirements for PPE at fire camp are the same as all field locations. Refer to BLM Manual Handbook 1112-2, Safety and Health for Field Operations, page 16, 3.3. For general working conditions, the minimum requirements are:

- 8" leather lace boots with non-slip soles and heels
- long trousers
- long-sleeve shirt

The BLM field uniform is excellent; however, for more flexibility you may choose to wear the aramid fire shirts and trousers or flight suit.

### **Visits to the Fireline**

When visiting the fireline, there are three major considerations: PPE, physical fitness, and training requirements or escort.

#### **PPE Required**

- 8" leather lace boots with non-slip soles and heels
- long trousers made of flame-resistant material
- long-sleeve shirt made of flame-resistant material
- hard hat
- leather gloves

- fire shelter and hand tool
- water canteen/personal First Aid Kit

**Physical Fitness** To visit the fireline, there are no specific physical fitness requirements, if escorted\*. However, you must be able to walk in mountainous terrain and be in good physical condition with no known limiting conditions. If you are not physically active and in good health, consider a medical examination, including an exercise electrocardiogram. If a manager visits a fireline unescorted, they must meet the physical fitness level of moderate (40 step test score or mile-and-one-half run in 12:45).

\* Escorts must be qualified at the Single Resource Boss (Crew or Engine) level.

**Training Requirements** Managers who are escorted are not required to have any previous training. However, if a manager is not escorted, they must have successfully completed the following:

- Introduction to Fire Behavior (S-190), 16 hours
- Firefighter Training (S-130), 32 hours
- Standards for Survival, video/workbook, 8 hours
- Your Fire Shelter, video/pamphlet, 20 minutes
- Common Denominators of Fire Behavior on Tragedy & Near-Miss Forest Fires, booklet

### **Helicopter Observation Flights**

Managers who take helicopter flights to observe fires must receive a passenger briefing and wear the PPE listed below.

#### **PPE Required**

- flight helmet
- leather boots
- fire-resistant clothing
- all leather or leather and aramid gloves

In addition, the manager must have received training or a Helicopter Manager (HEMG) must accompany the flight or supervise all take-offs and landings.

**Training Requirements** can be met by any of the following courses: Basic Helicopter and Airplane Safety (B2), Helicopter Safety (B-1); Combination Helicopter and Airplane Safety (B-3); S-270, Basic Air Operations.

### **Fixed-Wing Observation Flights**

Managers who take fixed-wing flights to observe fires must meet the following minimum requirements:

- Flight level must not drop below 500' AGL
- Passenger Briefing
- No PPE is required

## **Fire Accident Reporting & Investigation**

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### **Introduction**

Reporting is imperative to the safe operation of any program. Accurate and timely reporting provides many benefits to everyone involved in fire and aviation. Hazardous trends, unsafe conditions, and faulty equipment are identified and can be addressed to correct the situation.

### **Policy**

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

## **Entrapment**

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### **Scope**

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

## NWCG

**Wildland Fire Entrapment/Fatality****Initial Report**

Timely reporting of entrapments or fatalities is necessary for the rapid dissemination of accurate information to the fire management community. It will also allow fire safety and equipment specialists to quickly respond to these events as appropriate. This initial report does not replace agency reporting or investigative responsibilities, policies or procedures. Complete this report for fire-related entrapment and/or fatalities. Immediately notify the National Interagency Coordination Center (NICC) attn: Intelligence Section. Submit this written report to the address given below within 24 hours. Submit even if some data are missing.

NICC-National Interagency Fire Center  
3833 S. Development Avenue  
Boise, Idaho 83705-5354

Phone-(208)387-5400  
FAX-(208)387-5414

NICC Intelligence Section  
DG-A.INT:WO2A  
IAMS-FCNICCOR

**I. General Information**

- A. Date \_\_\_\_\_  
 B. Fire name and location \_\_\_\_\_  
 C. Number of personnel involved \_\_\_\_\_  
 D. Number of injuries \_\_\_\_\_  
 E. Number of fatalities \_\_\_\_\_

**II. Fire Related Information**

- A. Fuel Model \_\_\_\_\_  
 B. Temperature \_\_\_\_\_ R.H. \_\_\_\_\_ Wind \_\_\_\_\_ (mph)  
 C. Topography \_\_\_\_\_ Slope \_\_\_\_\_ %  
 D. Fire size at time of incident/accident \_\_\_\_\_ Acres  
 E. Urban/wildland intermix  Yes  No  
 F. Cause of Fire  Natural  Incendiary  Accidental  Unknown

**III. Entrapment**

A situation where personnel are unexpectedly caught in a fire-behavior related, life threatening position where escape routes or safety zones are absent, inadequate or have been compromised. An entrapment may or may not include deployment of a fire shelter.

**A. Entrapment information**

1. Firefighter trapped  with fire shelter  without fire shelter
2. Burns/smoke injuries incurred while in fire shelter  Yes  No
3. Burns/smoke injuries incurred while escaping entrapment  Yes  No
4. Burns/smoke injuries incurred while fighting fire  Yes  No
5. Fire shelter performed satisfactorily  Yes  No
6. Fire shelter was available, but not used  Yes  No

Release Date: 4/97

**B. Personal Protective Equipment Used**

- |                         |  |                     |  |
|-------------------------|--|---------------------|--|
| 1. Fire Shelter         | <input type="checkbox"/> Yes <input type="checkbox"/> No | 5. Protective Shirt | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. Protective Pants     | <input type="checkbox"/> Yes <input type="checkbox"/> No | 6. Hard hat         | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 3. Gloves               | <input type="checkbox"/> Yes <input type="checkbox"/> No | 7. Boots            | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 4. Face/Neck Protection | <input type="checkbox"/> Yes <input type="checkbox"/> No | 8. Goggles          | <input type="checkbox"/> Yes <input type="checkbox"/> No |

**IV. Fatalities**

**A. Type of accident**

- |   |  |
|---|--|
| <input type="checkbox"/> 1. Aircraft                            | <input type="checkbox"/> 5. Vehicle    |
| <input type="checkbox"/> 2. Natural (lightning, drowning, etc.) | <input type="checkbox"/> 6. Smoke      |
| <input type="checkbox"/> 3. Medical (heart, stroke, heat, etc.) | <input type="checkbox"/> 7. Entrapment |
| <input type="checkbox"/> 4. Struck by Falling Object            | <input type="checkbox"/> 8. Other      |

**B. Where fatality(s) occurred**

- |   |  |
|---|--|
| <input type="checkbox"/> 1. Fire site     | <input type="checkbox"/> 3. In transit |
| <input type="checkbox"/> 2. Incident Base | <input type="checkbox"/> 4. Other      |

**C. Fatalities**

1. Name \_\_\_\_\_ D.O.B. \_\_\_\_\_  
Employment Status  Career  Seasonal  Casual  Other
2. Name \_\_\_\_\_ D.O.B. \_\_\_\_\_  
Employment Status  Career  Seasonal  Casual  Other
3. Name \_\_\_\_\_ D.O.B. \_\_\_\_\_  
Employment Status  Career  Seasonal  Casual  Other
4. Name \_\_\_\_\_ D.O.B. \_\_\_\_\_  
Employment Status  Career  Seasonal  Casual  Other

**Note: In the event of fatality(s), do not release name(s) until next of kin are notified.**

D. Employing agency \_\_\_\_\_

E. Unit name and address \_\_\_\_\_

F. Firefighting part of employee's job description  Yes  No

G. Person to contact for additional information \_\_\_\_\_ Phone \_\_\_\_\_  
Home unit address \_\_\_\_\_

H. Brief description of accident \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## **Fire Entrapment Investigation and Review Guidelines**

**Purpose** NWCG hereby recommends guidelines for investigation and review of fire entrapment situations. These guidelines are not intended to replace agency-specific investigation protocol.

The intended purpose for developing these guidelines is to provide standardized data to assist in identifying and analyzing trends. From those trend analyses, preventative recommendations may be made.

These investigation and review guidelines will:

- Outline investigation elements, and
- Clarify management and command responsibilities.

Through the NWCG Safety and Health Working Team, the review process will:

- Provide an effective distribution mechanism of findings, and
- Develop a framework for implementation of recommendations.

### **Definitions**

**Agency Administrator** – That line officer having responsibility for management of land and/or resources on an organizational unit, and having accountability for overall results of management actions.

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

**Entrapment Investigation Elements** The following elements most commonly contribute to entrapment situations. As a minimum, each of these elements should be addressed in an entrapment investigation and subsequent report, even if the investigation indicates that the element did not contribute to the entrapment. Exhibit I, “Entrapment Investigation Element Matrix,” may be utilized to expedite the process.

#### **Fire Behavior**

- ♦ Fuels
- ♦ Weather
- ♦ Topography
- ♦ Predicted v. Observed

#### **Environmental Factors**

- ♦ Smoke
- ♦ Temperature
- ♦ Visibility
- ♦ Slope
- ♦ Other

**Incident Management**

- ♦ Incident Objectives
- ♦ Strategy
- ♦ Tactics
- ♦ Safety Briefings/Major Concerns Addressed
- ♦ Instructions Given

**Control Mechanism**

- ♦ Span of Control
- ♦ Communications
- ♦ Ongoing Evaluations
- ♦ 10 Standard Fire Orders/18 Watch Out Situations

**Involved Personnel Profiles**

- ♦ Training/Qualifications
- ♦ Operational Period Length/Fatigue
- ♦ Attitudes
- ♦ Leadership
- ♦ Experience Levels

**Equipment**

- ♦ Availability
- ♦ Performance/Non-performance
- ♦ Clothing and Equipment
- ♦ Used for Intended Purpose?

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

Upon notification of an entrapment the Incident Commander should consider:

- Removing involved personnel from the fireline, ensuring appropriate medical attention as necessary. 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 that all pertinent evidentiary items are 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, insofar as 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 readily available for interviews by the Entrapment Investigation Team (EIT, below defined). "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 Entrapment Investigation Team. Ensure preparation of a roster of individuals involved in the entrapment. The roster must minimally contain their names, employing agency, 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 assure that the following activities take place within 24 hours of notification:

- Convene an Entrapment Investigation Team (EIT) to investigate the entrapment. It is recommended that the EIT be interagency in nature, initially requested through Geographic Coordination Center, and should include personnel with the following skill areas:
  - ♦ Incident Commander or Operations Section Chief (Type 1).
  - ♦ Fire behavior analysis, qualified in the specific fuel type.
  - ♦ Safety officer, with investigative expertise.
  - ♦ Wildfire operations, with expertise at the peer level of the person(s) directly involved.
  - ♦ Agency representative of involved person(s).
  - ♦ Employee representation (union, peer at operations level).
  - ♦ Fire weather meteorology.
  - ♦ 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 Occupational Safety and Health Administration (Federal or State as applicable) if the entrapment involves a fatality or the hospitalization of 5 or more personnel. Advise OSHA office that a formal investigation is being conducted by a designated Entrapment Investigation Team.
- 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 NWCG Safety and Health Working Team 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, the EIT's final report and recommendations for corrective actions will be submitted to the Agency Administrator.

#### ***NWCG Safety and Health Working Team (SHWT) 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.

**Exhibit 1 – Entrapment Investigation Element Matrix**

**FIRE BEHAVIOR**

	Did Not Contribute	*Influenced	*Significant Contribution
Fuels			
Weather			
Topography			
Predicted v. Observed			

**ENVIRONMENTAL FACTORS**

Smoke			
Temperature			
Visibility			
Slope			
Other			

**INCIDENT MANAGEMENT**

Incident Objectives			
Strategy			
Tactics			
Safety Briefing/Major Concerns Addressed			
Instructions Given			

**CONTROL MECHANISMS**

Span of Control			
Communications			
Ongoing Evaluations			
“Standard Fire Orders/18 Watch Out Situations”			

**INVOLVED PERSONNEL PROFILES**

Training/Quals/Physical Fitness			
Operational Period Length/Fatigue			
Attitudes			
Leadership			
Experience Levels			

EQUIPMENT	Did Not Contribute	*Influenced	*Significant Contribution
Availability			
Performance/Non-Performance			
Clothing and Equipment			
Used for Intended Purpose?			

\* Element items must be supported with written documentation.

## Wildland Fire Serious Accident Investigation

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### Purpose

This manual supplement augments Department of the Interior 485 DM 7 "Serious Accident Investigation," and USDA-Forest Service FSM 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 1/29/97 from both Departmental Designated Agency Safety and Health Officers (DASHOs).

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

### Scope

This supplement applies to accidents occurring to personnel participating in wildland fire suppression or prescribed burning operations, or to personnel working in direct support of those activities, which 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 had less serious results.

### Procedures

**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, are made as soon as reasonably 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 assure 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:

- Exercise the authority of the agency head and 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 the 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 for cultural considerations.
- Assure that the fire Incident Commander acts to secure the accident site to protect physical evidence.

***Agency Fire Director(s) will:***

- Assure that 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 be comprised as follows, with duties, responsibilities, qualifications and training identified on pages 58-62.

- **Team Leader**—a senior management official. The Team Leader will direct the investigation.
  - **Safety and Health Manager**—an experienced Occupational Safety and Health specialist or manager. As a team member, ensures that the investigation focus remains on safety and health issues.
  - **Chief Investigator**—a qualified accident investigation specialist responsible for the direct management of all 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 (EIT)
- Administrative support personnel should be available to facilitate gathering of factual 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 local agency administrator having the accident. This Brief is intended to give only the most obvious and basic facts about the accident. The factual Brief may be widely distributed to managers and used to enhance accident prevention based on preliminary findings. The Brief may be a simple 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.

Upon 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 such information as 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. They will then produce the **Factual Report**. This Report contains only information of a factual nature and is entirely free of opinions, conclusions, and recommendations.
- Produce a **Management Evaluation Report**. This Report is considered 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 calendar days of the accident; extensions require departmental DASHO approval. The Reports will be in a format as identified in 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, develop and forward to the agency DASHO a recommended corrective action plan. 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 make the Factual Report available for release.

In the event of a co-lead investigation, the same procedures and time limits will apply. Involved agency DASHO's 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 the Occupational Safety and Health Administration.

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.

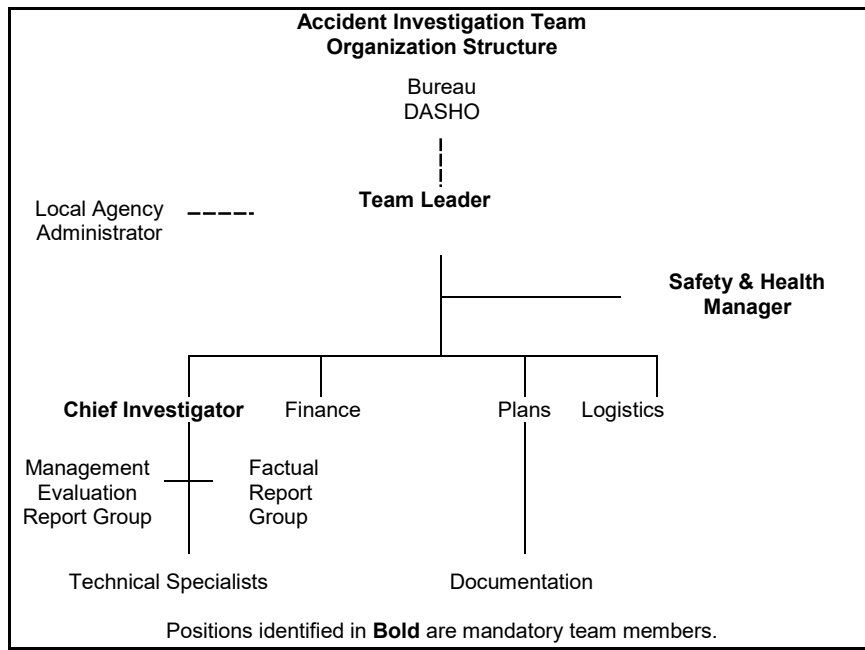
### **Occupational Safety & Health Administration (OSHA)**

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

Upon completion of the investigation and Reports, OSHA, upon 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**

- Serves as the agency DASHO's representative.
- 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 local affected Agency Administrator.
- Ensures that accommodations and resources needed by the team are available.
- Coordinates the investigation with the affected local 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.
- 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.

***Technical Specialists***

Technical Specialists are individuals with technical expertise or skills needed to support accident investigation operations. 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.”

***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 so as 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."



## **5 – Training & Qualifications**

### **Policy**

It is BLM policy that only personnel who are certified as being fully qualified will be assigned duties in wildland fire suppression or prescribed fire. It is also BLM policy to work jointly with other Federal, State, and local agencies, through the National Wildfire Coordinating Group (NWCG), to establish minimum fire qualification standards acceptable to all agencies. Interagency standards allow a cost effective exchange of personnel and resources and reduce duplication among the agencies. It is BLM policy to adopt the NWCG standard. BLM also participates with other Interior agencies through the Department of the Interior Fire Coordination Committee (IFCC). Standards for Interior agencies, which may exceed the minimum standards established by NWCG, are coordinated through IFCC. Such additional standards will be approved by the Director, Office of Fire and Aviation, and implemented through the Incident Qualification and Certification System (IQCS).

### **Qualification System**

BLM minimum qualification standards in wildland and prescribed fire are developed jointly with other Federal and State agencies through NWCG. These qualification standards are published in the NWCG Wildland Fire Qualification Subsystem Guide 310-1 and NWCG Wildland Fire Qualification Subsystem Guide, Part 2 – Prescribed Fire.

#### **Non-NWCG Agencies**

Personnel from other agencies who do not subscribe to NWCG qualification standards may be used on BLM-managed fires. BLM fire managers must ensure these individuals are only assigned to duties commensurate with their abilities and agency qualifications.

#### **Annual Refresher Training**

The BLM Manual Section 9215.22 Refresher Training requires all personnel participating in fire suppression or prescribed fire duties to receive annual safety refresher training which includes, at a minimum, training in the 10 Standard Fire Orders; 18 Watch Out Situations; Lookouts, Communications, Escape Routes, and Safety Zones (LCES); and hands-on fire shelter inspection and deployment practice. It is also recommended that refresher training include The Common Denominators to Tragedy Fires, Principles for Downhill Line Construction, Urban-

Wildland Firefighter Safety, Snag Safety, and discussion reviews of local entrapments, near entrapments, and deployments and findings from safety research efforts such as the "Wildland Firefighter Safety Awareness Study." Managers must ensure that such personnel can correctly apply this information on wildland fires.

### **Qualification and Certification Committee**

A Qualification and Certification Committee should be established for each field office with fire management responsibilities. In those areas with cooperative fire protection with other Federal, State, or local agencies, an interagency qualification and certification committee is appropriate with representation from each unit. These qualification and certification committees provide management oversight and review of the wildland and prescribed fire positions under their jurisdiction. These tasks are accomplished through the committee by:

- Certifying that qualifications generated by IQCS or other agency systems for employees are valid, by reviewing the training and experience of each employee.
- Determining if each employee possesses the personal characteristics necessary to perform the wildland and prescribed fire positions entrusted to them in a safe, efficient, and effective manner.
- Making recommendations to the appropriate Agency Administrator for signature. The Agency Administrator or designee is responsible for final signature.
- Developing interagency training requirements and sponsoring courses that can be completed locally.

## **New NWCG ICS Position**

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### **Incident Commander Type 5 (ICT5)**

This position was adopted by the National Wildfire Coordinating Group, (NWCG) and will be included in the Wildland Fire Qualification Subsystem Guide (PMS 310-1).

The Type 5 incident has the following characteristics:

- Resources required normally vary from two to six firefighters.
- The fire is generally contained within the first burning period and often within a few hours after arrival.
- Additional firefighting resources or logistical support is normally not required.

**Incident Commander Type 5 (ICT5)**

REQUIRED TRAINING:	“Look Up, Look Down, Look Around” (full 4-hour course)
SUGGESTED TRAINING:	“Intermediate Fire Behavior” S-290 (may be substituted for required training, as it includes the entire “Look Up...” material. S-290 in its entirety would exceed the standard.)
EXPERIENCE:	Satisfactory position performance (included Position Task Book completion and prerequisite training) as an Advanced Firefighter/ Squad Boss (FFT1) on a wildfire incident
PHYSICAL FITNESS:	Arduous
OTHER ASSIGNMENTS THAT WILL MAINTAIN CURRENCY:	None

**Bureau Specific Positions****Initial Attack Dispatcher (IADP)**

Qualification, training, and performance standards for the Initial Attack Dispatcher positions are currently being addressed by the Interagency Initial Dispatch Work Group. The qualification, training, and performance standards listed below are Interim Standards and are subject to change.

**Initial Attack Dispatcher (IADP)**

REQUIRED TRAINING:	Local Dispatch Orientation Training; Basic ICS (I-200); Firefighter Training (S-130); Introduction to Fire Behavior (S-190); Entry Level Dispatch (modules 1,2,3,4,5,7,9); Dispatch Recorder (D-110) & Basic Computer Training
SUGGESTED TRAINING:	Fire Supervision S 201
EXPERIENCE:	Working knowledge of radio, telephone, fax, computers and other types of communication equipment, including typing/data entry skills.
PHYSICAL FITNESS:	None
OTHER ASSIGNMENTS THAT WILL MAINTAIN CURRENCY:	None

### **Engine Operator (ENOP)**

The Wildland Fire Qualifications Subsystem Guide (NWCG 310-1) produced by NWCG developed the qualification standards and task book for single Resource Boss, Engine. The Bureau recognizes and utilized this standard for Engine Boss (ENGB). The Bureau has established a lower-level position of Engine Operator (ENOP) to meet the need at the local initial attack level. This bureau position serves as a path of progression to the NWCG Engine Boss position. Refer to Chapter 7, Engines.

#### **Engine Operator (ENOP)**

REQUIRED TRAINING:	Firefighter Training (S-130) 32 hours; Introduction to Fire Behavior (S-190) 6 hours; & Driving for Fire Service (S-216) 40 hours or equivalent training
EXPERIENCE:	Satisfactory position performance as an Advanced Firefighter/Squad boss (FFT1) on a wildland fire incident.
PHYSICAL FITNESS:	Arduous
OTHER ASSIGNMENTS THAT WILL MAINTAIN CURRENCY:	Firefighter

## **File and Record Maintenance**

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The Bureau of Land Management Manual Section 9215, Fire Training and Qualifications, identifies the training and experience requirements for Bureau personnel to perform jobs associated with the fire management program. The Manual Section also establishes State and District responsibility for maintaining fire qualification and training records.

Instruction Memorandum 95-2001 established the Incident Qualification and Certification System (IQCS) as the Department of the Interior's fire qualifications and certification system. The system is designed to provide managers at the local, state, and national levels with detailed qualification, experience, and training information in order to certify employees in fire management related jobs.

Unit Fire Management Officers (FMOs) are responsible for selecting trainees, proper use of task books, certification of trainees, and establishing and maintaining fire training, experience, and qualification records will be accomplished by utilizing the IQCS and one of the systems standard reports, the Employee Master File Index Report.

## Qualification and Certification

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As the employees' designated manager, the local office has the responsibility for implementation of the Position Task Books (PTB). These responsibilities are stated in the Task Book Administrator's Guide, PMS 330-1. They are:

- Select trainees, based on the needs of the local office and agreements with cooperators.
- Ensure that trainees have prerequisite training and experience as stated in the 310-1.
- Issue and explain the PTB.
- Ensure that the trainee has the opportunity to acquire the skills/knowledge necessary to perform the position.
- Provide opportunities for non-incident task evaluation, for position performance assignments on local incidents, and/or make the trainee available for assignments to large incidents. The local office must provide an evaluator for local incidents.
- Track the progress of the trainee.
- Review and confirm the completion of the PTB and make determination of certification.
- Issue proof of certification as required by 310-1. This proof is normally an incident qualification card (red card) issued by utilization of the IQCS.

The employee also has responsibilities in the utilization of PTB. These responsibilities are stated in the Task Book Administrator's Guide, PMS 330-1. They are:

- Review and understand the instruction in the PTB.
- Identify goals and objectives for an assignment.
- Ensure that they are ready to perform the tasks of the position.
- Provide background information (training and experience) to a evaluator.
- Complete the PTB within a three-year time limit.
- Make sure that a qualified evaluator initials all tasks as they are completed and completes the appropriate evaluation record.
- Safeguard the PTB.

- Provide a copy of the completed PTB to the local office. The original is kept in the trainee's personal records.

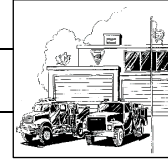
For more detailed information regarding Qualification and Certification refer to the following publications:

Wildland Fire Qualification Subsystem Guide, PMS 310-1, October 1993

Wildland Fire Qualification Subsystem Guide, Part 2 – Prescribed Fire, PMS 310-1 (Part 2), February

Task Book Administrator's Guide, PMS 330-1, 1993

## 6 – Preparedness



### Preparedness Plan

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#### Elements of the Local Preparedness Plans

Preparedness levels are determined by using at a minimum a logical combination of the following elements:

A short- and long-term national Fire Danger Rating System (NFDRS) component or equivalent such as Canadian Forest Fire Danger Rating System (CFFDRS). An example would be the burning index for day-to-day conditions and the energy release component for long-term conditions.

Districts are to select the time lag fuel that typifies fuel conditions locally, and use live and dead component as a planning tool and drought indicator.

#### Other Components

- Committed IA resources on and off district
- Current and expected fire occurrence
- Keetch-Byram Drought Index (KBDI) departure from normal or equivalent
- Fire weather warnings and red flag warnings must be addressed

Safety considerations are an aspect of each of these elements. They are to serve as guides and should not duplicate elements addressed in a Geographic or National Preparedness Plan. Plans are to include, but are not limited to:

- Management direction and considerations.
- Cooperation discussion and/or involvement.
- Safety oversight.
- Augmentation of suppression forces.
- Support function: consideration given to expanded dispatch activation, initial attack dispatch staffing and other support needs, e.g., procurement, supply, ground support and communication.

- Resource Area and support staff availability outside of fire organization.
- Communication of fire weather and red flag conditions.
- Fire potential assessment.
- Briefings for management and fire suppression personnel.
- Fire information internal and external.
- Fire Prevention Actions including closures/restrictions, media messages, signing, and patrolling.
- Multi-Agency Coordination Groups/Area Command activation.

## **Mobilization Guide**

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The National Interagency Coordination Center (NICC) at the National Interagency Fire Center (NIFC) is responsible for the cost-effective and timely coordination of national emergency response for wildfire suppression. This is accomplished through planning, situation monitoring and expediting resources orders between the Federal Wildland Fire Agencies and their cooperators.

The National Interagency Mobilization Guide identifies standard procedures which guide the operations of multi-agency logistical support activity throughout the coordination system. It is designed to accommodate amendments as needed, and will be retained as current material until amended. Local Mobilization Guides should be used to supplement the National Interagency Mobilization Guide. Geographic Areas will provide NICC with two copies of their mobilization guide and will provide amendments as issued. Local Mobilization Guides should be prepared on an interagency basis. Local units will provide their Geographic Area Coordination Center with two copies of their Mobilization Guide and will provide amendments as issued.

## **Seasonal Risk Analysis**

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Seasonal risk analysis is the procedure for analyzing present and future fire danger for any given area.

The seasonal risk analysis is a process that requires fire managers to step back, review current and predicted weather and fuels information, compare this information with historic weather and fuels records, and predict the upcoming fire season's severity and duration. It is important to incorporate drought indices into this assessment.

Seasonal risk analysis information can be used to modify step-up and pre-attack plans. It provides the basis for actions such as pre-positioning critical resources,



requesting additional funding, or modifying memoranda of understanding (MOU) to meet anticipated needs.

Each District should select one or more indicators from the following which are most useful in predicting fire season severity and duration in its area:

- Temperature Levels
- Precipitation Levels
- Humidity Levels
- Palmer Drought Index
- Keetch-Byram Drought Index or CFFDRS indices
- Energy Release Component
- 1000-Hour Fuel Moisture (Timber Fuels)
- Vegetation Moisture Levels
  - ♦ Live Fuel Moisture (Brush Fuels)
  - ♦ Curing Rate (Grass Fuels)
- Episodic Wind Events (Moisture Drying Days)
- Unusual Weather Events (e.g., early killing frost)
- Fires To Date

If the risk analysis suggests that an abnormal fire season might be anticipated, a District should notify the State office and request additional resources commensurate with the escalated risk.

District risk analyses should be compiled at the State office to determine the predicted fire season severity within the State, and then forwarded to the Office of Fire and Aviation for use in determining national fire preparedness needs.

Risk analysis is an on-going process; it should be reviewed periodically and revised when significant changes in key indicators occur. All reviews of risk analysis, even if no changes are made, should be documented.

## **Severity Fund Guidance**

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### **Objective of Fire Severity**

Fire severity funds are used to improve initial attack response capabilities when abnormal fire conditions occur resulting in fire seasons starting earlier than normal, lasting longer than normal, or exceeding average high fire danger rating for prolonged periods. Abnormal conditions exceed the weather and fire history conditions used in the fire management workload analysis to determine the most efficient and effective organization and therefore should exceed the planned workload. Typical uses of severity funds are to: temporarily increase firefighting staffing, pay for standby, preposition initial attack suppression forces in areas of abnormally high fire danger, provide additional aerial reconnaissance, standby aircraft availability, increased prevention activities, and other supplemental contractual services. These funds are not provided to restore lost funding or to raise funding levels to those identified in the Fire Management Plans as the Most

Efficient Level (MEL), and thus are not an “augmentation” in funding. The authorization to use Suppression Operations funds for severity preparedness purposes is controlled by individual project approval tied to dollar ceilings, time frames and the preparedness resources. Regardless of the length of severity authorization, funding activities must be terminated when abnormal conditions no longer exist. There are two levels of severity funds; State and National.

**State Level Severity Funds** Each fiscal year, State Directors are delegated the authority to expend up to \$100K for State “short term” severity needs. Short-term needs refer to special preparedness activities addressing situations anticipated to last less than a week. State Directors also have the responsibility and accountability to ensure these funds are only used to meet the objectives of severity and that amounts are not exceeded.

Each State Office is responsible for establishing a process to document needs, what is approved, and how the funds are utilized. (See Appendix 1 for a sample State Level Severity Fund Form.) At a minimum the process should require the Field Office to document the reason for the request by providing some technical data, e.g., wind events, cold dry front passage, lightning events, unexpected social events such as motorcycle rallies, and contain a line officer’s or formally delegated official’s signature. The request and the State’s decision should be maintained in a state office severity file.

Every fiscal year the National Office of Fire and Aviation will provide each state a unique project number to implement state level severity funding activities. The national office will also notify the State Director, State Budget Officer and the SFMO when the number is provided and will request the National Business Center (NBC) to establish the projects in the accounting system.

**National Level Severity Funding** The Director of the Office of Fire and Aviation has the authority to allocate to states funds from the Suppression Operations subactivity for specified preparedness activities and specified time frames (two weeks to 30 days) that will increase preparedness capabilities. The need for these funds must be based upon fuels and weather conditions which are creating, or have the potential to create, abnormal fire protection workloads. The following is the process to implement the use of these funds:

**Request** – A formal documented request should be concise and at a minimum contain the following information:

- Quantification of Need – Quantification of needs requires that at a minimum each of the following items be addressed:
  - ♦ Precipitation/Drought - Palmer or Keetch Byram indices that specify the departure from normal.
  - ♦ Fuel Loading - Quantitative information comparing current to the average.

- ♦ Fuel Moisture - Live and dead fuels for current vs. average, and the all time worst. (Local current fuel moisture [Note: NDVI and the Great Basin Project may be a week old or older], compared to the average, trend, and all time worst provided by NDVI and/or Great Basin Project reports.)
  - ♦ Fire Models – Fire Information Retrieval Evaluation System (FIREs), or PC Season, that graphically displays the 5-day running average of current NFDRS components for ERC and/or BI vs. worst and average.
  - ♦ NWS 30 day Weather Outlook
- Amounts, Types, and Costs – In a table format identify the requested preparedness resources. (See sample.)
  - Narrative Statement – Provide a brief statement of the interagency situation (local and/or geographic). Note: Each agency should request funds only for their own needs, not for the needs of another agency. Sharing resources when all parties have needs is desirable.
  - Approval Signature – The request should contain the signature and date of the relevant line officer.
  - Severity File – Set up a severity file where all documents are maintained for reference, monitoring, and evaluation.
  - Modifications & Extensions – Extensions and modifications to the request(s) are made through the same process.

**Salt Lake Field Office (UT020) – July 15 to August 14, 1997**

Item	Quantity	Unit Cost	Total Cost
Type 4 engine	1	use rate per day (not FOR)	\$\$\$\$
Engine Crew labor	5	average cost/day	\$\$\$\$
Engine crew travel/per diem	5	Government rate	\$\$\$\$
SEAT	1	daily minimum & hourly rate	\$\$\$\$
Type 3 IC labor	1	average cost/day	\$\$\$\$
Type 3 IC travel & per diem	1	Government rate	\$\$\$\$

**Responsibilities/Approval Process**

<b>Responsibility/Actions</b>	<b>Responsible Official</b>
Identify and develop request	Field Office, FMO
Approve and transmit to State Office	Field Office, Line Officer
Review, Technical Analysis, Verify, Modify, and Consolidate requests within 48 hours	State Office, SFMO
Identify and add to the request state needs not efficiently met by field offices	State Office, SFMO
Approve and transmit to Director, Office of Fire and Aviation (informally notify fire budget staff)	State Director
Review, Technical Analysis Verification, Modification within 48 hours.	Office of Fire and Aviation
Approve and transmit to National Business Center (NBC), WO Budget and State Director/SFMO	Office of Fire and Aviation
Establish projects in Federal Financial System (FFS) within 24 hours	NBC, Accounting Group
Notify Field Office(s) and State Budget lead upon receipt of National Office approval	State Office, SFMO
Execute severity project, monitor program and expenditures on a real-time basis	Field Office
Severity Files: include requests, approvals, summary of expenditures and activities	Field/State/National Offices

**Appropriate Severity Charges (When Not on Wildfires)****Labor**

- Labor Cost Coding
  - ♦ BLM fire personnel outside their activation period should charge all time to the Suppression Operations subactivity (2821) and the requesting office's severity project number.

- ♦ BLM employees whose regular salary is not funded by fire management should charge all time to Suppression Operations subactivity (2821) and the requesting office's severity project number.
- ♦ BLM employees hired above the normal staffing (Administratively Determined [ADs]) should charge all time to the Suppression Operations subactivity (2821) and the severity number of the requesting office.
- ♦ Non-federal employees should charge all time to the Suppression Operations subactivity and the requesting office's severity number. A Task Order for reimbursement will have to be established and is authorized under the Interagency Agreement for Fire Management.
- ♦ Other Federal agency fire employees (BIA, FWS, Forest Service, NPS) within their activation period should charge base salaries to their home unit and their overtime to the Suppression Operations subactivity (2821) and the severity number of the requesting office. A Task Order for reimbursement will have to be established and is authorized under the Interagency Agreement for Fire Management.
- ♦ BLM fire funded personnel should charge their regular planned salary (base-8) to their home unit's location code, the preparedness subactivity (2821), and the requesting office's severity project number. For example:
  - An Idaho Falls, Idaho fire management employee detailed to Arizona on a severity request codes the base-8 to: ID 030 2811 00 XXXX (the severity project number)
  - An Idaho Falls Range Specialist detailed to Arizona on a severity request codes the base-8 to: ID 030 2821 XXXX (the severity project number)
- Labor Considerations:
  - ♦ All overtime is funded by severity unless assigned to a wildfire. Overtime is not guaranteed, it must be based on need.
  - ♦ Severity assignments/details frequently last up to 30 days and should not be constrained by 21-day fire assignment limitations.
  - ♦ In general, personnel obtained under severity authorizations should not be used to fill wildfire resource orders outside the local dispatch area.
  - ♦ Resources obtained under fire severity funding must be available for "immediate" initial attack regardless of the daily task assignment.

- ♦ When personnel and preparedness resources are assigned to a wildfire, the wildfire number will be used. **There will be no use of any severity project number while assigned to a wildfire.**

### ***Vehicles and Equipment***

- GSA rental and mileage
- BLM owned use rate (not F.O.R.)
- Commercial rentals and contracts

### ***Aircraft***

- Contract extensions
- Call When Needed (CWN) daily minimum
- Flight time related to prepositioning
- Facilities to support aircraft brought on with severity funds (facility rentals, utilities, telephones, etc.)

### ***Travel and Per Diem*** (Detailed personnel and pre-positioning)

- All off-base per diem (travel voucher)
- Government provided meals in lieu of per diem
- Government provided lodging in lieu of per diem
- Airfare to and from duty station/pre-position location
- Privately Owned Vehicle (POV) mileage (with advance approval)
- Government vehicle mileage to and from duty station

***Supplies*** Supplies are normally available in fire caches and should be not be purchased.

### ***Inappropriate Severity Charges***

- Administrative surcharges, indirect costs, fringe benefits
- Equipment purchases
- Vehicles (including maintenance, F.O.R., repairs, upgrades)

- Radios (unless approved by the National Office because of a national shortage)
- Telephones (including cellular)
- Pumps, saws and similar suppression equipment
- Aircraft availability during contract period

## **Fire Prevention/Education**

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BLM fire prevention programs are based upon local Wildfire Prevention Plans (WPP) which include 1) an assessment of risks, hazards, values and historical fire occurrence, 2) unit-wide (General) and localized (Specific) prevention strategies identified and implemented and 3) the approved prevention program funding level (Workload Analysis). For information on the WPP process refer to the DOI Wildfire Prevention Analysis and Planning guide.

These WPPs are based upon average weather conditions, historical fire occurrence, normal fire behavior and expected human activities. To insure fire prevention strategies are properly implemented as the progression towards more dangerous fire conditions continues, preparedness plans should include proactive fire prevention step-up procedures.

