

## ANNEX A

### FIRE ENTRAPMENT INVESTIGATION & REVIEW GUIDELINES

#### DEFINITIONS:

**Agency Administrator**--That lead employee 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, life-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.

- |      |   |     |  |
|------|---|-----|--|
| I.   | FIRE BEHAVIOR                             | IV. | CONTROL MECHANISMS                               |
|      | Fuels                                     |     | Span of Control                                  |
|      | Weather                                   |     | Communications                                   |
|      | Topography                                |     | Ongoing Evaluations                              |
|      | Predicted vs. Observed                    |     | “10 Standard Fire Orders/18 Watchout Situations” |
| II.  | ENVIRONMENTAL FACTORS                     | V.  | INVOLVED PERSONNEL PROFILES                      |
|      | Smoke                                     |     | Training/Qualifications                          |
|      | Temperature                               |     | Operational Period Length/Fatigue                |
|      | Visibility                                |     | Attitudes  |
|      | Slope                                     |     | Leadership                                       |
|      | Other                                     |     | Experience Levels                                |
| III. | INCIDENT MANAGEMENT                       | VI. | EQUIPMENT  |
|      | Incident Objectives                       |     | Availability                                     |
|      | Strategy                                  |     | Performance/Non-performance                      |
|      | Tactics                                   |     | Clothing and Equipment                           |
|      | Safety Briefings/Major Concerns Addressed |     | Used for Intended Purpose?                       |
|      | Instructions Given                        |     | Etc.   |

## 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:

1. 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.
2. 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.
3. Immediately notifying the DNRC Line Officer and providing details on the incident status summary (ICS-209).
4. 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.
5. Relieving involved supervisors from fireline duty until the preliminary investigation has been completed.
6. 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.
7. 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:

1. Convene an Entrapment Investigation Team (EIT) to investigate the entrapment. It is recommended that the EIT be interagency in nature and should include personnel with the following skill areas:
  - a. Incident Commander or Operation’s Section Chief (Type I).
  - b. Fire Behavior Analyst, qualified in the specific fuel type.
  - c. Safety Officer, with investigative expertise.

- d. Wildfire Operations, with expertise at the peer level of the person(s) directly involved.
  - e. Agency Representative of involved person(s).
  - f. Employee representation (union, peer at operations level).
  - g. Fire weather meteorology.
  - h. Personal protective equipment specialist, from a lab such as the USDA Forest Service's Missoula Technology and Development Center.
2. Instruct the EIT to arrive on scene within 24 hours.
  3. Advise the Incident Management Team of the EIT's time of arrival and team composition.
  4. 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.
  5. Arrange for a critical incident stress debriefing team for the personnel involved in the entrapment.
  6. Notify the home unit agency administrator of all individuals involved in the entrapment/deployment.
  7. 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**

1. 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.
2. The EIT will brief the Agency Administrator and the Incident Commander of their preliminary findings prior to leaving the incident.
3. 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**

1. 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.
  
2. The SHWT will periodically review all entrapment reports, determine trends, and incorporate findings to develop specific prevention recommendations for implementation by NWCG agencies.

**ENTRAPMENT INVESTIGATION ELEMENT MATRIX**

**I. FIRE BEHAVIOR**

	<b>Did Not Contribute</b>	<b>*Influenced</b>	<b>*Significant Contribution</b>
Fuels			
Weather			
Topography			
Predicted vs. Observed			

**II. ENVIRONMENTAL FACTORS**

	<b>Did Not Contribute</b>	<b>*Influenced</b>	<b>*Significant Contribution</b>
Smoke			
Temperature			
Visibility			
Slope			
Other			

### III. INCIDENT MANAGEMENT

	<b>Did Not Contribute</b>	<b>*Influenced</b>	<b>*Significant Contribution</b>
Incident Objectives			
Strategy			
Tactics			
Safety Briefings/Major Concerns Addressed			
Instructions Given			

*\*Element items must be supported with written documentation.*

### IV. CONTROL MECHANISMS

	<b>Did Not Contribute</b>	<b>*Influenced</b>	<b>*Significant Contribution</b>
Span of Control			
Communications			
Ongoing Evaluations			
“10 Standard Fire Orders/18 Watchout Situations”.			

### V. INVOLVED PERSONNEL PROFILES

	<b>Did Not Contribute</b>	<b>*Influenced</b>	<b>*Significant Contribution</b>
Training/Qualifications			
Operational Period Length/Fatigue			
Attitudes			
Leadership			
Experience Levels			

*\*Element items must be supported with written documentation.*

VI. EQUIPMENT

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

*\*Element items must be supported with written documentation.*

**ANNEX B**

**LINE OFFICER'S BRIEFING**

**LINE OFFICER'S BRIEFING**

*A format for preparing and conducting the line officer's briefing  
to the incident management team.*

## A. INTRODUCTION

The line officer's (agency administrator's) briefing is a crucial procedure that should be given thorough attention and preparation, in consideration of the general hurried state of business during the transition between extended attack, an escaped fire and the anticipation of an incident management team.

The line officer's briefing will provide information, guidance, and direction, including constraints, necessary for the successful management of the incident.

The briefing must be provided any time an incident management team is assigned, including changing teams before all incident objectives have been met, and whenever major jurisdictional responsibilities are added or otherwise change within the incident.

Either at the time of the line officer's briefing for the incident management team, or at a separate place and time if necessary, ensure that the IMT has an opportunity to meet with, be briefed by, and thoroughly transition with, the current incident commander and the members of their organization prior to assuming command of the incident.

## B. PURPOSE OF THE LINE OFFICER'S BRIEFING

The purpose of the line officer's briefing is to:

1. Provide a common understanding between the line officer and the incident management team of the environmental, social, political, economic, and other management issues relevant to the incident and its location.
2. Inform the IMT of the history, current status of the incident and actions taken to date, including weather, fire behavior, and effectiveness of tactics.
3. Present other documents providing intelligence and aids to management of the incident, including maps, photos, GIS products, weather forecasts, fire management plans, phone lists, agreements, operational period plans, and current ICS-209.
4. Present the wildland fire situation analysis with the selected alternative and the delegation of authority letter from the line officer to the incident commander.
5. Identify key agency personnel who will be involved with the IMT, including the line officer's representative, resource advisor, and incident business advisor.
6. Establish procedures and schedules for communication between the line officer and incident commander.



7. Establish how news media, public information, and important local and political contacts will be handled on the incident.
8. Establish resource ordering procedures.
9. Identify the IMT's responsibility for initial attack and support of other Forest incidents.
10. Establish the disposition of Forest suppression resources and local participation on the incident.
11. Establish understanding for the use of trainees on the incident.
12. Establish Forest and incident policy on compensable meal breaks, work/rest, rest and recuperation, and open vs. closed camps.
13. Establish standards for return of the incident to local management, including mop-up and fire suppression rehabilitation expectations.
14. Identify special safety awareness concerns and expectations.