When a seasonal risk analysis indicates that the potential for fire behavior and/or human-caused ignitions has increased significantly, the predicted situation and the WPP should be reviewed to identify necessary General and Specific prevention actions and the resources required to accomplish these additional prevention program requirements. These resources should then be requested through one of the procedures identified below.

An inclusive fire severity request includes a wildland fire prevention component, developed through interagency planning, identifying the prevention resources needed that contribute to the effective prevention of undesirable wildland fires. This can be accomplished by:

- 1 interagency fire prevention planning to determine appropriate fire prevention resources and then requesting prevention resources through a district or state fire severity request.
- 2 mobilizing a "Cooperative Fire Prevention/Education Team" to support interagency fire loss mitigation or to coordinate fire education efforts during periods of active prescribed burning. Refer to Chapter 20 of the National Interagency Mobilization Guide for procedures.





## 7 – Suppression Resources

### Engines

The Bureau of Land Management's Fire Management Plan's most efficient level (MEL) identifies the need for 168 type 4/5 Engines and 177 Type 6 Engines. The following table shows the distribution by state of these engines.

State	Type 4/5 MEL*	Type 4/5 1998	Type 6 MEL*	Type 6 1998	Tenders MEL	Tenders
Alaska	0	0	0	0	0	0
Arizona	4	4	9	9	0	1
California	20	20	12	8	4	3
Colorado	6	6	11	13	0	0
Idaho	52	35	41	37	7	6
Montana	2	2	16	16	0	1
Nevada	44	35	18	12	8	6
New Mexico	5	3	8	11	1	1
Oregon	20	18	32	33	2	2
Utah	14	11	15	14	3	3
Wyoming	1	1	15	14	1	0
<b>Total</b>	<b>168</b>	<b>135</b>	<b>177</b>	<b>167</b>	<b>26</b>	<b>23</b>

\*Amended from 1996 National FMP

### Fire Engine Module Operations Standards

**Objective** The objective of the BLM fire engine crew standard is to provide for uniform and consistent Bureau wide organization, management, and training of engine crews.

**Policy** Each State will insure compliance with established BLM engine crew standards. Standardization in training, equipment, communication, crew organization, and operating procedures is required to effectively perform arduous duties, in multi-agency environments, and in operations in a wide variety of geographic areas. Standard operating procedures for fire management activities involving water as the suppression agent delivered by engines and portable pumps shall include the use of approved Class A foam concentrate to improve the efficiency of water except near watercourses where accidental spillage or overspray of the chemical could be harmful to the aquatic ecosystem.

**Mission Statement** The mission of Bureau of Land Management engine crews is to perform as a highly training, organized, and efficient local and national resource in a wide variety of wildland fire management operations, including initial attack, extended attack, and prescribed fire. The primary purpose of the crews is to provide safe, highly training, and organized crews to staff and manage the fire apparatus in the Bureau of Land Management fleet. All crews will meet the requirements for national resource availability for the duration of their activation.

### **BLM Fire Engine Crew Organization**

Each BLM Type 6 engine should have a minimum crew of two for local area or three for off-District fire assignments; **water tenders are exempted**. All BLM type 3, 4, or 5 engine will have a minimum crew size of three. The engine crew will be comprised of an Engine Boss, Engine Operator and one or more Engine Crew Members.

Water tenders can be used with a crew of one (driver/operator) when used in support role as a fire engine refill unit. When tactically deployed, water tenders will carry a minimum crew of two, with crew qualifications meeting those for Type 6 fire engines.

**Safety** All BLM Engine crews **will** promote and maintain a passion for safety. Tactical deployment of crews will not be initiated or continued without strict compliance to the Standard Orders, LCES, and 18 Watch Out Situations. It is the responsibility of each member of the crew to provide for safety in operations. Consideration should be given to maintaining ten percent of the pumpable capacity of the water tank for emergency engine protection and drafting. It is the

responsibility of all operators of engines and water tenders to ensure that the maximum certified gross vehicle weight (gvw) is never exceeded.

**Driving Standards** Supervisors and line officers have the ultimate responsibility for safety and health of their employees. By applying the following guidance, common sense, and our 2 to 1 work/rest guidelines, we will provide for the safety of assigned fire personnel.

The Federal Motor Carriers Safety Regulation applies to Commercial Vehicles and interstate transportation. The Federal Government is exempt from 49 CFR 390. In addition, Part 390.3- Federal Motor Carrier Safety regulations; General Applications which states: (f) Exceptions. Unless otherwise specifically provided, the rules in the subchapter do not apply to... (5) The operation of fire trucks and rescue vehicles while involved in emergency and related operations. Our current safety handbook refers to the 9210.53, when addressing fire, defines driving as "the operation of a fire apparatus to or from an incident on a designated highway or roadway." This is consistent with 49 CFR 390.3. Thus, if a line officer applies our 2 to 1 work/rest guidelines and common sense, they clearly provide for the safety of assigned fire personnel. **Although, 390.3 exempts fire vehicles; it is BLM policy to require a commercial driver's license (CDL) for all operators of Type 3, 4, and 5 engines.**

Posted speed limits will not be exceeded under any circumstances. In addition, fire engines will not exceed 65 mph or the appropriate speed limit (which ever is the more restrictive), even if the posted speed limit is greater than 65 mph.

**Lights** Off-road and during suppression activities headlights and taillights shall remain illuminated at all times the vehicle is in operation. In addition, strobe lights (or other appropriate emergency lights) shall be illuminated whenever visibility is reduced to less than 300 feet. Light bars, flashing lights, strobe lights, and other after market add-ons designed for emergency use shall not be used except for designated purposes during suppression operations and bona fide emergencies. Specific training must be provided for these special uses.

**Chocks:** At least one chock will be carried on each engine and will be properly installed whenever the engine is parked or left unattended. This includes engine operation in a stationary mode without a driver "in place."

**Fire Extinguishers:** All engines will have at least one 5 lb. ABC-rated (minimum) fire extinguisher either in full view or in a clearly marked compartment.

**On-Board Fuels:** All fuels carried on BLM engines used for drip torch, chainsaws, pump motors, etc. will be stored in approved safety cans and clearly marked as to their contents.

**First-Aid Equipment:** Each engine shall carry, at a minimum, a properly equipped 10-person first aid kit. It is strongly recommended that an adequate number of Water Jel burn packs be part of the inventory.

**Recommended Qualifications/Experience**

MINIMUMS		TARGET
<b>Type 6 (Light)</b>		
FFT2	S-130, S-190, I-100	FFT1
FFT1	S-201	ENOP(T)
ENOP	S-216 or equivalent, S-211, On/off road driving skills	ICT4, ENGB(T), Engine Academy
ENGB	ICT4, I-200, S-200, S-212, S-205, S-230, S-231, S-234, S-260, S-290	Instruction skills, CDL, S-336, Engine Academy

Performance Requirements		
Running attack	Urban interface	HECM
Simple/progressive hose lays	Vehicle fires	
Basic firing techniques	Foam use	
Hydraulics/pump systems	Land navigation	
Mechanical troubleshooting	Saw proficiency	
Handline construction	Communication	
Use of ICS 201	Hazmat awareness	

**Type 3, 4, 5 (Heavy)**

FFT2	S-130, S-190, I-100	FFT1
FFT1	S-201	ENOP(T)
ENOP	S-216 or equivalent, S-211, On/off road driving skills, CDL	ICT4, ENGB(T), Engine Academy
ENGB	ICT4, I-200, EFSA, S-200, S-212, S-205, S-230, S-231, S-234, S-260, S-290	Instruction skills, ICT3, STEN(T), S- 336, Engine Academy

Performance Requirements		
Running attack	Urban interface	HECM
Progressive hose lays	Vehicle fires	
Basic firing techniques	Foam use	
Hydraulics/pump systems	Land navigation	
Mechanical troubleshooting	Saw proficiency	
Handline construction	Communication	
Hazmat awareness	Use of ICS 201	

**Water Tender (Support)**

	FFT, CDL (tank endorsement), Hazmat awareness	FFT, strategy/tactics, FFT1(T)
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**Water Tender (Tactical)**

	ENOP(T), CDL (tank endorsement)	Same as Type 3,4,5
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Any or all of the above performance requirements will be tested during the readiness review process.

**Training** First year firefighters must meet NWCG basic training requirements for Firefighter 2. All fire engine personnel will receive annual refresher training that encompasses the following:

- Review of 10 Standard Orders and the 18 Watch Out Situations
- Look up, look down, look around
- Fire shelter training/refresher
- Standards for survival

Completion of an Engine academy and basic helicopter safety training is highly recommended for Engine Operators and Engine Module Leaders.

**Physical Fitness Standards** Performance of the following physical standard is required annually as a condition of hire: step-test, or 1.5 mile run with an adjusted score of 45 or greater. This physical fitness requirement will be maintained throughout the fire season. BLM engine crews are strongly encouraged to meet or exceed the muscular fitness recommendations outlined in the Safety chapter of this book. All personnel assigned to engine crews will be provided 1 hour per day of paid time for Physical Training to maintain fitness levels.

**Operational Procedures** Fire engine crews will meet all gear weight, cube, and manifest requirements specified in the National Mobilization Guide.

**BLM Engine Specifications**

All engines must adhere to the BLM Engine Specifications. Any alteration of the major components of bureau engine will be with the concurrence of the BLM national fire equipment committee. All engines must not exceed the GVWR of the vehicle as certified by the final manufacturer. Crews of all engines must ensure that the GVWR of the vehicle is not exceeded.

Fire engine equipment will be equipped, maintained, and operated within guidelines established by DOT, State/District operating plans/procedures and as outlined in the H-9216, Fire Equipment and Supply Management Handbook. It is highly recommended that all fire apparatus and vehicles used in tactical fire operations receive a daily inspection during the fire season. Periodic maintenance as required by the manufacturer shall be performed at the intervals

recommended and properly documented. All annual inspections should include a pump test to assure the pump/plumbing system is operating at specifications. A maintenance log book will be available by fire season 1998.

**Engine Inventories** An inventory of all supplies and equipment carried on each vehicle is essential to maintain accountability and to obtain replacement items lost on incidents.

**Minimum Fire Engine Stocking Level (NUS)**

Category	Item Description	NFES #	Type	
			4 & 5	6
Fire Tools & Equipment	McLeod	0296	1	
	Combination Tool	0346	1	1
	Shovel	0171	3	2
	Pulaski	0146	3	2
	Backpack Pump	1149	3	2
	Fusees (case)	0105	1	½
	Foam, concentrate, Class A (5-gallon)	1145	1	1
	Chain Saw		1	1
	Chain Saw Tool Kit	0342	1	1
	Drip Torch	0241	2	1
	Portable Pump		*	*
Medical	First Aid Kit, 10-person	0068	1	1
	Burn Kit		*	*
	Body Fluids Barrier Kit	0640	1	1
General Supplies	Flashlight, general service	0069	1	1
	Chock Blocks		1	1
	Tow Chain or Cable	1856	1	1
	Jack, hydraulic (comply w/ GVW)		1	1
	Lug Wrench		1	1
	Pliers, fence		1	1
	Food (48 hour supply)	1842	1	1
	Rags	3309	*	*
	Rope/Cord (feet)		50	50
	Sheeting, plastic, 10' x 20'	1287	1	1
	Tape, Duct	0071	1	1
	Tape, filament (roll)	0222	2	2
	Water (gallon/person)		2	2
	Bolt Cutters		1	1
Toilet Paper (roll)	0142	*	*	

Category	Item Description	NFES #	Type	
			4 & 5	6
	Cooler or Ice Chest	0557	*	*
	Hand Primer, Mark III	0145	*	*
	Hose Clamp	0046	2	1
	Gaskets (set)		1	1
	Pail, collapsible	0141	1	1
	Hose Reel Crank		*	*
Safety	Fire Extinguisher (5 lb)	2143	1	1
	Flagging, lime green (roll)	0258	*	*
	Flagging, yellow w/black stripes (roll)	0267	*	*
	Gas Safety Can (5-gallon)	1291	*	*
	Reflector Set		*	*
Vehicle & Pump Support	General Tool Kit (5180-00-177-7033/GSA)		1	1
	Oil, automotive, quart		4	2
	Oil, penetrating, can		1	1
	Oil, automatic transmission, quart		1	1
	Brake Fluid, pint		1	1
	Filter, gas		1	1
	Fan Belts		1	1
	Spark plugs		1	1
	Hose, air compressor w / adapters		1	0
	Fuses (set)		1	1
	Tire Pressure Gauge		1	1
	Jumper Cables		1	1
	Battery Terminal Cleaner		*	*
	Tape, electrical, plastic	0619	1	1
Tape, Teflon		1	1	
Personal Gear (Extra Supply)	File, mill, bastard	0060	*	*
	Head Lamp	0713	1	1
	Hard Hat	0109	1	1
	Goggles	1024	2	2
	Gloves		*	*
	First Aid Kit, individual	0067	1	1
	Fire Shirt		*	*
	Fire Shelter w/ case & liner	0169	2	1
	Packsack	0744	2	1
	Batteries, headlamp (pkg)	0030	6	4

Category	Item Description	NFES #	Type	
			4 & 5	6
	Ear Plugs (pair)	1027	3	3
	Dust Mask	0131	6	4
Radio	Portable		1	1
	Mobile		1	1
	Batteries (for portable radio)		2	2
Hose	Booster (feet/reel)	1220	100	100
	Suction (length, 8' or 10')		2	2
	1" NPSH (feet)	0966	300	300
	1½" NH (feet)	0967	300	300
	¾" NH, garden (feet)	1016	300	300
	1½" NH, engine protection(feet)		20	20
	1½" NH, refill (feet)		15	15
Nozzle	Forester, 1" NPSH	0024	3	2
	Adjustable, 1" NPSH	0138	4	2
	Adjustable, 1½" NH	0137	5	3
	Adjustable, ¾" NH	0136	4	2
	Foam, ¾" NH	0627	1	1
	Foam, 1½" NH	0628	1	1
	Mopup Wand	0720	2	1
	Tip, Mopup Wand	0735	4	2
	Tip, forester nozzle, fog	0903	*	*
	Tip, forester nozzle, straight stream	0638	*	*
Wye	1" NPSH, Two-Way, Gated	0259	2	1
	1½" NH, Two-Way, Gated	0231	4	2
	¾" NH w/ Ball Valve, Gated	0739	6	4
Adapter	1" NPSH-F to 1" NH-M	0003	*	*
	1" NH-F to 1" NPSH-M	0004	1	1
	1½" NPSH-F to 1½" NH-M	0007	1	1
	1½" NH-F to 1½" NPSH-M	0006	*	*
Increaser	¾" NH-F to 1" NPSH-M	2235	1	1
	1" NPSH-F to 1½" NH-M	0416	2	1
Coupling	1" NPSH, Double Female	0710	1	1
	1" NPSH, Double Male	0916	1	1
	1½" NH, Double Female	0857	2	2
	1½" NH, Double Male	0856	1	1



Category	Item Description	NFES #	Type	
			4 & 5	6
Reducer/ Adapter	1" NPSH-F to 3/4" NH-M	0733	3	3
	1 1/2" NH-F to 1" NPSH-M	0010	6	4
	2" NPSH-F to 1 1/2" NH-M	0417	*	*
	2 1/2" NPSH-F to 1 1/2" NH-M	2229	*	*
Reducer	1 1/2" NH-F to 1" NH-M	0009	1	1
	2.5" NH-F to 1 1/2" NH-M	2230	1	1
Tee	1"NPSH-F x 1" NPSH-M x 1" NPSH-M, w/cap	2240	2	2
	1 1/2" NH-F x 1 1/2" NH-M x 1" NPSH-M w/cap	0731	2	2
	1 1/2" NH-F x 1 1/2" NH-M x 1" NPSH-M w/valve	0230	2	2
Valve	1 1/2" NH-F, Automatic Check and Bleeder	0228	1	1
	3/4" NH, Shut Off	0738	5	5
	1", Shut Off	1201	1	1
	1 1/2", Shut Off	1207	1	1
	Foot, w/ strainer		1	1
Ejector	1" NPSH x 1 1/2" NH x 1 1/2" NH, Jet Refill	7429	*	*
Wrench	Hydrant, adjustable, 8"	0688	1	1
	Spanner, 5", 1" to 1 1/2" hose size	0234	4	1
	Spanner, 11", 1 1/2" to 2 1/2" hose size	0235	2	2
	Pipe, 14"	0934	1	1
	Pipe, 20"		1	1
ENGB Kit	Fireline Handbook	0065	1	1
	Belt Weather Kit	1050	1	1
	Binoculars		1	1
	Map Case w / maps		1	1
	Inventory List, engine		1	1

\*Items listed with no minimums but are carried by engines as an option.

## Smokejumpers

Smokejumpers are a Federally funded, national interagency resource. Their mission is to provide initial attack fire suppression and fire support services to BLM, the Forest Service, and other interagency fire managers. Concurrence with NICC must be obtained prior to using them in extended attack situations or configuring them as a Type 1 crew. BLM Smokejumpers use the ram air (square) parachute exclusively.

### Smokejumper Bases

Location	# SJ	Approx
Fairbanks, AK	68	May 1 - Oct 1
Boise, ID	64	May 20 - Oct 1



### Primary Spike Bases

Alaska	Fort Yukon
	McGrath
	Palmer
Great Basin	Grand Junction, Colorado
	Battle Mountain, Elko, Ely, Las Vegas, Reno/Stead, & Winnemucca, Nevada
	Cedar City & St. George, Utah
	Boise & Pocatello, Idaho

BLM Smokejumpers have operated regularly out of the above locations, but are not limited to them. Virtually any facility with adequate runway length and fueling capabilities can serve as a spike base for BLM Smokejumper operations.

### BLM Smokejumper Operations Standards

**Objective** The objective of the BLM Smokejumper Standards is to provide for the consistent Bureau-wide planning, funding, organization, management and utilization of Bureau Smokejumpers.

**Policy** Each BLM base will comply with BLM Smokejumper Operations Standards. The arduous duties, specialized assignments and operations in a wide variety of geographic areas required of smokejumpers dictate that training, equipment, communications, organization, and operating procedures are uniform for BLM Smokejumpers.

**Mission Statement** BLM Smokejumpers are primarily funded to provide smokejumper services to BLM fire managers and the interagency fire community. BLM Smokejumpers are dedicated to providing the finest initial attack and extended attack service possible, willing to go anywhere, at any time, and do anything necessary to fight fire safely and effectively on the public lands. BLM Smokejumpers can also perform Type 1 and Type 2 fire assignments when qualified and available.

BLM Smokejumpers are also based at Forest Service bases as the need arises; Forest Service Smokejumpers are available for use on BLM incidents.

Smokejumpers are used on a "closest forces" basis for initial attack on wildland fires, regardless of agency affiliation.

### **Operational Procedures**

**Coordination & Dispatch** Smokejumpers are ordered according with area or national mobilization guides. Specific information on the coordination, dispatch, ordering, and utilization of BLM Smokejumpers can be found in the BLM *Boise Smokejumpers User Guide*, a handbook for users in the contiguous 48 states, and in the *Alaska Fire Service Operational Procedures, Policies, and Guidelines*. These publications can be acquired by contacting the BLM Smokejumpers at 208/387-5426 (Boise) or 907/356-5541 (Ft. Wainwright).

**Communications** All BLM Smokejumpers will carry a programmable radio and be proficient in its use and programming procedures. Each radio has been preprogrammed with the 7 NOAA Weather Radio Frequencies.

**Transportation** Smokejumper retrieval is accomplished by coordinating with the requesting dispatch center. More detailed information can be found in the documents mentioned above.

**Smokejumper Organization** The basic operational unit of the BLM Smokejumpers is "one load," which consists of one plane with pilot(s), one or two spotter(s), and eight smokejumpers.

The BLM operates two smokejumper bases. 64 smokejumpers and three smokejumper aircraft are stationed at the National Interagency Fire Center in Boise, Idaho. 68 smokejumpers and five smokejumper aircraft are stationed at the Alaska Fire Service at Ft. Wainwright, Alaska.

The BLM Smokejumper bases are organized roughly as below:

Base Manager	(GS 12)
Ops Chief	(GS 11)
Air Ops/Lead Spotter	(GS 9/10)
Training Supervisor	(GS 9)
Loft Manager	(GS 9)
Assistant Loft Manager	(GS 8)
Spotter	(GS 8)
Squad Leader	(GS 7)
Smokejumper	(GS 6)
Rookie Smokejumper	(GS 5)

**Safety** All BLM Smokejumpers will consider risks and take appropriate action in order to fight fire safely. Tactical decisions will be based on the current and predicted situation and will be made in accordance with the Standard Orders, 18 Watch Out Situations and LCES. All aviation and parachute operations will be

accomplished with the highest regard for safety and in accordance with standard operating procedures and regulations. It is the responsibility of each individual crew member, each supervisor, and the crew as a whole to provide for safety in all operations.

**Training** The Rookie Training Program is four weeks long. During this time the trainees are evaluated to determine:

- Level of physical fitness
- Ability to learn and perform smokejumper skills
- Ability to work as a team member
- Attitude
- Ability to think clearly and remain productive in a stressful environment

The following area of training are provided to BLM smokejumpers to insure proficiency in smokejumper and fire operations:

Aircraft Operations & Safety	Disaster Fire Analysis
Parachute Jump Training	18 Watch Out Situations
Fire in Urban Interface	LCES
Fire Tactics/Environment	Initial Attack
Wilderness Fires	Extended Attack
Problem Fire Scenarios	Haines/Campbell Index
Fireline Leadership	Ten Standard Orders
Radio Use & Programming	Helicopter/engines
Parachute Rigger Refresher	CPR/First Aid
EEO Guidelines	Pumps/Saws
Situation Check	Fire Shelter Use

The following are minimum and target ICS qualifications for Smokejumper personnel:

<u>Position</u>	<u>Minimum Qualifications</u>	<u>Target Qualifications</u>
Overhead Cadre	ICT3, DIVS	OSC2, ATGS
Spotter	ICT3, DIVS	ATGS
Squad Leader	STCR, ICT4	DIVS, ICT3
GS-6 Smokejumper	CRWB	ICT4, STCR
GS-5 Smokejumper	FFT1, FFT2	CRWB

**Physical Fitness Standards** The following Smokejumper National Minimum Standards have been established based on studies by Dr. Brian Sharkey, Director, Human Performance Lab, University of Montana and Physiologist, USDA Forest Service Missoula Equipment Development Center, Missoula, Montana:

- 1.5 mile run in a time of 11:00 minutes or less
- 45 situps in 60 seconds
- 25 pushups in 60 seconds
- 7 pull-ups
- 110 lb. packout over 3 miles/level terrain/90 minutes

In addition to these national standards, BLM Smokejumpers have established a set of high standards. Although these standards are voluntary, BLM smokejumpers are strongly encouraged to meet them:

- 1.5 mile run in 9:30 minutes or less
- 3 mile run in 22:30 minutes or less
- 60 situps
- 35 pushups
- 10 pullups

## Interagency Hotshot Crews

Type 1 crews are Federal or Tribal funded Interagency Hotshot Crews (IHC) and are considered a national interagency resource. The IHC's are primary firefighting forces consisting of agency regular employees. Each crew is financed so that no reimbursement is necessary for wildfires occurring on Federal lands. Each crew must meet the minimum standards in the *National Interagency Hotshot Crew Operations Guide*. When in a 20-person crew configuration, Smokejumpers are considered a Type 1 crew resource.

### BLM Type 1 IHCs

Diamond Mountain	Susanville, CA
Silver State	Carson City, NV
Kern Valley	Bakersfield, CA
Chena	Fairbanks, AK
Midnight Suns	Fairbanks, AK



In 1997, two new BLM Hot Shot Crews in development are located in Jackson, Mississippi and Vale, Oregon.

Refer to the *National Interagency Hotshot Crew Operations Guide* for information on IHC organization, minimum qualifications and training, operational procedure, communication and equipment.

### Interagency Hotshot Crew Operations Standards

**Objective** The objective of the Bureau of Land Management Interagency Hotshot Crew (IHC) Standards is to provide for the consistent Bureau-wide planning, funding, organization and management of the Bureau's IHCs.

**Policy** The sponsoring unit will ensure compliance with the established standards. The arduous duties, specialized assignments, and operations in a wide variety of geographic areas required of IHCs dictate that training, equipment, communications, transportation, organization, and operating procedures are uniform for all BLM IHCs.

**Mission Statement** The primary mission of the Interagency Hotshot Crews is to provide a safe, organized, mobile, and highly skilled hand crew for all phases of wildfire suppression. The arduous duties and specialized assignments required of IHC personnel require staffing, certification, training, equipment, communications, transportation, organization, and qualifications that are uniform, adhered to by all IHCs and ensure the redemption of IHC duties and responsibilities.

These crews can also be used to meet other management objectives. All IHCs shall meet the minimum standards in the *National Interagency Hotshot Crew Operations Guide*. Compliance with these standards and the resulting safe operation of the IHC ultimately lies with the Crew Superintendent.

**IHC Organization** The goal of each BLM IHC will be to have a minimum of seven career (PFT or LT/WAE) positions. Individual crew structure will be based on local needs using the following standard positions: Superintendent (GS 8/9), Assistant Superintendent (GS 7/8), Squad Leader (GS 6/7), Skilled Firefighter (GS 5/6), and Crew member (GS 2/3/4).

**Safety** All BLM IHCs will promote and maintain a clear passion for safety. Tactical deployment of crews will not be initiated or continued without strict compliance to the Standard Orders, 18 Watch Out Situations, LCES, and Downhill and Indirect Line Construction requirements. It is the responsibility of each Crew member and of the entire crew to provide for safety in all operations.

**Training** Each crew will have a minimum of 40 hours annual training including the following:

- Review of safety procedures, including 10/18, downhills line construction, etc.
- Look up, look down, look around
- Fire shelter training/refresher
- Standards for survival
- Crew organization and mechanics

The crew will not be utilized for fire or project assignments until this training is completed.

An additional 40 hours will be used to provide advanced ICS and other training to returning crew members and to provide basic fire training for any new hotshots.

The following are minimum ICS qualifications for IHC personnel as defined by the *National Interagency Hotshot Crew Operations Guide*:

<u>Position</u>	<u>Minimum Red Card Qualifications</u>
Superintendent	Strike Team Leader Crew (STCR) Task Force Leader (TFLD) Incident Commander Type 3 (ICT3)
Assistant Superintendent	Crew Boss (Single Resource) (CRWB) Incident Commander Type 4 (ICT4)
Squad Leader	Advanced Firefighter/Squad Boss (FFT1)
Crew Member	Firefighter (FFT2)

**Physical Fitness Standards** The following standards are to be used as a condition of continued employment on a BLM Interagency Hotshot Crew (IHC):

- 1.5 mile run in a time of 10:35 minutes or less
- 40 situps in 60 seconds
- 25 pushups in 60 seconds
- Chin-ups, based on body weight

<u>Body Weight</u>	<u>Required #</u>
170+ lbs.	4
135 – 170 lbs.	5
110 – 135 lbs.	6
110 lbs. or less	7

**Operational Procedures** The minimum tour of availability, not including required training periods, for BLM IHCs will be 130 calendar days for crews in the lower 48 states and 90 calendar days for crews in Alaska.

All BLM IHCs will be capable of subdividing into at least three separate units which include a fully qualified Incident Commander Type 4. Each unit will be self-sufficient and capable of performing independent functions.

Crews will meet all weight, cubes and manifest requirements of the National Interagency Mobilization Guide (NFES 2092).

During the activation period, crews will depart the work site or base within 30 minutes of notification while on duty.

Each crew will be able to access a jet port within two hours of their home unit location.

All BLM IHCs will have a minimum of three individuals with a Red Card rating of Helispot Manager.

**Communications** All BLM IHCs will provide a minimum of five programmable multi-channel radios per crew.

**Transportation** All crews will be provided adequate transportation. This should not exceed four vehicles.

## Type 2 Crews

Type 2 hand crews are crews that consist of agency regular personnel, state crews, contract crews, casuals, or emergency firefighters. These crews will be formed into 20-person (16-person in Alaska) firefighting crews for fireline duties.

Individuals must have basic knowledge in the use of handline construction techniques, basic fire tool use, mopup, and fire behavior.

The Bureau sponsors four programs for organized Type 2 crews: Vale District Snake River Crews, Alaska Fire Service EFF Village Crews, Montana Indian Firefighters (MIF), and Colorado San Luis Valley Crews.



There are twenty-five Snake River Valley Crews in Oregon. Crews come with a Crew Representative, a Crew Boss, three Squad Bosses and fifteen Crew Members and equipped as follows:

- Available for 21 days
- Equipped with all PPE, including shelters
- No radios
- Handtools, if requested, no chainsaws
- Ground transportation provided (payments made by Vale District on return)
- One Interagency Resource Representative (IARR) per four crews

Alaska has a total of seventy-three Type 2 crews. For assignments within the state the crew is made up of 16 individuals with a crew boss, three squad bosses, and twelve crew members. Alaska supports the national Type 2 crew need by maintaining forty crews. Alaskan Type 2 crews assigned to the lower 48 will come with a Crew Representative, a Crew Boss, three Squad Bosses, and fifteen crew members and equipped as follows:

- Available for 21 day assignment
- Equipped with all PPE including shelters
- Four radios per crew
- No handtools or chainsaws
- One IARR with administrative assistant per five crews



Montana has five Montana Indian Firefighter crews. Colorado has one San Luis Valley crew. Other Type 2 Crews are available from a variety of sources ordered through the Geographic Area Coordination Center. Specific information about Type 2 Crews can be obtained from the Geographic Area Coordination Center. Following is a list of the approximate numbers of crews available:

<b>Geographic Area</b>	<b>#</b>		
Alaska	40	Southern California	32
Northern Rockies	70	Northern California	43
Rocky Mountain	20	Northwest	46
Southwest	78	Southern	43
Western Great Basin	9	Eastern	20

All crews are ordered through the dispatch/coordination system.

### **National Minimum Standards (Physical and Training)**

- Assigned crew overhead (crew boss-squad boss) must meet the minimum national standards set forth in NWCG 310-1.
- Individuals must meet the arduous national physical fitness level (45 minimum level).
- Individuals must be available for 21-day minimum assignments.
- Crew members (previously covered) are required to complete S-130 and S-190 prior to crew assignment. Field exercise using classroom training experience is recommended.

## **Prescribed Fire Support Modules**

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**Mission** The Prescribed Fire Support Modules provide the wildland fire management agencies with skilled and mobile personnel who are dedicated principally to prescribed fire management. As a national resource, the modules are available to all units throughout the prescribed fire season. The primary mission and priority is to assist with prescribed natural fires in holding, monitoring, mapping, and fire behavior predictions.

Secondary priorities in order, are as follows:

- Ignite, hold, and monitor management ignited prescribed fires (MIPFs).
- Prepare all aspects of MIPF, i.e., control line construction, burn plans, fire effects plot work, archeology surveys.
- Perform hazards fuel reduction projects.

**Organization** Four modules are available for the 1997 season. They are located at:

- Bandolier National Recreation Area – March 3 – October 11
- Whiskeytown National Recreation Area – April 28 – October 25
- Yellowstone National Park – April 28 – October 25
- Zion National Park – April 28 – October 25

Each module is comprised of seven members with the following capabilities:

- Prescribed Fire Analyst
- Prescribed Fire Specialist
- Prescribed Fire Monitor
- Burn Boss
- Ignition Specialist
- Single Resource Boss (Holding)
- Plastic Sphere Dispenser Operator

**Mobilization** All assignments will be scheduled and tracked by the Program Coordinator. To schedule modules contact:

NPS	Ben Jacobs, NPS-NIFC	208-387-5219 – office 208-343-6407 – residence 208-867-9144 – cellular e-mail: Ben_Jacobs@nps.gov
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BLM	Sean Cross, BLM-NIFC	208-387-5427
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**Note:** Actual make-up and availability of BLM Smokejumper modules will be based on fire activity. Their primary availability will be pre- and post-fire season.

## Helicopters

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## Location

The chart below shows the location of contract helicopters by state.

State	Type 2 MEL*	Type 2 1997	Type 3 MEL	Type 3 1997
Alaska	4	4	0	3
Arizona	0	0	3	2*
California	1	1	2	2
Colorado	0	0	1	1
Idaho	0	0	2	2
Montana	0	0	1	2
Nevada	1	1	3	2
New Mexico	0	0	0	0
Oregon	0	0	4	4
Utah	0	0	2	0
Wyoming	0	0	1	0
<b>National Totals</b>	<b>6</b>	<b>6</b>	<b>19</b>	<b>18</b>

\* A third Type 3 helicopter will be a shared contract with the Forest Service.

## BLM Helitack Crew Operations Standards

**Objective** The objective of the BLM Helitack Crew Standards is to provide for the consistent Bureau-wide planning, funding, organization and management of the Bureau's helitack personnel.

**Policy** The BLM has adopted the Interagency *Helicopter Operations Guide (IHOG)* as its policy. The wording used in the IHOG denotes mandatory, required except for justifiable reasons, and optional compliance. "Must" and "shall" mean mandatory; "ought" and "should" mean required unless justified; and "may" and "can" mean optional.

**Mission Statement** The mission of helitack crews is to provide highly trained and skilled personnel to safely initial attack fires, support extended attack and project fires, manage helicopter operations and also provide aviation expertise and support for accomplishment of non-fire resource management objectives.

**Organization** Each helitack crew will have the minimum number of personnel prescribed by the Interagency Helicopter Operations Guide (IHOG).

Release Date: 4/97

This is based on the size class of the helicopter. Individual crew structure and career status (PFT or WAE) will be based on local needs, with the following standard positions:

Helicopter Manager (HEMG)	one season as an assistant HEMG or two seasons as a lead HECM
Assistant Helicopter Manager	two seasons as a HECM or lead HECM
Lead Helicopter Crew Member	one season as a HECM
Helicopter Crew Member (HECM)	should have at least one season of firefighting experience (FFT2)

The HEMG and assistant HEMG must also be qualified as ICT4. Crew members must be at least FFT2 qualified.

**Safety** BLM helitack crews are hired to provide safe, cost-efficient, and effective aviation services in support of Bureau and interagency goals and objectives. Personnel involved in helicopter operations must follow rules, regulations, and mandates specified by the FAA, Department (OAS), Bureau, and contracts as well as operational procedures identified in the IHOG.

A continual risk management and risk assessment will be made while conducting all helitack and aviation missions. For further information on the risk assessment and management process, see IHOB, IHOG, Chapter 3.

**Training** The primary purpose of helitack crews is to fight fire; therefore, all helitack Crew members will meet **minimum** fire qualifications as prescribed by the NWCG 310-1 and BM 9215. In addition, personnel will meet the IHOG training and experience requirements for each position. The following combines the 310-1 and IHOG training requirements:

Helicopter Crew Member	S-130, S-190, S-217
Lead Helicopter Crew Member*	S-201, S-211, S-212
Assistant Helicopter Manager	S-200, S-205, S-205, S-230, S-260, S-271, S-290, and Contracting Officer's Authorized Representative/ Project Inspector
Helicopter Manager	Biennial attendance at a Helicopter Manager Workshop

\* It is recommended that the lead helicopter Crew member attend as many of the courses required for assistant manager as is feasible to lessen the training impact when the individual becomes an assistant manager or manager.

**Physical Fitness Standards** All personnel on helitack crews must meet the physical fitness requirements for arduous (step test of 45 or 1/5 mile run in

11:40 minutes or less) assignments. Local requirements may specify additional fitness requirements beyond the aerobic capabilities defined by the step test or run requirements. Refer to chapter 4 Physical Fitness and Job-Related Work Capacity Tests for Wildland Firefighters.

**Operational Procedures** The *IHOG* specifies how helicopter operations should be conducted, whether in support of wildland fire or natural resource missions; and is the source of guidance for Bureau helitack and helicopter operations. The *IHOG* has been adopted and serves as the interagency standard for operations, and it has been implemented by the NPS, BIA, BLM, and Forest Service. The FWS has implemented it on the basis of regional need and some States use the *IHOG*.

Exclusive-use helicopters and helitack crews are dispatched and controlled locally by the administrative unit. Type 2 helicopters and helitack crews are considered as National Resources, and will be made available for fire assignment when ordered by NICC, unless otherwise already committed.

The proper use and maintenance of equipment utilized in helitack and helicopter operation by both ground and flight crews personnel is essential to safety. Since much of this equipment is of relatively high cost, proper maintenance is also cost effective.

Required equipment items for helitack crews and helicopters changes frequently. Consult the *IHOG* (chapter 9) and the exact terms of the procurement document if uncertain about requirements.

**Communications** All BLM helitack crews will have a minimum of 4 programmable multi-channel FM radios per crew, and at least one multi-channel VHF-AM programmable radio in the primary helitack crew (chase) truck.

**Transportation** Due to the amount and cost of the specialized equipment required to support a helitack operation, a dedicated vehicle(s) with adequate storage and security will be provided for helitack crews. The required GVWR of the vehicle(s) will be dependent upon the size class of the helicopter and the number of helitack Crew members.

### **Helicopter Rappelling Standards**

**Objective** The object is to establish sufficient standardization in procedure and techniques to allow individuals or crews to be used for a variety of missions under varying conditions. To aid in this approach, methods are incorporated to cross-train personnel in more than one rappel system and more than one specific helicopter type.

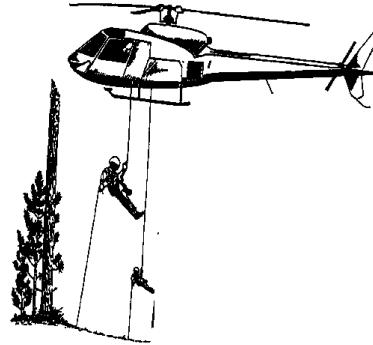
**Policy** All fire rappel operations must be in compliance with the Interagency Helicopter Rappel Guide (IHRG). Initiation of and participation in any fire rappel and programs must be approved by the Director, Office of Fire and Aviation.

**Mission** To provide safe, efficient, and effective Initial Attack and Helispot Construction.

### **Training**

#### **Spotter Qualifications and Training**

Each spotter and rappeller shall be certified by an approved and qualified rappel check spotter. BLM Check spotters shall be annually-approved by the State Aviation Manager.



Check Spotter Minimum Requirements:

- Must have been a qualified spotter for two seasons.
- Must have assisted in training at least two spotters.
- Must be recommended by an Agency Helicopter Operations Specialist and have demonstrated ability as an instructor.

Rappel Spotter Training and Certification Prerequisites:

- Meet the training, experience, and certification requirements for a helicopter manager as stated in the IHOG and have one season of rappel experience, or two seasons of rappel experience.
- For a new program within a bureau or agency, it will be the responsibility of the certifying officials and local managers to designate initial spotter trainees.
- Fire program spotter candidates must have a minimum of three seasons of fire experience.

Spotter Initial Training

- Successfully complete the IHRG rappel spotter training course.
- Spotters shall be certified to spot from specific models of helicopters. Each model of helicopter has unique rigging and exit procedures.
- All spotter training shall be under the supervision of an approved check spotter.

**Model-Specific Training** In order to be certified as a spotter for a different model of helicopter, a spotter must be trained by a spotter that is current in the new model being used. Spotters then must be approved by a qualified

check spotter prior to performing operational spots in any model that they are not currently certified to spot from.

If an individual cannot meet all of the minimum requirements, the check spotter shall not qualify the trainee as a heli-rappel spotter.

**Rappeler Initial Training and Certification** Refer to Interagency Helicopter Rappel Guide (IHRG).

### ***Operational Procedures***

**Rappel Proficiency** Each rappeller must make at least one error-free helicopter or simulator rappel in any 14 consecutive days. If proficiency is lost (a simulator or helicopter rappel has not been completed in the last 14 days), an error-free simulator or mockup and helicopter proficiency rappel must be completed prior to any operational rappels.

**Spotter Proficiency** Each spotter must make at least one error-free helicopter or simulator spot in any 14 consecutive days. This mission must include a full load of rappellers and cargo deployment. If proficiency is lost (a simulator or helicopter spot has not been completed in the last 14 days), an error-free simulator or mockup and helicopter proficiency spot must be completed prior to any operational spots.

### **Equipment, Accessory, and Procedure Development Process for BLM**

When a field user has a need for a new or improved piece of equipment and/or procedure, documentation of that need must be submitted to the National Steering Committee where it will be evaluated based on the above objectives and the following criteria: Critical Safety, National Focus, and Priority.

All equipment used in fire rappel operations must be approved by Aerial Attack Systems Specialist for the Forest Service and the National Aviation Operations Specialist for BLM.

**Helicopter Cargo Let-Down Procedures** Cargo let-down is to augment helicopter capabilities, **not** as a replacement to long-line operations. Exposure and risk assessment must be addressed in the process of deciding which type of helicopter cargo delivery system to use.

“Helicopter cargo let-down” is defined as the deployment of cargo from a hovering helicopter by means of an approved webbing/rope, descent device, and auxiliary equipment. Refer to the Interagency Helicopter Rappel Guide (IHRG). Only personnel trained and qualified will use this procedure.

Note: No person shall attempt cargo let-down without the training and guidance of a person qualified and experienced in cargo deployment, and expressed written approval of the State Aviation Manager.

## Airtankers

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Airtankers are a national resource. Geographic areas administering these aircraft will make them available for initial attack or project fires on a priority basis. All airtanker services are obtained through the contracting process; none are owned or operated by the federal government (except the C-130 MAFFS, which are Air National Guard resources and primarily used to supplement the contract fleet when needed).



The body responsible for the approval of the contract airtanker fleet is the Interagency Airtanker Board (IATB) which is made up of members representing USDA Forest Service, DOI, and State Forestry agencies.

### Categories

Airtankers are distinguished by the size of retardant load that they carry:

**Type 1** – over 3000 gallons

**Type 2** – 1800 to 3000 gallons

**Type 3** – 800 to 1800 gallons

**Type 4** – less than 800 (covered in Single Engine Airtanker section of this book)

### Qualifications

Airtanker crews fall into two categories: Initial Attack Qualified, and Initial Attack Candidates.

**Initial Attack Qualified** means that the crew may drop retardant on arrival at a fire without benefit of aerial supervision. This does not negate the requirement for a lead plane, if ordering agency policies, terrain, or congested areas dictate otherwise.

**Initial Attack Candidate** refers to a crew that is in the process of acquiring the experience, training, and prerequisite drops, and in the interim require aerial supervision.



## Tanker Bases & Reload Facilities

Tanker bases may be Type 1 bases, meaning they have tankers assigned there, or reload facilities. They may be contract bases or operated on Force Account, and may be operated by the BLM, Forest Service, or state agencies. Types of retardant (dry powder, liquid concentrate, etc.) will vary with locations. Base locations pertinent to BLM fire activity are as follows:

<b>Northern</b>	Pocatello, ID	Lakeview, OR
Billings, MT	Salt Lake City, UT	Medford, OR
Coeur d'Alene, ID	Stead, NV	Omak, WA
Grangeville, ID	Twin Falls, ID	Redmond, OR
Helena, MT		Troutdale, OR
Kalispell, MT	<b>California</b>	Wenatchee, WA
W. Yellowstone, MT	Bishop, CA	
	Chester, CA	<b>Alaska</b>
<b>Rocky Mountain</b>	Chico, CA	Delta Junction, AK
Broomfield(Jeffco), CO	Columbia, CA	Fairbanks, AK
Durango, CO	Fresno, CA	Ft. Yukon, AK
Grand Junction, CO	Goleta, CA	Galena, AK
Greybull, WY	Grass Valley, CA	McGrath, AK
Rapid City, SD	Hemet, CA	Palmer, AK
	Hollister, CA	Tanacross, AK
<b>Southwestern</b>	Lancaster,	
Alamogordo, NM	CAMontague, CA	<b>Southern</b>
Albuquerque, NM	Paso Robles, CA	Asheville, NC
Ft. Huachuca, AZ	Porterville, CA	Ft. Smith, AR
Phoenix, AZ	Pt. Mugu, CA	Knoxville, TN
Prescott, AZ	Ramona, CA	Lake City, FL
Roswell, NM	Redding, CA	London, KY
Silver City, NM	Rohnerville, CA	Tallahassee, FL
Winslow, AZ	Sonoma, CA	Weyers Cave, WV
	Stockton, CA	
<b>Great Basin</b>	Ukiah, CA	<b>Eastern</b>
Battle Mountain, NV		Bemidji, MN
Boise, ID	<b>Northwest</b>	Brainard, MN
Cedar City, UT	Everett, WA	Ely, MN
Minden, NV	Klamath Falls, OR	Hibbing, MN
McCall, ID	LaGrande, OR	

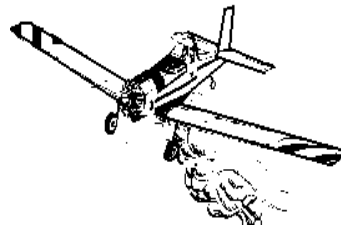
What agency an airtanker is principally contracted with is usually transparent to the user. The fleet provides a mix of resources that differ in capabilities and availability. Certain parameters for the operation of airtankers are agency-specific. For dispatch procedures and limitations, startup/ cutoff times, specific requirements for air tactical group supervisor or airtanker coordinator, and other operational considerations, refer to geographic area mobilization guides and the Interagency Airtanker Base Operations Guide.

**BLM Contract Airtankers**

Coordination			Dates
Area	Base	Type	(approximate)
AK	AFS	2	5/20 – 8/17
AK	AFS	2	6/1 – 8/29
NR	Billings	2	7/13 – 9/30
RM	Grand Junction	1	5/23 – 10/13
GB	Minden	1	6/8 – 9/3
GB	Stead	2	6/1 – 9/8
CA	Porterville	2	6/2 – 8/17
GB	Pocatello	1	6/23 – 9/29
SW	Roswell	2	6/8 – 7/14

**Single Engine Airtankers**

As so much forest and range is remote and inaccessible to ground equipment, land managers rely heavily on aerial applications to assist fire suppression activities. For every fire, whether in the initial attack or extended attack stage, there is an optimum mix of aircraft, equipment, components, tank capacities, and support facilities. The Single Engine Airtankers (SEATs) provide a viable suppression tool to the local fire manager.



**Location**

Since SEATs are normally acquired through the Call-When-Needed-Contract process, the home base of each aircraft varies. In addition to the SEATs listed below, approximately twenty call-when-needed (CWN) are available. A limited number of SEATs are on exclusive-use contracts as listed below:

500-gallon SEATs		799-gallon SEATs	
Kingman, AZ	60 days	Safford, AZ	1 <sup>st</sup> half of contract
Winnemucca, NV	60 days	Miles City, ,MT	2 <sup>nd</sup> half of contract
Caliente, NV	70 days	Bemidiji, MN *	
St. George, UT	70 days	White River, AZ *	
		San Carlos, NM *	

\* Sponsored by BIA

## Single Engine Airtanker Standards

For interagency SEAT Standards refer to IATB Single Engine Airtanker Standards Interagency Minimums, OAS Call-When-Needed Contract provisions, the Arizona Draft SEAT manager's Guide and the Interagency SEAT Operations Guide (ISOG).

**Objective** Provide an additional effective, efficient and safe fire suppression tool to the BLM that is not a national resource and which can, with proper planning, be obtained on a local basis.

**Policy** The using Field Office or sponsoring unit will ensure the aircraft is in compliance with OAS and Bureau standards, prior to use. The safety aspects, cost efficiency, management experience and special operation skills required by the pilot and the user dictate that training, equipment, communications, organization, and operating procedures are uniform for all using units.

**Mission Statement** The primary mission of the SEATs is to provide a mobile cost effective close aerial support resource to the firefighter. Even though these aircraft have been effectively used on extended attack fires, they are most effective when included as an integral part of the initial attack strategy.

**SEAT Organization** At this time there is no national standard established for SEAT operations organization. The SEAT concept was to allow fire managers a tool that is local in nature and self contained. Self contained means that the operator is the only person allowed to fuel, reload, and support the aircraft in accordance to BLM and OAS standards. However, there is currently a move towards developing an Interagency SEAT Operations Guide (ISOG) that will specifically define operating standards. The Interagency Airtanker Base Operations Guide as well as the Southwest Mobilization Guide has more clarification on operations and limitations of the SEATs.

SEAT use in BLM has been prominent in the Southwest with other federal and state agencies also increasing their use in the geographical area. The BLM in the Southwest has generated the use of a SEAT Manager and has developed an 12- to 16-hour training course. With the increased use of SEATs nationwide, the demand for this position has increased accordingly. The roles and responsibilities of the SEAT Manager parallel that of the Helicopter Manager, but it must be understood that this is not a red-carded position (also see Chapter 12, Air Operations).

**Safety** All SEAT operators and users will adhere to DOI/BLM/Forest Service safety standards. Flight Operations, Pilot Requirements, Flight Crew Duty and Flight Limitations, and the use of Personnel Protective Equipment (PPE) are addressed in the above referenced standards and will be adhered to by the both the operator and the user. The "passion for safety" will be maintained in SEAT

operations and lack of compliance to operational and safety standards will mean unavailability of the tool.

**Training** All SEAT pilots will meet the minimum fire training standards as described in Supplement 14.

Completion of an airtanker fire behavior orientation program that has been approved by the government and shall include:

- Fire Behavior
- Air/Ground Tactical Operations
- Incident Organizational Structure and Terminology
- Fire Perimeter Designation
- Radio Communications and Procedures
- Use of Retardants and Suppressants
- Mountain Flying Techniques
- Bureau Specific Operational Guidelines as appropriate

**Operational Procedures** The use of SEATs in conjunction with other aircraft over an incident is standard practice in BLM. However, other agencies or geographical area Mobilization Guides may specify different procedures and limitations.

Depending on location, operator, and availability, SEATs are capable of dropping either suppressants, water, or other approved retardants. The fixed tanks in these aircraft are fiberglass.

Because of the load capacities of the SEATs—300 to 800 gallons—quick turn-around times should be a prime consideration of the user. SEATs are capable off dirt, gravel, or grass strips (pilot must be involved in selection of the site), but a support vehicle is a must for reducing turn-around times. The use of volunteer fire departments has been of great benefit in many rural areas as these resources have been instrumental in sustaining the water needs of the operation.

Reloading at established airtanker bases and reload bases is authorized. (SEAT operators carry the required couplings), but it is dependent on whether the base addressed the loading of SEATs in the operational plan.

If a SEAT is dispatched to an incident outside of the operator's geographical area, it is highly recommended that a trained SEAT manager be assigned to that aircraft. It is possible for a SEAT Manager to manage more than one SEAT provided that they are both located at the same base of operation.

Pre-positioning of SEATs is recommended during periods of extreme fire danger. The CWN process allows for the possibility of price reduction for pre-planned availability and operations that may last 14 days or more.

**Communications** All SEATs must have a minimum of one VHF-AM and VHF-FM (programmable) multi-channel radios.

## Leadplanes

**Objective** Leadplanes are national resources and are responsible for the tactical deployment of airtankers over an incident. Leadplane pilots evaluate flight hazards, visibility, wind, storm activity, turbulence, terrain, and other factors to ensure aerial suppression operations may be conducted in a safe and effective manner. Congested airspace, populated areas, and the limited maneuverability of large airtankers all contribute to the need for leadplanes.



**Policy** A leadplane is required on an incident when;

- The airtanker pilot is not initial attack rated.
- Operations are over congested areas. (Forest Service requirement. BLM requires that a leadplane be on order, but operations may commence prior to arrival of the leadplane.)
- MAFFS C-130 Airtankers are assigned to the incident.
- When foreign government airtankers are being used.
- When two or more airtankers are over the incident.
- When the airtanker flight crew request a leadplane.

**Operating Practices** At the present time, a number of leadplane techniques are used. The three most frequently used are:

- 1 The leadplane orbits the fire at 1000 feet above ground level and directs the airtankers by radio. This high level technique affords better visibility of both the ground and air operations, but radio exchanges are often time consuming and time loss is costly.
- 2 The leadplane performs a low-level "show me" pass with the airtanker observing from a higher vantage orbit. In this manner the leadplane can switch positions with the airtanker and observe the drop from a higher vantage point.

- 3 The leadplane performs a low-level “follow me” pass, simulating the airtanker run, and identifies the target by radio, by rocking its wings over the target, smoke trail, pull up, or by other methods of identifying the target to the airtanker captain.

The leadplane pilot also determines if there are firefighting personnel or others in the proposed drop area, and if so, notifies the air attack supervisor or incident commander, so people on the ground can be warned or moved.

**Organization** Leadplanes are operated by both the Forest Service and Bureau of Land Management. Forest Service leadplanes are usually Beechcraft Barons, and BLM leadplanes are usually OV-10 Broncos. Other makes and models may be used from time to time for relief, maintenance down days, etc.

Forest Service Leadplanes are assigned by Region, and individual Regions have varying numbers of leadplanes and pilots from year to year.

BLM Leadplanes are assigned by state, and are fairly constant in number. They are highly mobile from one geographic area to another when required. BLM operates six leadplanes

2 (3) Alaska	AFS (State of Alaska operates one Interagency Leadplane)
1 California	Kern County Pilots (trainees)
1 Nevada	BLM Pilot
1 Arizona-Idaho	BLM Pilot (part of season in SW, rest of season in GB)

### **Operational Considerations**

Some operating practices are specific by agency. For instance:

- Forest Service requires leadplanes to be ordered when *two or more* airtankers are over the incident. BLM requires *aerial supervision* when *more than two aircraft* are over the incident.

**Note:** *assigned to the incident* is not the same as *over the incident*. For BLM purposes, two airtankers could be assigned to the same incident, but if they are not in a pattern over the fire together, they are not considered “*over the fire*.” If one tanker is in a pattern in the vicinity of a fire and another is ferrying to or from a reload, then only one tanker is *over the fire*.

**Note:** BLM does not require leadplanes to operate single engine airtankers (SEATS). The “more than two aircraft” standard for requiring aerial tactical supervision can be met with an ATGS.

- Forest Service policy requires a leadplane to be present and in tactical control of an airtanker prior to it dropping retardant over a congested area. BLM policy requires a leadplane **be on order** prior to this drop, but operations may proceed before the lead plane arrives, if fire conditions warrant.

- For operations over congested areas, Forest Service policy is that air operations be conducted under an FAA Grant of Exemption No.392, from FAR 91.119. The BLM does not operate under this exemption, opting instead to operate under the parameters of FAR Part 137.
- Some of the leadplanes will carry an Air Tactical Group Supervisor (ATGS). In those instances the leadplane may perform both the leadplane and ATGS missions.

### ***Startup/Cutoff Times***

Normally, a Leadplane Pilot will allow an airtanker to arrive over an incident for the purpose of dropping retardants only during the period from 30 minutes prior to official sunrise to 30 minutes after official sunset. *However*, drops may be conducted earlier (and later) than these periods and outside of civil twilight in Alaska providing the following conditions are met:

- The leadplane pilot has determined visibility and other safety factors are suitable for dropping retardant; and
- notifies the appropriate dispatcher of this determination.

An airtanker, crewed by an initial-attack-rated captain, may be dispatched to arrive over a fire *without aerial supervision* by an ATGS or leadplane providing the airtanker's arrival and drop activities are conducted between thirty minutes after official sunrise and thirty minutes before official sunset in the lower-48 states and during periods of civil twilight in Alaska.

## Air Attack

**Policy** Aerial supervision over an incident is required over when conducting operations over congested areas. An Air Tactical Group Supervisor (ATGS) or Airtanker Coordinator (ATCO) is required for aerial supervision.

Aerial supervision over an incident is recommended when there are more than two aircraft or a mix of aircraft over the incident at the same time. An ATGS, ATCO, or smokejumper spotter, during smokejumper operations, is recommended for aerial supervision.

During initial response operations the recommended aerial supervision in priority order with regard to safety and efficiency is as follows:

- 1 ATGS
- 2 ATCO
- 3 Smokejumper Spotter
- 4 Helicopter Manager

If aerial operations will continue beyond initial response, an ATGS or ATCO will be ordered. Aerial supervision response will be commensurate with expected complexity.

**Objectives** The ATGS is utilized to provide direction, coordination and supervision to aerial suppression resources. The ATGS is tasked with assuring a safe and effective air operation in support of ground operations. The ATGS position is utilized on incidents from initial attack to project incidents to ensure safety of aerial and ground suppression operations, monitor fire behavior, and provide aerial oversight guidance for the firefighter on the ground. Minimum red card qualifications for an ATGS is division supervisor. Although not required, it is highly recommended that ATGS candidates have an aviation background.

**Operational Procedures** Currently there are four operational modes for BLM Air Tactical Group Supervisors.

- 1 The ATGS is in the rear seat of a BLM owned OV-10 Bronco with a leadplane **qualified** pilot. In this scenario, the ATGS and ATCO missions are combined, with low-level lead performed as well as the command and control function of the ATGS. Once there are more than two aircraft or a mix of aircraft over the fire at the same time, the combination ATCO/ATGS should assume an ATGS role ordering a lead plan to assume the ATCO duties as needed. Currently only **certified** BLM ATGS are authorized to be part of the air crew on the OV-10 while performing the low-level lead plane mission. OV-10 flights must meet PPE requirements.
- 2 The ATGS is in a contracted, CWN, or BOA (rental) fixed-wing aircraft in orbit over the incident. **Generally, this is not a low-level flight scenario;**



**instead it occurs at or near 1000 AGL. Should low-level flight be required, all PPE and pilot/aircraft carding requirements must be met.**

- 3 The ATGS is in a contracted, CWN, or BOA (rental) rotary wing aircraft. This mode of operation occurs most often on Type 1 or Type 2 incidents. (See Chapter 12, Air Operations section)
- 4 The ATGS is on the ground with a vantage point of the entire incident. Although seldom used, generally when there is a shortage of aircraft, it is effective when the entire area can be viewed from the ground and the ATGS has VHF-AM and VHF-FM radio communication capability.

**The following is provided as a guide to obtaining an air attack platform, in priority order for safety and efficiency:**

- 1 high wing, twin engine
- 2 low wing, twin engine
- 3 high wing, single engine

Any aircraft selected should have as a minimum of two **720 channel VHF-AM** radios and one **VHF-FM** with guard; the pilot will be carded to perform the air tactical mission.

### **Operational Considerations**

- Operations are to be conducted only during daylight hours defined as one-half hour before sunrise to one-half hour after sunset.
- A relief ATGS and aircraft should be ordered for sustained operations to ensure continuous coverage over an incident.
- Personnel who are performing aerial reconnaissance and detection should not perform air tactical duties unless they are fully qualified as an ATGS.
- All PPE, pilot and aircraft carding and other special use requirements must be met when operating in the low-level flight environment (below 500 feet AGL).
- Flight operations conducted above 500 feet AGL are exempt from PPE requirement.

**Organization** The ATGS is an identified position in the Incident Command System with minimum qualifications and training prescribed by the NWCG 310-1. The ATGS is a tactical position with two subordinate specialty positions to assist when required – Airtanker Coordinator (ATCO) and Helicopter Coordinator (HLCO). The ATCO, commonly called a leadplae pilot, deals with fixed-wing retardant aircraft, while the HLCO deals with tactical coordinator and airspace management or rotary wing aircraft. Some geographic areas and agencies have

full time ATGS personnel, while the majority of districts rely on a qualified local person to perform the job, or order the position through the coordination system.

## Suppression Chemicals & Delivery Systems

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### Foam

**Policy** Standard operating procedures for fire management and fire suppression activities involving water as the suppression or protection agent delivered by engines and portable pumps shall include the use of an approved class A foam concentrate to improve the efficiency of water except near watercourses where accidental spillage or over spray of the chemical could be harmful to the aquatic ecosystem. Foam can also be delivered by helicopters and single engine air tankers.

**Principles of Use** Technical guidelines for equipment operations and general principles of foam application are discussed in "Foam vs Fire, Class A foam for wildland fires". National Wildfire Coordinating Group, PMS 446-1, NFES 2246, Second edition, October 1993 and "Foam vs Fire, Aerial applications". National Wildfire Coordinating Group, PMS 446-3, NFES 1845, October 1995.

### Operational Guidelines

**Proportioners** – The Bureau standard for foam proportioners on engines is the automatically regulated pressure bladder system (Robwen Flowmix 500). These devices are available as a foam kit for use with portable pumps. Automatic proportioners are required for Compressed Air Foam Systems to prevent slug flow.

Manually regulated proportioners, such as around-the-pump proportioners, in-line and by-pass eductors, and suction-side regulators, are acceptable for remote portable pump use when the operator understands the limitations of the device.

It is recommended that proportioners be flushed after every operational period of use.

**Conventional Nozzles and Backpack Pumps** – Mix ratio is 0.1-0.3%. Hydraulic considerations are the same as water.

**Aspirating Nozzles** – Mix ratio is 0.2 - 1.0%, generally 0.5%, depending on nozzle, foaminess of concentrate used, and type of application. Adjust the ratio to best meet needs and objectives. Foam production and delivery should occur as readily as would water delivery.

**Compressed Air Foam Systems (CAFS)**

- 1 Keep static air and water pressures equal
- 2 Start with a 0.3% mix ratio; adjust if necessary
- 3 Generally operate with 1 cfm of air for every gpm of water; adjust if necessary
- 4 Employ a motionless mixer or 100 feet of hose to develop foam in the hose
- 5 Foam production and delivery should occur as readily as water delivery

**Wildland/Urban Interface and Vehicle Fires** – 1.5 inches is the recommended minimum hose diameter when using foam on wildland/urban interface and vehicle fires according to Bureau policy (see Chapter 9).

**Safety**

**Personal Safety and Protection** – BLM uses foam concentrates and solutions which have been tested and meet specific minimum requirements with regard to mammalian toxicity (according to “International specification for Class A foam for wildland fires, aircraft or ground application” August 1993): acute oral toxicity, acute dermal toxicity, primary skin irritation, and primary eye irritation).

All personnel involved in handling, mixing, and applying foam concentrates or solutions should be trained in proper procedures to protect both their health and safety as well as that of the environment.

All personnel must follow the manufacturer's recommendations as found on the product label and product material safety data sheet (MSDS).

All of the currently approved foam concentrates are mildly to severely irritating to the eyes. Anyone involved with or working in the vicinity of foam concentrates should use protective splash goggles.

All containers of foam concentrate or solutions, including backpack pumps and engine tanks, should be labeled to alert personnel that they do not contain plain water, and that the contents must not be used for drinking purposes.

Slipperiness is a hazard at storage areas and unloading and mixing sites. Because foam concentrates and solutions contribute to slippery conditions, all spills must be cleaned up immediately.

Care should be taken by personnel applying foam to stand in untreated areas as they proceed. A foam blanket can be dangerous to walk through because it conceals ground hazards. Also, foam readily penetrates leather boots, resulting in wet feet.

All safety precautions associated with ground crews near retardant drops also apply to aerial foam drops.

**CAFS Safety** – All personnel assigned to operate a compressed air foam system must be trained in safe CAFS operations including operating the nozzle, working around charged hose lays, and how to prevent slug flow.

### **Long-Term Retardant**

**Policy** Utilization of approved long-term retardants in support of wildland fire suppression efforts is standard in fire management and planning. The retardants are most often delivered in fixed- or rotor wing aircraft. Approved retardants currently contain sulfate or phosphate salts.

**Principles of Use** Principles of application and coverage levels are outlined in NFES 2048, PMS 440-2.

#### **Operational Principles**

- Utilize retardant drops before an immediate need is recognized; pretreat according to expected fire behavior.
- Retardant dropped in the morning hours will still be effective in the afternoon.
- Build progressive retardant line.
- Use retardant drops to cool areas (reduce flame length), as necessary, in support of ground forces.
- Be sure the line is clear of personnel prior to dropping retardant.
- Be alert for gaps in retardant lines.
- Expect fixed wing vortices and rotor wing down wash.
- Wildland fire can burn around, under, spot over, and with enough intensity through retardant lines.

**Safety** Approved long-term retardants have all been tested and meet specific minimum requirements with regard to mammalian toxicity in the following areas: acute oral toxicity; acute dermal toxicity; primary skin irritation; and primary eye irritation.

Some approved long-term retardants are mildly irritating to the eyes. Persons that mix or handle retardants and those near retardant drops should use protective goggles.

Retardant drops can cause slippery footing and slippery tool handles. Care should be taken when walking through areas that have had retardant applied and tool handles should be wiped clean of retardant.

All personnel involved in handling, mixing, and loading retardant should be trained in proper procedures to protect their health and safety.

Personnel should not be under a retardant drop. The target or drop area must be clear of personnel prior to the drop.

Persons down range, but in the flight path of intended retardant drops, should also move to a location that will decrease the possibility of being hit with retardant, if a drop goes long.

Persons near retardant drops should be alert for objects (rocks, etc.) that drop could dislodge.

**Environmental Guidelines** – Due to the sensitivity of aquatic habitats, the application of foam and retardant directly into bodies of water must be avoided. Leave at least a 100-200 foot buffer zone from the water.

To reduce impacts to the environment:

- During training or briefings, inform field personnel of the potential danger of fire chemicals, especially concentrates, in streams and lakes.
- Locate foam and retardant mixing and loading areas and dip-tank sites to minimize contact with natural bodies of water.
- Exercise care to avoid spills at mixing, loading, and application areas—especially near streams.
- Notify authorities promptly of any fish kill or spill into a water body.
- Minimize or avoid dipping from rivers or lakes with a helicopter during foam and retardant operations. Set up an adjacent reload site and manage the foam and retardant in portable tanks, or terminate the use of chemicals for that application.

## Dozers

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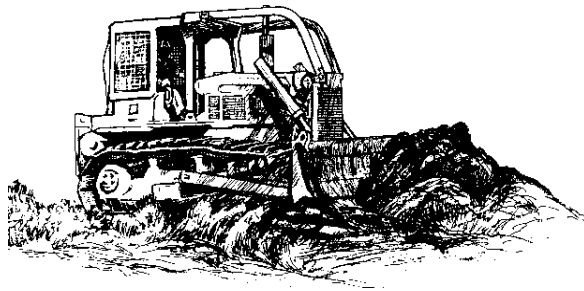
**Mission Statement** BLM dozers and operators provide safe and efficient suppression and support capability for local and project fires.

**Operational/Safety Standards** Personnel assigned as dozer operators and support crew will meet the standards for a Firefighter 2 (FFT2). This includes all safety and refresher training including annual review of the 10 Standards/18 Situations, fire shelter use and deployment, and LCES. While on fire assignments, all operators and support crew will meet PPE requirements for all firefighters including the use of aramid fiber clothing, hard hats, fire shelters, etc.

Since dozers operate independently, communication is essential between operators, support crew, and supervisors. BLM dozers will be equipped with programmable two-way radios with a configuration to allow the operator to monitor radio traffic.

Operators of dozers and transport equipment will meet the Department of Transportation (DOT) certifications and requirements regarding the use and movement of heavy equipment. Including driving limitations, Commercial Drivers License, pilot car use, etc.

**Physical Fitness Standards** All dozer operators must meet the physical fitness standards for moderate assignments which is a fitness score of 40 as determined by the Step Test or the 1.5 mile run.



**Radio Communications***Introduction* The recent Phase 1 report of the Firefighter Safety Study identified communications as a critical element in providing firefighting safety. This section is dedicated to responding to that concern.

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Good radio communications is a key component for effective operations in all phases of all-risk incidents, including wildfire suppression. Radio communications provides line overhead a means for operation coordination, tactical information flow, and command/control of personnel and resources. It is an important aspect of overall operational safety.

### **Effective Radio Use**

Keep the antenna as high as possible and in an vertical position.

- Canting or tilting the radio 45 degrees lowers the effective transmitting power by 50%; so, a two-watt radio performs as a one-watt radio.
- Use of a chest harness reduces the effectiveness of the radio; since the radio is held at a 45 degree angle, the effective transmit power of the radio is reduced. There is also a decrease in transmitting and receiving capabilities due to shielding from your body.
- To increase the chances of communications in marginal coverage areas, raise the radio antenna in the following ways:
  - ♦ Remove the radio from chest harness and hold it in an upright position.
  - ♦ Use a speaker microphone and lift the radio above your head to the full extent of your arm.
  - ♦ Walk up the side of a hill. A 10 foot rise in elevation can make the difference.
- When using a mobile radio, repositioning the vehicle can improve communications in marginal coverage areas. This is especially true if you are parked under power lines or behind an obstacle such as a hill.

### **Radio Discipline**

Speak into the radio microphone in a normal voice. Above all **“DO NOT SHOUT”** into the radio microphone. The louder you talk into a radio, the more distorted you will sound. As voice volume increases, it eventually reaches a point where the voice output of the radio is totally unintelligible. **This is very important to remember!**

Stay alert, keep calm, think clearly, act decisively (Fire Order # 10).

Speak in clear, plain language. **DO NOT** use codes. No profanity!

Keep messages short and to the point, only transmit necessary traffic. Think about what you are going to say before transmitting. Use radio courtesy at all times. Listen for other system users before transmitting; this is especially important when you are changing channels.

Set the volume on your handheld or mobile radio so that you can hear it. Turning the radio volume down can cause you to miss messages, requests, and orders. One quick way to reduce the confidence in a radio system is to miss messages.

Let dispatchers, radio operators, or other system users know what channel you are going to be using. Example: "Dispatch, this is Johnson; I'm switching to Tac One." This is especially important for supervisors when they are switching from the command or main channel

When you return to the main channel, let dispatch, radio operators, or other systems users know that you are back to the main or command channel. This will reduce the need for scanning and will increase the chances of a message getting to you.

When utilizing the scan feature on handheld or mobile radios, all radio calls must be identified with the specific channel or channel identifier being used.

Make sure that all radio traffic is understood. **Request that garbled or unclear messages be repeated.** The main objective of the communications system is to provide a link for the flow in information. It is important that the information be correct.

Operations personnel should be continually briefed on changes to communications requirements throughout all phases of an incident.

Keep communications and communications system as simple as possible. The more complicated the communications or communications system, the more can go wrong. Complex systems may compromise safety.

### **Pre-assigned National Frequencies**

**National Air Guard - 168.625 MHz** is a National Air Guard frequency for Government aircraft assigned to incidents. It is used in emergency communications for aviation. A separate receiver is required to permit continuous monitoring. Transmitters on this frequency should be equipped with a CTCSS Encoder on 110.9 Hz.

Restrictions for use are:

- 1 Air-to-air emergency contact and coordination.
- 2 Ground-to-air emergency contact.



- 3 Initial call, recall, and re-direction of aircraft when no other contact frequency is available.

**National Flight Following - 168.650 MHz** is the National Interagency Air Net frequency. It is used for flight-following of official aircraft.

Restrictions for use are:

- 1 Flight-following, dispatch, and/or re-direction of aircraft.
- 2 Air-to-ground and ground-to-air administrative traffic.
- 3 Not authorized for ground-to-ground traffic.

**National Interagency Air Tactics - 166.675 MHz, 167.950 MHz, 169.150 MHz, 169.200 MHz, 170.000 MHz** are frequencies used to support air-to-air or ground-to-air communications on incidents west of the 95th meridian.

Restrictions for use are:

- 1 These frequencies shall be used for air-to-air and ground-to-air communications only.

**NOTE: Pacific Southwest Geographic Region exception: 166.675 MHz, 169.150 MHz, and 169.200 MHz will be used for air-to-air only; 170.000 MHz will be used for ground-to-air only.**

**Pacific Northwest Geographic Region exception: 170.000 MHz frequency cannot be used in Columbia River Gorge area (located between Oregon and Washington).**

- 2 Interagency Geographic Area Coordination Centers assign these frequencies. Assignment must be coordinated through the National Interagency Fire Center (NIFC), Communications Duty Officer (CDO).
- 3 Transmitter power output of radios installed in aircraft operating on these frequencies shall be limited to 10 watts.
- 4 Base stations and repeaters are prohibited on these frequencies.

**National Airtanker Initial Call - 135.975 MHz** is the National Interagency Frequency assigned to all airtanker bases for their exclusive use. No other use outside of airtanker bases is authorized.

**National Government All-Call Frequencies - 163.100 MHz and 168.350 MHz** are assigned for use anywhere, any time. They are good choices

as travel frequencies for strike teams moving between assignments. They are also available for ground tactical frequencies during initial attack or incident operations.

**NOTE: When you are traveling between incidents, be sure to monitor for incident radio traffic in area before using these frequencies.**

### **Radio Frequency Management**

Frequency assignments for normal operations or initial attack are made on a permanent basis and are requested through the State Office or Regional Telecommunications Manager to the Washington Office Frequency Manager.

Mutual-aid agreements for frequency sharing can be made at the local level. NIIMS form PMS 903-1/NFES 1519 "Radio Frequency Sharing Agreement" is available and should be used for this purpose.

A mutual-aid frequency sharing agreement is valid only in the specific locale it originates in. These agreements do not authorize the use of a shared frequency in any other area.

Do not use a frequency unless authorized to do so by communications personnel at the local, State, Regional or National level.

On an incident, the Communications Unit Leader (COML) will assign frequencies on the Communications Plan (ICS-205) for incident use. The ICS-205 is always a part of the Incident Action Plan (IAP) and distributed at every operational period briefing.

Frequencies for Type 1 and Type 2 project fires or all-risk incidents are assigned through the National Incident Radio Support Cache (NIRSC) located at NIFC. They are a limited resource and have to be assigned to each incident to prevent interference. More complex situations that involve two or more incidents within the same geographic area require detailed coordination.

During severe situations and/or when there are significant numbers of project fires, additional frequencies assignments can be made available. These are temporary assignments, and are requested by NIRSC-NIFC from the Washington Office Telecommunications Managers. This applies to frequencies for command, ground tactical, and aviation operations.

Additional frequencies are provided in the following circumstances:

- The NIRSC national frequencies are all committed within a specific geographic area.
- The requests continue for frequencies to support new incidents within a specific complex.

- The fire danger rating or conditions are extreme and the potential for additional fire starts is high.

### **General Communication System Facts**

If the personnel using the system do not follow basic guidelines and use the system properly, the best system, even with 100% coverage, will not meet the requirements of the situation or incident.

Consider the following prior to adding additional radios to a system:

- An increase in radio traffic may overload the communication system.
- Sufficient radios must be provided to operations personnel. However, it is far easier to manage a communication system with fewer radios.
- In a crisis situation, once radio discipline breaks down and everyone tries to talk at the same time, regaining control is difficult.

As with radio numbers, the number of frequencies used within a given communication system has an effect on operational safety as well. Adding more frequencies will make the use of the system more complicated.

Even with multiple frequencies, everyone with a radio can end up on the same channel (frequency) when there is no radio discipline. Maintaining control of personnel using the radio system is easier when a limited number of frequencies or channel options is available.

Frequencies are a finite resource. There is a limited number available for initial attack and/or incident communications. At the same time, the nature of their physical properties is that radio frequencies are, in a sense, boundless. Care must be taken how and where they are assigned to minimize the possibility of interference.

The use of the scan feature on a radio may increase as the number of frequencies increase. To be effective with the scanning function, all users have to let everyone know what channel they are using. **During a crisis or critical situation, all radio users have to remember to end each message with the radio channel identifier being used. This is still required even with more sophisticated radios.**

The more channels that are scanned, the busier the radio receiver becomes. In the case of inexperienced radio users, the communication system will appear to be overloaded because the radio is never quiet.

Scanning causes an increase in battery consumption due to increased use of receiver.

Without scheduled periodic maintenance, communications equipment will deteriorate in reliability. Communications equipment must be properly maintained.