#### C. CONDUCTING THE LINE OFFICER'S BRIEFING

The briefing should be planned for a comfortable setting away from most distractions, where the incoming incident management team and all required representatives of the host agency can assemble. It should take place as soon as the incoming team is assembled. It is essential that the line officer ensure notification of the briefing time and location to the incident commander, usually through the dispatch network.

The briefing should be led by the responsible line officer and follow an organized format to ensure information exchange and minimize the time required of the team prior to them mobilizing to the incident location. All agency participants must be prepared for their part in this procedure and all pertinent information and documentation must be printed in sufficient quantities for required distribution.

The agenda for the line officer's briefing should include:

- |    |   |   |
|----|---|---|
| 1. | Welcome and Introductions   | Line Officer / IC                           |
| 2. | Incident History  | Unit Fire Supervisor/Area Fire Program Mgr. |
| 3. | Background of Other Activity or Issues on the Land Office or That May Influence This Incident | Line Officer/Area Fire Program Mgr.         |

- |    |  |   |
|----|--|---|
| 4. | Overview of WFSA Selected Native Strategy and Direction                          | Unit Fire Supervisor/Area Fire Program Mgr.                     |
| 5. | Presentation of the Line Officer's Briefing Package (Discussion of Each Element) | Unit Fire Supervisor/Area Fire Program Mgr.                     |
| 6. | Presentation of Delegation of Line Officer Authority to the IC                   | Line Officer  |
| 7. | Emphasis on Safety   | Line Officer  |
| 8. | Questions and Answers  | IC/Line Officer/Unit Fire Supervisor/<br>Area Fire Program Mgr. |
| 9. | Concluding Remarks   | Line Officer  |

**D. WHO SHOULD PARTICIPATE**

**1. From the Forest**

- a. Line Officers (both the Unit Manager or Area Manager or their representatives)
- b. Unit Fire Supervisor/Area Fire Program Mgr.
- c. Resource Advisor
- d. Incident Business Advisor
- e. Current Incident Commander
- f. Dispatch Center Manager
- g. Incident Support Organization Coordinator
- h. Buying Team Leader
- i. Necessary Staff Specialists

**2. From the Incident Management Team**

- a. At a minimum, the Command and General Staff should attend. Attendance of other members of the teams should be at the IMT's discretion

**3. Others**

- a. Involved Cooperators' Representatives

Do not make the line officer's briefing a public meeting, and do not include the press.

E. LINE OFFICER'S BRIEFING FORMAT

The following is a format for organizing the line officer's briefing package.

LINE OFFICER'S BRIEFING  
**to**  
THE INCIDENT MANAGEMENT TEAM

\_\_\_\_\_ WILDLAND FIRE INCIDENT

\_\_\_\_\_ AGENCY

\_\_\_\_\_ ADMINISTRATIVE UNIT

\_\_\_\_\_, \_\_\_\_\_

CONTENTS				
1.	Delegation of authority to the incident commander			
2.	WFSA _____	Fire___	/___	/___
3.	Line officer's briefing form			
4.	ICS-209 for _	/_	/_	
5.	Unit fire management direction			
6.	Fire wx. forecast for _	/_	/_	
7.	Incident area map(s)			
8.	Incident area aerial photo(s); (planning section chief packet only)			
9.	Resource, overhead, and equipment order forms completed to _	/_	/_	
	(logistics section chief packet only)			
10	Agency, incident telephone directory copies to (21):			
	<b>Command and General Staff:</b>			
	<input type="checkbox"/> IC			
	<input type="checkbox"/> Deputy IC			
	<input type="checkbox"/> Planning Section Chief			
	<input type="checkbox"/> Operations Section Chief			
	<input type="checkbox"/> Finance Section Chief			
	<input type="checkbox"/> Logistics Section Chief			
	<input type="checkbox"/> Incident Information Officer			
	<input type="checkbox"/> Safety Officer			
	<input type="checkbox"/> Liaison Officer			
	<input type="checkbox"/> Air Operations Director			
	<input type="checkbox"/> Area Commander (if ACA established)			
	<input type="checkbox"/> MAC Group Coordinator (if MAC established)			
	<input type="checkbox"/> Other			
	<b>Local Organization:</b>			
	<input type="checkbox"/> Supervisor/Manager/Superintendent			
	<input type="checkbox"/> Incident Business Advisor			
	<input type="checkbox"/> District Ranger/RA Manager			
	<input type="checkbox"/> Resource Advisor			
	<input type="checkbox"/> Agency Fire Staff			
	<input type="checkbox"/> Unit FMO			
	<input type="checkbox"/> Agency Dispatch Center Manager			
	<input type="checkbox"/> Incident Support Coordinator (if ISO established)			
	<input type="checkbox"/> Public Affairs Officer			

**KEY PERSONNEL AND CONTACTS FOR THE (name of wildland fire) INCIDENT**

For the \_\_\_\_\_ Land Office:

For Other Agency Cooperators:

For \_\_\_\_\_ County:

Local Landowners, Residents, Permittees, Parties with Interest:

## LINE OFFICER'S BRIEFING TO THE INCIDENT MANAGEMENT TEAM

### A. INCIDENT IDENTIFICATION

1. Name of Incident: \_\_\_\_\_
2. Incident Start:  
Cause \_\_\_\_\_  
Date \_\_\_\_\_  
Time \_\_\_\_\_
3. Size of Incident: \_\_\_\_\_
4. Current IC: \_\_\_\_\_
5. General Weather Conditions/Forecast:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Fire Behavior:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Fuel Types:  
At Fire \_\_\_\_\_  
Ahead of Fire \_\_\_\_\_

### B. COMMAND CONSIDERATIONS

1. Other Fires on Unit/Cooperators:  
\_\_\_\_\_  
\_\_\_\_\_
2. Delegation of Authority; Line Officer's Representative:  
\_\_\_\_\_  
\_\_\_\_\_
3. Resource Advisor(s) Assigned to Incident:  
\_\_\_\_\_  
\_\_\_\_\_

4. Technical Specialists Assigned to Incident:  

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5. Land Mgmt. Plan / Fire Mgmt. Plan direction:  

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6. Priority for This Incident (Local, Area, State):  

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7. Values to be Protected:  

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8. Political Considerations:  

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9. Social/Economic Considerations:  

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10. Health and Welfare Considerations:  

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11. Human Resources Management Considerations:  

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12. Desired Local Participation in Fire Team Organization:  

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- 13. Unified Command (In Place or Contemplated):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 14. Area Command (In Place or Contemplated):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 15. MAC Organization (In Place or Contemplated):  
\_\_\_\_\_  
\_\_\_\_\_
- 16. Evaluation Team Assigned:  
\_\_\_\_\_  
\_\_\_\_\_
- 17. News Media Relations:  
\_\_\_\_\_  
\_\_\_\_\_
- 18. IIO Organization Report to:  
\_\_\_\_\_  
\_\_\_\_\_
- 19. Special Relationships/"Thank You" Policy for Assistance:  
\_\_\_\_\_  
\_\_\_\_\_
- 20. Other Agencies on This Incident:  
\_\_\_\_\_  
\_\_\_\_\_
- 21. Land Status:  
\_\_\_\_\_  
\_\_\_\_\_
- 22. Cooperative Agreements Relevant to Incident:  
\_\_\_\_\_  
\_\_\_\_\_
- 23. Condition of Organization on Rest of Unit:  
\_\_\_\_\_  
\_\_\_\_\_



- 24. Capability of Unit to Support Team:  
\_\_\_\_\_  
\_\_\_\_\_
- 25. Training Opportunities/Policy on Use of Trainees:  
\_\_\_\_\_  
\_\_\_\_\_
- 26. Team will assume command: Date \_\_\_\_\_ Time \_\_\_\_\_
- 27. Transition and Close-out Plan:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. SAFETY CONSIDERATIONS

- 1. Accidents/Near Misses on Incident to Date:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 2. Status of Accident Investigations/Reports:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 3. Areas with Known or Potential Hazards:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 4. Firefighter Safety Considerations:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 5. Public Safety Considerations:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 6. Critical Incident Stress Management Procedures:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Medical Treatment Facilities/Procedures:

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**D. OPERATIONS CONSIDERATIONS**

1. Priorities for Management, WFSA-Selected Strategy:

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2. Are Structures Threatened?

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3. Equipment on Fire:

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Is all equipment inspected and signed up?

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4. Tactics Used to Date and Success:

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5. Fire Weather Forecasting Services/Fire Weather Station(s) Data Availability:

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6. Mop-up Standards:

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7. Initial Attack Responsibilities:

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8. Airtankers Assigned:

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Airtanker Effectiveness:

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9. Air Base Location:  
\_\_\_\_\_  
Telephone:  
\_\_\_\_\_
10. Helicopters Assigned:  
\_\_\_\_\_
11. Helibase location:  
\_\_\_\_\_  
Telephone:  
\_\_\_\_\_
12. Crash/Rescue at Helibase:  
\_\_\_\_\_  
\_\_\_\_\_
13. Temporary Flight Restriction assigned:  
\_\_\_\_\_
14. Flight Hazard Map Available/Known Hazards in Area:  
\_\_\_\_\_  
\_\_\_\_\_
15. Smoke Conditions Affecting Air Operations:  
\_\_\_\_\_  
\_\_\_\_\_
16. Air Operations Technical Specialist Assigned or Ordered:  
\_\_\_\_\_  
\_\_\_\_\_

**E. PLANNING CONSIDERATIONS**

1. Unusual Fire Behavior and Fire History in Area of Fire:  
\_\_\_\_\_  
\_\_\_\_\_
2. Legal Considerations (Investigations in Process):  
\_\_\_\_\_  
\_\_\_\_\_
3. Pre-attack Plans Available: Yes \_\_\_\_\_ No \_\_\_\_\_
4. Availability of Aerial Photos and Maps:  
\_\_\_\_\_  
\_\_\_\_\_

5. Agency Needs for Release of Presently Assigned Resources:

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6. Incident Status Summary (ICS-209) Reporting Requirements:

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7. Most Recent ICS-209 Available:

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8. Training Specialist Assigned or Ordered:

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9. Personnel Now on Incident (Organization):

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10. Firefighter Rest and Rehabilitation Policy:

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11. Fire Suppression Rehabilitation Policy:

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12. Demobilization Procedures:

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**F. LOGISTICS CONSIDERATIONS**

1. ICP Location:

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2. Base Location:

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3. Incident Transportation Plan:

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4. Incident Support Organization:

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5. Ordering System To Be Used:

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6. Procurement Unit/Buying Team in Place or Ordered:

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7. Security Considerations/Local Law Enforcement Assistance:

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8. Communications System(s) in Use/Ordered:

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9. Resources Ordered:

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10. Catering Services/Feeding Procedures:

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11. Medical/Burn Facilities:

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12. Medivac Procedures:

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13. Potable Water Sources:

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14. Gray Water Disposal Location:

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15. Garbage Disposal Service/Location:

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16. Incident Recycling Requirements:

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**G. FINANCE CONSIDERATIONS**

1. Fiscal Considerations/Limitations or Constraints:

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2. Cost to Date:

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3. Cost-Sharing Agreements in Effect:

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4. Incident Business Management Advisor Assigned:

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5. Procedure established for T&A transmittals:

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6. Claims to Date:

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7. Potential for Claims:

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## ANNEX C

### DOCUMENTATION PACKAGE FOR LARGE FIRE INCIDENTS

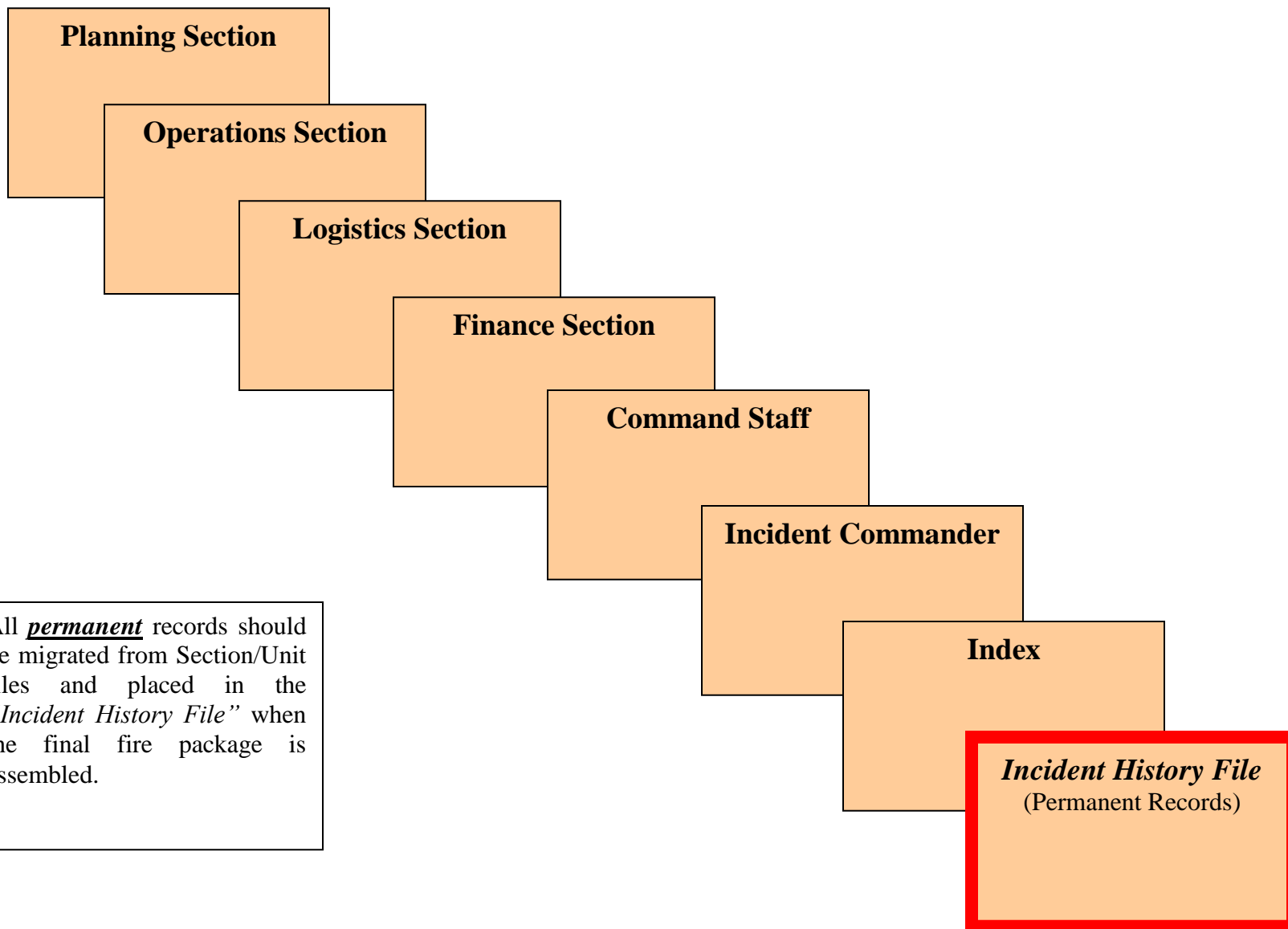
A quality fire package standard should be conveyed to IMTs at in-briefings and be included in Delegations of Authority. Establish transfer requirements for fire package contents from IMT to IMT on long duration incidents. This is especially important when fires are transferred from one complex to another. All line officer training should teach a standard level of documentation. Incidents of long duration should have one individual assigned to documentation by the hosting agency(ies) who will stay for the duration of the incident. Line Officers should review fire packages well before closeout meetings to ensure the packages meet their quality and documentation expectations. If the package is deficient, keep the team assigned until it meets expectations of a quality fire package.