### **Incident Radio Support**

All cache communications equipment should be returned to NIRSC at NIFC immediately after the incident is turned over to the jurisdictional agency. The only exception is the five Pacific Southwest Regional Starter Systems, which must be returned to their designated home unit.

Cache equipment includes kit accessory items. Shortages can occur at critical times during severe fire load causing kits to be sent without accessories. These accessory items are expensive and can contribute to higher incident cost.

No cache communication equipment should be moved from one incident to another without being first returned to NIFC for refurbishment. However, equipment unused and red sealed may be moved, if approval is given by the NIRSC-CDO at NIFC.

Battery orders should be realistic. Over ordering causes shortages to occur. All incident communications resource orders should be coordinated with and approved by the Communication Coordinator (COMC). This will help to keep even distribution of batteries as well as other communications resources. All battery orders can be consolidated by COMC to simplify and reduce the number of resource orders.

### **Radio Coverage**

There are only three ways to increase communication system coverage:

- Increase the transmitter power.
- Increase the height of the communication system antennas.
- Increase the number of transmitters and receivers within a system.

**NOTE:** All three can lead to severe system interference problems when done without proper planning or coordination.

### **When Communications Resources Are Scarce Or Limited**

The following options should be considered when there are radio resource shortages:

- The priority should always go to operations personnel or those personnel who are going to be in a hazardous environment and cannot be with someone carrying a radio. All other personnel should share radios, if possible, or team up with someone who is carrying a radio.

- When frequencies are in short supply, use human relay to get messages back to dispatch or ICP.
- On Type 1 or Type 2 project fires or incidents, move the communications center to a prominent location to gain access to line. From the communications center, relays can be used to cover medical or operational emergencies from the operational area. For logistic or routine communications, some type of phone or satellite access or a vehicle to and from a contact point can be utilized.
- Request additional frequencies for short-term use.
- Re-use tactical (single frequencies) whenever possible. If care is taken and these frequencies are assigned in areas of low terrain, they can be re-assigned and used by other nearby incidents.

### **Communications Equipment – Installation & Operation**

Communications equipment such as repeaters should be placed in locations that provide maximum coverage for operations. Additional repeaters should be ordered, if terrain conditions warrant.

If frequencies are limited, COML can place communications personnel in strategic locations to act as relays through an existing repeater.

Crews can improve their access into existing communications systems by placing personnel to act as relays. This is very effective in areas requiring short duration operations. Personnel used as relays must be trained and reliable.

All emergency communications equipment should be kept away from sources of possible interference. Existing radio communications sites are the best example of where **NOT** to place this equipment.

### **Military Communications on an Incident**

Military units assigned to an incident will already have radios. Each battalion is assigned 48 handheld radios. Sixteen of these radios are used by military crew liaisons. Intercrew communications within a military unit is provided by the military on its radios using their frequencies. All frequency assignments at the incident will be made by the COML in accordance with the ICS 205.

Some active military and guard units have 9600 channel VHF-FM radios compatible with civilian systems. Other units are adapting their aircraft for the civilian radios and can be easily outfitted prior to dispatch to an incident. A limited number of wiring harnesses are available at NIFC for those military aircraft that do not have civilian VHF-FM capability.

## **Cellular Communications**

Cellular telephones are not intended for command/tactical emergency communications.

Cellular telephone coverage is not available in all locations and is not always 100% effective in areas with coverage. This is especially true in the western states.

Cellular enhancer systems can be used to expand coverage; they can have from 6 to 10 channels. This means only 6 to 10 phone calls can be made at any one time. The enhancers have to get these channels from an existing cell site which adds an additional system load. This results in a cascading effect which can reduce overall cell site performance.

Communication is from one cellular radio to another or to a telephone on the public switch network. There is no broadcast capability.

Access is not universal. Some cell providers do not allow a competitor's cellular customers use of their systems without a charge card number. (Most do not accept calling cards of any type.)

Cell systems get overloaded with calls during emergencies making access virtually impossible. Since all systems are interconnected in some form or another, problems that occur in one system can cause problems in other cell system(s), which can shut down all or part of an entire network.

# 8 - Initial Attack



## Policy

Initial attack action must be based on approved Fire Management Plans and reflect a commitment to firefighter and public safety. Without an approved Plan, BLM units must take an aggressive suppression action on all wildland fire consistent with firefighter and public safety and resources to be protected. Exceptions to this policy are as follows:

- When multiple fire starts and lack of resources preclude the staffing of all new fires, those fires that have the highest priority will be staffed first. A Fire Situation Analysis (FSA) will be used to document this decision.
- When a fire is too hazardous to initial attack or when adequate forces are not available to safely or effectively attack a fire, a Fire Situation Analysis (FSA) will be completed immediately to determine the appropriate management action.

## Objectives

The objective of Initial Attack is to conduct safe fire suppression in a timely, effective, and efficient response to wildland fires. The appropriate action will be defined and given as objectives to the Initial Attack Incident Commander. The first and most important objective will be to provide for firefighter and public safety.

**Sample: Fire Situation Analysis**

Fire Name & Number \_\_\_\_\_

Current Size \_\_\_\_\_ Potential Size \_\_\_\_\_

Fuels Description \_\_\_\_\_

Fire Behavior \_\_\_\_\_

1. Decision Factors:

Threatening Private Property	Yes _____	No _____
Improvements at Risk	Yes _____	No _____
Public Safety at Risk	Yes _____	No _____
Firefighter Safety at Risk	Yes _____	No _____
Public Concern	Yes _____	No _____

Resource Advisor Notified	Yes _____	No _____
Least Cost Strategy	Yes _____	No _____

Other: \_\_\_\_\_

Current Weather Forecast:

3-5 Day Forecast:

## 2. Objectives

## 3. Identify appropriate management activities and frequency.

Recommend by: \_\_\_\_\_

Approved by: \_\_\_\_\_

# Dispatch Operations

## Organization/Points of Contact

The wildland fire dispatch system in the United States has three distinct levels (tiers): the National, Geographic Area, and Local levels. Logistical dispatch operations occur at all three levels, while initial attack dispatch operations occur primarily at the Local level. Most wildland fire dispatch offices are interagency dispatch centers, in that they are funded and staffed by various Federal and State fire management agencies. Some dispatch centers are funded and staffed by BLM alone, but are still interagency dispatch centers in that they process resource orders for other agencies' fires and mobilize resources provided by other agencies in addition to performing these functions for BLM.

The standard for dispatch ordering channels is the three-tier dispatch system. Any Geographic Area or Local Dispatch Center using a dispatch system outside the three-tier system must justify, in writing to the National Office, why a non-standard system is being used.

## Roles and Responsibilities

Three primary functions are performed by all dispatch centers: mobilization of fire suppression resources, demobilization of fire suppression resources, and gathering and disseminating intelligence information regarding incidents within a defined geographic area. The specific methods and forms used to accomplish these functions are prescribed by agency managers at the National, Geographic Area, and Local level. Many of the forms and procedures used have been standardized nationally. Many other forms and procedures, particularly those used at the local level, are non-standard and vary greatly from one area to another.



Dispatch centers are tasked with the safe and efficient mobilization of resources to wildland fires and non-fire incidents. Safe mobilization involves the movement of fire suppression resources to areas of need while ensuring that agency regulations and guidelines relating to safety are not violated. Efficient mobilization entails the movement of resources to meet ordering time frames in the most cost-effective manner possible.

Dispatch centers are also tasked with the safe and efficient demobilization of resources from incidents upon release. This involves either the movement of resources back to their home units or the movement of resources from one incident to another (reassignment). Cost-effectiveness, timeliness, and safety considerations are all taken into account during demobilization.

All dispatch centers supply intelligence information specific to incidents within their pre-designated geographic area. The type of intelligence information supplied and the timing of reporting are specified in Geographic Area Mobilization Guides and the National Interagency Mobilization Guide.

Many dispatch centers, at all three levels of the system, are also tasked with mobilizing and demobilizing resources and providing intelligence information for Prescribed Natural Fires or Management Ignited Fires within their geographic area.

Some local unit dispatch centers are involved in law enforcement dispatching in addition to wildland fire dispatch duties. Law enforcement dispatching is very site-specific. Some dispatch centers are deeply involved in it to the point where it generates a significant portion of their workload and necessitates staffing 24 hours a day year-round, while other dispatch centers have no law enforcement dispatching duties.

***Oversight Committees*** Each dispatch center at every level must have an oversight committee composed of agency managers or their representatives from each of the agencies it services. Oversight committees are responsible for providing direction to dispatch centers relating to agency policy, and for ensuring that adequate funding is provided to centers to enable accomplishment of prescribed dispatch duties.

### **National Dispatch/Coordination System**

***National Interagency Coordination Center*** The National Interagency Coordination Center (NICC) is located in Boise, Idaho on the National Interagency Fire Center (NIFC) compound. NICC is staffed by personnel from various federal agencies. NICC deals directly with all of the Geographic Area Coordination Centers in the country, as well as with other countries (e.g. Canada and Mexico). NICC Coordinators also interact extensively with the Directors of Fire and Aviation programs at the National level of federal agencies,

as well as with the National MAC Group. The principal mission of NICC is the cost-effective and timely coordination of national emergency response for wildfire suppression.

Through the Federal Response Plan, NICC can also respond to non-fire emergencies when tasked by an appropriate agency such as the Federal Emergency Management Agency (FEMA). NICC also collects, consolidates and disseminates intelligence information relating to fire and resource status. The information comes to NICC from each of the GACC's and is consolidated into one nationwide report which is sent to all of the GACC's, agency directors, and Washington Office personnel.

**Geographic Area Coordination Centers** There are eleven Geographic Area Coordination Centers (GACC's) in the United States, each serving a specific geographic portion of the country. Each GACC interacts with all of the local unit dispatch centers in its area, as well as with NICC and neighboring GACC's. Reference the National Interagency Mobilization Guide for a complete directory of GACC locations, addresses, and personnel. The principal mission of each GACC is the cost-effective and timely coordination of emergency response for all incidents within the specified geographic area. GACC's are also responsible for determining the need, coordinating priorities, and facilitating the mobilization of resources from their areas to other geographic areas in need. Each GACC also prepares an intelligence report that consolidates fire and resource status information received from each of the local dispatch centers in its area. This report is sent to NICC and to the local dispatch centers, caches, and agency managers in the Geographic Area.

**Local Unit/Interagency Dispatch Centers** Local Unit Dispatch Centers are located all over the country as dictated by the needs of fire suppression agencies. The principal mission of a local dispatch center is the coordination of timely and cost-effective coordination of emergency response for all incidents within its specified geographic area. This most often entails the coordination of initial attack responses and the ordering of additional resources when fires escape initial attack. Local dispatch centers are also responsible for supplying intelligence information relating to fires and resource status to their GACC and to their agency managers and cooperators. Local dispatch centers may work for or with numerous agencies, but should only report to one GACC for reasons of safety and efficiency.

Some local dispatch centers are also tasked with law enforcement and agency administrative workloads for non-fire BLM operations; if this is the case, a commensurate amount of funding and training should be provided by the benefitting activity to accompany the increased workload. If a non-wildfire workload is generated by another (non-BLM) agency operating in an interagency dispatch center, careful study must be undertaken to ensure that the agency generating the additional workload offsets this increased workload with additional funding or personnel sufficient to enable the unimpaired fulfillment of BLM fire suppression dispatch activities.

## Initial Attack Dispatch Operating Procedures

Districts with dispatching responsibility, in conjunction with their cooperators, will ensure Dispatch Standard Operating Procedures are developed, reviewed, and updated on an annual basis prior to fire season. Local management input, review, and approval is critical.

There are many variations in dispatch Standard Operating Procedures (SOPs) and the topics identified. These variations are due to many factors (i.e. activity level/complexities, interagency coordination, all-risk incidents, hazmat). The following topics shall be identified (but not limited to) in a Dispatch Center's SOP. The elements identified under the topics are just examples of what should be covered. Additional guidance can be obtained by reviewing the District Fire Management Reference Guides.

- Organization: Chain-of-Command/table of organization for local agencies and cooperators, notification process/procedures, roles/responsibilities, etc.
- Initial Attack Response Plan (synonymous terminology—preplanned dispatch plans, run-cards, dispatch procedures): General information relating to the plan; procedures for identifying preparedness levels, notification to suppression forces and management of new fire starts or ongoing fire activity, modification/update procedures for the plan, procedures to follow when activity exceeds the I. A. plan, etc.
- Dispatch Operations:
  - General Information
  - Dispatcher Role and Responsibilities
  - Dispatcher Training and Qualifications
  - Procedures for Dispatch of Resources Off Unit
- Daily Duties:
  - Check-In/Out of Administrative/Fire Personnel
  - Intelligence
  - Weather/Briefings
  - Verify Initial Attack Response Levels
  - Status Suppression Resources
  - Preparedness Level establishment and verification
- Emergency Operations (Fire/Non-fire):
  - Notification of a Fire Report
  - Land Status Verification
  - IA Response Plan activation
  - Agency and Area Notification
  - Move-up and Cover Procedures
  - Call-back Procedures
  - Evacuation of Fire Area
  - Closing Public/Private Roads

Ordering Additional Personnel, Equipment, Aircraft needed  
Fire Weather Watch and Red Flag Warning Notification  
Temporary Flight Restrictions (TFR)  
Agency Duty Officers (Roles and Responsibilities)  
Aircraft Pre-Accident Plan  
Agency Employee Accident Plan  
Utility Company Notification (Power and Gas)  
Law Enforcement Dispatching Procedures/Requirements  
Hazmat/Spill Response Notification Procedures  
Local Government Requesting All-risk Assistance  
Search and Rescue

- Local Agreements: copies of all interagency or inter-district agreements governing the use of suppression resources, delineating areas of responsibility for fire suppression coverage.
- Communications: Procedures for assigning/managing local radio frequencies, procedures for obtaining additional frequencies, a map of repeater sites/frequencies, instructions for using local dispatch radio consoles, phones, computers, fax machines, paging systems.
- Weather: Processing of weather observations via WIIMS, daily posting and briefing procedures, broadcasts of fire weather forecasts to local fire suppression personnel, procedures for processing spot weather forecast requests and disseminating spot forecasts to the field, procedures for immediate notification to fire suppression personnel of Fire Weather Watches and Red Flag Warnings.

- Information to be provided by Dispatch:

For Suppression/Support Personnel: Resource availability/shortages, radio frequencies to be used, burning conditions/fuel types, weather forecast updates, local fire activity, agency policies (limited/full suppression), etc.

For Management: Fire activity, incident update, weather update, resource status.

**Time frames and frequencies/locations for daily briefings must be clearly specified in the local Dispatch Standard Operating Plan.** A method should also be identified for documenting briefings (time given, content of briefing, and person(s) conducting and receiving briefing).

- Preparedness levels: General information relating to the local preparedness plan; procedures for identifying level, notification to management, dispatching roles and responsibilities at each preparedness level, etc. Specific triggers should be incorporated into preparedness plans that cause the preparedness level to move up or down. These triggers could be related to number/size of fires, amount and type of resources available/committed, regional/national fire situation, condition of local fuels, observed fire

behavior, human-caused risk or predicted lightning activity level, etc. Specific actions should also be tied to each preparedness level, such as prepositioning of suppression resources (crews, engines, smokejumpers, air tankers, etc.), activation of local MAC Groups, contacts with other agencies, or hiring of CWN aircraft, Emergency Equipment Rental Agreement (EERA) equipment or AD crews.

- Dispatch Center Staffing Plan: Call-out procedures for additional personnel in emergency situations, designation of duty officer for dispatch center, shift limitations, day off/R&R policy, EFF hiring, etc.
- Administrative Items (funding, travel, time sheets, fire reports, etc.)
- Accident/Incident: Criteria/definitions, agency notification and documentation requirements, procedures for mobilization of Critical Incident Stress Debriefing teams, etc.
- Expanded Dispatch Plan: Indicators for considering establishment of expanded dispatch, recommended organization and points of contact, overhead positions to order, location/facilities, equipment/supplies, support needs, procurement or Buying Unit Team considerations, Service and Supply Plan, etc.
- Medical Plan: Activation/evacuation information, medical facility locations and phone numbers, air and ground transport (Medivac) capability, burn center information, etc.
- Media Plan: General procedures, notification requirements to agency external affairs personnel, routing for media calls.
- Aviation: Ordering/scheduling requirements and procedures, special use airspace, special use mission requirements, Incident/Accident reporting and documentation procedures, flight management/tracking procedures.

## Sizeup

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At the earliest opportunity the Initial Attack Incident Commander should forward, at a minimum, the following information to the agency dispatch, and continue to keep the dispatcher informed of any significant changes and progress on the fire.

- Fire Name
- Location
- Terrain (slope, aspect, elevation)
- Position of fire on the slope
- Size of fire
- Fuel Type
- Anticipated control problems
- Spread potential
- Values threatened
- Weather conditions
- Wind speed and direction
- Fire behavior
- Resources on the fire
- Resources needed, if any
- Estimated containment
- Estimated control
- Cause (known, suspected)

**Example:** INITIAL FIRE SIZE UP  
(By IC or Air Detection To Dispatch)

Relayed by (Incident Commander): \_\_\_\_\_

\*\*Date: \_\_\_ Time: \_\_\_\_\_ Fire #: \_\_\_\_\_ Fire Name: \_\_\_\_\_

\*\*Location: \_\_\_\_\_

\*\*Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

OR

\*\*Township: \_\_\_\_\_ Range: \_\_\_\_\_ Section: \_\_\_\_\_ 1/4S: \_\_\_\_\_ 1/4 1/4S: \_\_\_\_\_

VOR: \_\_\_\_\_ Distance: \_\_\_\_\_ nm Radial: \_\_\_\_\_ (degrees)

Temporary Flight Restriction? \_\_\_ Yes \_\_\_ No If Yes, Radius: \_\_\_ nm Altitude: \_\_\_ MSL

\*\*Structures Threatened? \_\_\_ Yes \_\_\_ No If Yes, Type of Structures: \_\_\_\_\_

Apparent Cause: \_\_\_\_\_ Human \_\_\_\_\_ Lightning

\*\*Hazard(s): \_\_\_\_\_

\*\*Estimated Size: \_\_\_\_\_ acres Elevation: \_\_\_\_\_ feet

\*\*Fuel Type(s): \_\_\_\_\_

\*\*Current Character of Fire (Mark one or more)

Smoldering \_\_\_ Running \_\_\_ Torching \_\_\_ Crowning/Spotting  
Creeping \_\_\_ Running/Spotting \_\_\_ Crowning \_\_\_ Erratic

\*\*Slope At Origin (If Origin Cannot Be Determined, Mark Where Fire Now Burning)

0-25% \_\_\_ 26-40% \_\_\_ 1-55% \_\_\_ 56-75% \_\_\_ 76+%

\*\*Spread Potential

Low \_\_\_ Moderate \_\_\_ High \_\_\_ Extreme

\*\*Wind Direction

Calm \_\_\_ Northeast \_\_\_ Southeast \_\_\_ Southwest \_\_\_ Northwest  
North \_\_\_ East \_\_\_ South \_\_\_ West \_\_\_ Erratic

\*\*Wind Speed: \_\_\_\_\_ mph

\*\*CALL INTO DISPATCH IMMEDIATELY

Wind Direction/Topography

Down Canyon \_\_\_ Up Canyon \_\_\_ Down Slope \_\_\_ Up Slope \_\_\_ Erratic

\*\*Aspect (Slope at Fire Origin; If Origin Cannot Be Determined, Mark Where Fire Now Burning)

Flat \_\_\_ Northeast \_\_\_ Southeast \_\_\_ Southwest \_\_\_ Northwest  
North \_\_\_ East \_\_\_ South \_\_\_ West \_\_\_ Ridgetop

Position On Slope Where Fire Now Burning

Ridgetop \_\_\_ Middle 1/3 on slope \_\_\_ Valley Bottom  
Saddle \_\_\_ Lower 1/3 on slope \_\_\_ Mesa or Plateau  
Upper 1/3 on slope \_\_\_ Canyon Bottom \_\_\_ Flat or Rolling

Current Weather Conditions (Mark as Appropriate)

Clear \_\_\_ Tstrm Overhead \_\_\_ Overcast \_\_\_ Heavy Rain  
Scattered Clouds \_\_\_ Tstrm Nearby \_\_\_ Intermittent Showers \_\_\_ Hailing  
Building Cumulus \_\_\_ Lightning in Area \_\_\_ Drizzling \_\_\_ Snowing

Resistance to Control

Low \_\_\_ Moderate \_\_\_ High \_\_\_ Extreme

Personnel/Equipment/Aircraft Needs (Enter Number Needed Next To Each Type)

Helicopter \_\_\_ Type 3 Engine  
Airtanker-Large \_\_\_ Type 4 Engine  
Airtanker-Single-Engine \_\_\_ Type 5 Engine  
Air Tactical Aircraft \_\_\_ Type 6 Engine  
Lead Plane \_\_\_ Type 7 Engine  
Smokejumper Load \_\_\_ Dozer  
Type 1 Crew \_\_\_ Resource Advisor  
Type 2 Crew \_\_\_ Other: \_\_\_\_\_

Estimated Containment Date: \_\_\_ / \_\_\_ / \_\_\_ Time: \_\_\_\_\_

Estimated Control Date: \_\_\_ / \_\_\_ / \_\_\_ Time: \_\_\_\_\_

Estimated Out Date: \_\_\_ / \_\_\_ / \_\_\_ Time: \_\_\_\_\_



**WEATHER AND BEHAVE INFORMATION**

Location	Elev	Obs Time	Wind Dir /Speed	Dry Bulb	Wet Bulb	Rel Hum	Remarks (Tstrm, etc)

BEHAVE CALCULATIONS *(Verify or Amend Previous Sizeup Information, particularly Slope, Aspect, Fuel Type(s); Provide Updated Weather Information)*

Wind Vector/Slope (Degrees)

N - 000                    \_\_\_ E - 090                    \_\_\_ S - 180                    \_\_\_ W - 270  
 NE - 045                    \_\_\_ SE - 135                    \_\_\_ SW - 225                    \_\_\_ NW - 315

Percent of Cloud Cover

0-10%                    \_\_\_ 10-50%                    \_\_\_ 50-90%                    \_\_\_ 90-100%

Rate of Spread (Chains Per Hour): \_\_\_\_\_

Line Building Rate of Resources (Chains Per Hour): \_\_\_\_\_

Length-to-Width Ratio of Fire: \_\_\_\_\_ : \_\_\_\_\_

**POST-FIRE REPORT**

**1. VERIFY CONTAIN/CONTROL/OUT TIMES**

Containment      Date: \_\_\_ / \_\_\_ / \_\_\_      Time: \_\_\_\_\_

Control              Date: \_\_\_ / \_\_\_ / \_\_\_      Time: \_\_\_\_\_

Out                      Date: \_\_\_ / \_\_\_ / \_\_\_      Time: \_\_\_\_\_

**2. Predominant Fuel Type Burned (NFDRS Fuel Model; Check One Only):**

A\_Grass B\_Grass/Sage C\_Brush D\_Pinyon/Juniper E\_Timber F\_Other: \_\_\_

**3. Statistical Cause (Check One Only):**

1\_\_Lightning                    4\_\_Debris Burning                    7\_\_Railroads  
 2\_\_Camp Fire                    5\_\_Incendiary (Arson)                    8\_\_Children  
 3\_\_Smoking                    6\_\_Equipment Use                    9\_\_Miscellaneous

4. SPECIFIC CAUSE (Check Only One):

- |                       |                          |                          |
|-----------------------|--------------------------|--------------------------|
| 01__Lightning         | 11__Trash Burning        | 21__Insect/Snake Control |
| 02__Aircraft          | 12__Burning Dump         | 22__Job Hunting          |
| 03__Burning Vehicle   | 13__Field Burning        | 23__Blasting             |
| 04__Exhaust-Power Saw | 14__Land Clearing        | 24__Burning Building     |
| 05__Exhaust-Other     | 15__Slash Burning        | 25__Power Line           |
| 06__Logging Line      | 16__Right-of-Way Burning | 26__Fireworks            |
| 07__Brake Shoe        | 17__Resource Mgmt Burn   | 27__Playing with Matches |
| 08__Cooking Fire      | 18__Grudge Fire          | 28__Repelling Predators  |
| 09__Warming Fire      | 19__Pyromania            | 29__House/Stove Flue     |
| 10__Smoking           | 20__Smoking Out Animals  | 30__Other                |

5. CLASS OF PEOPLE STARTING FIRE (Check Only One):

- 0\_\_For all fires where the cause is lightning or unknown  
 1\_\_For all individuals who own land or businesses within the protection boundaries  
 2\_\_For all individuals, their agents, or employees who have special-use permits on the reporting agency lands within the protection boundaries  
 3\_\_For contractors, their agents, or employees for purchase of products or construction of facilities  
 4\_\_For all Federal, State, County, Municipal or other public employees  
 5\_\_For all permanent residents living inside or within one mile outside the protection boundary  
 6\_\_For all seasonal residents or workers residing inside or within 1 mile outside the protection boundary  
 7\_\_For all tourists, motorists, campers, etc. in transit through the protected area  
 8\_\_For all people not included above (Enter in "NARRATIVE" if known)

6. APPROXIMATE ELEVATION OF FIRE AT ORIGIN (Check One):

- |               |               |               |           |
|---------------|---------------|---------------|-----------|
| 0__0-500'     | 3__2501-3500' | 6__5501-6500' | 9__8501+' |
| 1__501-1500'  | 4__3501-4500' | 7__6501-7500' |           |
| 2__1501-2500' | 5__4501-5500' | 8__7501-8500' |           |

7. OWNERSHIP ACREAGE

OWNER	ACRES	OWNER	ACRES	OWNER	ACRES
1. BLM		4. FWS		7. State	
2. BIA		5. USFS		8. Private	
3. NPS		6. Other Fed		9. Other	

8. NARRATIVE. Use a separate sheet to describe your activities after arrival include dates/times major decisions were made, resources ordered, when they arrived, containment/control strategy and its effectiveness, and any other observations or problems relating to the fire. Attach map for all Class C+ fires.

Incident Commander (Print Name): \_\_\_\_\_

Signature of Incident Commander: \_\_\_\_\_

Date: \_\_\_\_\_

## Cause Determination Checklist

- 1 Take essential investigation materials with you to incident.
- 2 Make factual notes of all your actions and findings including:
  - ♦ Time fire was reported.
  - ♦ Name and ID of reporting party.
  - ♦ En route observations – people and vehicles.
  - ♦ Name and ID of persons or vehicles in vicinity of fire origin.
  - ♦ Take the weather and report it.
- 3 Locate and protect fire origin.
- 4 Search fire origin area for physical evidence of fire cause.
- 5 Protect evidence. **Do not remove** unless necessary to prevent destruction.
- 6 Make sketches of origin area using accurate measurements of relative locations of all evidence.
- 7 Take photographs from all angles and include long and medium distance, and closeup views of fire origin area and important evidence.
- 8 Turn over all notes, information, and physical evidence to the responsible law enforcement representative, or make your notes part of the official fire record.

## Briefing

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### Crew Briefing Guidelines

#### (Required for All Incoming Crews)

Wildland fire crews (all types including engine crews, hand crews, etc.) from outside the “local area” are likely to be unfamiliar with local fuel and weather conditions, terrain, customs, etc. Unless they are provided with local information regarding the incident, they are likely to be less effective, and safety may be compromised. Therefore, it is the policy of the Bureau of Land Management (BLM) to brief all crews which arrive from outside the local area. For the purpose of this policy, “local area” is defined as that geographically defined area that is under the dispatch control of a single dispatching unit.

**Procedure** Many incoming crews arrive at the unit by vehicle, or by transport aircraft and are transported to the incident. This constitutes a captive audience which can be briefed prior to fireline deployment. Exceptions include smokejumpers, and occasionally engine crews and miscellaneous overhead, which may deploy directly to the incident. The following checklist will be used to brief **all** incoming crews. If smokejumpers cannot be briefed prior to departure from base, the receiving unit dispatch office should provide a briefing to the spotter by radio. In all cases, aerially delivered firefighters will be briefed prior to

starting work. Engine crews can also be briefed by radio if driving to the ordering unit for the briefing would cause needless delay in attacking the fire. Documentation of briefings should be noted in an appropriate log.

**Expanded Briefings** The attached briefing checklist contains the **minimum** required briefing items. Units are encouraged to expand the **minimum** briefing, as appropriate, to ensure that safety, effectiveness, and efficiency are adequately managed.

Briefing Checklist		
1. Incident Status	Location	
Size	Jurisdiction	
Hazards		
2. Incident Site	Forest/Grassland/etc.	
General Health		
Terrain		
3. Fuel Conditions	Live Fuels	
1-hour	10-hour	1000-hour
Important Indices		
4. Weather Conditions	Current: AIR TEMP WIND SPEED DIRECTION RH	Forecasted: AIR TEMP WIND SPEED DIRECTION RH
5. Command/Control	Incident Commander	
Resources on Incident		
Resources Ordered		
Communications		
Reporting Procedures		
Key Radio Frequencies	TACTICAL:	AIR TO GROUND:
COMMAND:		

6. Fire Behavior	Current	Forecasted
7. Aviation	Aircraft	
Hazards		
Restrictions		
8. Other		

(Reverse of Checklist Form)

### Briefing Items

Some items on the briefing checklist may not be applicable. For example, a discussion of the conditions of 1,000-hour time-lag fuels **may** not be necessary if such fuels do not exist on or adjacent to the incident site. A brief description of items on the briefing checklist follows:

- 1. Incident Status** – Provide the location (T, R, Section), estimated size, jurisdictional agency, and known hazards such as power lines, Hazmat sites, loose rock, etc.
- 2. Incident Site** – Provide basic information about the site, including biome (forest, woodland, shrub steppe, etc.). Include general state of health, such as overmature, 70 percent insect infested, large areas of blowdown, flashy fuels, etc. Also, provide general sense of terrain, such as large relief with 60 percent slopes.
- 3. Fuel Conditions** – Provide best estimates of live, 1-, 10- and 1,000-hour timelag fuel moisture contents, and important NFDRS indices.
- 4. Weather conditions** – Provide current (or most recent) weather, including wind speed and direction, air temperature, and relative humidity. Also provide the most recent forecast, and spot weather information if available. Emphasize FIRE WEATHER WATCHES and RED FLAG WARNINGS. Local Dispatch should also remind the Incident Commander to obtain and relay site weather conditions.
- 5. Command and Control** – Provide the name and contact radio frequency of the Incident Commander (or appropriate general staff) for contact on arrival. Also describe the appropriate method of reporting (checking in), the general communications procedure, and key radio frequencies.
- 6. Fire behavior** – Provide best estimates of rate of forward spread, direction of spread, and approximate flame lengths. Include important facts on recent fire behavior.

**7. Aviation** – Provide important information such as number and types of aircraft operating in the area, MOAs, airspace closures, etc.

**8. Other** – Add additional information which would improve effectiveness and safety.

The IC should provide a specific safety briefing to all crews arriving at the incident.

### **Spot Weather Forecast**

Spot weather forecasts should be requested for fires that have potential for extreme fire behavior or exceed initial attack or are located in areas for which red flag warnings have been issued.

The basic elements of a Spot Weather Forecast are:

Name of Fire or Other Project

Control Agency

Request Time & Date

Location by ¼ Section

Drainage Name

Exposure

Size

Elevation (top and bottom)

Fuel Type

Fire Character (ground, crown)

Weather Conditions

Place

Elevation

Observation Time

Wind Direction

Wind Velocity (eye level or 20 feet)

Dry Bulb

Wet Bulb

Remarks

## Strategy and Tactics

Determining the appropriate initial attack strategy is based on firefighter and public safety, and management objectives.

Remember to “**Match your strategy and tactics to the present and predicted fire behavior and weather conditions.**”

<b>Fire Suppression Interpretations from Flame Length</b>	
<b>Flame Length</b>	<b>Interpretations</b>
<b>Less than 4 feet</b>	Fires can generally be attacked at the head or flanks by firefighters using hand tools. Handline should hold fire.
<b>4 to 8 feet</b>	Fires are too intense for direct attack on the head with hand tools. Handline cannot be relied on to hold the fire. Bulldozers, engines, and retardant drops can be effective.
<b>8 to 11 feet</b>	Fires may present serious control problems: torching, crowning, and spotting. Control efforts at the head will probably be ineffective.
<b>over 11 feet</b>	Crowning, spotting, and major fire runs are probable. Control efforts at the head of the fire are ineffective.

## Strategy

**Direct Attack** This strategy is conducted in light fuels, directly on the flaming edge of the fire. The type of fuel and the flame length will dictate your strategy. If the flame length is greater than 2 to 3 feet, the fire is burning too intense for direct attack. Direct attack must start with an anchor point.

### Advantages and Disadvantages of Direct Attack

#### Advantages

There is minimal area burned. No additional area is intentionally burned.

Safest place to work. Firefighters can usually escape into the burn area.

Full advantage is taken of burn out areas.

May reduce the possibility of the fire moving into the crowns of the trees or brush.

Eliminates the uncertain elements of burning out or backfiring.

#### Disadvantages

Firefighters can be hampered by heat, smoke, and flames.

Control lines can be very long and irregular, because the line follows edge of fire.

Firefighters may accidentally spread burning material across line.

Doesn't take advantage of natural or existing barriers.

Usually more mopup and patrol.



**Parallel Attack** This strategy constructs fireline 6 to 50 feet from the fire's edge. The line is burned out immediately after construction.

**Advantages and Disadvantages of the Parallel Attack Method**

**Advantages**

Firefighters can drop back from the fire's edge, getting away from the smoke and heat.

Can cut fireline across pockets and fingers.

May be able to place line in lighter fuels.

Usually shorter and straighter line.

**Disadvantages**

Fire may cross fireline before it is burned out.

Burned area is not readily available as a safety zone.

Fails to take advantage of fireline that has burned out on its own.

Will increase the area burned.

**Indirect Attack** This strategy is used when a direct attack is not possible or practical. The use of natural barriers, roads, fuel type changes, etc. allow you to establish control lines and burn out. Very effective strategy when fire behavior is intense and or fire fighting resources are scarce.

<b>Advantages and Disadvantages of Indirect Attack Method</b>	
<b>Advantages</b>	<b>Disadvantages</b>
Can locate line along favorable topography.	More acreage will be burned.
Takes advantage of natural or existing barriers.	May be dangerous to firefighters, because they are some distance from the fire and can't observe it.
Firefighters work out of smoke and heat.	Fire may cross line before it is fired.
More time to construct line.	Burning out may leave unburned islands.
Allows line to be constructed in lighter fuels.	Brings into play the dangers of burning out or backfiring.
May be less danger of slopovers.	Fails to take advantage of line that has already burned out.

**Hotspotting** Hotspotting is the stopping of the spread of the flaming front. The purpose of this dangerous tactic (no anchor point and working at the head of the fire) is to slow the rapid spread of the fire, until firelines can be constructed. Often used in the protection of life and property. This strategy requires lookouts, escape routes, communications, and support from air tactical resources (retardant, water drops).

**Cold Trailing** Cold trailing means the firefighters are working along a partially dead line. They are inspecting the black line for hotspots, constructing line where needed, and mopping up hotspots. Cold trailing is used to reduce unnecessary disturbance to the environment.

**Mopup** To extinguish burning material that may cause a fire to spread beyond the control lines.

<b>Rules of Mopping Up a Fire</b>	
<b>Rule</b>	<b>What?</b>
Start work on each portion of line as soon as possible.	Start with the most dangerous line first. Work from the fire line toward the center of the fire. Small fires are totally extinguished. On larger fires, mop up a minimum of 100 feet, or to such a distance that nothing will blow, roll, or spot across the line.
Secure and extinguish burning materials.	Arrange burning fuels so they cannot roll across the line. Spread smoldering fuels and apply water so they will cool. Scatter fuels away from the line.
Deal with special hazards INSIDE the line.	Fall snags; extinguish logs and stumps. If you can't fall the snag, clear around the base, so that burning material will not fall into flammable fuels.
Deal with special hazards OUTSIDE the line.	Move slash back, away from the fireline. Fall snags and cover with dirt. If stumps are close to the line, cover them with dirt.
Reinforce the fireline.	Widen and clean the fireline. Reinforce any undercut line. Burn out or cold trail islands. Dig out roots that cross under the fireline. Feel for hot material along the fireline.
Check for spot fires.	Constantly check for spot fires, especially downwind from the fireline. Check heavier fuels (logs, snags, slash, etc.) for smoldering material.

The following Checklists are provided to increase safety and effectiveness in suppression operations:

***Downhill/Indirect Checklist***

- 1 The decision is made by a competent firefighter after thorough scouting.
- 2 Downhill line construction should not be attempted when fire is present directly below the proposed starting point.
- 3 The fireline should not lie adjacent to a chute.
- 4 Communication is established between the crew working downhill and crews working toward them from below, when neither crew can adequately observe the fire.
- 5 The crew will be able to rapidly reach a zone of safety from any point along the line if the fire unexpectedly crossed below them.
- 6 A downhill line should be securely anchored at the top. Avoid underslung line if practical.
- 7 Line firing should be done as the line progresses, beginning from the anchor point at the top. The burned out area provides a continuous safety zone for the crew and reduces the likelihood of fire crossing the line.
- 8 Be aware/avoid the Watch Out Situations.
- 9 Fully comply with the Standard Fire Orders.

***Principles of Retardant Use***

- 1 Determine tactics of direct or indirect based on fire sizeup and resource available.
- 2 Establish an anchor point and work from it.
- 3 Use the proper drop height.
- 4 Apply proper coverage levels.
- 5 Drop downhill and down-sun when feasible.
- 6 Drop into the wind for best accuracy.

- 7 Maintain honest evaluation and effective communication between the ground and air.
- 8 Use direct attack only when ground support is available or extinguishment is feasible.
- 9 Plan drops so that they can be extended or intersected effectively.
- 10 Monitor retardant effectiveness and adjust its use accordingly.

### **Directing Drops**

- 1 **Give general location** on incident.
- 2 **Finalize location** with:
  - a Clock direction – Straight in front of the aircraft is 12 o'clock, out the right door is 3 o'clock, the tail is 6 o'clock, and the left door is 9 o'clock. When giving direction, remember that helicopters and air attack generally orbit in a right-hand pattern and air tankers in a left-hand pattern.
  - b Position on slope – Lower 1/3, upper 1/3, midslope, top of ridge, etc.
  - c Aspect – Direction slope is facing.
  - d Describe prominent landmarks – Don't say "I have a red hard hat. I'm wearing a yellow shirt. I'm waving. I'm by a big rock. I'm by the big tree." Visualize what the pilot sees from the air and describe target.
  - e Use Signal Mirrors – Use smoke or fusee, if a mirror is unavailable. Stand in drop location (when safe) for ID and move away before drop.
- 3 **Describe target** from your location and explain mission. The pilot will decide drop technique and flight path.
- 4 **Assure pilot** all personnel are safe and know aircraft intentions before the drop.
- 5 **Give feedback** to pilot about drop accuracy. Be honest and constructive. Let the pilot know if drop is early, late, uphill, downhill, on target, too high, too low, etc. Report low drops immediately.

## Evaluation

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### Initial/Extended-Attack IC Evaluation Standards

It has been documented that the greatest risk to the health and safety of firefighters is during the initial- and extended-attack phase of fire suppression. For this reason we have developed the following criteria for managers to use in the evaluation of Initial- and Extended-Attack Incident Commanders. The criteria are designed to emphasize those factors that are critical for the safe and efficient suppression of wildfires.

#### Sample Evaluation:

**1. Provide for the Safety and Welfare of Assigned Personnel.**

Recognize potential hazardous situations and determine if the fire can be fought safely.

Select safe and effective strategies and tactics by applying the LCES process.

Effectively brief firefighters of hazards, safety zones, escape routes, and current and expected weather and fire behavior.

Establish effective communications, and lookouts.

Ensure that special precautions are taken when hazards exist.

Ensure that adequate rest, food, water, and health services are provided to all personnel.

**2. Fire Sizeup**

Correctly estimate the fire behavior and potential.

Order the appropriate resources to safely and effectively manage the fire.

Communicate effectively with dispatch.

Select safe and effective strategies and tactics that meet management objectives.

**3. Fire Suppression Operation**

Safe and effective implementation of strategy and tactics through the use of the 10 Standard Fire Orders, 18 Watch Out Situations, LCES, and safety procedures.

Concise and effective briefing of firefighters, to include:

- Incident objectives, strategy, and tactics
- Hazards

- Safety principles

Monitor weather and fire behavior, and make needed adjustments to strategy and tactics.

Provide for the safety and welfare of firefighters.

Communicate effectively with dispatch and supervisor. Keep dispatch informed of progress, problems, and needs.

Determine control, when the fire is out, and when it is safe to demobilize.

Early and effective notification of fire's escape.

Timely and effective input into the "Escaped Fire Situation Analysis."

#### **4. Complete Administrative Responsibilities**

Complete time reports, accident forms, fire report, and other required reports.

Brief and submit complete documentation to supervisor.

Prepare and discuss performance evaluations with subordinates.

Actively participate in an analysis of:

- Incident objectives
- Strategy and tactics
- Safety
- Cost effectiveness
- Lessons learned and suggestions for improvement





## 9 – Wildland/Urban Firefighting



### Wildland Urban Interface

The wildland/urban interface is defined as the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. (Federal Wildland Fire Management Policy and Program Review, Dec 1995)

“The operational role of Federal agencies as a partner in the wildland/urban interface is wildland firefighting, hazardous fuels reduction, cooperative prevention and education, and technical assistance. Structural fire protection is the responsibility of local governments. Federal agencies may assist with exterior structural suppression activities under formal Fire Protection Agreements that specify the mutual responsibilities of the partners, including funding.” (Federal Wildland Fire Management Final Report, December 1995)

### BLM Structural & Vehicle Firefighting Policy

The BLM Manual 9200 states: Structural firefighting is not the functional responsibility of the Bureau. Bureau assistance in suppressing structure fires may only be performed on an emergency basis to save lives or to keep the fire from spreading onto public lands. Bureau suppression personnel will be made aware of safety hazards associated with suppression activities around developments and transportation systems.

#### Clarification

- 1 Bureau resources will not be planned for, nor dispatched as normal response for structure or vehicle fires, except in those cases where these fires pose significant threat to Bureau responsibility lands. In these situations, Bureau resources should only be planned for wildland protection. Bureau employees may only take direct action on structure or vehicle fires when adequate local firefighting forces are not yet present. Actions will be limited to the exterior of the structure or vehicle unless there is immediate threat to human life. Employees must not knowingly be placed in a position where exposure to noxious gases or chemicals or other situations require the use of self-contained breathing apparatus. BLM units will withdraw from the suppression of structural fires and will work to protect adjoining wildland resources when local fire agency units arrive in sufficient force.

- 2 The number, type, and location of Bureau firefighting resources will not be based on nor justified by structure or vehicle firefighting needs.
- 3 No Bureau employee should respond to a structure or vehicle fire prior to receiving specialized training in hazard awareness and unique safety considerations associated with structure and vehicle protection. In most cases, a local fire department with responsibility for structure and vehicle fire protection will provide this training.
- 4 Bureau employees, in interagency dispatch centers, should not provide dispatch service for cooperating agencies having structure fire, vehicle fire, or emergency medical responsibility unless (1) a current interagency agreement is in effect, (2) the Bureau dispatcher has been trained the same as the cooperating agency dispatchers, and (3) the Bureau employee has been given a delegation of authority for those activities outside the normal scope of the Bureau. In these instances, our employees will be acting as agents of that agency and will **only** communicate information contained in that agency's dispatch plan or as directed by an official from that agency.

## **Safety**

### ***Wildland/Urban Watch Outs***

- Wooden construction and wood shake roofs
- Poor access and narrow one-way roads – Observe bridge limits when using heavy equipment
- Inadequate water supply
- Natural fuels 30 feet or closer to structure
- Extreme fire behavior
- Strong winds
- Evacuation of public (panic) and pets (horses, dogs)
- Structures located in chimneys, box canyons, narrow canyons, or on slopes of 30% or more in flashy or heavy brush fuel types
- Power lines and poles – watch for both overhead and fallen lines
- Propane and above ground fuel tanks with nearby vegetation or wooden improvements
- Local citizens attempting suppression actions
- Airtanker retardant drops and helicopter bucket operations

## **Sizeup**

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The primary considerations are firefighter safety, public safety, potential fire behavior, access, egress, nature of the threat, hazardous materials, and water supplies. The following checklists are designed for incidents that BLM normally does not respond to unless specifically trained. Distribute these checklists only to those who are trained and qualified to perform these tasks.

## **Structure Assessment Checklist**

### ***Address/Property Name***

- Numerical street address, ranch name, etc.
- Residents on site?

### ***Road Access***

- Paved, gravel, dirt
- Number of lanes, vegetation clearance, defensible space, safety zones
- Undercarriage problems, 4x4 only?
- Turnouts, turnarounds
- Bridges – adequate support structure?
- Creek Crossings – approach angle, crossing surface
- Terrain – road slope, position on slope, near chimneys, saddles, canyon bottom
- Grade – greater or less than 15%

### ***Structure/Building***

- Single residence, multiple occupancy, barn, fuel storage, unknown storage.
- Exterior walls – stucco or other non-combustible, wood frame, wood shake, r other combustible. Large unprotected windows facing heat source?
- Roof – asphalt or fiberglass shingle, tile, rock, metal or other low combustible material; wood shake or other easily combustible material?
- Eaves – covered and little overhang; exposed with large overhang exposure?
- Other – exposed wooden structural elements, overhangs slope, attached wood deck, firewood piles, wooden patio furniture, wooden fences attached to house.

### ***Clearances/Exposures/Defensible Space***

- 100' vegetation clearance, max. 18" high, 15% or less slope, good ground clearance, vegetation is low combustible type, or is clearance less than described?
- Predominant fuel bed in area surrounding structure is light, medium, heavy, continuous, non-continuous?
- Flammable trees adjacent to structure?
- Other combustibles adjacent to structure?
- High voltage lines or transformers near apparatus placement areas?
- Structure located on narrow ridge, knoll, narrow canyon, chimney, mid-slope; defensible space less than 200 feet?
- Propane and above ground fuel tanks with nearby vegetation

### ***Hazardous Materials***

- Pesticides, herbicides, DOT/NFPA/UN symbols, propane, oil, fuels, paints

### ***Available Water***

- Hydrant or standpipe, water storage tank with valve, swimming pool with access

**Evacuation Needs**

- Describe

**Estimated Resources for Protection**

- Number and type engines, number water tenders, number crews, number dozers?

**Structure Triage**

There are three categories of structures: those that are threatened; those that are not threatened; and those that are lost or are too dangerous to protect.

Factors that may make an attempt to save a structure hopeless or too dangerous are:

- Fire is making a sustained run and there is little or no clearance.
- Fire behavior is extreme; spot fires are numerous and out pacing your ability to control them.
- Water supply will not last as long as the threat.
- Fire's intensity dictates you leave the area NOW.
- Roof is more than ¼ involved.
- There is fire inside the structure or windows are broken.
- You cannot safely remain at the structure and your escape route could become unusable.

**Initial Action**

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The following checklists are designed to guide you in response to situations that may occur. The checklists provide you with factors to consider for a safe and effective response.

**Structure Protection Checklist**

- Always stay mobile.
- Back equipment in for quick escape.
- Coil a short 1½" charged line with fog nozzle on your engine for safety and quick knock down.
- Don't make long hose lays.
- Know bridge limits, alternate access, and turnarounds for you and support vehicles.
- Keep at least 100 gallons of water reserve in your tank.
- Check roads before the fire hits.
- Check each home for defense. Use Structure Assessment Checklist.
- Determine if residents are home. Leave home lights on inside and out, day and night.
- Close garage door.
- Place owner's ladder at a corner of home on least fire threat side.
- Coil and charge garden hoses.

- Check and mark HazMat, i. e., LPG, pesticides, paint storage.
- Don't enter a burning structure unless you are trained, equipped, and authorized.
- If a home becomes well involved, **leave it**. Move on to one you can save.
- **Always wear your safety gear, all of it.**
- Firefighter safety and survival is the number one priority.

## Hazardous Materials

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All individuals responding to wildland fire incidents should be familiar with the current publication of the Department of Transportation's Emergency Response Guidebook DOT P 5800.7 1996, its purpose and use. It is recommended that Engine and Crew vehicle operators complete Hazardous Materials awareness training. This training usually takes about four hours and is available either through agency HazMat coordinators or local fire departments.

### IC HazMat Checklist

- |                      |   |
|----------------------|---|
| Approach Cautiously  | Resist the urge to rush in; you cannot help others until you know what you are facing. Stay upwind and uphill.  |
| Identify the Hazards | Placards, container labels, shipping papers and or knowledgeable persons on the scene are valuable information sources. Evaluate all of them and then consult the recommended guide page before you place yourself or others at risk.                               |
| Secure the Scene     | Without entering the immediate hazard area, do what you can to isolate the area and assure the safety of individuals and the environment. Move and keep individuals away from the scene and the perimeter. Allow room enough to move and remove your own equipment. |
| Obtain Help          | Advise dispatch to notify responsible agencies and call for assistance from trained experts through CHEMTREC and the NATIONAL RESPONSE CENTER.  |
| Decide on Site Entry | Any efforts you make to rescue persons, protect property or the environment must be weighed against the possibility that you could become part of the problem.  |

***Above All*** Do not walk into or touch spilled material. Avoid inhalation of fumes, smoke and vapors, even if no hazardous materials are known to be involved. Do not assume that gasses or vapors are harmless because of lack of smell—odorless gasses or vapors may be harmful.

**1-800-424-9300** **CHEMTREC** (Chemical Transportation Emergency Center) – for immediate information about a chemical or to seek assistance from a manufacturer

**1-800-424-8802** **National Response Center** – To report spills of oil and hazardous materials

### **HazMat Checklist**

#### **Assume role of IC until relieved by responsible agency**

- Assign safety officer
- Develop action plan for area security and evacuation. Advise dispatcher.
- Advise all units of changes in situation.
- Document all actions taken and contacts.
- Document employee exposure.

#### **Rules for Isolation Distances**

- Minor event (1 drum, 1 bag, etc.) = 150 feet
- Major event (1 drum or more, etc.) = 500 feet
- Residential and light commercial = 300 feet
- Open areas = 1000 feet
- BLEVE (Boiling Liquid Expanding Vapor Explosion) potential = 2500 feet (½ mile)
- Stage arriving units 2500 feet upwind.
- Position vehicles headed out.

#### **Think Safety**

- Safe approach, upwind/upgrade/upstream
- Identify, isolate and deny entry
- Notify agency dispatcher
- Request needed assistance via safe route

#### **Scene Management**

- Goal is to protect life, environment and property
- Attempt to identify substance using DOT Emergency Response Guide, occupancy/location, placards/labels, container shapes/colors, Material Safety Data Sheets (MSDS), shipping papers. **Use binoculars!**
- Assess situation – exact location, identity and quantity of material involved, exposures and hazards

### **HazMat Response Acronyms** Reference: NFES 2148

**S**afety – Responder safety is #1 priority.

**I**solation & **D**eny Entry – Isolate material and don't let anyone enter hazard area.

**N**otifications – Local, state, and federal responders and regulators.

**C**ommand/Management – Implement command. IC must be identified/assigned.  
**I**dentification & Assessment – ID material and hazards associated with it.  
**A**ction Planning – State law requires written action plan. ICS 201 will work.

**P**rotective Equipment – Determine appropriate level for responders.  
**C**ontainment & Control – Mitigate hazardous material involved only if you are trained, equipped, and authorized.  
**P**rotective Actions – Secure area, evacuate or shelter in place.

**D**econtamination & Cleanup – Up to responsible party or local health department.

**D**isposal – Very expensive. Special permits required for hauling.

**D**ocumentation – Document everything!

## **Vehicle Accident IC Checklist**

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### **Report on conditions**

- Hazards – fuel, electrical, traffic, access, etc.
- Need for law enforcement, ambulance, helicopter, tow truck, extrication tools
- Injuries – number of victims, severity
- Vehicles – number, type
- Periodic update to dispatch

### **Establish traffic control.**

- Place apparatus between oncoming traffic and rescuers. Keep exhaust from pointing at scene, victims.
- Chock the involved vehicle, if on a hill.
- Place warning devices.
- Establish positive communications.

### **Assess fire hazard or potential.**

- Take suppression action as needed if trained, equipped and authorized.
- Be aware of fuels running downgrade.
- Keep engine running.

### **Perform patient assessment.**

- Administer first aid or triage until responsible medical service arrives.
- If there are fatalities, do not give names or other information over radio that would reveal identity. Do not move bodies.

### **Begin incident report.**

- Document all events.





## 10 – Extended Attack



Extended attack is that transition phase of an incident when initial capabilities have been exceeded and a management team has not yet taken over.

### Introduction

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The extended attack phase of fire suppression has historically been the most dangerous and costly to the bureau's fire program. Extended attack actions can overwhelm an incident commander if specific ICS organizational issues are not addressed at an early stage. The Extended Attack Complexity Analysis must be used as soon as it is evident that the incident will entail the use of numerous types and kinds of resources.

### Policy

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All BLM units will utilize a decision-making process to determine the most appropriate management strategies for a wildland fire that exceeds initial management capabilities.

### Complexity Analysis

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The purpose of the complexity rating process is two-fold. It is to be used to identify elements or characteristics of an incident that pose special problems or concerns. Noting certain factors that are highly complex offers the opportunity to mitigate the situation through the selection of a different strategy, tactic, or higher qualification of incident management. The second purpose of the complexity analysis is to assist the manager in determining the level of management required to safely and effectively manage the incident.

### Extended Attack Complexity Analysis

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#### Appraising the Situation

An Incident Complexity Analysis (ICA) should be used as a guide for agency administrators. In developing this guide, certain assumptions are made:

- 1 As an incident becomes more complex, the need for an incident management organization increases.
- 2 To facilitate an efficient and effective organization, key incident management positions should be involved during the early stages of complexity analysis.

- 3 The guide is not a panacea for the decision process; local fire history and management requirements must be considered.

**Guidelines for Using the ICA**

One check in each of the five major elements would indicate a complexity level suggesting consideration of a Type 2 Incident Management Team. If all elements are not involved, use the following ranges:

- 1-3 Current management should be able to handle. District organization fills positions as needed. Continue to monitor objectives and accomplishments and consider a Type 3 organization.
- 4-6 Indicates complexity level suggesting a Type 3 Team.
- 7-10 Scrutinize overall complexity and safety concerns, consider past fire history and current and expected situation, and review EFSA. Consider ordering Type 2 team.

Prior to containment, the Escaped Fire Situation Analysis (EFSA) must be reviewed by a line officer and/or manager prior to each operational period to determine if it is still valid. If it is not valid, a new EFSA should be completed. All completed EFSA's shall become a part of the final incident package. The Incident Complexity Analysis should also be reviewed with the EFSA to determine the level of management required.

**Extended Attack Incident Complexity Analysis**

<b>Safety</b>	Yes	No
<i>Exposure of personnel to unusually hazardous conditions</i>	_____	_____
<i>Accidents/injuries have occurred</i>	_____	_____
<i>Multiple fixed-wing aircraft and helicopters involved or anticipated</i>	_____	_____
<i>Current of Potential for public evacuations</i>	_____	_____
<i>Terrain adversely affects performance of tactical resources, limits safety zones.</i>	_____	_____
<i>Performance of firefighting resources affected by cumulative fatigue</i>	_____	_____
<b>External/Political Factors</b>		
Potential for numerous damage claims	_____	_____
More than one jurisdiction involved	_____	_____
Controversial fire policy	_____	_____
Sensitive public/media relationships	_____	_____
Smoke management problems	_____	_____
Lack of cohesive organizational structure	_____	_____

**Resources Issues**

Structures	_____	_____
Cultural values	_____	_____
Recreational developments	_____	_____
Urban interface	_____	_____
Critical municipal watershed	_____	_____
T& E species	_____	_____

**Fire Behavior**

Current or predicted fire behavior dictates indirect control strategy	_____	_____
Fuels extremely dry and susceptible to rapid and explosive spread	_____	_____
Extreme fire behavior/blow-up potential exhibited	_____	_____
Current or predicted winds above 20 MPH	_____	_____
Fuel moisture of eight percent or below (10-hour fuels)	_____	_____
Severe fire weather predicted for next two operational periods	_____	_____

**Personnel/Equipment**

100 or more personnel assigned to incident	_____	_____
Variety of special support personnel or equipment	_____	_____
Resources unfamiliar with local conditions and accepted tactics	_____	_____
Heavy commitment of local resources to logistical support	_____	_____
Existing forces worked two operational periods without success	_____	_____
Communication ineffective with tactical resources or dispatch	_____	_____

**Complexity Rating**

- 1-3 Current management should be able to handle. Consider a Type 3 organization.
- 4-6 Indicates complexity level suggesting a Type 3 Team.
- 7-10 Scrutinize overall complexity and safety concerns, consider past fire history and current and expected situation, and review EFSA. Consider ordering Type 2 team.

**Remarks:**

**Prepared By:** \_\_\_\_\_ **Date** \_\_\_\_\_ **Time** \_\_\_\_\_

**Reviewed By:** \_\_\_\_\_ **Date** \_\_\_\_\_ **Time** \_\_\_\_\_

**Reviewed By:** \_\_\_\_\_ **Date** \_\_\_\_\_ **Time** \_\_\_\_\_

## BLM EFSA Guide

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Escaped Fire Situation Analysis (EFSA) is a decision making process in which the agency administrator or representative describes the situation, evaluates the expected effects, establishes objectives and constraints for the management of the incident, and documents that decision. The format and level of detail required is dependent on the specific incident and its complexity. The key is to document the decision made. The required elements to be addressed in the EFSA are:

- Current Situation
- Evaluation Criteria
- Alternatives
- Analysis of Effects
- Record of Decision
- Review/Evaluation/Update
- Probability of Success
- Consequence of Failure

### Current Situation

This portion of the analysis provides basic information describing the fire situation at the time the analysis was conducted. It is important to clearly describe the situation that occurred at the time the decision was made. Elements to be addressed are:

- Fire name and number.
- Date of Analysis. This is the date on which the current analysis was made. Enter the month, day, and year.
- Time. Enter the time of day the analysis was completed. Enter the 24-hour clock time.
- Location. Use local terminology for point of origin. Include a legal description and latitude and longitude.
- Fire Weather and Behavior
  - ♦ Current. Briefly discuss the fire weather in terms of temperature, wind and daily patterns. Describe the fire in non-technical terms, such as creeping, spotting crowning, etc. Discuss the flame lengths, rates of spread, size, etc.
  - ♦ Predicted. Describe the predicted weather patterns, and fire behavior predictions based on weather, fuels, topography, and the potential size.
- Resource Availability. Briefly discuss the availability of suppression resources to control the fire and fire activity at the local, and geographic level.
- Management Objectives and Constraints. The management objectives and constraints should be summarized to assist in the decision process.

- Social or External Considerations. Discuss any issues that would contribute to making good suppression decisions.

### **Evaluation Criteria**

Document the criteria used to evaluate suppression alternatives. The criteria should reflect the following:

- Safety (Firefighter/Public)
- Land and Resource Management Objectives.
- Environmental
- Social, Political, Economic
- Resources Availability. Local, geographic, and national fire activities and reinforcement capabilities.

### **Alternatives**

Develop a sufficient number of alternatives to represent a reasonable range for the situation. Each alternative must be practical and contain the level of detail required to compare the alternatives and make a decision based on pre-identified evaluation criteria.

**Strategy** Briefly state the alternative strategies for management of the incident. Use geographic names, locations, etc. Roughly designate each strategy on a map.

**Management Forces Required** Make general estimates with enough detail to help in estimation of costs, determine if resources are available, etc.

**Estimate Date of Control** Estimates for each alternative should be made based on predicted weather and behavior factors, barriers, fuels etc., and the effects of suppression efforts.

**Estimated Size at Containment** Estimates for acreage burned under each alternative should be recorded and displayed on a map.

**Estimated Cost** Estimate total cost of suppression alternative. Include suppression costs, and rehabilitation. Estimated cost should also consider the probability of success, i.e., the consequences of failure. The EFSA "Decision Tree Application" describes the cost of failure based on the probability of success. (see attached description).

**Estimated Probability of Success** Based on estimates from 0-100 for each alternative.

### **Analysis of Effects**

Apply the above Evaluation Criteria to the alternatives. The results of the analysis will be the basis for selecting the appropriate alternative. The analysis of effects is based on the best estimates on the unit, resource and fire management. The situation will determine the level of detail required. You may display the effects in dollars, or as positive or negatives, as demonstrated on the example forms. The important thing is to document your decision. Ensure that estimates of potential fire consequences are consistent with resource objectives, values, fire effects, and policy.

### **Record of Decision**

Agency Administrator selects an alternative that best implements the objectives and constraints for the management of the area. Agency Administrator selects the level of management required to successfully implement the selected alternative. (Incident Management Team Type 1, 2, or 3). Briefly provide your rationale for decisions. The EFSA shall become a permanent part of the final fire record.

### **Monitoring/Evaluation/Update**

The EFSA must be reviewed prior to each operational period to determine if the alternative is still valid. The responsible Agency Administrator must sign the EFSA to document the review has taken place.

## **EFSA Instructions**

### **Section I. EFSA Information Page**

*This page is completed by the Agency Administrator.*

- I.A. Jurisdiction(s): Assign the agency that has fire protection responsibility, e.g., USFWS, Forest Service, BLM.
- I.B. Geographic Area: Assign the recognized "Geographic Coordination Area" in which the fire is located, e.g., Northwest, Northern Rockies.
- I.C. Unit: Designate the local administrative unit, e.g., Hart Mountain Refuge Area, Flathead Indian Reservation.
- I.D. EFSA#: Identify the number assigned to the most recent EFSA for this fire.
- I.E. Fire Name: Self-explanatory.
- I.F. Incident Number: Identify the agency number assigned to the fire, e.g., BOD 296, BNF 001.
- I.G. Management Code: Insert the local unit's fiscal management code.
- I.H. Date/Time Prepared: Self-Explanatory.
- I.I. Attachments: Check here to designate attachments used in the completion of the EFSA.

<b>I. WILDLAND FIRE SITUATION ANALYSIS</b>		
A. JURISDICTION(S):	B. GEOGRAPHIC AREA:	
C. UNIT:	D. EFSA#:	
E. FIRE NAME:	F. INCIDENT #:	
G. MANAGEMENT CODE:		
H. DATE/TIME PREPARED:		
I. ATTACHMENTS:		
Complexity Matrix		
Success/Failure Matrix		
Maps		
Other		



## Section II. Objectives and Constraints

- II.A. Objectives Criteria: Specify criteria that should be considered in the development of alternatives. Economic criteria could include closure of all or portions of an area, thus impacting the public, or impacts to transportation communication and resource values.

Environmental objectives could include management objectives for airshed, water quality, wildlife, etc.

Social objectives could include any local attitudes toward fire or smoke that might affect decisions on the fire, safety, etc.

Other criteria might include legal or administrative constraints which would have to be considered in the analysis of the fire situation, such as the need to keep the fire off other agency lands, etc.

- II.B. Constraints: List constraints on suppression action. These could include constraints to designated wilderness, wilderness study areas, environmentally or culturally sensitive areas, irreparable damage to resources or smoke management/air quality concerns. Economic constraints such as public and agency cost could be considered here.

<p><b>II. OBJECTIVES AND CONSTRAINTS</b></p> <p>TO BE COMPLETED BY AGENCY ADMINISTRATOR</p> <p>A. OBJECTIVES</p> <p>1. <i>ECONOMIC:</i></p> <p>2. <i>ENVIRONMENTAL:</i></p> <p>3. <i>SOCIAL:</i></p> <p>4. <i>OTHER:</i></p> <p>B. CONSTRAINTS</p>
--

### Section III. Alternatives

- III.A. Strategic Plan of Control: Briefly describe the general suppression strategies for each alternative. These could include direct, indirect, direct and indirect, confine, contain or control strategies. A “no suppression” alternative is not acceptable.
- III.B. Narrative: Briefly describe each alternative with geographic names, locations, etc., that would be used when implementing a suppression strategy. For example, “contain within the Starvation Meadows’ watershed by the first burning period.” A map for each alternative should be prepared. The map should be based on the “Calculation of Probabilities” and include other relevant information.
- III.C. Resources Needed: Self-explanatory.
- III.D. Final Size: Estimated final size for each alternative at time of containment.
- III.E. Estimated Contain/Control Date: Estimates for each alternative should be made based on predicted weather, fire behavior, resource availability and the effects of suppression efforts.
- III.F. Suppression Cost: Estimate suppression costs for each alternative, including mopup when necessary.
- III.G. Probability of Success: Base estimates from 0 to 100% for each alternative strategy.
- III.H. Complexity: Assign the complexity rating calculated on the page 1 attachments for each alternative, e.g., type 3, Type 2, Type 1.

III. ALTERNATIVES			
TO BE COMPLETED BY FIRE MANAGER/COMMANDER			
	A	B	C
A. STRATEGIC PLAN OF CONTROL			
B. NARRATIVE			
C. RESOURCES NEEDED:			
HANDCREWS	_____	_____	_____
ENGINES	_____	_____	_____
DOZERS	_____	_____	_____
AIRTANKERS	_____	_____	_____
HELICOPTERS	_____	_____	_____
D. FINAL SIZE			
E. EST. CONTAIN /CONTROL DATE			
F. SUPPRESSION COST			
G. PROBABILITY OF SUCCESS:			
H. COMPLEXITY:			
ATTACH MAPS FOR EACH ALTERNATIVE:			

## Section IV. Evaluation of Alternatives

- IV.A. Evaluation Process: Conduct an analysis for each element of each objective criterion and each alternative. Objective criteria should match those identified in section II.A. Use the best estimates available. Provide ratings for each alternative and corresponding objective element. Fire effects may be negative, cause no change, or may be positive. Examples are: 1) a system which employs a "-" for negative effect, a "0" for no change, and a "+" for positive effect; 2) a system which uses a numeric factor for importance of the consideration (soils, watershed, political, etc.) and assigns values (such as -1 to +1, -100 to +100, etc.) to each consideration, then arrives at a weighted average. Some agencies can estimate dollar amounts for resource values. If so, this data is preferred. Use those methods which are most useful to managers and most appropriate for the situation and agency.
- IV.B. Sum Of Economic Values: Calculate the net effect of the rating system used for each alternative. This could include the balance of: pluses (+) and minuses (-), numerical rating (-3 and +3), resource values as a dollar value, etc.

<b>IV. EVALUATION OF ALTERNATIVES</b>			
To Be Completed by Agency Administrator & Fire Manager/Commander			
	A	B	
A. EVALUATION PROCESS			
<i>SAFETY</i> Firefighter Safety Public Safety			
<i>ECONOMIC</i> Timber Improvements Recreation Wilderness Wildlife Water Forage Other (Specify)			
<i>ENVIRONMENTAL</i> Air Visual Fuels Threatened & Endangered Spec. Other (Specify)			
<i>SOCIAL</i> Employment Public Concern Cultural Other (Specify)			
<i>OTHER</i>			
B. SUM OF RESOURCE VALUES			

## Section V. Analysis Summary

- V.A. Compliance with Objectives: Prepare narratives that summarize each alternative's effectiveness in meeting each objective. Alternatives that do not comply with objectives are not acceptable. Narratives could be based on effectiveness and efficiency. For example: "most effective and least efficient," "least effective and most efficient," or "effective and efficient." Or answers could be based on a two-tier rating system such as "complies with objective" and "fully complies with or exceeds objective." Use a system that best fits the manager's needs.
- V.B. Pertinent Data: Data for this section has already been presented, and is duplicated here to help the Agency Administrator(s) confirm their selection of an alternative. Complexity is calculated in the page 1 attachments and displayed on page 3, section III.G. Size is displayed on page 3, section III.D. Suppression Costs are displayed on page 3, section III.F. Resource Values have been calculated and displayed on page 4, section IV.A. Probability of Success is calculated in the page 1 attachments and displayed on page 3, section III.H.
- V.C. External and Internal Influences: Assign information and data occurring at the time the EFSA is signed. Identify the Preparedness Index (1 through 5) for national and regional levels. Designate the Recourse Availability status. The information is available at the Regional Coordination Center. Designate "yes" indicating an up-to-date weather forecast has been provided to the Agency Administrator. Indicate the Incident Priority assigned regionally by the local MAC group. Assign information to the "other" category as needed by the Agency Administrator(s).

## Section VI. Decision

Identify the alternative selected, a brief rationale for the decision, and a signature with date and time. The signature of the appropriate Agency Administrator is mandatory.

<b>V. ANALYSIS SUMMARY</b>			
TO BE COMPLETED BY AGENCY ADMINISTRATOR			
A. COMPLIANCE WITH OBJECTIVES			
ECONOMIC	A	B	C
ENVIRONMENTAL			
SOCIAL			
OTHER			
B. PERTINENT DATA			
FINAL FIRE SIZE	_____	_____	_____
COMPLEXITY	_____	_____	_____
COST	_____	_____	_____
RESOURCE VALUES	_____	_____	_____
PROBABILITY OF SUCCESS/FAILURE	_____	_____	_____
C. EXTERNAL/ INTERNAL INFLUENCES			
PREPAREDNESS LEVEL _____			
INCIDENT PRIORITY _____			
RESOURCE AVAILABILITY _____			
WEATHER FORECAST (LONG-RANGE) _____			
OTHER _____			
<b>VI. DECISION</b>			
_____ SELECTED ALTERNATIVE:			
RATIONALE:			
_____		_____	
Agency Administrator Signature		Date/Time	

*This section is completed by the Agency Administrator or designate.*



**Section VII. Daily Review**

The date, time and signature of reviewing officials are reported in each column for each day of the Incident. The status of Incident Priority, Weather Forecast, Preparedness Level and EFSA Valid is completed for each day reviewed. Ratings for the Incident Priority, Weather Forecast and Preparedness Level are addressed on page 5, section V.C. A "yes" is required in the "EFSA Valid" to continue use of the this EFSA. A "no" indicates this EFSA is no longer valid and another EFSA must be prepared.

**Section VIII. Final Review**

This section is completed by the Agency Administrator. A signature, date and time are provided once all conditions of the EFSA are met.

<b>VII. DAILY REVIEW</b>						
TO BE COMPLETED BY AGENCY ADMINISTRATOR OR DESIGNATE						
SELECTED ALTERNATIVE TO BE REVIEWED DAILY TO DETERMINE IF STILL VALID UNTIL						
CONTAINMENT/CONTROL						
REVIEW			P R E P A R E D N E S S	L E V E L	I N C I D E N T	P R E O R I T Y
W E A T H E R	F O R E C A S T	E F S A  V A L I D				
DATE	TIME	BY				
IF EFSA IS NO LONGER VALID A NEW EFSA WILL BE COMPLETED						
<b>VIII. FINAL REVIEW</b>						
THE ELEMENTS OF THE SELECTED ALTERNATIVE WERE MET ON:						
Date: _____			Time: _____			
By: _____			Agency Administrator			

# 11 – Incident Management



## Policy

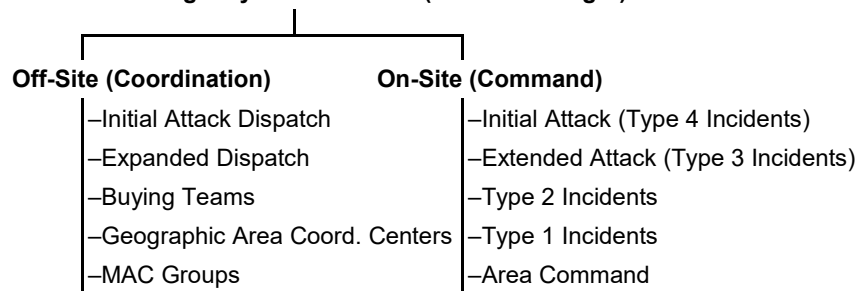
It is the BLM policy to utilize the Incident Command System to manage all incidents.

## Introduction

Over 90% of wildland fires are contained and controlled during initial attack. The implementation of an ICS approach provides for management/organizational growth on those incidents that evolve in complexity or increase in size. The transition and/or growth of an ICS management structure can occur over a period of several days or it may happen quickly within a few hours. Many safety problems, organizational issues, and cost-efficiency concerns emerge as the incident transitions into a larger operation.

Incident Management requires both on-site incident organizations and off-site coordination and support organizations. To effectively manage an incident, it is important to understand the roles and responsibilities of these organizations.

### Agency Administrator (District Manager)



## On-Site Incident Organizations

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**Type 4 Incident (Initial Attack)** - Characteristics of a Type 4 Incident are:

- The Incident has an Incident Commander, a single individual responsible to the Agency Administrator for all incident command level functions and incident activities. (All fires regardless of size have an Incident Commander.)
- Command and general staff positions are not activated.
- Resources vary from a single firefighter to several single resources or a single task force or strike team.
- The Type 4 Incident is limited to one operational period in the control phase. Mopup may extend into multiple periods.
- The Type 4 Incident does not require a written action plan.
- Role of the Agency Administrator
  - ♦ Operational Plans which provide:
    - Objectives
    - Strategy
    - Priorities

**Type 3 Incident (Extended Attack)** – Characteristics of a Type 3 Incident are:

- Some of the command and general staff positions may be activated, usually at the division/group supervisor and unit leader level.
- Resources vary from several single resources to several task forces/strike teams.
- The Incident may be divided into divisions but usually does not meet the division/group supervisor complexity for span-of-control.
- The Incident may involve multiple operational periods prior to control, which requires a written action plan.
- Staging areas and a base may be used.
- Role of Agency Administrator:
  - ♦ Operation Plan which includes: Objectives, Strategy, and Priorities
  - ♦ Fire complexity analysis.
  - ♦ Escaped Fire Situation Analysis.

**Type 2 Incident** - Characteristics of a Type 2 Incident are:

- Most or all of the command and general staff positions are filled.
- Incident base/camps are established.

- The incident extends into multiple operational periods.
- A written action plan is needed and prepared.
- Many of the functional units are needed and staffed.
- Operations personnel normally do not exceed 200 per operational period and total incident personnel do not exceed 500 (numbers are guidelines only).
- Divisions are usually established to geographically facilitate making work assignments and a qualified division/group supervisor is not required on Divisions established for reasons other than span-of-control or other complexity factors.
- Role of Agency Administrator
  - ♦ Complexity analysis
  - ♦ Escaped Fire Situation Analysis
  - ♦ Agency Administrator briefings
  - ♦ Written Delegation of Authority

**Type 1 Incident** - Characteristics of a Type 1 Incident: A Type 1 Incident meets all the criteria of a Type 2 Incident, plus the following:

- All command and general staff positions are activated.
- Operations personnel often exceed 500 per operational period and total personnel will usually exceed 1000 (numbers are guideline only).
- Divisions are almost always established requiring division/group supervisor qualified personnel.
- Type 1 Incident may require the establishment of branches.
- The Agency Administrator will have briefings, EFSA's, and new delegation of authority along with possible transition from Type 2 to Type 1 Teams.
- At this stage interface with the team often takes more of the Agency Administrator's time.

**Unified Command** - A representative from each of the involved jurisdictions shares in carrying out the command and at times other functions. Collectively they direct the management of the incident to accomplish a set of common objectives from all involved agencies. Unified command may be at the incident management team or area command level.

- The concept of unified command simply means that all agencies who have jurisdictional responsibility at the incident contribute to the process of:
  - ♦ Determining overall strategies.