Incident Records Management information can be found at: <http://www.nifc.gov/records>.

Following is an outline of documentation that could be included in a large fire incident fire package.

# *Wildland Fire Incident Records*

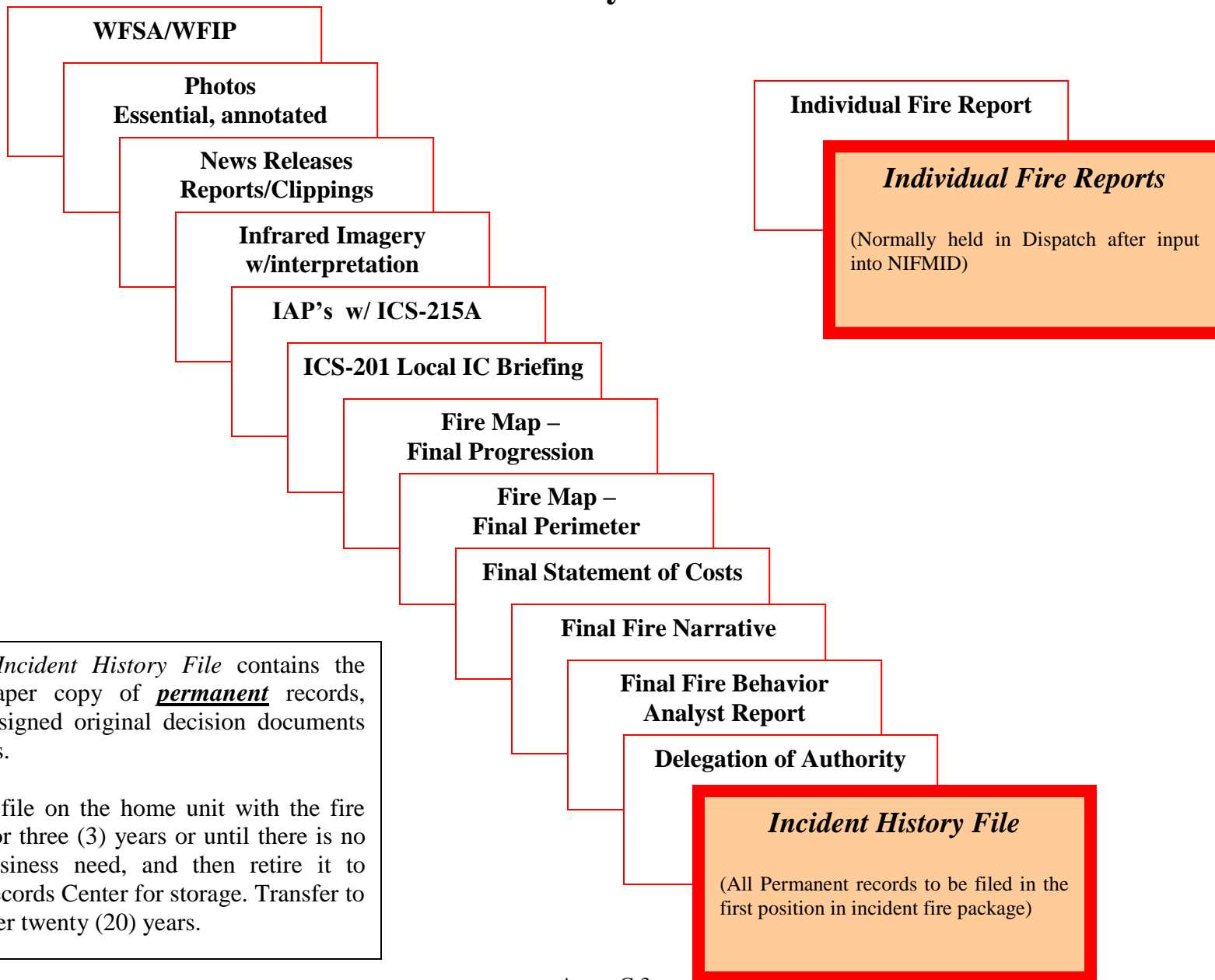
## **Paper Document File Directory**





# Wildland Fire Incident Records

## Incident History File Contents

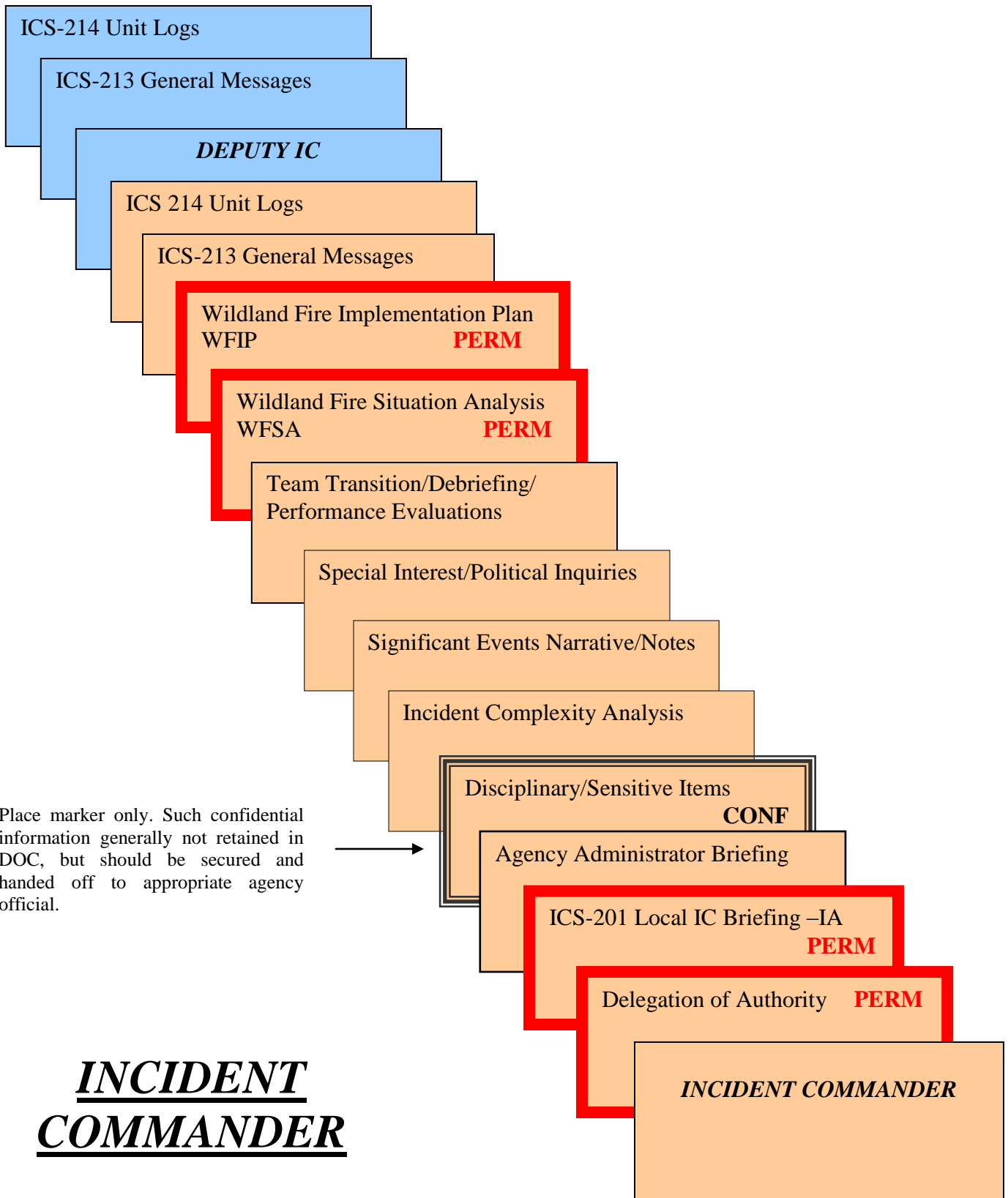


The fire *Incident History File* contains the official paper copy of permanent records, including signed original decision documents and reports.

Keep this file on the home unit with the fire package for three (3) years or until there is no further business need, and then retire it to Federal Records Center for storage. Transfer to NARA after twenty (20) years.