- ♦ Selection of alternatives.
- ♦ Ensuring that joint planning for tactical activities will be accomplished.
- ♦ Making maximum use of all assigned resources.
- The need for a unified command is brought about because:
  - ♦ Incidents have no regard for jurisdictional boundaries.
  - ♦ Individual agency responsibilities and authority is normally legally confined to a single jurisdiction.
- The goals of the unified command are to:
  - ♦ Improve the information flow and interface between all agencies.
  - ♦ Develop a single collective approach to the incident regardless of its functional complexities.
  - ♦ Optimize the efforts of all agencies as they perform their respective missions.
  - ♦ Reduce or eliminate duplicate efforts or omissions.
  - ♦ Improve each agency's awareness of the plans and actions of all others.
  - ♦ Ensure that all agencies with responsibility for the incident have an understanding of their organization's goals, objectives, and restrictions.
  - ♦ Ensure that no agency's authority will be compromised.
  - ♦ Develop a set of objectives that will be developed for the entire incident.

**Complex** – A complex is two or more individual incidents located in the same general proximity which are assigned to a single incident commander or unified command to facilitate management.

**Area Command (AC)** – Area command is an expansion of the incident command function primarily designed to manage a very large incident that has multiple incident management teams assigned or numerous large incidents with teams assigned. However, an AC can be established at any time that incidents are close enough that oversight direction is required among incident management teams to ensure conflicts do not arise.

- The functions of AC are to coordinate the determination of incident:
  - ♦ Objectives.
  - ♦ Strategies.
  - ♦ Priorities for the use of critical resources allocated to the incidents assigned to the area command.
  - ♦ May be responsible for the coordination of demobilization.
  - ♦ The organization is normally small with personnel assigned to command, planning, and logistics. Depending on the complexity of the interface between the incidents, specialist in other areas such as aviation, safety, or information may also be assigned to area command.
- The AC is responsible for supervising, managing, and evaluating the incident management teams.

**Overall Coordination and Management** – As numbers of wildland fires, complex incidents, and the involvement or impact on other agencies increases, it is necessary to expand day-to-day coordination and management organizations to ensure efficient and effective use of critical personnel and equipment. This is not an expansion of the Incident Command System (ICS) but rather an expansion of the coordination and management system that supports on-the-ground incident management organization(s).

## Managing the Incident

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### **Agency Administrator's Responsibilities to the Incident Management Team**

- Assure that cause of fire is investigated immediately and that the ignition site is protected. Make clear assignment to the IMT for further investigation of ignition source.
- Conduct initial briefing following a well prepared briefing format so that incident objectives and concerns are understood by the IMT and you understand the IMT's expectations and concerns. **Define your role in the management of the incident.**
- Complete and approve Delegation of Authority.
- Provide signed initial EFSA and establish daily re-certification procedure.
- Assign resource advisor(s) to IMT.
- Define public information responsibilities and delegations so that all parties understand their roles. Establish standards for IMT liaison with local communities. Assure that all appropriate public, media, and government contacts are made.
- Assure that employee briefings occur.
- Utilize the capabilities of the IMT information officer, but remain involved.
- Assure that you receive briefings on the fire situation in enough detail to meet your needs.
- Consider the realities of today's suppression costs. A comparison between suppression costs and "Values at Risk" should be made. "Values at Risk" is a total assessment of the resource, and the political and economic considerations which may be affected by the incident now and in the foreseeable future.
- Consider requesting a comptroller to assure cost-effective incident operations.

- Set clear and measurable standards for safety. Highlight known hazards of the area. You may require a safety analysis on the tactical alternatives.
- Assign clear responsibilities for additional initial attack action responses.
- Assure that fire management staff is briefed regularly on incident status.
- Assure that the IMT addresses your fire training needs.
- Assure that rehabilitation of all effects of fire suppression activities is addressed by the IMT.
- Assure that all fiscal matters are resolved to your satisfaction prior to release of the IMT. You may choose to establish follow-up contact procedures with team for fiscal matters.
- Assure a written re-Delegation of Authority has been completed prior to release of the IMT.
- Provide separate written evaluation to the IC and IMT performance.

### **Large Fire Complexity Analysis**

The following questions are presented as a guide to assist the Agency Administrator and staff in analyzing the complexity or predicted complexity of a fire situation. Because of the time required to assemble or move an Incident Management Team to a fire, this checklist should be completed when a fire escapes initial attack and be kept as part of the fire records. This document is prepared concurrently with the preparation of and attached to a new or revised Escaped Fire Situation Analysis. It must be emphasized that this analysis should, where possible, be based on predictions to allow adequate time for assembling and transporting the ordered resources.

#### ***Use of the Guide***

- 1 Analyze each element and check the response yes or no.
- 2 If positive responses exceed, or are equal to, negative responses within any primary factor (A through G), the primary factor should be considered as a positive response.
- 3 If any three of the primary factors (A through G) are positive responses, this indicates the fire situation is or is predicted to be Type 1.
- 4 Factor H should be considered after all above steps. If more than two of these items are answered yes, and three or more of the other primary factors are positive responses, a Type 1 team should be considered. If the



composites of H are negative, and there are fewer than three positive responses in the primary factors (A-G), a Type 2 team should be considered. If the answers to all questions in H are negative, it may be advisable to allow the existing overhead to continue action on the fire.

**Controversial fire policy** – Escaped management fire is one example of this. Another is differing fire policies between suppression agencies when the fire involves multiple ownership is a good example.

**Pre-existing controversies** – These may or may not be fire management related. Any controversy drawing public attention to an area may present unusual issues to the Incident Management Team and local management.

**Have personnel overextended themselves mentally or physically?**—This is a critical item that requires judgment by the responsible agency. It is difficult to write guidelines for this judgment because of the wide differences among individuals. If the Agency Administrator feels the existing overhead cannot continue to function efficiently and take wise and aggressive action due to mental or physical reasons, assistance is mandatory.

**Fire Complexity Analysis**

Yes No

A. Fire Behavior *Observed or Predicted*

- |  |       |       |
|--|-------|-------|
| 1. Burning index (from on-site measurement of weather conditions) predicted to be above the 90% level using the major fuel model in which the fire is burning. | _____ | _____ |
| 2. Potential exists for extreme fire behavior (fuel moisture, winds, etc.)   | _____ | _____ |
| 3. Crowning, profuse or long-range spotting.   | _____ | _____ |
| 4. Weather forecast indicating no significant relief or worsening conditions.  | _____ | _____ |
| Total  | _____ | _____ |

B. Resources Committed

- |   |       |       |
|---|-------|-------|
| 1. 200 or more personnel assigned.                          | _____ | _____ |
| 2. Three or more divisions.                                 | _____ | _____ |
| 3. Wide variety of special support personnel.               | _____ | _____ |
| 4. Substantial air operation which is not properly staffed. | _____ | _____ |
| 5. Majority of initial attack resources committed.          | _____ | _____ |
| Total   | _____ | _____ |

	Yes	No
<b>C. Resources Threatened</b>		
1. Urban interface.	_____	_____
2. Developments and facilities.	_____	_____
3. Restricted, threatened, or endangered species habitat.	_____	_____
4. Cultural sites.	_____	_____
5. Unique natural resources, special-designation areas, wilderness.	_____	_____
6. Other special resources.	_____	_____
Total	_____	_____
<b>D Safety</b>		
1. Unusually hazardous fireline construction.	_____	_____
2. Serious accidents or fatalities.	_____	_____
3. Threat to safety of visitors from fire and related operations.	_____	_____
4. Restrictions and/or closures in effect or being considered.	_____	_____
5. No night operations in place for safety reasons.	_____	_____
Total	_____	_____
<b>E. Ownership</b>		
1. Fire burning or threatening more than one jurisdiction.	_____	_____
2. Potential for claims (damages).	_____	_____
3. Different or conflicting management objectives.	_____	_____
4. Disputes over suppression responsibility.	_____	_____
5. Potential for unified command.	_____	_____
Total	_____	_____
<b>F. External Influences</b>		
1. Controversial fire policy.	_____	_____
2. Pre-existing controversies/relationships.	_____	_____
3. Sensitive media relationships.	_____	_____
4. Smoke management problems.	_____	_____
5. Sensitive political interests.	_____	_____
6. Other external influences.	_____	_____
Total	_____	_____

	Yes	No
G. Change in Strategy		
1. Change in strategy to control from confine or contain	_____	_____
2. Large amounts of unburned fuel within planned perimeter.	_____	_____
3. EFSA invalid or requires updating.	_____	_____
Total	_____	_____
H. Existing Overhead		
1. Worked two operational periods without achieving initial objectives.	_____	_____
2. Existing management organization ineffective.	_____	_____
3. Overhead overextended mentally and/or physically.	_____	_____
4. Incident action plans, briefings, etc. missing or poorly prepared.	_____	_____
Total	_____	_____

## Team Selection

Selecting the appropriate management team is essential for successfully meeting your incident objectives. The incident complexity analysis will guide you in the selection of the appropriate team.

All teams are ordered through the established ordering channels from local dispatch offices, Geographic Area Coordination Centers, and National Interagency Coordination Center.

The following teams are available for immediate mobilization.

### Type 3 Incident Management Teams

The Type 3 Incident management team is used to manage initial attack fires with a large commitment of resources, manage an escaped fire until a Type 1 or 2 team arrives, or to manage an extended attack fire until containment/control is achieved. The incident may be divided into segments, but normally would not meet the division supervisor complexity in regards to span-of-control.

**In using the Type 3 team, a manager must be very cautious to avoid extending them beyond the extended attack (Type 3) level.** The command staff is normally comprised of the Incident Commander, plus two primary Command Staff positions; however, a manager must assess the hazards and determine if the safety officer position is also needed.

**Recommended Minimum Positions** The following three different configurations of type 3 teams can be used.

1	<u>Positions</u>	<u>Qualification Requirement</u>
	IC/Operations	Type 3 IC and Division Supervisor
	Logistics	Camp Manager, Ordering, and Receiving Manager
	Plans/Finance	Resource Unit Leader, Personnel and Equipment Time Recorder
2	Incident Commander/Plans	Type 3 IC and Documentation, Resource Unit Leader
	Operations	Division Supervisor
	Finance/Logistics	Camp Manager, Ordering and Receiving Manager. Personnel and Equipment Time Recorder
3	Incident Commander	Type 3 IC
	Operations/Logistics	Division Supervisor, Ordering Manager, Receiving and Distribution Manager, or Camp Manager
	Finance/Plans	Personnel and Equipment Time Recorder and Resource or Documentation Unit Leader

### **Type 2 Incident Management Teams**

These teams are ordered through the Geographic Area Coordination Center. The team can be ordered in one of two configurations – short (9 members) or long (approximately 27-33 members). The National standard configuration of Type 1 and Type 2 teams is the same; however, Geographical Area Coordination Centers may adjust the makeup of teams for use in their area.

#### **Short Team:**

- Incident Commander (IC)
- Deputy Incident Commander (DPIC) (not required)
- Planning Section Chief (PSC)
- Safety Officer (SOF)
- Logistics Section Chief (LSC)
- Finance Section Chief (FSC)
- Operations Section Chief (OSC)(2)
- Air Operations Branch Director (AOBD)

**Additional Long Team Members:**

Situation Unit Leader (SITL)  
 Communication Unit Leader (COML)  
 Supply Unit Leader (SPUL)  
 Facilities Unit Leader (FACL)  
 Ground Support Unit Leader (GSUL)  
 Time Unit Leader (TIME)  
 Procurement Unit Leader (PROC)  
 Division Supervisor (DIVS) (4 each)  
 Resource Unit Leader (RESL) (2 each)  
 Fire Behavior Analyst (FBAN)  
 Information Officer (IOF)  
 Comp/claims Unit Leader (COMP)  
 Air Support Group Supervisor (ASGS)  
 Air Tactical Group Supervisor (ATGS)

**Type 1 Incident Management Teams**

There are eighteen Type 1 National Interagency Teams. These teams are mobilized according to National call-out procedures and rotation. Teams ordered through NICC will be in either long- or short-team configuration. Any variation from the standard configuration is only allowed at the discretion of the requesting unit.

**Area – # of Teams**

Northern Rockies – 2	California – 5
Rocky Mountains – 1	Northwest – 3
Southwest – 2	Alaska – 1
Great Basin – 2	Southern – 1
Eastern Area – 1	

**Area Command**

There are four National Area Command Teams. Area Command works directly for agency administrator(s) and is an extension of the incident command function primarily designed to manage a very large incident that has multiple incident management teams assigned. The function of the teams are to coordinate the determination of incident: objectives, strategies, priorities for scarce resources, and coordination of demobilization.

Teams are comprised of six positions – four specific and two trainees identified by the Area Commander.

Area Commander (ACDR)	Area Command Planning Chief (ACPC)
Area Command Logistics Chief (ACLC)	Area Command Aviation Coordr. (ACAC)
Area Command Trainee	
Area Command Trainee	

## Prescribed Fire Teams

These interagency teams are available for planning, developing and implementing the prescribed fire program. As a national resource the teams are available to all agencies through NICC. The team can be ordered in many configuration based on the ordering office's needs. The teams are made up of the following positions:

Prescribed Fire Manager	Planning Section Chief
Operations Section Chief	Logistics Section Chief
Prescribed Fire Behavior Analyst	Assistant Team Leader
Prescribed Fire Behavior Analyst (Trainee)	

## Transition to Teams

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Once the decision has been made to mobilize an Incident Management Team a briefing must be given by the Agency Administrator, FMO, and local incident commander. The following guidelines are provided to assist in the orderly transition of fire management responsibilities to incoming incident management teams. Some information will need to be in writing and some may be oral. A Delegation of Authority is provided by the Agency Administrator to the incoming team at the briefing.

### Assumption of Responsibilities

- The assumption of an incident by a team must be as smooth and orderly as possible. An orderly transition saves money and assures that fire fighting continues in an orderly manner. The local team already in place remains in charge until incoming team members are briefed by their counterparts.
- The ordering area should specify the times of arrival and transition by the incoming team. These should be discussed with the incoming incident commander when determined so that the transition is orderly.
- The ordering unit should accomplish the following actions prior to the arrival of the incoming team:
  - ♦ Determine incident command post/base location.
  - ♦ Order support equipment, supplies, and basic support organization for the incident.
  - ♦ Secure an ample supply of appropriate maps. This is a critical item.
  - ♦ Determine the team's transportation needs and obtain needed vehicles.
  - ♦ Schedule Agency Administrator briefing time and location.
  - ♦ Obtain necessary information for the Administrator briefing.
  - ♦ Obtain necessary communications equipment.

**There should be two briefings for the incoming team.** The first briefing should be by the Agency Administrator at a site away from the incident. The second briefing should be by the existing incident commander at the incident command post. The time needed for transition will depend on the complexity of the incident, the expertise of the existing team, and/or other problems. The EFSA and Delegation of Authority should be completed prior to the first briefing.

### **Agency Administrator Briefing**

This briefing should take place as soon as the incoming team is completely assembled. The Agency Administrator (or designated representative) should provide, at a minimum, the following information to the team:

- A written overview with the following information:
  - ♦ Name and number of incident.
  - ♦ Approximate size, location, jurisdictions and land status.
  - ♦ Name of the current incident commander.
  - ♦ General weather conditions at the incident site.
  - ♦ Behavior of fire.
  - ♦ Fuel types.
  - ♦ Current tactics.
  - ♦ Incident command post and base locations.
  - ♦ Other strategies, resources and tactics which might have an impact on the incident.
- Signed delegation of authority to the incoming incident commander.
- Local participation in the team organization by resource and agency representatives.
- Information about existing or anticipated unified command organization (if any). (May have been a consideration in decision to order a team.)
- Names and skills of technical specialists assigned to the incident.
- District fire policy.
- Concerns about resource values, improvements, wilderness and roadless areas, cultural resources, rare and endangered species, rehabilitation requirements, etc.
- Priorities for control.
- News media procedures.
- Political considerations.

- Agreements in effect.
- Other agencies already on the incident, agency representatives.
- Desired date and time when team transition will occur.
- Safety issues:
  - ♦ Accidents to date.
  - ♦ Status of accident reports.
  - ♦ Areas with existing or potential hazardous materials.
  - ♦ Investigation of ignition point and direction on needed follow-up.
  - ♦ Hazards (power lines, underground gas lines, etc.)
  - ♦ Name of local and State safety manager
- Operations and Planning (Considered in Incident Commander briefing):
  - ♦ Strategy
  - ♦ Tactics
  - ♦ Local unusual fire behavior and fire history in the vicinity of the incident.
  - ♦ Pre-attack plans available to the team.
  - ♦ Incident Status Summary (ICS-209) reporting requirements.
  - ♦ Copy of the current ICS-209.
  - ♦ Status of current team.
  - ♦ Status of local agency personnel.
  - ♦ Agency capabilities for team operation support.
  - ♦ Agency rest and rotation policies.
  - ♦ Agency rehabilitation policies.
  - ♦ Agency demobilization concerns.
  - ♦ Other large incidents
- Logistics:
  - ♦ Transportation routes.
  - ♦ Ordering system to be used.
  - ♦ Procurement unit in place or ordered.
  - ♦ Incident feeding procedures.
  - ♦ Available sleeping facilities.
  - ♦ Local medical facilities.
  - ♦ Nearest burn treatment center.
  - ♦ Contacts with local law enforcement agencies.
- Finance/Administration:
  - ♦ Fiscal limitations and constraints.
  - ♦ Any cost-sharing arrangements affecting the incident.
  - ♦ Contracting officer assigned.
  - ♦ Potential for claims.
  - ♦ Comptroller assigned.





6. Minimum tools for use are Type 2/3 helicopters, chainsaws, hand tools and portable pumps.
7. My Agency Advisor will be Eric Johnson (Wildlife Biologist).
8. The NE flank of the fire borders private property and must be protected if threatened. John Dennison of the Big Pine Fire Department will be the local representative.
9. Managing the fire cost-effectively for the values at risk is a significant concern.
10. Providing training opportunities for the District and resource area personnel is requested to strengthen our organizational capabilities.
11. Minimum disruption of residential access to private property, and visitor use consistent with public safety.

\_\_\_\_\_  
(signature)

District Manager, Montrose District

#### Amendment to Delegation of Authority

The Delegation of Authority dated May 20, 1995, issued to Incident Commander Bill Jones for the management of the Crystal River Fire, number E353 is hereby amended as follows. This will be effective 1800, May 22, 1995.

3. Key cultural features requiring priority protection are: Escalante Cabin, overlook board walks along the south rim, and the Ute Mountain study site.
12. Use of tracked vehicles authorized to protect Escalante Cabin.

\_\_\_\_\_  
(signature)

District Manager, Montrose District

### **Transfer of Command**

The following are guidelines for local and off-unit Incident Management Teams for the orderly transfer of fire suppression responsibilities. This guide is for the assumption and release of incoming Management Teams plus a checklist of information and data the receiving unit needs to provide. Information will be written and oral.

#### Taking Over of a Complex Fire by an Off-Unit Incident Management Team

- 1 The assumption of a fire by an off-unit team must be as smooth and orderly as possible. It must be remembered that the local team is in charge until officially released.

- 2 Ordering unit should specify expected time of arrival and expected time of takeover by the off-unit team.
- 3 Incoming Incident Commander should contact the fire's unit dispatch in advance and arrange for:
  - Expected support staff
  - Location of Agency Administrator
  - Transportation needs. Team Incident Commander should also contact ordering Agency Administrator or designated alternate immediately on team assignment.
- 4 The ordering unit should do the following prior to the arrival of the incoming team:
  - Determine ICP/Base Location
  - Order support equipment, supplies, and initial basic support organization for the fire.
  - Order or make ample supply of topography maps, base maps, etc.
  - Determine transportation needs of incoming team. (From ordering unit to fire and on fire.)
  - Determine Agency Administrator briefing time and location.
  - Obtain necessary information for the Agency Administrator briefing (see below).
  - Order communication cache and communication vehicle.
- 5 There should be two briefings for the incoming team. First briefing should be by the Agency Administrator at a site away from the fire. Second briefing should be by the local incident commander at the fire site. Transition period of takeover will depend on complexity, expertise of local team, and/or other issues.
- 6 Agency Administrator Briefing. Should be as held soon as possible after arrival of all members of the team. It is impossible to list everything a team needs to know. The following checklist and sample briefing form include those items that should be discussed and/or distributed to the team:

### **Briefing Package Checklist**

- \_\_\_ Agency Administrator's Delegation of Authority to the Incident Commander
- \_\_\_ EFSA for \_\_\_\_\_ Incident
- \_\_\_ Agency Administrator's Briefing to the Incident Management Team
- \_\_\_ Unit Service and Supply Plan

- \_\_\_ Local Key Contact Phone List
- \_\_\_ ICS-209 \_\_\_/\_\_\_/\_\_\_
- \_\_\_ Fire Weather Forecast
- \_\_\_ Incident Area Map(s)
- \_\_\_ Incident Area Aerial Photo(s) (Planning Section packet only)
- \_\_\_ Resource, Overhead, and Equipment Order Forms completed to date (Logistics & Planning Section packets only)

**Sample:**

**Agency Administrator’s Briefing to the Incident Management Team**

**GENERAL**

Name of incident \_\_\_\_\_  
 Fire start: date \_\_\_\_\_ time \_\_\_\_\_  
 cause \_\_\_\_\_  
 Approximate size of fire \_\_\_\_\_  
 Location \_\_\_\_\_  
 Land status \_\_\_\_\_  
 Local fire policy \_\_\_\_\_  
 \_\_\_\_\_  
 Resource values threatened \_\_\_\_\_  
 \_\_\_\_\_  
 Private property or structures threatened \_\_\_\_\_  
 \_\_\_\_\_  
 Capability of Unit to support team (suppression and support resources) \_  
 \_\_\_\_\_

**COMMAND**

Written Delegation of Authority: \_\_\_\_\_  
 Agency \_\_\_\_\_  
 Agency Administrator’s representative \_\_\_\_\_  
 Resource Advisor \_\_\_\_\_  
 Transition:  
 Name of current Incident Commander \_\_\_\_\_  
 Proposed time when team will assume command: date \_\_\_\_\_ time \_\_\_\_\_  
 Recommended local participation in fire team organization \_\_\_\_\_  
 \_\_\_\_\_  
 Other Command Organizations (Unified/Area/MAC) \_\_\_\_\_  
 \_\_\_\_\_  
 Legal considerations (investigations in process) \_\_\_\_\_  
 \_\_\_\_\_

Known political considerations \_\_\_\_\_

Local social / economic considerations \_\_\_\_\_

### Incident Information

I/O Organization reports to: \_\_\_ Incident Commander \_\_\_ Agency Administrator

Provide regular updates to: \_\_\_ Unit FMO \_\_\_ Expanded Dispatch

### Safety

Accidents/injuries to date \_\_\_\_\_

Condition of local personnel \_\_\_\_\_

Known hazards \_\_\_\_\_

## PLANNING SECTION

### General

Access to Fax and Copier \_\_\_\_\_

Pre-attack plans \_\_\_\_\_ Yes \_\_\_\_\_ No

Other nearby incidents influencing strategy/tactics/resources \_\_\_\_\_

Training specialist assigned or ordered \_\_\_\_\_

Training considerations \_\_\_\_\_

Rehabilitation policies \_\_\_\_\_

### Situation Unit

General weather conditions/forecast \_\_\_\_\_

Fire behavior \_\_\_\_\_

Local unusual fire behavior and fire history in area of fire \_\_\_\_\_

Fuel types: at fire \_\_\_\_\_

ahead of fire \_\_\_\_\_

ICS off-incident reporting requirements \_\_\_\_\_

### Resources Unit

Refer to attached Resource Orders.

Personnel on fire (general) \_\_\_\_\_

Equipment on fire (general) \_\_\_\_\_

Unit demobilization procedures \_\_\_\_\_

**OPERATIONS SECTION**

Priorities for control, Escaped Fire Situation Analysis approved \_\_\_\_\_

Current tactics \_\_\_\_\_

Ground Operations

Accessibility by engines \_\_\_\_\_

Accessibility by ground support \_\_\_\_\_

**Air Operations Branch**

Airtankers assigned \_\_\_\_\_

Effectiveness of airtankers \_\_\_\_\_

Air Attack Supervisor \_\_\_\_\_

Air base \_\_\_\_\_

Telephone \_\_\_\_\_

Helicopters assigned \_\_\_\_\_

Helibase location \_\_\_\_\_

Crash / rescue at helibase \_\_\_\_\_

FAR 91.137 assigned (describe) \_\_\_\_\_

Flight hazard map available / known hazards in area \_\_\_\_\_

Smoke/visibility conditions \_\_\_\_\_

Aviation Safety Team assigned or ordered \_\_\_\_\_

**LOGISTICS SECTION**

**Facilities Unit**

ICP/Base location \_\_\_\_\_

ICP/Base Pre-plans: \_\_\_\_ Yes \_\_\_\_ No

Catering services/meals provided \_\_\_\_\_

Shower facilities \_\_\_\_\_

Security considerations \_\_\_\_\_

Incident Recycling \_\_\_\_\_

**Supply Unit**

Expanded dispatch organization \_\_\_\_\_

Supply system to be used (local supply cache, ordering procedures) \_\_\_\_\_

**Communications Unit**

Communications system(s)

NFRC System on order \_\_\_\_ Yes \_\_\_\_ No Type \_\_\_\_\_

Local Network available \_\_\_\_ Yes \_\_\_\_ No \_\_\_\_\_ Temporary

Cell phone cache available \_\_\_\_ Yes \_\_\_\_ No \_\_\_\_\_

Landline access to ICP \_\_\_\_ Yes \_\_\_\_ No \_\_\_\_\_ Unknown

Local Telecom technical support \_\_\_\_\_

**Ground Support Unit**

Route to ICP/Base \_\_\_\_\_

Route ICP to Fire \_\_\_\_\_

**Medical Unit**

Nearest hospital \_\_\_\_\_

Nearest burn center \_\_\_\_\_

Nearest air ambulance \_\_\_\_\_

**FINANCE SECTION****Cost Unit**

Fiscal considerations \_\_\_\_\_

Cost sharing (on multi-agency fires) \_\_\_\_\_

Comptroller assigned? (name) \_\_\_\_\_

**Procurement Unit**

Buying unit in place or ordered \_\_\_\_\_

Procurement unit leader assigned \_\_\_\_\_

Contracting officer assigned \_\_\_\_\_

Copy of local Service and Supply plan provided \_\_\_\_\_ Yes \_\_\_\_\_ No

Is all equipment inspected and under agreement? \_\_\_\_\_

**Compensations/Claims Unit**

Potential for claims \_\_\_\_\_

Status of claims/accident reports \_\_\_\_\_

**Time Unit**

Payroll procedure established for T&amp;A transmittal \_\_\_\_\_

- 7 Local Incident Commander Briefing - Incoming team will be briefed by local Incident Commander on arrival at fire. The ICS 201 form should be the basis for this briefing. After briefing, functions will start phasing in to their areas of responsibility, but will not assume control until the predetermined time. Local teams may continue to work on fire in various functions depending on physical condition and Agency Administrator's direction.

Map of fire (best available) \_\_\_\_\_

Time of start \_\_\_\_\_

Spread - fire behavior \_\_\_\_\_

Fuels - at fire \_\_\_\_\_

Anchor points \_\_\_\_\_

Line held (on map) \_\_\_\_\_

Natural barriers \_\_\_\_\_

Weather forecast \_\_\_\_\_

ICP and Base/Campsites  
 Established \_\_\_\_\_  
 Possible \_\_\_\_\_  
 Airtanker effectiveness to date \_\_\_\_\_  
 \_\_\_\_\_  
 Hazards (aircraft and people) \_\_\_\_\_  
 \_\_\_\_\_  
 Access from base to line \_\_\_\_\_  
 Personnel and equipment on line \_\_\_\_\_  
 \_\_\_\_\_  
 Personnel and equipment ordered (confirm information received at Agency Administrator briefing) \_\_\_\_\_  
 \_\_\_\_\_  
 Aerial photos \_\_\_\_ Yes \_\_\_\_ No  
 Helibase/helispot locations (use map) \_\_\_\_\_  
 \_\_\_\_\_  
 Communication system in use: Radio \_\_\_\_\_  
 Telephone \_\_\_\_\_ Mobile Phone \_\_\_\_\_  
 Water availability \_\_\_\_\_  
 Facility fire protection \_\_\_\_\_  
 Crash fire protection at helibase \_\_\_\_\_  
 Medivac arrangement \_\_\_\_\_  
 Review of existing plans for control in effect; copy of approved Escaped Fire Analysis

Smoke conditions \_\_\_\_\_  
 Local political issues \_\_\_\_\_  
 Any security problems? \_\_\_\_\_  
 Personnel on line (names and location - put on map).  
 Copy machine in Incident Command Post \_\_\_\_ Yes \_\_\_\_ No

#### Release of Incident Management Team

Release of an Incident Management Team is basically the reverse of the above. Date and time must be approved by Agency Administrator or a representative. It must be as smooth as possible and local team members should be assigned and start working with team members at the predetermined time. Local management team should be off duty 24 hours prior to takeover.

Incoming team should start phasing in local team as soon as demobilization begins.

Incoming team should not be released from the Incident until fire management activity is at the level and workload a local team can reasonably assume.

- Fire must be controlled or contained.
- Most all line crew members released that are not needed for patrol and mopup.
- Base camp shut down, reduced, or in the process.



- Planning section chief has prepared a rough copy of fire report and narrative.
- Finance section chief should have most all known finance problems resolved. Contact made with local unit budget and financial personnel.
- Resource rehabilitation work completed or done to unit's satisfaction.
- Overhead ratings completed.

Finance and logistics section chiefs may have to stay longer or return to local unit to resolve problems.

Incident Management Team should have closed debriefing session prior to meeting with Agency Administrator.

Agency Administrator and Evaluation Team should debrief team and prepare evaluation as soon as possible after release.

Items to cover:

- The local Agency Administrator should give team written performance evaluation.
- Were objectives met? (See approved Escaped Fire Analysis)
- Safety
- Were costs considered in selection of strategy and tactics.
- Outstanding or poor performance of individuals or crews.

Should an Incident Management Team be assigned to a fire and portions of the above procedures cannot be followed due to emergency conditions or other problems, the assigned Incident Commander and staff will work with members of the local unit in obtaining the necessary information to make the transition period effective and organized.

## **Incident Management Considerations**

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Fire management requires the fire manager and firefighter to select suppression and mopup tactics commensurate with the fire's potential or existing behavior, yet leaves minimal environmental impact.

Cost of wildland fire suppression is rapidly increasing and of major concern to Agency Administrators. Development of strategy and tactical implementation should evaluate costs commensurate with the values at risk for improvements and private property as well as for natural resources being protected.

The following guidelines are for Agency Administrators, Incident Management Teams, and firefighters to consider. Some or all of the items may apply, depending on the situation; consider:

- Firefighter and Public Safety may not be compromised.
- Evaluate each and every suppression tactic during planning and strategy sessions to see that they meet Agency Administrator objectives and minimum impact guidelines.
- Include agency resource advisor and/or local representative in above session.
- Discuss minimum impact tactics with overhead during overhead briefings, to gain a full understanding.
- Ensure minimum impact tactics are implemented during line construction as well as other resource disturbing activities.

### **Implementation Guidelines**

Minimum impact suppression is an increased emphasis to do the job of suppressing a wildland fire while maintaining a high standard of caring for the land. Actual fire conditions and your good judgement will dictate the actions you take. Consider what is necessary to safely manage the incident.

#### ***Safety***

- Apply LCES to all planned actions
- Constantly review and apply the Situations That Shout Watch Out and Standard Fire Orders.
- Be particularly cautious with:
  - ♦ Burning snags you allow to burn down.
  - ♦ Burning or partially burning live and dead trees.
  - ♦ Unburned fuel between you and the fire.
  - ♦ Identify hazard trees with either an observer, flagging, and/or glow-sticks.
- Be constantly aware of the surroundings, of expected fire behavior, and possible fire perimeter one or two days hence.

#### ***Fire Lining Phase***

- Give serious consideration to use of water or foam as a firelining tactic (fireline constructed with nozzle pressure, wetlining).
- In light fuels, consider:
  - ♦ Cold trail line.
  - ♦ Allow fire to burn to natural barrier.

- ♦ Consider burn out and use of “gunny” sack or swatter.
  - ♦ Constantly re-check cold-trailed fireline.
  - ♦ If constructed fireline is necessary, use minimum width and depth to check fire spread.
- In medium/heavy fuels, consider:
    - ♦ Use of natural barriers and cold-trailing.
    - ♦ Cooling with dirt and water, and cold trailing.
    - ♦ If constructed fireline is necessary, use minimum width and depth to check fire spread.
    - ♦ Minimize bucking to establish fireline; preferably build line around logs.
  - Aerial fuels—brush, trees, and snags:
    - ♦ Adjacent to fireline: limb only enough to prevent additional fire spread.
    - ♦ Inside fireline: remove or limb only those fuels which if ignited would have potential to spread fire outside the fireline.
    - ♦ Brush or small trees that are necessary to cut during fireline construction will be cut flush with the ground.
  - Trees, burned trees, and snags:
    - ♦ MINIMIZE cutting of trees, burned trees, and snags.
    - ♦ Do not cut live trees, unless determined they will cause fire spread across the fireline or seriously endanger workers. **If** tree cutting occurs, cut stumps flush with the ground.
    - ♦ Scrape around tree bases near fireline if hot and likely to cause fire spread.
    - ♦ Identify hazard trees with either an observer, flagging and/or glow-sticks.
  - When using indirect attack:
    - ♦ Do not fall snags on the intended unburned side of the constructed fireline, unless they are an obvious safety hazard to crews working in the vicinity.
    - ♦ On the intended burn-out side of the line, fall only those snags that would reach the fireline should they burn and fall over. Consider alternative means to falling, i.e. fireline explosives, bucket drops.

### ***Mopup Phase***

- Consider using “hot-spot” detection devices along perimeter (aerial or hand-held).
- Light fuels:
  - ♦ Cold-trail areas adjacent to unburned fuels.
  - ♦ Do minimal spading; restrict spading to hot areas near fireline only.
  - ♦ Use extensive cold-trailing to detect hot area.
- Medium and heavy fuels:
  - ♦ Cold-trail charred logs near fireline; do minimal scraping or tool scarring.

- ♦ Minimize bucking of logs to check for hot spots or extinguish fire: preferably roll the logs.
  - ♦ Return logs to original position after checking or ground is cool.
  - ♦ Refrain from making boneyards: burned/partially burned fuels that were moved would be arranged in natural position as much as possible.
  - ♦ Consider allowing larger logs near the fireline to burn out instead of bucking into manageable lengths. Use lever, etc. to move large logs.
- Aerial fuels—brush, small trees and limbs: remove or limb only those fuels which, if ignited, have potential to spread fire outside the fireline.
  - Burning trees and snags:
    - ♦ First consideration is to allow a burning tree/snag to burn itself out or down (Ensure adequate safety measures are communicated).
    - ♦ Identify hazard trees with either an observer, flagging, and/or glow-sticks.
    - ♦ If burning tree/snag poses serious threat of spreading firebrands, extinguish fire with water or dirt. FELLING by chainsaw will be last means.
    - ♦ Consider falling by blasting, if available.
    - ♦ Be particularly cautious when working under snags that may pose a hazard.

### **Camp Sites and Personal Conduct**

- Use existing campsites if available.
- If existing campsites are not available, select campsites that are unlikely to be observed by visitors/users.
- Select impact-resistant sites such as rocky or sandy soil, or openings within heavy timber. **Avoid** camping in meadows, along streams or lake shores.
- Change camp location, if ground vegetation in and around the camp shows signs of excessive use.
- Do minimal disturbance to land in preparing bedding and campfire sites. Do not clear vegetation or do trenching to create bedding sites.
- Toilet sites should be located a minimum of 200 feet from water sources. Holes should be dug 6-8 inches deep. (Use portable toilets whenever possible.)
- Select alternate travel routes between camp and fire if trail becomes excessive.
- Evaluate coyote camps versus fixed camp site in sensitive areas.

### **Restoration of Fire Suppression Activities**

- Firelines:
  - ♦ After fire spread is secured, fill in deep and wide firelines, and cut trenches.

- ♦ Waterbar, as necessary, to prevent erosion, or use wood material to act as sediment dams.
  - ♦ Ensure stumps from cut trees/large size brush are cut flush with ground.
  - ♦ Camouflage cut stumps, if possible.
  - ♦ Any trees or large size brush cut during fireline construction should be scattered to appear natural.
- Camps:
    - ♦ Restore campsite to natural conditions as much as possible.
    - ♦ Scatter fireplace rocks, charcoal from fire; cover fire ring with soil; blend area with natural cover.
    - ♦ Pack out all garbage and unburnables.
  - General:
    - ♦ Remove all signs of human activity (plastic flagging, pieces of aluminum foil, litter).
    - ♦ Restore helicopter landing sites.
    - ♦ Cover, fill in latrine sites.

**Work/Rest Guidelines** Management of crew, overhead, and support personnel rest to assure safe, productive fire suppression activity is a basic responsibility of all supervisory fire management personnel. Refer to Safety Chapter (4).

**Incident Status Reporting** The status of the incident must be reported at least once every 24 hours. The local Agency Administrator may require additional reporting times. Incident status is reported on the Incident Status Summary (ICS-209) and associated continuation sheet. Establish time requirements that will meet both the local, Geographic Area Coordinator Center (GACC) and National Interagency Fire Center requirements.

## Rehabilitation

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Fire damages resulting from wildland fires take two forms: suppression damages and resource damages. Suppression action damages may be the result of suppression operations; resource damages are a result of the fire itself as related to the damage to the natural resource.

Rehabilitation involves short-term actions (usually 0-6 months) to stabilize a burned area and mitigate suppression damages. This includes replacing District equipment, infrastructure, buildings, or facilities damaged or destroyed by a **suppression action**. Immediate rehabilitation actions to prevent further land degradation or resource loss, or to ensure safety, may be carried out as part of the incident. Post-incident rehabilitation actions must be specified in a rehabilitation plan approved by the Director. Rehabilitation needs should be

considered for each fire, and plans prepared for those fires requiring complex rehabilitation efforts.

## Release of Teams

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The release of an incident management team is basically the reverse of the transition to the incident management team from extended attack. The Agency Administrator must approve the date and time. The incoming local incident management team should have adequate rest prior to assuming control of the incident.

Incident management team should not be released from the incident until:

- The agreed objectives are met.
- Most operations personnel that are not needed for patrol and mopup have been demobilized.
- Base/Camp have been demobilized, reduced, or are being demobilized.
- Planning section chief has prepared a rough copy of fire report and narrative.
- Finance section chief should have all known finance problems resolved. Contact made with District budget and financial personnel.
- Suppression rehabilitation work is completed or to a point where the agency is satisfied with assuming remaining work.
- Overhead performance ratings are completed.
- Incident close out with Agency Administrator.

## Team Closeout and Review

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The Agency Administrator must complete a written evaluation of the incident management team. This evaluation should **not** be completed at the closeout review; instead, it should be completed after sufficient time has elapsed so that incident costs, claims, demobilization, and rehabilitation are essentially complete and can be thoroughly evaluated.

This delay in preparing the written evaluation will also provide the Agency Administrator with the opportunity to evaluate the incident management team's effectiveness with cooperating agencies, the media, and neighbors. However, the written evaluation must be completed within six months after demobilization of the incident management team.

The Delegation of Authority, Escaped Fire Situation Analysis, and Agency Administrator's direction shall serve as the primary standards against which the incident management team is evaluated.

The Agency Administrator will provide a copy of the evaluation to the Incident Commander, and state fire management officer and retain a copy for the final fire package.

The SFMO will review all evaluations and will be responsible for providing a copy of any evaluation documenting superior or deficient performance to the geographic area board managing the incident management team in question. The SFMO will confer with the Office of Fire and Aviation regarding performance evaluation prior to submission to the geographic coordination center.

See Chapter 13 "Reviews" for closeout format.

Factors to consider in a written evaluation of an incident management team are:

- Compliance with Delegation of Authority.
- Compliance with Escaped Fire Situation Analysis.
- Compliance with Agency Administrator directions.
- Orderly transition; District to team/team to District.
- Human Resource management.
- Personnel safety records.
- Financial performance compared to EFSA predictions.
- Accountability and control of all accountable property.
- Documentation of fire costs.
- Completeness of claims investigations/documentation.
- Media relations.
- Interaction with cooperative agencies/District staff/neighbors.
- Effectiveness of suppression damage rehabilitation.
- Orderly demobilization.
- Completeness of final fire package.

## Off-site Coordination & Support

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**Initial Action Dispatch** – this includes normal dispatching operations on initial actions utilizing existing available resources.

**Expanded Dispatch** – as incidents develop and/or numbers of wildland fires increase, it is necessary to expand day-to-day coordination organizations. Coordinators are added to handle requests for personnel, equipment and supplies, aircraft, etc. This allows initial action dispatchers to concentrate on new starts.

- An Emergency Operations Center may be set up for expanded dispatch.
- The Emergency Operations Center Coordinator serves as a facilitator in accomplishing the goals and direction of the Agency Administrator and, when in place, the MAC Group. The individual filling of the position is key and, depending on the complexity of the situation, may be filled by the person normally managing the day-to-day operations of the center or an individual from a higher level of management. The Emergency Operations Center Coordinator is responsible for:
  - ♦ Filling and supervising necessary positions, as needed, in accordance with coordination complexity.
  - ♦ Implementing decisions made by the MAC Group.
- Facilities and equipment for its organization should be pre-identified, procured, and available for immediate setup. The following key items should be provided for:
  - ♦ Separate from but accessible to the initial attack organization.
  - ♦ Adequate office space (lighting, heating, cooling, security).
  - ♦ Communications, equipment (telephone, telecopier, computer hardware with adequate data storage space, priority use, and support personnel).
  - ♦ Area suitable for briefings (agency administrators, media).
  - ♦ Timetable/schedule should be implemented and adhered to (operational period changes, briefings, strategy meetings).

**Buying Teams** – Assistant Disbursing Officer Teams and Administrative Payment Teams may be assigned to expanded dispatch or the unit administrative officer.

**Multi-agency Coordination Group (MAC)** – A MAC Group is activated by the Agency Administrator when requests exceed or may exceed the number of available resources. Normally, this will occur when a number of jurisdictions are involved; are heavily supporting an effort; and/or are significantly impacted by the commitment of local resources. A MAC Group support organization can be activated to provide staff support to the land manager when only one agency has incident(s). The MAC Group is made up of agency representatives who are fully authorized to commit agency resources and funds. They, as a group, prioritize incidents and allocate scarce resources based on resource requests and availability, policies and agreements, and situation status. In order to make



knowledgeable decisions, the group is supported by situation and resource status coordinators who collect and assemble data through normal coordination channels. MAC Group direction is carried out through expanded dispatch organizations.

- MAC Groups may be activated at one or several levels (BLM/State Forestry District, National Forest, State/Region, and National).
- A MAC Group and supporting organization would normally be activated when the character and intensity of the emergency situation significantly impacts or involves other agencies. At this point, agency representatives are brought together and briefed so they can relieve the expanded dispatch organization of the responsibility for making key decisions regarding the sharing and use of critical resources.
- MAC Group and Support Organization – Positions, units and support personnel are activated depending on the complexity of the involvement.
- MAC Organization Relationships – A MAC organization represents the agencies from which it is composed. The flow of information is from MAC through the expanded or normal dispatch channels. The organization does not operate directly with the incident command or area command who have responsibility for the management of the on-the-ground incident organizations.
- MAC Functions – Activation of MAC Group improves interagency coordination at top management levels and provides for allocation and timely commitment of multi-agency emergency resources on any incident. Participation by multiple agencies in the MAC effort will improve:
  - ♦ Overall situation status information.
  - ♦ Incident priority determination.
  - ♦ Resource acquisition or allocation.
  - ♦ State, Federal disaster coordination.
  - ♦ Political interfaces.
  - ♦ Overall coordinated information provided to the media and agencies involved.

The agency representatives should be fully authorized to represent their agency. Their functions are:

- ♦ Ensure that the collective situation and resource status is provided and current, by agency.
- ♦ Prioritize incidents.
- ♦ Determine specific resource requirements, by agency.
- ♦ Determine resources availability by agency (available for out-of-jurisdiction assignment) and the need for providing resources in a mobilization center.
- ♦ Determine need and designate mobilization and demobilization centers.
- ♦ Allocate scarce/limited resources to incidents based on priorities.
- ♦ Anticipate future resource needs.

- ♦ Review policies/agreements for resources allocations.
  - ♦ Review need for other agencies' involvement.
  - ♦ Provide necessary liaison with out-of-area facilities and agencies, as appropriate.
  - ♦ Critique and recommend improvements.
- MAC Group Coordinator – the MAC Group coordinator serves as a facilitator in organizing and accomplishing the mission, goals, and direction of the MAC Group. The position provides expertise on the functions of a MAC organization and the proper relationships with dispatch centers and incidents.
    - ♦ Fill and supervise necessary unit and support positions, as needed, in accordance with coordination complexity.
    - ♦ Arrange for and manage facilities and equipment necessary to carry out the MAC Group functions.
    - ♦ Facilitate the MAC Group decision process by ensuring the development and display of information that will assist agency representatives in keeping abreast of the total situation. Provide the data necessary for astute priority setting and allocation of resources.
    - ♦ Implement decision made by MAC Group.
  - MAC Group Agency Representatives – The MAC Group is made up of top management level personnel from those agencies who have jurisdictional responsibility and those who are heavily supporting the effort or may be significantly impacted by the lack of local resources.

# 12 – Aviation Operations

## Introduction

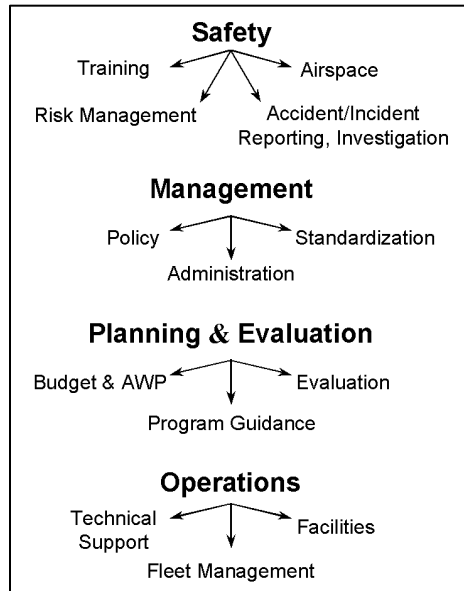
### Purpose and Scope

Aviation managers are charged with the responsibility to provide leadership for resource missions which depend on aircraft support services. Incumbents must possess prerequisite qualifications in order to assure that aviation services are practical, low risk, and of benefit to the Bureau and the public.

Aviation is inherent in all BLM programs, in all corners of the Nation. Essentially every person in the aviation organization provides a valuable service for the customer, whether the customer, whether the customer is the user of public resources or an operating function within the organization.

This program embraces a philosophy that sound practices can reduce risks common to aviation. The formula for success in any aviation environment is a high standard of training and education, and a commitment to excellence in performance of its mission.

The aviation program is characterized by four major areas of emphasis: Safety, Management, Planning and Evaluation, and Operations. Refer to the chart above for an illustration of these components and their sub-components.



## Roles and Responsibilities

**Office of Aircraft Services** The Office of Aircraft Services (OAS) is responsible for Department-wide functions related to aircraft services and facilities. The OAS is the principal coordinator of aircraft services from the commercial sector and facilitates all procurement, administrative support, and payment for services. Refer to 112 DM 12 for a complete list of responsibilities.

**National Office Level** The mission of the BLM National Aviation Office (NAO) is to develop Bureau-wide policy, procedures, and standards and to maintain functional oversight and interagency coordination for all aviation activities. The primary goals are safety and cost-effectiveness. NAO promotes accident prevention efforts and provides aviation management services in support of all Bureau functions and missions, including fire suppression. Refer to Manual 9400 for further information on aviation policy and procedures.

**State Office Level** State Aviation Managers (SAMs) are in place in all BLM State Offices. SAMs are responsible for implementing aviation program objectives and directives in support of the BLM mission and as appropriate for each State's goals. Several States have additional support staff, aircraft dispatchers, and/or pilots assigned to support aircraft operations and to provide technical expertise. A State Aviation Operations and Management Plan is required in each State to outline long-range goals of the State's aviation program and to identify State-specific policy and procedures.

**Important Note:** Manual 9400 specifies that a State cannot be more restrictive in policy and procedures (e.g., flight following) than the national policy unless such policy or procedure is approved by the Director, Fire and Aviation. This was done purposefully to encourage Bureau-wide standardization of operations.

**Local Level** Field managers staff their programs as necessary to conduct their aviation operations safely. While many Districts have aviation management as a collateral duty, during periods of intense fire activity, it is still absolutely critical and necessary that aviation oversight be maintained. Assistance from the State Office, cooperators, resource ordering in assistance, Aviation Safety Assistance Team (ASATs)—are all resources that should be considered when other duties interfere with aviation management.

## Aviation Information Resources

There is a significant amount of aviation reference material available to BLM aviation managers and users. Agency and interagency manuals, handbooks, and guides exist that provide both broad policy guidance and specific procedural requirements. Note: In all cases Interagency "Guides" have been adopted as mandatory policy and procedures by the Office of Fire and Aviation.

In addition, Safety Alerts, Instruction Memoranda, Information Bulletins, Incident Reports, and other guidance or information is issued frequently as the need arises.

It is impossible to summarize aviation policy and procedure(s) without the risk of omitting critical items. It is therefore incumbent on each State and District Aviation Managers to maintain an up-to-date reference library with all aviation policy and procedural references.

Tactical aircraft bases and other fire users of aviation resources (e.g., air tactical group supervisors) should maintain those applicable portions of the overall aviation reference library.

## **Aviation Safety**

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### **Risk Assessment and Risk Management**

Risk management is the mainstay of the BLM aviation program. It enables personnel at all levels to manage risks; in this context it refers to management of safety risks. Risk management is a five-step process:

- 1 Identification of Hazards
- 2 Assessment of Hazards: each hazard is analyzed to determine (1) the effect on personnel and equipment should the hazard be encountered, and (2) the probability that the hazard will be encountered.
- 3 Making a Risk Decision: risk is weighed against the benefit of performing an operation.
- 4 Implementing Controls: risk is mitigated by establishing and implementing controls. Control may be as substantial as writing a special-use plan or as simple as conducting a safety briefing.
- 5 Supervision: Supervision by qualified personnel while the operation is conducted is critical to successful risk management.

Risk assessment is part of the risk management process, and can range from simple to complex. The process of assessing risk causes personnel to identify hazards, analyze the degree of risk associated with each, and place hazards in perspective relative to the mission or task at hand. This enables personnel to determine whether or not to perform a flight mission, and, once the decision has been made to conduct the mission, those controls that must be in place to ensure success. Risk assessment must be conducted by those individuals best qualified by training and experience to evaluate a proposed flight or operation.

Numerous methods for aviation hazard assessment and implementation of controls can be found in the Interagency Guides relating to Airspace

Coordination, Air Tanker Base Operations, Helicopter Operations, Lead Plan Operations, and Air Tactical Operations.

For more complete discussion of risk management, refer to Chapter 3 of the Interagency Helicopter Operations Guide (IHOG).

### **Aviation Safety Assistance Teams**

During high fire activity on a local or statewide basis, it is highly advisable to order an Aviation Safety Assistance Team (ASAT).

For helicopter operations, the ASAT consists of the following:

- Helicopter Operations Technician
- Pilot Inspector
- Maintenance Inspector
- Avionics Inspector (optional)

For fixed-wing base operations, the ASAT consists of the following:

- Fixed-wing Base Manager
- Pilot Inspector
- Maintenance Inspector
- Avionics Inspector (optional)

### **Aviation Watch Out Situations**

As part of the risk management process, especially during high activity fire situations, each aviation manager and user should ask themselves the following questions:

- Is flight necessary?
- Who is in charge?
- Are all hazards identified and have you made them known?
- Should you stop the operation or flight due to change in conditions?
  - Communications?
  - Confusion?
  - Personnel?
  - Weather?
  - Turbulence?
  - Conflicting priorities?
- Is there a better way to do it?
- Are you driven by an overwhelming sense of urgency?

- Can you justify your actions?
- Are there other aircraft in the area?
- Do you have an escape route?
- Are there any rules being broken?
- Are communications getting tense?
- Are you deviating from the assigned operation or flight?

### **Mission Planning/Hazard Mitigation**

Pre-flight planning by all participants in the intended mission serves to reduce the risk inherent to any aviation mission to acceptable levels. During flight planning and scheduling process, the following items must be addressed (additional items may be addressed as needed):

- Completion/Submission of the Aircraft Flight Request/Schedule
- Cost analysis
- Assessment and mitigation of hazards
- Selection of aircraft
- Scheduling of aircraft with vendors or agency pilots
- Pilot and aircraft approvals checked
- Pre-flight briefings

### **Aircraft and Pilot Carding**

The OAS has responsibility for the approval and carding of pilots and aircraft used by BLM. With the exception of life-threatening situations or undercover law enforcement missions, personnel shall not fly with pilots or in aircraft that have not been approved. Note that some State agency aircraft and pilots are approved by State and Private Forestry, USDA Forest Service. They may or may not carry a card. If they do not have a card, they must have a letter of approval.

Use of Military or National Guard Aircraft and Pilots – The Military Use Handbook (NFES #2175) is the reference that should be used when planning or conducting aviation operations involving military aviation assets. All ordering of military assets is done through the NICC; all ordering of National Guard assets is done through the Governor of the State that owns the Guard resources.

Dispatchers or Aviation Managers are responsible for verifying pilot and aircraft carding during mission planning and aircraft procurement stage. Prior to actual flight operations, it is also the responsibility of the Aircraft Chief of Part, Helicopter Manager, Project Flight Manager or other on-scene supervisor to check both pilot and aircraft cards or letters of approval.

Field personnel do not have the authority to suspend or revoke a Pilot's card. Only the agency Contracting Officer or other agency-designated official may suspend or revoke a card. However, other individuals (e.g., Helicopter Managers, Helibase Managers) have the right to suspend operations that are being conducted improperly.

Any individual has the right to refuse to participate on a flight that he or she deems unnecessarily risky.

### **Aviation Safety Briefing**

Each passenger on a BLM flight should receive a briefing prior to each flight. The briefing may be conducted by the pilot, Aircraft Chief of Party, Helicopter Manager, Fixed Wing Base Manager, or other individual with sufficient training and experience to conduct an adequate briefing. The briefing should include (but is not limited to):

- Personal Protective Equipment (PPE): for special-use airplane missions and all helicopter flights, all passengers, pilot(s) and air crew members must wear the following: flight helmet or hard hat (including chin strap); flame resistant clothing; ear and eye protection; boots; other survival equipment as applicable. For point-to-point flights, no PPE is required.
- Approach and departure paths: to include the desired route for personnel to take towards and away from the aircraft (e.g. always approach and depart from the down slope side of helicopters parked on uneven terrain); approach and depart helicopters in a crouch; stay in pilot's field of vision; stay clear of landing areas/taxiways while aircraft are approaching or departing; never go near the tail of helicopters, do not approach airplanes from the front.
- Tools and Equipment: to include the proper securing of tools and equipment while awaiting aircraft transport; proper methods for carrying tools to and from the aircraft; individual assignments for carrying tools/equipment to and from the helicopter or airplane.
- Seating in Aircraft: seat belt fastened at all times; no movement between seats unless authorized by pilot; unbuckle only when specifically directed to do so by the pilot, air crew member, or helitack personnel; follow the instructions of the pilot at all times; know the location of first aid kit, survival kit, fire extinguisher, Emergency Locator Transmitter (ELT), fuel/battery shutoff switch, radio operation, oxygen (if available).



- Security of equipment: loose items secured and manageable; all baggage secured in aircraft or in cargo compartment; never throw any object from a helicopter or airplane; around helicopters, never reach up or dart after a hat or other object that has become unsecured.
- Smoking: rules in and around aircraft and fuel sources.
- Emergency Exits: location and use.

### **Low-level Flight Exemptions**

BLM operates air tankers and drops retardant in congested areas under the authority in FAR Part 91.137.51. in addition, the following are requirements for dropping retardants in congested areas:

- Aircraft engaged in the aerial application of fire retardants or water may operate without regard to these restrictions, provided the following procedures are implemented.

Deviation permitted is limited to reconnaissance, aerial surveys, cargo dropping, and air application of water or fire suppressants or retardants conducted by or for DOI, subject to the following provisions:

- 1 A thorough air survey for obstacles, and check for air conditions in each operating area, shall be made prior to low-flight operations.
- 2 All flights below 500 feet altitude shall be confined to immediate areas being treated or where operational requirements make such low flights essential.
- 3 All aircraft are to follow planned flight course.
- 4 Low-flight operations are to be under VFR conditions and during daylight hours — ½ hour before sunrise to ½ hour after sunset. (further limited by visibility).
- 5 Prior clearance is to be obtained from the appropriate air traffic controller before any flight to be made in controlled air space.
- 6 Pilot must avoid creating any unnecessary hazard to passengers or to persons or property on the surface.
- 7 Aerial applications of fire retardants in congested areas shall be avoided in normal situations. Where such operations are considered necessary, owing to special circumstances, they may be authorized subject to these special limitations:

- a Airtanker operations in congested areas may be conducted at the special request of the responsible firefighting agency (city, rural fire department, county, State, or Federal fire suppression agency).
- b A qualified Airtanker Coordinator (Lead Plane Pilot) will be ordered **immediately on identification of the congested area** and, on arrival, will directly supervise all such airtanker operations.
- c The FAA office (Air Traffic Control Center, Tower, or Flight Service Station) responsible for airspace control in the vicinity of proposed airtanker operations will be notified prior to or as soon as possible after the beginning of the operation and an appropriate airspace restriction will be requested by the responsible fire agency prior to or as soon as possible after beginning airtanker operations. (Request all Temporary Flight Restrictions from the ATC, but notify local Tower and FSS.)
- d No airtanker operation shall be conducted unless and until a positive communication has been established between the Airtanker Coordinator or Air Attack Supervisor, airtanker pilot(s), and the official directly supervising fire suppression for the responsible fire suppression agency or designee.
- e The official supervising fire suppression for the responsible fire agency or designee shall advise the Airtanker Coordinator that all nonessential people and movable property have been cleared from the area to be treated by airtankers prior to commencing airtanker operations.
- f The Airtanker Coordinator shall be personally satisfied that no nonessential people or movable property will be placed in hazard by the proposed airtanker operation prior to ordering any airtanker drops.
- g The first retardant pass of each series (repeated retardant drops using the same pattern) shall be preceded by a dry run flown on the same pattern as the planned retardant drops.

### **Aviation Hazards**

An aviation hazard is any condition, act, or set of circumstances that compromises the safety of personnel engaged in aviation activities. These hazards may address, *but are not limited to*, such areas as:

- Deviations from policies, procedures, regulations and instructions as contained in manual and handbook releases, interim directives, standard operating guides, etc.
- Hazardous materials handling and/or transport

- Flight following
- Deviation from planned operations, flight plan, type of use (e.g., general to special-use)
- Failure to utilize Personnel Protective Equipment (PPE) or Aviation Life Support Equipment (ALSE)
- Inadequate training, or failure to meet training requirements
- Failure to utilize load calculations and/or manifests correctly
- Weather conditions
- Ground operations
- Pilot procedures
- Fuel contamination
- Unsafe actions by pilot, air crew, passengers, or support personnel.

Aviation hazards also exist in the form of aerial hazards such as wires, low-flying aircraft, and obstacles protruding beyond normal surface features. Known aerial hazards must be identified. This is particularly crucial when aircraft are planned to be in the special-use profile of low-altitude flight. Each District will post and maintain a "Known Aerial Hazard Map" for the local operations encompassing areas where aircraft are operated (regardless of agency land ownership), and will be posted in dispatch centers and permanent helibases, air tanker bases, air attack bases, etc.

All personnel involved in aviation operations are responsible for hazard identification and mitigation. This includes pilots, flight crew personnel, aviation managers, incident air operations personnel and passengers.

An aircraft incident is an unplanned event that results in damage which meets less than serious aircraft incident criteria, or injury not requiring medical attention (first aid only). Examples of incidents are:

- Injury to personnel requiring only first aid
- Damage to aircraft (less than accident criteria)
- Forced landing necessitated by failure of engines, systems or components
- Precautionary landing necessitated by apparent impending failure of engines, systems or components or incapacitation of the flight crew

- Aircraft ground mishap (mishap in which there is no intent to fly)
- Ground damage to aircraft (damage is incurred requiring repair or replacement before flight)
- Near Mid-Air Collision (when airborne aircraft encroaches within 500 feet of another airborne aircraft or a pilot or crew member determines that a collision hazard existed)

### **Accidents**

The definition for aircraft accident is lengthy and fairly technical. An investigation team will make the final determination as to classification. In general, if an occurrence was more serious than those described under the definition of "incident" above, then the occurrence should be treated as an accident.

### **SAFECOM –Incident/Hazard/Maintenance Deficiency Reporting**

Both the USDA Forest Service and the Department of the Interior agencies have adopted a common incident/hazard reporting form. It is called the SAFECOM (Safety Communiqué). **The dispatcher or local aviation management staff is responsible for immediate completion and transmittal of the form. In their absence, any responsible agency individual with knowledge of the accident should make the report. The form is routed immediately to both the OAS, the agency's headquarters office, and State Aviation Manager.**

The objectives of the form are:

- To report any damage or injury less than accident criteria and any condition, act, observance, maintenance deficiency or circumstance which has potential to cause an aviation-related accident.
- To document all aviation hazards and incidents.
- To perform trend analyses for short- or long-term changes in policy and procedures, identify areas needing training, etc.
- To provide accountability for aviation mission participants and employee safety.

It is the responsibility of any individual (including contractors) who observes or who is involved in an aviation mishap to report the occurrence immediately to local aviation management staff. The local Aviation Manager is responsible for reviewing the report and forwarding it through agency channels within established time limits.

Timely reporting is essential in problem identification and accident prevention. Within 48 hours after an aircraft incident, aviation hazard, or maintenance deficiency, the local aviation manager or participant in the flight shall complete and submit the SAFECOM form.

The report shall be forwarded by electronic mail or telefax to the State Aviation Manager within 72-hours after occurrence. Please notify appropriate OAS or BLM aviation safety managers whenever an aircraft mishap involves damage or injury. Use the hot line or the most expeditious means possible. Call 1-888-464-7427.

The agency with operational control of the aircraft at the time of the occurrence has the responsibility to complete the SAFECOM and to submit it through its agency channels.

Under 49 CFR 830 the operator is responsible for notifying the National Transportation and Safety Board (NTSB) of any accident.

## Operations

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Due to the volume of reference material contained in aviation policy and procedures documents, as well as their continual updating, specific procedures or guidance are not addressed below for fear of omitting some item of critical information.

*It is the responsibility of aviation managers and associated personnel (pilots, dispatcher, fire managers, etc.) to avail themselves of the necessary documents and acquire a working knowledge of their contents.*

The Departmental Manual 350-354 DM and Manual 9400 Aviation Management are the umbrella documents for aviation policy and operations in the Bureau.

### Helicopter Operations

The Interagency Helicopter Operations Guide (IHOG) is the primary document to be referenced by BLM personnel conducting helicopter operations. The Interagency Heli-Rappel Guide (IHRG) is the reference source for helicopter rappel operations; all fire rappel operations must be in compliance with the IHRG and approved by Director, Office of Fire and Aviation.

These guides (IHOG/IHRG) were developed to define and standardize national interagency operating procedures for all helicopter operations, both fire and non-fire; facilitate the exchange of personnel from other agencies during periods of high fire activity (through standardization); provide a common interagency approach in the Government's relationship with helicopter contractors; provide checklists, operational requirements, and special instructions for personnel at helibases; and provide a framework within which each government helibase with contract helicopters can provide supplemental site-specific guidance.

All personnel conducting rotor-wing operations should be knowledgeable of the contents of this document and have it readily available.

**Helicopter Crew Personnel** Chapter 2 of the IHOG contains required experience, training, and qualification requirements for each helicopter crew position. Refer to Chapter 7 of this document for additional information.

**Rappelling** The Interagency Heli-Rappel Guide (IHRG) is the standard and reference source for BLM helicopter rappel operations. All BLM fire rappel operations must be in compliance with the IHRG and with those standards found in Chapter 7 of this document.

**Aerial Ignition** The Interagency Aerial Ignition Guide (IAIG) is the standard and reference source for BLM aerial ignition operations. All BLM aerial ignition operations must be in compliance with the IAIG.

### **Air Tanker Base Operations**

Large air tankers are procured under National contracts. The management of these resources is governed by the requirements of the Departmental Manual, BLM Manual 9400, and the Interagency Air Tanker Base Operations Guide (IATBOG). Air tankers are operated by commercial vendors in accordance with Federal Aviation Regulation Part 137.

The IATBOG is the reference source for all air tanker base operations. This guide was developed to define and standardize national interagency operating procedures at all air tanker bases; facilitate the exchange of personnel from other agencies during periods of high fire activity (through standardization); provide a common interagency approach in the Government's relationship with air tanker and retardant contractors; provide checklists, orientation outlines, and special instructions for personnel at air tanker bases; and provide a framework within which each air tanker base can provide supplemental site-specific guidance.

All personnel conducting air tanker base operations should be knowledgeable of the content of this document and have it readily available.

The Startup/Cutoff times as outlined in the Interagency Leadplane Operations Guide (ILOG) (draft) shall be followed. (These require air tactical or leadplane supervision of air tanker operations prior to or after sunrise and sunset.)

**Air Tanker Base Personnel** The IATBOG identifies a generic Table of Organization and recommended staffing level for air tanker bases. This Guide also describes the duties associated with the various positions used at air tanker bases. There is currently no identified training for the positions at air tanker bases, however the IATBOG contains a chart identifying recommended training for each position. It is also critical that reload bases staff up commensurate with the need during periods of moderate or high fire activity at the base.

### **Single Engine Air Tankers (SEAT)**

An Operations Guide for Single Engine Air Tankers has been developed in Arizona. At the present time that Guide is the model guide for SEAT operations nationwide: it contains a great deal of reference information that would be of use to potential SEAT users. Until such a guide is finalized, the Arizona SEAT Operations Guide should serve as reference material for all BLM SEAT users.

Work is also currently underway to develop the position of SEAT Manager. This position has been and continues to be used to facilitate the safe management of SEAT operations, however the position is not an ICS position and has no set interagency standards for qualification and performance. Until such standards are developed, SEAT Managers should come from the ranks of personnel who are experienced managers of wildland fire aviation resources and who can provide the fiscal oversight and safety guidance vital to SEAT operations.

### **Leadplane Operations**

The Interagency Leadplane Operations Guide (ILOG) (draft) is adopted by the Office of Fire and Aviation as mandatory policy and operating procedures for BLM leadplane operations. Unless for reasons of safety, any deviation from the policies or procedures contained in the ILOG must be approved in writing by the Director, Office of Fire and Aviation.

The ILOG is the reference standard for leadplane operations. This guide was developed to define and standardize national interagency operating procedures for lead planes; facilitate the exchange of personnel for other agencies during periods of high fire activity (through standardization); and provide checklist, orientation outlines, and special instructions for lead plane pilots.

All personnel conducting or involved in lead plane operations (e.g., ATGSs) should be knowledgeable of the content of this document and have it readily available.

Other Guides: There are various other operational guides utilized to standardize field operations e.g. Interagency Smokejumper Pilot Operations Guide (ISMOG). These various guides are in different stages of development. As they are completed they will be added to the Standards for Fire Operations.

### **Air Tactical Operations**

The Air Tactical Group Supervisor (ATGS) is primarily responsible for coordination of aircraft operations when fixed and/or rotor wing aircraft are operating on an incident. Specific duties and responsibilities are outlined in the Fireline Handbook (PMS 410-1). Coordination of airborne resources is performed by the ATGS. The ATGS reports to the Air Operations Branch Director (AOBD), or in the absence of the AOBD, to the operations section chief, or in the absence of the operations section chief, to the Incident Commander. **When airborne, the ATGS works for the IC or operations chief, depending on the size of the incident.** When the positions are in use on an incident, the Air Tanker

Coordinator (ATCO) and Helicopter Coordinator (HLCO) will be supervised by the ATGS.

The Interagency Air Tactical Group Supervisor Guide (draft) is adopted by the Office of Fire and Aviation as mandatory policy and operating procedure for BLM air tactical operations. Unless for reasons of safety, any deviation from the policies or procedures contained in the ATGS Guide must be approved in writing by the Director, Office of Fire and Aviation.

The Interagency Air Tactical Group Supervisor Guide has been developed in order to develop and maintain an effective national interagency ATGS program, high standards in training, certification, operating procedures, equipment, and program safety. This document will be the reference for BLM personnel using air tactical group supervisors or functioning in that role on an incident.

All personnel conducting or involved with air tactical operations (e.g., leadplane pilots, helicopter coordinators) should be knowledgeable of the content of this document and have it readily available.

### **Smokejumper Operations**

The Smokejumper Operations Guide has been developed and is available from AFS or NIFC. Also see "Suppression Resources," Chapter 7.

### **Agency-Owned Aircraft Operations**

The Office of Fire and Aviation has developed Standard Operating Procedures for agency-owned fleet aircraft (OV-10, Sherpa, Baron and Aztec) operations and maintenance. These are adopted as policy by the Office of Fire and Aviation.

### **Search and Rescue**

There are two basic scenarios for BLM personnel and/or aircraft involved in Search and Rescue (SAR) operations:

- 1 the search is initiated by BLM in an attempt to locate or rescue BLM personnel and/or aircraft;
- 2 the search or rescue operation is initiated by a cooperating agency and BLM assistance (in the form of personnel and/or aircraft) is requested by the cooperator.

In either case, actual search operations may not be coordinated by the BLM, they may be coordinated by another agency (such as the local sheriff's department, state police agency).

Search and Rescue is not the BLM's mission.



Regardless of who coordinates the physical search operations, it is the responsibility of each District to develop and maintain a local Search and Rescue Plan. The following items are recommended for inclusion in a local SAR Plan (other items may also be included as appropriate):

- General Information
- Overdue Aircraft Procedures
- Missing Aircraft Procedures
- Downed Aircraft - Away from Crash/Fire/Rescue Equipped Airport
- Downed Aircraft - Within Crash/Fire/Rescue Equipped Airport's response area
- Initial Action Checklist instructions to rescue personnel
- Crash, Search, and Rescue Plan checklist
- Telephone Directory
- Hazard Map Instructions
- Request Information for Air Ambulance
- Preparing for the arrival of the Investigation Team

(Most dispatch offices have a current Pre-accident Plan with contacts, telephone numbers, etc)

Search and rescue missions often involve specialized flight environments, such as:

- Reconnaissance
- Low-level flight
- Infrared scanning
- Hovering Out of Ground Effect (helicopter)
- Short Haul Rescue (helicopter)
- Rappelling (helicopter)
- Cargo Letdown (helicopter)

These types of operations must emphasize safety requirements and considerations. During complex operations, it may be advisable to use the Incident Command System aviation structure. For multiple aircraft operations, it is recommended that an Air Tactical Group Supervisor (ATGS) be assigned to perform airspace coordination duties. This individual can operate from either a fixed-wing aircraft or a helicopter. The requirements of FAR 91.119 regarding maintenance of minimum safe altitudes from persons or property on the ground apply. Standard agency procedures for flight following, resource tracking, and communications, shall be followed during SAR operations.

Aircraft of other Federal, State and local agencies, military components, and private industry cooperators used by SAR entities that are not currently under contract or agreement should only be used until approved aircraft and pilots can be obtained. In some cases, a Letter of Agreement or Memorandum of Understanding may exist which allows use of other-agency or military aircraft.

BLM employees involved in SAR operations are authorized to use unapproved aircraft and pilots during the emergency phase of the operation when, in the Incident Commander's (person in charge of SAR operations) best judgement, it is deemed necessary to do so to save a life.

The following policies shall govern emergency situations:

- Authorization will be given on a case-by-case basis by the responsible employee in charge or Incident Commander (it is recognized that this cannot always be accomplished before the fact);
- A written justification statement shall be prepared by the employee and attached to an Incident/Hazard Report (Form OAS-34), and submitted to the appropriate aviation manager within 24 hours of the completion of the mission.

When injured personnel are being transported, the following procedures should be used:

- Use the most qualified available medical attendant.
- Secure oxygen tanks.
- Carry latex gloves for protection from patient body fluids and blood-borne pathogens.
- Secure patients to litters; secure litters to the aircraft.
- If injuries would be aggravated by use of Personal Protective Equipment (PPE) or the time involved in clothing the patient in PPE, then PPE requirements are exempt.

Refer to the Interagency Helicopter Operations Guide (IHOG), the Interagency Airspace Coordination Guide, and local Search and Rescue Plans for more specific information and regulations.

### **Airspace Coordination**

The Interagency Airspace Coordination Guide (IACG) is adopted by the Office of Fire and Aviation as mandatory policy and operating procedure for BLM airspace coordination. Unless for reasons of safety, any deviation from the policies or procedures contained in the IACG must be approved in writing by the Director, Office of Fire and Aviation.

The IACG is the primary document to be used by BLM personnel (i. e., dispatchers, aviation managers, pilots, and air tactical group supervisors) when dealing with airspace issues. This IACG, adopted as policy by both the Director of OAS and the Director, Fire and Aviation, USDA Forest Service promotes aviation safety by establishing safe, consistent, and standardized approaches to issues involving airspace and Federal land management responsibilities.

**Airspace Coordination Specialists** All BLM States have an assigned Airspace Coordination Specialist (ACS). These individuals are a ready source of assistance during fire activity, particularly in coordinating fire activity with the FAA and Department of Defense bases. Other individuals are available from BLM and other agencies and are trained to function as an ACS to provide local or statewide assistance. The current BLM ACSs are:

Dick Williams, National Office (Boise).....	208-387-5181
Julie Stewart, Pacific Northwest.....	503-326-6728
George Walter, Northern Region .....	406-657-6471
Jack Durham, Idaho .....	208-373-3853
Ben Middleton, California.....	916-979-2910
Kevin Hamilton, Arizona.....	602-417-9306
Mark Jones, Utah.....	801-539-4075
Jim Johnson, Alaska.....	907-267-1220
Vacant (SAM), Nevada .....	702-785-6526
John Selkirk, New Mexico.....	505-438-7431

In the event you are unable to contact one of the above people call the State Aviation Manager (SAM) for the state you are operating in.

## **Flight Management/Flight Following**

The 9400 1a: The Aircraft Request/Flight Schedule form will be used for approval and flight planning. This form will be completed between the chief dispatcher and flight manager for the mission. The chief of party will use this form to brief the pilot on the mission. Outlined below are the basics relating to flight planning, pre-flight briefing, and flight following.

### **Types of Flights**

There are two basic types of flights: **point-to-point** and **mission**. Point-to-point flights typically originate at one developed airport or permanent helibase, with the flight route being direct to another developed airport or permanent helibase. Point-to-point flights are conducted solely for the purpose of transportation of personnel or cargo, and do not involve mission-type flight.

Mission flights are defined by exclusion as all flights not meeting the definition of "point-to-point" flight. As such, mission flight requires work to be performed in the air (e.g., retardant or water delivery, fire reconnaissance, smokejumper delivery), or through a combination of ground and aerial work (e.g., delivery of personnel and/or cargo from helibases to helispots or unimproved landing sites, rappelling or cargo letdown, horse herding). Mission flight inherently require greater planning due to the greater number of hazards and consequent higher degree of risk commonly involved in non-point-to-point flights.