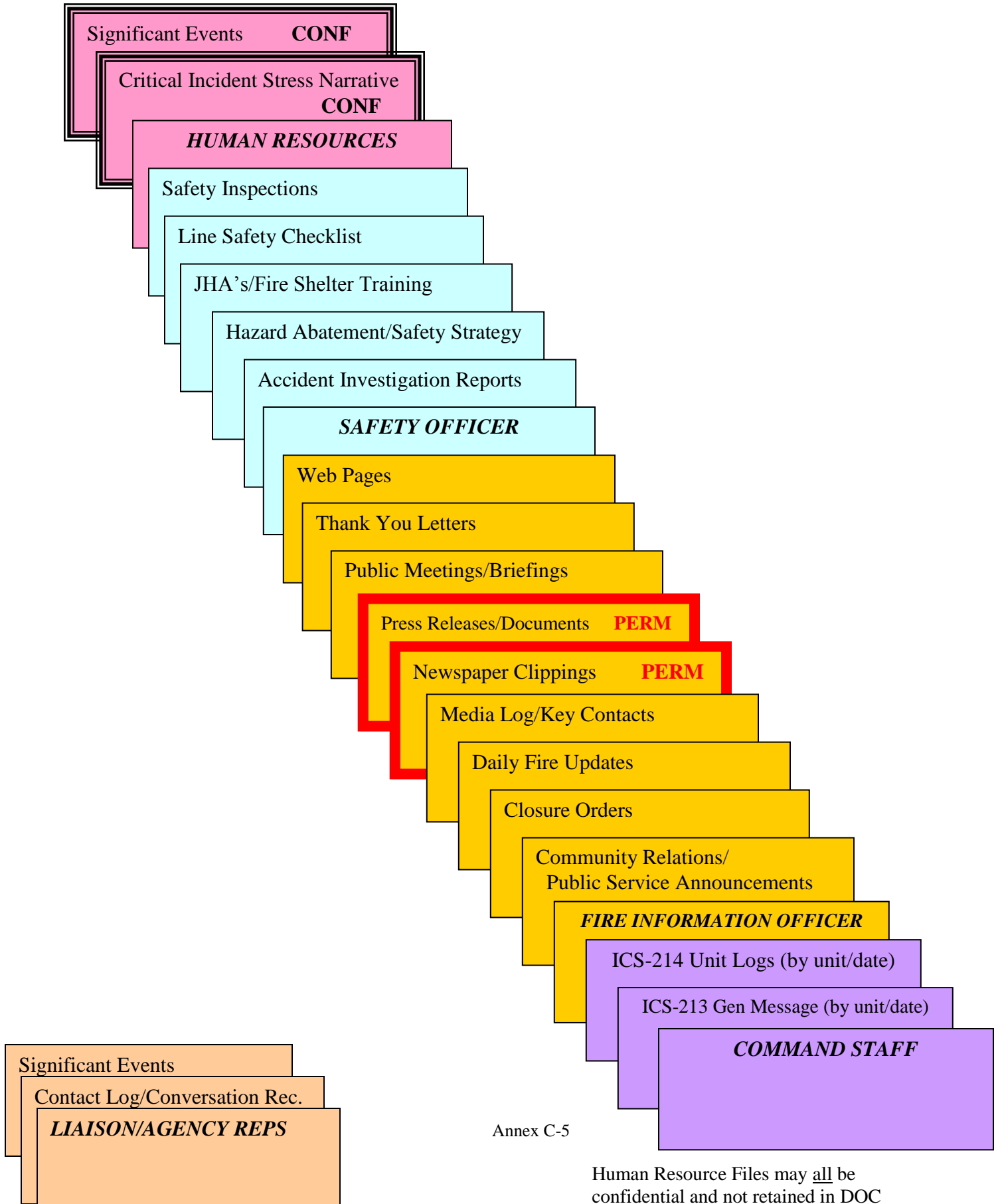
# *Wildland Fire Incident Records*

## **Paper Document Files**



# *Wildland Fire Incident Records*

## **Paper Document Files**

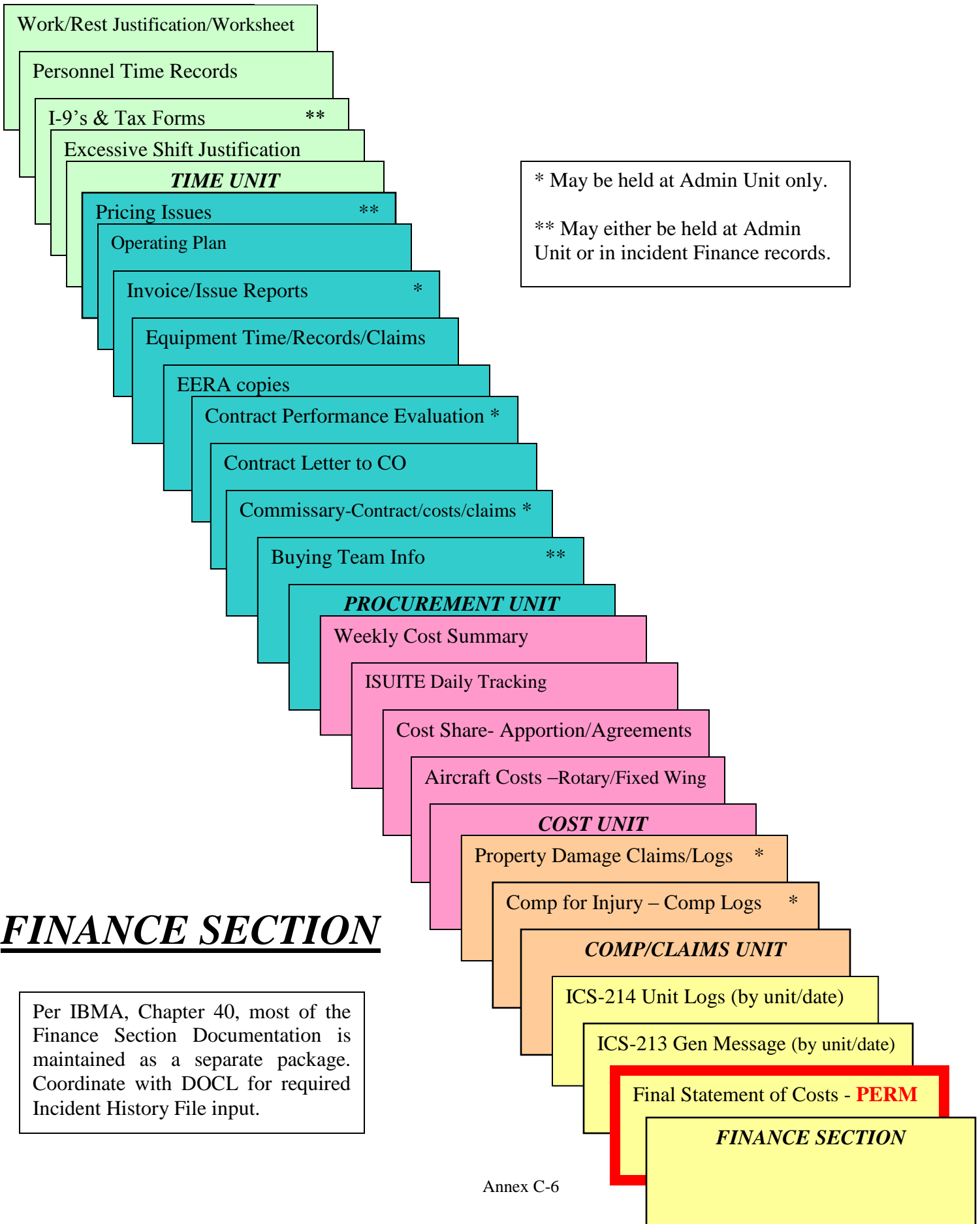


Annex C-5

Human Resource Files may all be confidential and not retained in DOC

# Wildland Fire Incident Records

## Paper Document Files



\* May be held at Admin Unit only.

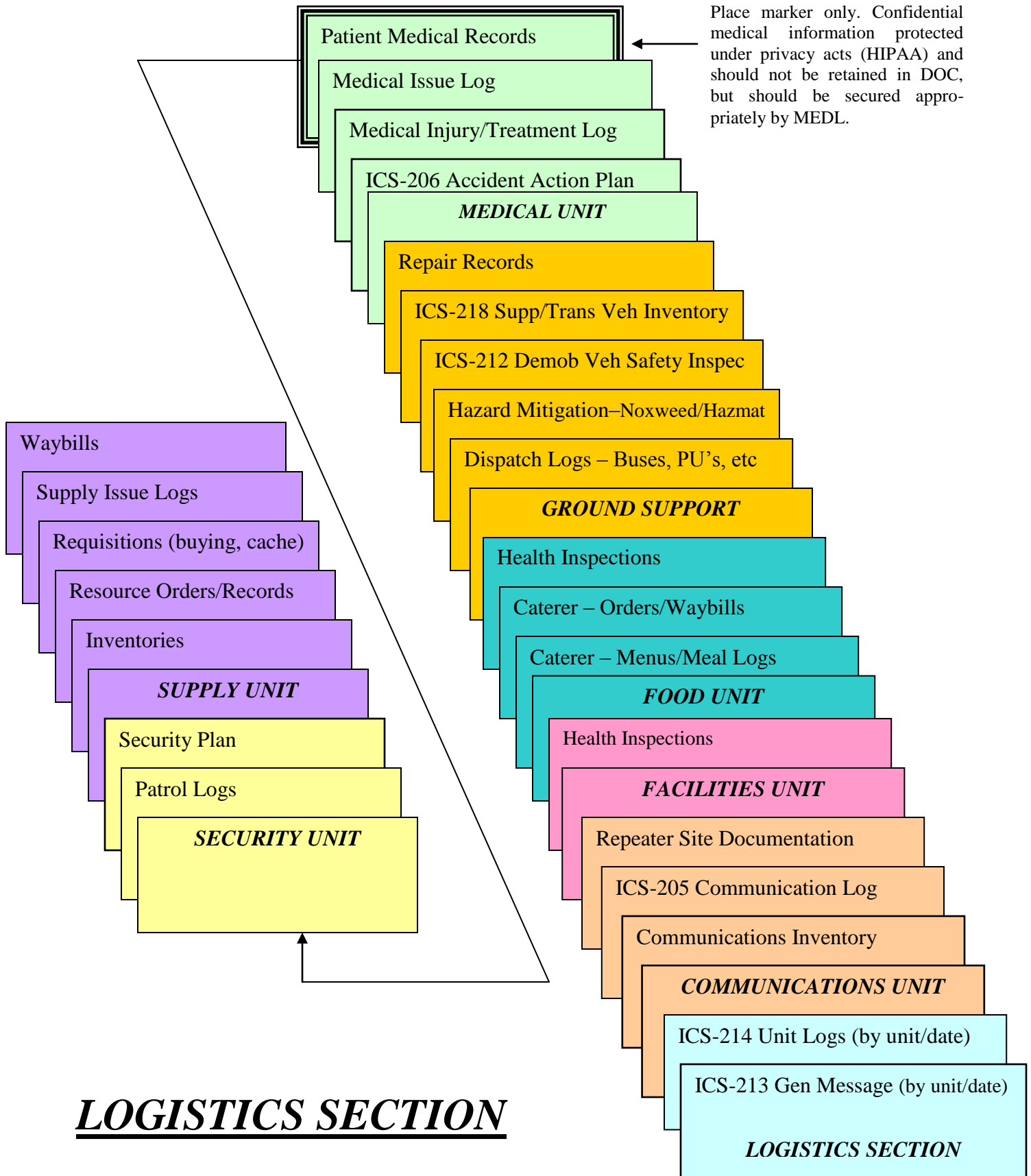
\*\* May either be held at Admin Unit or in incident Finance records.