Flights are also categorized as either "General Use" or "Special-Use" activities. Special-use flights require additional pilot qualifications, aircraft equipment, and passenger safety equipment.

A point-to-point flight is a general use flight. A mission flight conducted at greater than 500 feet AGL (above ground level), with no descent at any time below 500 feet AGL, is also a general use flight. By exclusion, all other flights are special use.

### **Fixed-wing Aircraft**

***Point-to-point Flights*** All BLM Flights shall be approved using an Aircraft Request/Flight Schedule, BLM Form 9400-1a. This form is the primary document used to plan and track point-to-point flights.

Bureau policy requires the designation of an Aircraft Chief of Party for each fixed-wing point-to-point flight transporting personnel. The basic duties and responsibilities of the Aircraft Chief of Party are:

- 1 Pilot's Card: check that pilot is qualified and current for aircraft type
- 2 Aircraft Card: check that aircraft is approved for mission, card current
- 3 Flight Plan/Flight Following: filed with FAA or Agency, facilitate as needed (Filing, opening, and closing the FAA flight plan is the responsibility of the pilot.)
- 4 Pilot Briefed on flight route/mission objective
- 5 Pilot Briefing to passengers is given
- 6 Passengers: have received and understand briefing; all personnel on board are either air crew members, authorized or official passengers
- 7 Fiscal Documents: ensure flight payment paperwork is accurate and signed where appropriate

***Tactical/Special-Use Missions*** Tactical flight missions are aircraft operations associated with initial attack of wildfires and large fire support. For wildfire suppression, these missions are requested and documented on the Aircraft Resource Order form, **not** the Aircraft Flight Request/Schedule.

Personal Protective Equipment (PPE) is required for a special-use mission.

All personnel will meet training and qualification standards required for the mission.

Special-use flight for fixed-wing aircraft includes the following flight missions:

- Flights conducted within 500 feet of the surface

- Water or retardant application
- Parachute delivery of personnel or cargo
- Air tactical group supervisor operations
- Air tanker coordinator operations
- Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, pinnacles, or surface conditions

## Helicopters

***Tactical/Special-Use Missions*** These missions also require a completed 9400-1a.

Special-use helicopter flights include the following flight missions:

- Flights conducted within 500 feet of the surface
- Water or retardant application
- Helicopter coordinator and air tactical group supervisor operations
- Aerial ignition activities
- External load operations
- Night vision goggle operations
- Hoversite/Autosurvey
- Rappelling
- Short haul
- Aerial capture, eradication, and tagging of Animals
- Offshore vessel or platform landings
- Toe-in, single-skid and step-out landings (prior authorization or exemption required)
- Takeoff or landing requiring special techniques due to hazardous terrain, obstacles, pinnacles, or surface conditions
- Free fall cargo

The use of Personal Protective Equipment (PPE) is required for both helicopter flight missions and ground operations. The specific items to be worn are dependent on either the type of flight, the function an individual is performing, or the type of ground operation being conducted. Refer to the tables in Chapter 9 of the IHOG for specific requirements.

### **Flight Following**

The primary method of flight-following point-to-point flights is through FAA flight plans, either VFR (Visual Flight Rules) or IFR (Instrument Flight Rules). The method of flight-following chosen by the pilot for a particular flight will be documented on the Aircraft Flight Request/Schedule by the scheduling dispatcher.

The primary method of flight-following tactical or special-use mission flights is by radio check-in with agency dispatch center(s). Check-in intervals of 15 minutes are the norm during tactical missions, however intervals between 15 and 60 minutes are allowed depending upon the mission and degree of risk.

Flight following is the responsibility of the scheduling office and will remain so until transferred through positive hand-off to another facility or office. This hand-off shall be documented. Flight-following reports from the aircraft are the responsibility of the Pilot-in-Command (PIC) in accordance with 14 CFR. Violation of flight following standards requires submission of Form OAS-34 per the Departmental Manual.

For tactical aircraft that cross dispatch area geographic boundaries, the receiving unit is responsible for confirming arrival of the aircraft via telephone to the sending unit, via dispatch channels.

Chief of Party (Flight Manager): Will brief the pilot using the 9400-1a. The chief of party is responsible for the health and welfare of the Bureau employee(s).

Special-Use Plans: Special-use missions require prior approval by the State Office and the immediate supervisor.

## 13 – Reviews & Investigations



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

### Program Reviews

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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 three levels, District, State, and National.

***District Level Review*** The District level review should be conducted by the District manager or his or her designated representative. The District Manager will appoint other qualified persons, including the District Fire Management Officer (or an official who has designated fire program management responsibilities) to be a part of the review.

The purpose of this review is to provide the District 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 Fire Management Officer. A copy of the

complete report will be sent to the State Fire Management Officer, who will review it and, if appropriate, forward a copy to the 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
- Results in a large expenditure of funds (\$250,000 or EFSA projections of over \$250,000)

The State level review normally will be conducted at the District where the fire occurred. It will be convened by the State Fire Management Officer or his/her designated representative. It will be attended by the District Manager. The District Fire Management Officer, the incident commander(s) for the fire, and other individuals agreed upon by the State Director and District 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 of the 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:

- Significant adverse media or political interest
- Multi-regional resource response
- A substantial loss of equipment or property
- Multiple, serious fire-related injuries or fatalities
- Large expenditure of funds (over \$250,000)
- Any other fire that the director wants reviewed

The National level review normally will be conducted at the District where the fire occurred. It will be convened by the Director, Office of Fire and Aviation, or his or her designated representative. It will be attended by the District Manager, District Fire Management Officer, State Fire Management Officer, 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 Districts and States will include the review of fire management programs to assure compliance with established Bureau standards.

## Readiness Reviews

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Pre-season readiness reviews are intended to provide comprehensive operational inspections, evaluations, and reports on BLM District fire programs. Standards for conducting fire readiness reviews are found in the "Interagency Fire Readiness Review Guide, 1996" and the BLM "Fire Readiness Review Guide 1996." State Offices must ensure fire readiness reviews of all Districts with fire programs are done on an annual basis. The reviews are to take place at the beginning of the fire season. Involvement of line management, and cooperators, where applicable, is critical. The National 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 readiness 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 readiness review is to provide a comprehensive evaluation and report on BLM fire readiness.

### Policy

Readiness reviews are required to be conducted on an annual basis.

### Elements

The following major elements must be considered when conducting a fire readiness 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 services. It is encouraged within the parameters of the internal review to bring in expertise from other States. This would facilitate technology transfer of ideas. District Managers will determine the makeup of the review teams when the readiness reviews are conducted at the District level. The State Director shall determine the makeup of the review teams when the reviews are conducted as part of a statewide readiness review. The Director of Office of Fire and Aviation will determine the makeup of the review team for national reviews.

### **Frequencies**

District Managers will conduct readiness inspections on an annual basis. State Directors will conduct readiness reviews to evaluate all BLM districts within two years. Director will conduct readiness reviews annually so that all States within a three years.

***Fire Preparedness Standards*** BLM State Offices have the responsibility for conducting fire readiness evaluations of all BLM offices in their state. BLM fire readiness review standards are found in the "Interagency Fire Readiness Review Guide, 1996."

- A final report for each district will be prepared and routed through the State Director to the District 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

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### 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 run and efficient fires in order to document efficient procedures for future use.

### Objectives

All reviews will be conducted as a constructive assessment aimed at determining the facts related to the specific fire or fire management program. They will identify commendable actions, techniques, and decisions as well as areas which need improvement. **Reviews are intended to resolve operational issues, not impose punitive actions.**

### Policy

All escaped prescribed fires will be reviewed. All entrapments and fire shelter deployments will be reviewed. Fires with projected large expenditures of funds will be reviewed, i.e., \$200,000 projected in EFSA.

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 Fire Management Officer, in consultation with the District, to recommend the appropriate level of review, if any. This must be done within thirty days after the fire has been declared out. The District Manager and/or State Director will act upon 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 Escaped Fire Situation Analysis or determine where the decision process has been faulty and corrective actions are needed.

The "hotline" review is normally conducted by the District Fire Management Officer (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 their release from the fire incident. The purpose of this review is to ensure complete transition of the incident management back to the District, to evaluate the status of any incomplete fire business, and to bring forward any issues, both positive and those addressing areas in need of improvement.

***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 District, 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. Bureau Manual 1112- Safety, Paragraph .22 outlines accident investigation procedures. The following guidelines apply to escaped fire reviews.

The objectives of the investigation will be:

- To prevent future escapes from occurring and to establish accountability.
- To determine if policy, guidance, and procedures relating to operation and safety are adequate.
- To determine the level of awareness and attitude toward procedures and guidance of personnel involved before escapes.
- To determine the extent of prescribed fire training and experience levels of personnel involved.

Responsibilities for prescribed fire reviews are as follows:

- **Supervisors** – Supervisors are required to make an investigation of all escapes either personally or through an appropriate designated investigator within 24 hours.
- **District Manager or Area Manager** – The Manager has the responsibility for ensuring adequate and proper investigation of all escapes resulting in estimated expenditures up to \$25,000 for suppression or damage to property. The Manager may appoint an investigation team or request that one be appointed consistent with Manual Section 1112 - Safety, paragraph .22D, Accident Investigations.
- **State Director** – The State Director has the responsibility for ensuring adequate and proper investigation of all escapes resulting in an estimated expenditure of more than \$25,000.
- **BLM Director (FA-100)** – The Director is responsible for ensuring adequate and proper investigation of all escapes resulting in suppression expenditures exceeding \$200,000.

***Entrapment and Fire Shelter Deployment Review*** Fire shelter deployment is defined as the use of a fire shelter for its intended purpose in **any** situation other than training. Use of the terms “precautionary deployment”, “practice deployment” and “entrapment deployment” are **not** recognized.

Entrapments and fire shelter deployments will be reviewed in order to gather complete and accurate information to determine the reasons for the deployment. Corrective recommendations will be developed to minimize future situations which might lead to other shelter deployments.

All entrapments and fire shelter deployments will be reviewed by the District Manager and reported to the State Fire Management Officer, who will be responsible for developing the review team in cooperation with the Office of Fire and Aviation. The team leader will contact the Agency Administrator for reporting information.

All entrapments and fire shelter deployments will be investigated as soon as possible after the deployment incident. Refer to Chapter 4 for directions.

**Format for Entrapment/Fire Shelter Deployment Written Review**

- I. Executive Summary
- II. Review Team Members—list of investigator/board of review members, giving names, agencies, titles, red card qualifications, home units, and business phone numbers.

- III. Chronology-of events leading to entrapment/deployment.
- IV. Findings
- V. Recommendations
- VI. Appendices
  - A. Maps
  - B. Standards
  - C. Personnel rosters
  - D. Incident action plans and unit logs (ICS-214)
  - E. Detailed narrative of fire weather and behavior
  - F. Photographs
  - G. Other pertinent documentation

### **Outline for Final Reports of Fire Reviews**

This format is provided to develop consistency in the Bureau fire review reporting system. This format will assure more efficient review of reports at the District, State, and National levels.

Fire reviews will follow the general outline listed below. The list of subjects is included for consideration, but only those subjects that the review team identifies as commendable actions, policy issues or correctable deficiencies need be included in the written report.

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

### **Distribution of Reviews**

State fire management officers 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 that occurred or recommendations that might be applicable elsewhere. SFMOs will forward such 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:

- EFSA with all updates.
- IAPs showing incident strategy and any 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 deemed necessary to understanding of the incident.
- Personnel and equipment charts showing buildups by burning periods.
- Detailed financial summary of the incident.

## Fire and Aviation Safety Team

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### Purpose

To assist the 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 Fire and Aviation Safety Teams 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 appropriate 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 member 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 areas of concern and what is going well!
- 2 Report to appropriate authority (National, Geographic Area, etc.) on observations and findings.
- 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 Assure draft report is completed prior to closeout with requesting unit.
- 9 Submit a final report within 7 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 FASTeam 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 Fire and Aviation Safety Team 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 (5 days).
- Equipment will include field and office clothing, laptop computer, cellular telephone or pager.
- Travel dependent 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 providing fire and aviation oversight.
  2. At mobilization, the Team will be given a briefing from the National Fire and Aviation Safety Team 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 Fire and Aviation Safety Team.
  4. Upon arrival at the ordering unit, the Team will receive an Agency Administrator's briefing, objectives, and (when appropriate) a delegation of authority.
  5. When entering an administrative unit, it is common courtesy to 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.

## **14 - Administration**

### **Policy**

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BLM has adopted the National Wildfire Coordinating Group (NWCG) Interagency Incident Business Management Handbook as the official procedures for handling administrative matters relating to fire management. Periodic supplements will be issued based on Bureau needs and/or changes agreed on by the interagency community making up NWCG. This handbook replaced and updated BLM Manual Section 1111.

### **Purpose**

Since the uniform application of interagency policies and guidelines is essential, appropriate procedures in the Interagency Incident Business Management Handbook (NWCG Hbk2) should be followed. The BLM Manual will provide a bridge between Manual Sections and the Interagency Incident Business Management Handbook, so that continuity of the BLM Manual System is maintained and all additions, changes and supplements are filed in a uniform manner. Field offices may supplement the Handbook (see Manual 1221) to provide additional clarification or information as long as policy or conceptual data is not changed.

### **Objectives**

The objectives are to assure that fire operations include:

- Maintaining proper finance, property, procurement, and personnel records and forms in a consistent manner.
- Properly classifying emergency fire personnel, and paying such personnel according to classification.
- Applying specific regulations applicable to pay, leave, travel, hazard, pay, etc., in a uniform manner.
- Acquiring necessary equipment and supplies from appropriate sources in accordance with applicable procurement regulations.
- Maintaining adequate property records and accountability procedures.

## Responsibility

**District Manager** It is the responsibility of the District Manager and assigned staff to provide fire business management information, support to the Incident Commander. The District Manager is responsible to oversee that fire business management activities are in compliance with Bureau policy.

**Incident Commander** The Incident Commander (IC) has responsibility for establishing and maintaining a sound business management program for all activities related to the suppression of wildfire. The Incident Commander and assigned staff are responsible for carrying out business management activities as identified in the Interagency Incident Business Management Handbook.

## Fire Pay Provisions

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### Policy

BLM has well established policies for normal day to day non-fire activities to include pre-suppression duties. For fire emergencies the Bureau has adopted the policies and procedures identified in the Interagency Incident Business Management Handbook – Chapter 10 Personnel – which has been updated in January of 1991 and May of 1995.

### Initial and Extended Attack Fires

ICS Type 4 and Type 3 Fires that are contained within the first burning period may result in extended duty for fire personnel. The first eight hours of the day of the incident may be the regularly scheduled tour of duty followed by several hours of overtime up until 2400. At 0001 the tour of duty spot changes to a new first eight hours of regular time which could be potentially continued on into the daylight hours with additional overtime. A twenty four to thirty hour continuous duty shift is possible. As soon as relieved these personnel must be provided one hour of rest for every two hours worked. The rest time is not compensable, but premium pay for hours worked does apply. Should the incident continue these personnel may be utilized on the incident after the mandatory rest period for additional tours of duty normally not to exceed 16 hours. The initial attack personnel released from the incident will follow established guidelines.

### Project Fires

For fire incidents that have escaped initial control efforts, the work/rest guidelines of one hour of rest to every two hours of work will be planned for. Deviation from the guidelines must be approved by the Incident Commander and Agency Administrator. Operational periods should normally not exceed 16 hours, but may do so, if the incident management requires it. Incident Commanders or Agency

Administrators will justify and document such decisions after the first operational period.

### **Days Off**

As a general rule days off are not provided during an ongoing incident or for an off-unit assignment of less than 21 days. An Incident commander or any Agency Administrator is not prohibited from providing a non-pay day off; however, rest and recuperation is the preferred method to assure employees remain productive, physically capable, and mentally alert.

## **Procurement**

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### **Policy**

Procedures for procurement operations in a fire emergency are intended to assure that support of an incident can be accomplished in a cost efficient and timely manner. The Interagency Incident Business Management Handbook—Chapter 20, Procurement—provides procedures to be used on a large incident.

### **Planned Procurement**

As much as possible a unit should pre-plan and implement the types of procurement and the locations of vendors willing to provide supplies and services to an emergency incident. Planned procurement can follow the normally accepted methods of advertisement, competition, and selection of the best price for the government. Included could be meal agreements, aircraft (OAS), equipment rentals, memoranda of understanding or agreements with cooperators, incident base locations, motel accommodations, and vendor provided services. Blanket purchase agreements are being replaced by use of Visa card, but in some instances may still be viable. Inclusion of contracting officers/procurement agents in the preplanning phase is essential. It is also recommended that units in a geographic area work together with vendors and establish one list for all agencies to use, particularly as it relates to equipment rentals and negotiated prices for goods and services. Better rates can possibly be obtained and prices will be consistent within the area. The more accomplished before an incident occurs, the better the procurement for the emergency. Incident Command teams will integrate quickly with the local unit and even the small local incidents benefit from preplanning.

### **Emergency Procurement**

Although most initial attack and smaller incidents don't require extensive immediate need procurement, unplanned situations will occur that require an emergency procurement. Some units have contracting officers and procurement agents that are capable of rapid support using their delegated authority. Others

are not as fortunate and must rely on fire suppression personnel or other staff to meet the incidents needs.

- It is suggested that some delegations of authority be in place to allow emergency purchases using imprest, blanket purchase authorizations, or Visa with expanded limitations at appropriate vendors. The delegation must be issued by a Warranted Contracting Officer or Warranted Procurement Agent.
- A local unit should request assistance through the resource order process up to and including incident management teams and buying teams.
- Utilize cooperators as much as possible.
- Recognize procurement limitations:
  - ♦ No capitalized equipment purchases.
  - ♦ \$25,000 single purchase with some exemptions allowable.
  - ♦ Visa card authorized.
  - ♦ Imprest purchase limits and cash on hand.

## **Injury Compensation**

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### **Policy**

It is the policy of the BLM to provide prompt medical attention to all injured or ill employees. On a large incident the injured or ill employee may be from another agency. All forms and documentation needed to protect the employees rights must be completed and sent to appropriate employing offices. It is the responsibility of the employee, supervisor, Incident Commander, and the Agency Administrator to assure policy and procedure are followed.

### **Federal Employees**

At a minimum, a CA-1 is filled out by the employee and supervisor for any injury. If medical treatment beyond first aid or Agency Provided Medical Care (APMC) is required, a CA-16 is also required. The employee's home unit should receive the CA-1 and a copy of the CA-16, if available from the care provider.

### **Non-Federal Employees**

Provide for the appropriate level of medical care dependent on the situation. Contact an Agency Representative (if available) or the employee's home unit to determine what forms are required. Use CA-1 and CA-16 lacking any other format.

### **Agency Provided Medical Care**

When available through a licensed physician or medical center, Agency Provided Medical Care is an option for initial treatment of injuries. Since OWPC bills the agency for all medical costs plus administrative charges, APMC may be less

expensive and is directly billable to the activity during which the injury occurred. On a large incident APMC can be provided in base camp or the services can be arranged at a facility in a community.

## **EFF/AD Hiring**

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### **Policy**

The authority to hire Emergency Firefighters/Administratively Determined (EFF/AD) is updated each year with an instruction memo and a pay plan as an exhibit to the Interagency Incident Business Management Handbook. The conditions for hiring are clearly stated. A local unit or an Incident Management Team may hire additional personnel for an ongoing emergency incident to include rehabilitation. A local unit may also hire additional personnel to deal with an anticipated increase in fire activity, replace suppression personnel currently assigned to other fires, and to train fire suppression personnel for up to 80 hours.

### **Pay Plan**

The pay plan is based on a regional basis for AD-1 to 4 and sets upper limits on AD-5, which is negotiated for specific jobs at the local level. All time as an EFF/AD is straight time with no premium pay authorized. This type of employment is not eligible for unemployment benefits at the conclusion of the employment period. No deductions are made (except commissary or lost property), but the earnings are taxable under Federal and State tax laws.

### **Injuries**

An employee in EFF/AD status who is injured on the job will be treated utilizing CA-1 and CA-16 procedures. Once the injury is treated the employee may be released from duty with no Continuation of Pay (COP). Medical treatment beyond the initial treatment is continued under OWCP procedures.

## **Contracts**

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### **Policy**

Use of contractors for support of fire suppression operations is appropriate and in many cases the preferred method of obtaining goods or services. Fire suppression contracts with other agencies are utilized when it is not practical nor economically feasible for BLM to provide its own fire protection. Fire suppression contractors must meet BLM minimum standards for fire equipment, personnel qualifications and training.

### **Types of Contracts**

The best example of pre-arranged contracts are those for aircraft as provided through Office of Aircraft Services. Another common arrangement is a

suppression contract with a state or local government agency for fire protection services on public lands. BLM may also contract to provide services to another agency for suppression activities. Others include meals, lodging, fuel, equipment, and service contracts.

## Buying Unit Teams

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### Policy

The use of Buying Unit Teams is encouraged to support large fire incidents which are managed by Type 1 or Type 2 Incident Management Teams.

### Team Composition

A Buying Unit Team can be set up in a local office or pre-planned as part of a Mobilization Guide. The team members are normally procurement personnel with warranted contracting authority. Two or three personnel familiar with local vendors and procurement procedures work at the District Office level and support an incident at a remote location. An Incident Management Team may be managing the fire or other type of emergency and the Buying Unit Team would handle orders the IMT.

## Comptrollers

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### Policy

Use of comptrollers on large incidents is encouraged as a proactive cost control measure. The department or the agency may send a comptroller to an active incident or as a follow up to an incident that has been concluded.

### Roles and Responsibilities

The responsibility of the Comptroller is as follows:

- Provide advice to the Agency Administrator on the need for cost-analysis or cost-apportionment personnel.
- Provide general guidelines on cost-effectiveness at the incident briefing to the Incident Management Team (IMT).
- Provide Incident agency specific cost information to the Finance/Administration Section Chief (FSC).
- Determine if the IMT has implemented cost-effective measures.
- Ensure proper business and financial management practices are being followed.



- Assist the IMT in solving difficult or unusual problems.

## Cache Management & Accountability

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Each BLM fire cache, regardless of size, should initiate and maintain a cache inventory management system. The Bureau's management system provides a checkout/return concept that incorporates a "debit/crediting" for all items leaving the cache. This system is strictly adhered to in the two Bureau National Interagency Support Caches (located at NIFC and AFS). Please ensure that an inventory management process is implemented for your local interagency support and initial action caches, and that it follows established categories of equipment and supplies reasonable fire loss/use rates, and procedures for reviewing fires and investigating those cases where loss tolerance rates may have been exceeded.

### ***Fire Loss Tolerance Reporting for Type 1 and 2 Incidents***

In order to help managers keep incident-related equipment and supply loss to a minimum, incident management teams are required to maintain accountability and tracking of these items. Guidelines and procedures to assist with this accountability are provided in Chapter 30 of the Interagency Incident Business Management Handbook. To further facilitate these procedures and provide oversight, a fire loss report has been developed that provides detailed information regarding consumable and durable item use. Fire Loss/Use Rate is defined as all property and supplies lost, damaged or consumed on an incident. It is reported as a percentage that is calculated in dollars of items issued compared to items returned. The reasonable anticipated fire loss/use rate is 25 to 30 percent. This report has been accepted by the National Wildfire Coordinating Group for all wildland fire agencies and will be compiled for all Type 1 and Type 2 incidents.

These reports are compiled by the geographic area National Fire Equipment System cache servicing the particular incident. Reports will then be forwarded to the responsible field office, Agency Administrator within 60 days of the close of the incident. To meet these time limits, several steps must be followed to facilitate complete data resulting in accurate reports:

- At the close of each incident, all **property ordered** from the cache must be returned to the servicing NFES cache. If accountable property has been destroyed or lost, appropriate documentation must be provided to the cache for replacement and updating property records.
- All **property purchased** with emergency fire funds for an incident must be returned to the NFES cache system.
- All **unused and/or durable** NFES items must be returned to the servicing NFES cache within 30 days of control of the incident.

District Managers and/or FMOs must review the fire loss report and recommend appropriate follow-up action if losses are excessive. Those actions and recommendations should be documented and filed in the final incident records.

Each BLM fire cache will also establish a list of accountable property, durable goods, and consumable supplies commensurate with the following guidelines:

### **Accountable Property**

Includes all items with a purchase price greater than \$5,000 or classified as a "sensitive" item. All property items must be returned to the issuing fire cache, or be documented on a Property Loss/Damage Report (OF-289).

### **Durable Goods**

These non-controlled items that are expected to be used on more than one fire. Loss guidelines should be established for these items. Following are some examples of durable goods: water handling accessories such as valves, wyes, and nozzles; helicopter accessories such as nets and swivels; camp items such as heaters, flood lights, lanterns, tables, and chairs; hand tools; hose; backpack pumps; and clothing such as fire resistant shirts, trousers, and flight suits.

### **Consumable Supplies**

Those items normally expected to be consumed on the fire. Consumable supplies that are not utilized and which can be used on another fire are to be returned to the issuing fire cache for appropriate credit. Loss tolerance guidelines are established for these supplies. These supplies include items such as batteries, Meals-Ready-to-Eat (MREs), plastic canteens, cubitainers, fuses and medical supplies.

## **Local Cache Procedures**

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The Local Interagency Support and Initial Action Caches will:

- Maintain stocking levels to meet the identified needs of the agencies to whom service is provided.
- Receive and process orders from participating agencies.
- Follow ordering and fire replenishment procedures as outlined by geographic area National Interagency Support Cache.
- Submit to the geographic area National Interagency Support Cache, inventories of critical fire items. The required list and time due will be sent out by the national geographic area cache on a yearly basis.

## **Mobile Fire Equipment Policy**

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It shall be the policy of the BLM to maintain each piece of mobile fire equipment in a condition consistent with the work it is expected to perform. This shall be accomplished through the intelligent application of a uniform preventive maintenance program and in accordance with all Bureau fiscal requirements. Repairs shall be made and parts replaced as necessary to keep the equipment functional, with priority being given to those items contributing to safety. Mobile fire equipment shall not be altered or modified without BLM National fire operations committee approval.

Regular inspections of all mobile fire equipment shall be made as outlined in the preventive Maintenance Procedure and Record. Accurate records shall be maintained of maintenance and repairs on all mobile fire equipment. As far as possible, major repairs shall be scheduled during the time of least expected activity for each type (e.g., fire apparatus during winter period; construction equipment during summer), thus reducing the possibility of breakdown during its active period. Recurring fire equipment problems/failures should be identified to the state fire equipment representative. This information will be forwarded to the national Office of Fire and Aviation for review and staffing of possible solution

## **Fire Equipment Management**

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### **Introduction**

This section contains specific guidance on activities, standards, and procedures in the management of the Bureau's fire equipment. Also refer to the Bureau Manual Handbook H-9216-1, "Fire Equipment and Supply Management Handbook."

The Bureau Fire Equipment Program designs, develops, and acquires specialized equipment, cabs, chassis, utility bodies, and pump packages to meet the Bureau's fire use and suppression requirements. Design is accomplished through the analysis of performance needs, survey of new technology, and the development of test models and prototype units. Acquisition of these components is done through a combination of contracting, remanufacturing of existing units, and in-house assembly. The Bureau operates a vehicle program balancing state-of-the-art technology with overall cost efficiency to provide maximum safety for personnel while effectively meeting suppression needs.

### **Fire Equipment Committees**

There are three levels of Fire Equipment Committees: State/Geographic Board, National, and National Wildfire Coordinating Group. Fire Equipment Committees address the broad spectrum of equipment subjects and make recommendations to the respective Fire Management Officer or Director. Equipment committees should invite the participation of other agency equipment leads to share ideas and to expand the network of equipment specialists.

**State/Geographic Area Fire Equipment Committee** Each State/Geographic Area maintains a Fire Equipment Committee which, at a minimum, does the following:

- Establishes, coordinates, and standardizes internal (State) fire equipment management practices.
- Identifies equipment needs and problems for national resolution.
- Provides a State focal point (committee chair) who can knowledgeably speak for the State on national and local activities.

**National Fire Equipment Committee** The committee consists of the State Equipment Committee Chairs (or designated representatives), one National Fire Management Staff, National Business Center (BC) Equipment Management Specialist. Meeting frequency is based on need, but meetings are typically scheduled twice a year. Agenda topics are solicited from the National Office and States. Formal. Formal meeting minutes containing recommendations are distributed for review, before adoption. The committee focuses on the full fire equipment spectrum. Sub-groups or special task groups may be utilized for in-depth studies on an ad hoc basis and to provide staff recommendations to the committee. The National Business Center and National Office members are non-voting. The Chair votes only in cases of ties and is responsible for scheduling, meeting management, and the minutes.

**The NWCG Fire Equipment Working Team (FEWT)** is the National Interagency Fire Equipment Committee. The BLM has one term position on the FEWT; several employees may be assigned to task forces and work groups. The Working Team meets twice a year and produces official minutes for the NWCG. The Bureau's representative is responsible for timely distribution of these minutes and soliciting Bureau topics to bring to the FEWT meetings.

### **Standards and Specifications**

Bureau's fire engine program strives for standardization for reasons of economy and efficiency. Standardization produces state-of-the-art equipment, effectively meeting user needs at the lowest possible cost, and with the least impact on the Bureau's work force.

**Management of Standards** Bureau specifications and standards are maintained by the Fire Center. Equipment Standards and Standard Options are managed under the "sealed pattern" concept; changes may only be made once a year, through a formal, documented process. Minor changes to blueprints and specifications are made only with the concurrence of the National Equipment Committee. Major changes may be addressed only through the engine development process. Procurement of nonstandard equipment with fire

management funds, when standards exist, must have prior written approval by the Director, Office of Fire and Aviation.

***Classes of Standard Units*** The Bureau has established standards for engines and pump units. These standards are for Light Engines, Heavy Engines, Water Tenders, and Slip-Ons. Not all of the cab and chassis carrying fire packages are Department of the Interior vehicles; several offices also use GSA vehicles. The BLM's fire vehicle program standards also apply to GSA vehicles.

***Funding Accessories and Upgrades*** States and Districts are responsible for procuring and funding all accessories and upgrades added to a Bureau fire vehicle that are not part of the standard as defined in detail in the "sealed pattern" for the year the equipment was assembled. If the engine did not have the item on it when received from the Fire Center, that item is considered an accessory. Charges for accessories (e.g., special painting, supplemental lighting, warning devices, winches, etc.) and the maintenance of these items cannot be made against the WCF. They are totally the responsibility of the local unit.

***Pump Packages-Heavy Equipment, Water Tenders & Special Purpose Vehicles*** The major components comprising the pump package plus the utility body will be listed on Receiving Report Form (DI-102) or the Contract Receiving Report (Form 1520-54), along with the cost of each component plus labor costs. Serial numbers are not required for the pump and pump motor, which may be replaced during the life cycle.

***Pump Packages-Light Engines*** The major components that comprise the light engine pump package will be listed on Form DI-102 or Form 1520-54 along with the cost of each component plus labor costs. Serial numbers are not required for the pump and pump motor. The utility body is treated as an "add-on" to the cab and chassis. At the end of a life cycle, the utility body may be reused or sold with the cab chassis. The Fire Center will contact the field in the event any pump package(s) or part(s) of pump packages are wanted for remanufacturing and should be turned in to the Fire Center. No units or parts are accepted at the Fire Center without prior notification and concurrence by Equipment Development Unit and the completion of Transfer of Property Form (DI-104).

***Property Numbers*** The Fire Center assigns property numbers to pump packages built at the Fire Center. Packages built at a local unit have property numbers assigned by that office. The National Business Center assigns an Interior license plate to the cab and chassis. The number on that plate is the property number by which the cab and chassis will be identified, in both the APPS and the AFMS. A credit card is issued when the vehicle has reached its assigned destination and on receipt of the transfer document. Property transfers are made by FA-220 to the receiving District Office on a DI-104. This document

shows the license number of the vehicle and the property number of the pump package with complete assignment information on both items.

The heavy engine, water tender, or special purpose vehicle pump package is assigned a single property number. The property number covers all components comprising the pump package, the cab/chassis, and the utility body.

The light engine pump package is considered to be the slip-on type and, therefore, is assigned a separate property number covering all components comprising the slip-on package. The utility body and cab/chassis are considered a unit and have a property number separate from the slip-on pump package.

### **Mid-Cycle Maintenance**

Field offices perform the maintenance on their fire vehicles. Some wear and tear cannot be resolved through a regular maintenance schedule. To ensure the vehicle's integrity, reliability, and cosmetic value, it is often necessary to perform special maintenance at the mid-cycle point. Mid-cycle is determined as the halfway point in the WCF replacement cycle. All mid-cycle maintenance is chargeable to the WCF and must have written approval in advance by the State Director. All major damage, not from normal use, is chargeable to the appropriate activity(s), not WCF. The cost of mid-cycle activities becomes part of the use rate, and performance is the responsibility of the field office, not the Fire Center. The special mid-cycle maintenance is limited to the following:

***Tank Maintenance*** Tops removed, (If steel) tank inspected and cleaned; baffles checked and rewelded, if necessary; rust damage repaired, if needed.

#### ***Cosmetics***

- Painting – Is done at mid-cycle or if major damage has occurred. Repainting is covered by WCF only at mid-life cycle, where normal deterioration has occurred.
- Body Work – Is limited to damage repair and does not include package or equipment upgrades.
- Pumping System – Does not include upgrades to newer models, but does include rebuilding and repainting, when necessary.
- Hose Reels – Rewind motors and rebuild hose swivels; model/styles remain original.

### **Valid/Invalid Expenditures of WCF Funds**

***Add-Ons and Accessories*** All equipment added to a fire engine vehicle after delivery such as light bars, tools, radios, and winches are considered

add-on" items and are not funded through WCF. The cost of fire vehicle or fire package modifications, including the replacement/ modification of equipment provided with the vehicle on delivery (such as bumpers), is not funded through the WCF, unless the equipment is in need of replacement due to damage, wear, or defect. All accidents must be charged to benefitting activity.

**Vehicle Repairs, Maintenance** The cost of all vehicle repairs and maintenance may be charged to WCF. Exceptions include the cost of replacement or repair of "add-on" items and accessories, and equipment damage other than normal use.

**Mid-Cycle Maintenance** Mid-cycle is required to ensure a fire vehicle's reliability, integrity, and cosmetic value. Special maintenance items may be performed halfway into the WCF life cycle. This maintenance is an appropriate WCF charge (see Mid-Cycle Maintenance for details).

**Travel on WCF Funds** Travel using the WCF must be pre-authorized by the WCF Manager and is normally allowed only to Fire Center and National Business Center personnel serving as Contracting Officers, Contracting Officer Representatives, and Project Inspectors on fire vehicle related contracts, and for fire vehicle delivery by Fire Center personnel.

### **Fixed Ownership Rates (FORs)**

These are the annual fees charged monthly against a fire vehicle currently in service that accumulate over the life of a vehicle, which are then applied toward the purchase of the eventual replacement vehicle. The FORs are adjusted annually by WCF to reflect changes in replacement cost due to inflation or specification changes. Sales of outgoing fire vehicles provide approximately 20% of the value of the replacement vehicle. Life cycles (required for collection period) for common fire engine equipment are as follows: Slip-on Pump Packages, 7 years; Crew Carriers (class 644), 7 years; Light Fire Engines (class 663), 7 years; Heavy Fire Engines/Gas (class 66), 7 years; Heavy Fire Engines/Diesel (class 667), 10 years; Model 14 Heavy Engines (class 665); 15 years; Water Tenders (class 669), 15 years; Unimog (class 925), 15 years.

Slip-on pump packages on light engines are included in the rates charged for class 663 vehicles. Slip-on pump packages not on WCF class 663 vehicles (i.e., GSA vehicles) are charged a separate rate which is collected at the end of each fiscal year. Incomplete or improper disposal of outgoing (replaced) fire engine equipment results in continued charges of FORs until such time as disposal is completed.

### **Use Rate Determination**

Use rates are independent of the FOR. The use rate is a yearly adjusted rate that is equal to the average cost for the use and maintenance of vehicles in that class

the preceding year. The use-rate figure may vary significantly from year to year, particularly in those vehicle classes with a low number of vehicles which are more sensitive to large maintenance or repair charges on a single vehicle.

### **Property Classifications**

The following vehicle classes comprise the majority of fire engine equipment currently in service.

- 421022 = Slip-on pump package to 300 gallons
- 421042 = Slip-on pump packages from 300–2000 gallons
- 421062 = Slip-on pump packages over 2000 gallons
- 644 = Crew Carrier
- 663 = Light fire engine (with slip-on)
- 666 = Heavy fire engine (gas)
- 667 = Heavy fire engine (diesel)
- 668 = Water tender (gas)
- 669 = Water tender (diesel)
- 925 = Unimog or equivalent special-purpose vehicle

### **Property Transfer/Replacement**

***Surplus Vehicle/Early Turn-Ins/Transfer*** Fire vehicles that are to be replaced may be transferred to another area for continued service with the approval of the appropriate State Directors and WCF Managers. In these instances, the vehicle remains in the same class, and the FOR and Use Rates will continue to be charged to the unit acquiring the vehicle. Districts wishing to dispose of fire engine equipment prior to the normal replacement date may do so. In these instances, no future replacement is provided and there is no accrued credit from the FOR collected on that unit prior to disposal. Districts acquiring this type of equipment continue payment of the FOR and Use Rates.

***Conversions*** Districts, in possession of fire engine equipment due for replacement, have the option of replacing that equipment with vehicles of another class, if the change in NUS is covered and in the approved FMP (e.g., conversion of two light engines to one heavy engine). Appropriate State Director and Property Manager approval is required, and sufficient contributions through the FOR or other funds to make up any difference in cost are required.