### FINANCE SECTION

Per IBMA, Chapter 40, most of the Finance Section Documentation is maintained as a separate package. Coordinate with DOCL for required Incident History File input.

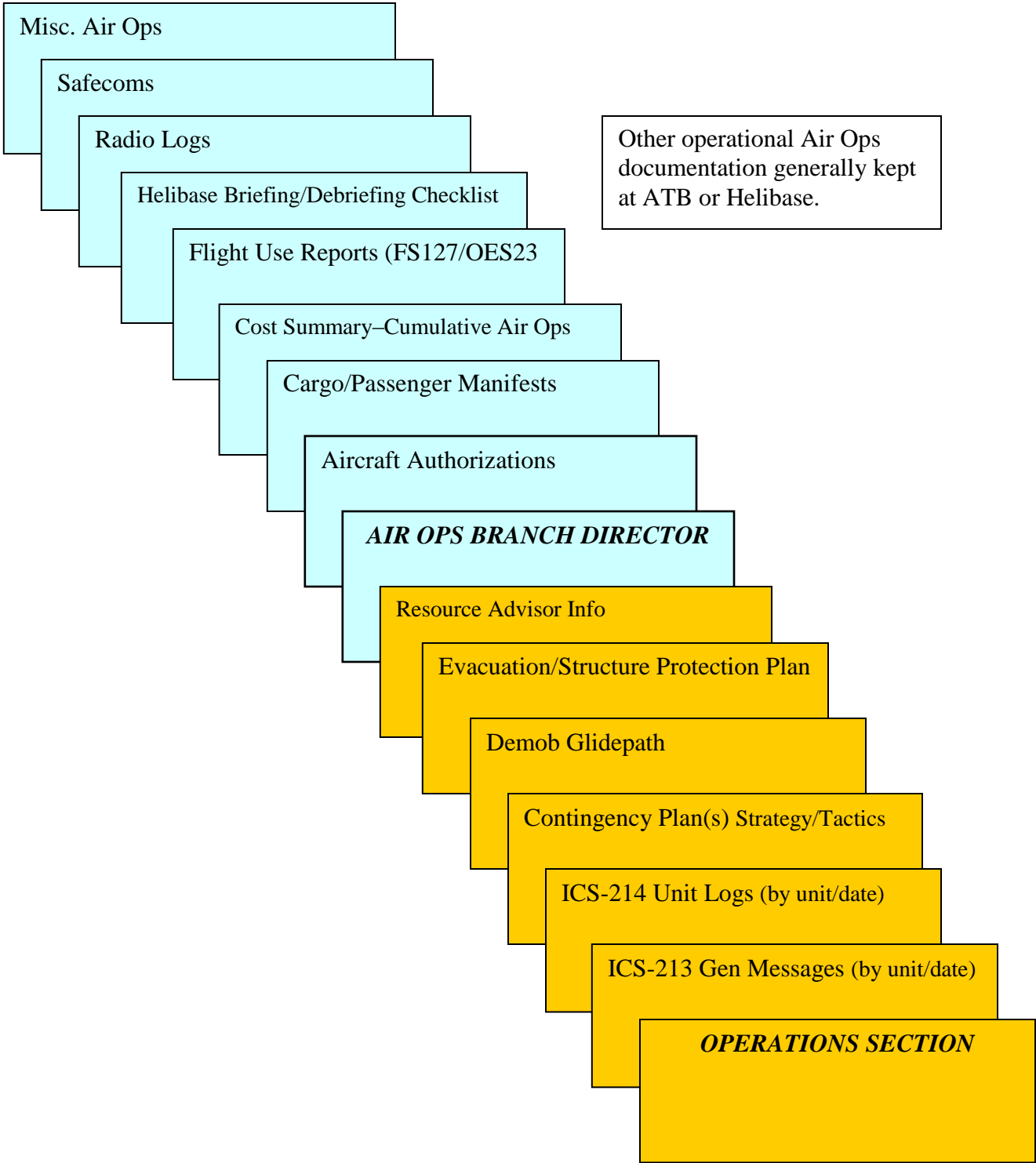
# Wildland Fire Incident Records

## Paper Document Files



# *Wildland Fire Incident Records*

## **Paper Document Files**



# **OPERATIONS SECTION**

# *Wildland Fire Incident Records*

## **Paper Document Files**



**ANNEX D**

**DOCUMENTATION OF LENGTH OF ASSIGNMENT EXTENSION REQUIREMENTS**

Documentation of any type of assignment extension should include the following:

**I. Name and Position/Type of Resource**

**II. Length of Extension**

**III. Rationale for Extension (Mark All That Apply)**

- A. Life and property threatened.
  - B. Suppression objectives are close to being met.
  - C. Replacement resources are not available (unable to fill).
  - D. Military assignment.
  - E. Other:
- 
- 

**IV. A. Single Resource Recommendation**

Resource Name, Title and Signature: \_\_\_\_\_

Section Chief Name, Title and Signature: \_\_\_\_\_

**OR**

**B. Incident Management Team/Area Command Recommendation**

Operations Section Chief: \_\_\_\_\_

Planning Section Chief: \_\_\_\_\_

Finance Section Chief: \_\_\_\_\_

Logistics Section Chief: \_\_\_\_\_

**V. APPROVAL**

\_\_\_\_\_  
Incident/Area Commander Signature

\_\_\_\_\_  
Date



## ANNEX E

### INDUSTRIAL HEAD PROTECTION USER INFORMATION GUIDE

#### **Hard Hats: Maintenance, Inspection, and Precautions**

The hard hat is one of the most important pieces of equipment worn in the industrial workplace. Many workers have been saved from serious injury or even death because they were wearing a hard hat. To assist in your organization's head protection program, E.D. Bullard Company would like to share some observations on proper maintenance and inspection of industrial hard hats, as well as a few precautions. These comments apply to hard hats made by all manufacturers, not just Bullard.

A conventional hard hat consists of two components--the shell and the suspension--which work together as a system. Both components require periodic inspection and maintenance. It is recommended that employers conduct a regular head protection inspection, maintenance, and replacement program. Each program will vary according to the work environment at each job site location.

#### **Hard Hat Shell**

Thermoplastics (polyethylene, polycarbonate, and polyphthalate carbonate [P.P.C.][Lexan]) and thermoset materials (fiberglass and phenoli-impregnated textiles) are commonly used to mold the shells of industrial hard hats. These materials have proven to be durable, reliable, lightweight, and provide effective protection. Given proper care and normal workplace conditions, a hard hat will have a reasonable service life.

The shell should be inspected routinely for dents, cracks, nicks, gouges, and any damage due to impact, penetration, abrasions, rough treatment, or wear that might reduce the degree of protection originally provided. Any hard hat that shows signs of worn or damaged parts should be removed from service immediately and replaced.

Although Bullard adds an ultraviolet inhibitor to hard hat shells, all hard hats are susceptible to damage from ultraviolet light, temperature extremes, and chemical degradation. Thus, users who work in environments with high degrees of exposure to sunlight, heat, cold, or chemicals should replace their hard hats more frequently than workers in other environments.

Degradation of thermoplastic material may be apparent when the shell becomes stiff, brittle, faded, dull in color, or exhibits a chalky appearance. With further degradation the shell surface may craze, flake, or delaminate. A hard hat should be replaced immediately at the first sign of any of these conditions.

The following is a simple field test that can be performed by an employee or supervisor to determine possible degradation of polyethylene shells:

Compress the shell inward from the sides about 1" with both hands and then release the pressure without dropping the shell. The shell should quickly return to its original shape, exhibiting a degree of elasticity. Compare the elasticity of the sample with that of a new

shell. If the sample does not exhibit a similar degree of elasticity to that of a new shell or if it cracks due to embrittlement, it should be replaced immediately.

### **Hard Hat Suspension**

The hard hat suspension system is just as important as the shell. Its main purpose is to help absorb the shock of a blow. Therefore, it must be in good condition at all times.

Like the shell, the suspension must also be inspected and replaced periodically. Over a period of time, the suspension will become worn and may become damaged.

Suspensions should be inspected closely for cracks, frayed or cut shell straps, torn headband or size adjustment slots, loss of pliability, or other signs of wear. These conditions can be caused by perspiration, hair oils, or normal wear.

Any suspension that is damaged must be removed from service and replaced immediately.

### **Cleaning**

Hard hat service life can be extended by cleaning both the shell and the suspension. This should be part of the inspection and maintenance program. Scrub the shell and suspension with a mild detergent to remove dirt and stains. Rinse thoroughly with clean, warm water approximately 60 degrees Celsius (140 degrees Fahrenheit). After rinsing, wipe dry and carefully inspect once again for any signs of damage.

### **What is the Useful Life of a Hard Hat?**

Users of industrial head protection devices must realize that these products do not have an indefinite useful life. E.D. Bullard Company recommends that employers conduct a regular head protection replacement program as a responsive solution to the task of addressing useful service life of hard hats.

Since the details of such a program must be developed based on work conditions at each job site, it is impossible to provide a specific timeframe for hard hat replacement. As a general guideline, many large corporations replace all employees' hard hats every five years, regardless of the hard hats' outward appearance.

Where user environments are known to include higher exposure to temperature extremes, sunlight or chemicals, hard hats should be replaced automatically after two years' use. This is based on information and hard hat samples returned to E.D. Bullard after being exposed to such conditions. It may be that in certain rare instances a hard hat should be replaced within less than two years.

The employer should have a policy of immediately replacing a hard hat if the employee (wearer) feels it is necessary.

**WARNING:** In addition to an inspection and maintenance program, employers should review with their employees some precautions concerning hard hat use and treatment. The following are some warnings that should be discussed:

- X If the hard hat has been struck by a forcible blow of any magnitude, both the hard hat shell and suspension should be replaced immediately, even if no damage is visible.
- X A conventional hard hat provides limited protection by reducing the force of falling objects striking the top of the shell. Protection from side impact and penetration is limited.
- X The hard hat shell or suspension should never be altered or modified. Drilling holes in the shell for ventilation purposes must be prohibited at all times.
- X Avoid contact of the hard hat with electrical wires.
- X Hard hats should not be carried on the rear window shelf of an automobile or stored in direct sunlight. Exposure to extreme sunlight over time may cause degradation which can affect the degree of protection originally provided.
- X Because hard hats can be damaged, they should not be abused. They should be kept free of abrasions, scrapes, and nicks and should not be dropped, thrown, or used as supports. Do not sit on a hard hat.
- X Wearers should never carry or wear anything inside their hard hat. A clearance must be maintained between the shell and head for the protection system to work properly.
- X Do not paint a hard hat prior to consultation with the manufacturer. Some paints and solvents may attack and damage the shell and reduce the degree of protection originally provided.
- X As a general guideline, all new employees should be provided with a new, unused, and unexposed hard hat. The practice of reissuing cleaned hard hats must be avoided. The cost of a hard hat is negligible when the potential for injury, lost time, health care cost, and liability are considered.

**AMERICAN NATIONAL STANDARD FOR PERSONNEL PROTECTION  
PROTECTIVE HEADWEAR FOR INDUSTRIAL WORKERS--REQUIREMENTS  
ANSI Z89.1**

**Recommendations and Precautions Concerning Helmet Use, Maintenance, and Testing**

**B1. Laces**

Laces, if any, should always be tied securely with a square knot.

**B2. Cleaning**

Shells should be scrubbed with a mild detergent and rinsed in clear water approximately 60 degrees Celsius (140 degrees Fahrenheit). After rinsing, the shell should be carefully inspected for any signs of damage.

Removal of tar, paints, oils, and other materials may require the use of a solvent. Since solvents may attack and damage the shell, the manufacturer should be consulted with regard to an acceptable solvent.

### **B3. Painting**

Caution should be exercised if shells are to be painted, since some paints and thinners may attack and damage the shell and reduce protection. The manufacturer should be consulted with regard to paints or cleaning materials.

### **B4. Periodic Inspection**

All components, shells, suspensions, headbands, sweat bands, and accessories, if any, should be visually inspected daily for signs of dents, cracks, penetration, and any damage due to impact, rough treatment, or wear that might reduce the degree of safety originally provided. Any industrial helmet that requires replacement or the replacement of any worn, damaged, or defective part should be removed from service until the condition of wear or damage has been corrected.

### **B5. Limitation of Protection**

Industrial protective helmets meeting the requirements of ANSI Z89.1 are designed to provide optimum protection under average conditions. Users are cautioned that if unusual conditions prevail (for example, higher or lower extremes of temperature than those prescribed), or if there are signs of abuse or mutilation of the helmet or of any component, the margin of safety may be reduced.

**Note:** All items constructed of polymeric materials are susceptible to damage from ultraviolet light and chemical degradation, and safety helmets are no exception. Periodic examination should be made of all safety helmets and in particular those worn or stored in areas exposed to sunlight for long periods. Ultraviolet degradation will first manifest itself in a loss of surface gloss, called chalking. Upon further degradation the surface will craze or flake away, or both. At the first appearance of either or both of the latter two phenomena, the shell should be replaced immediately for maximum safety.

### **B6. Sizes**

Provisions should be made by the manufacturer of industrial protective helmets for testing large and small sizes as appropriate.

### **B7. Precautions**

Because helmets can be damaged, they should not be abused. They should be kept free from abrasions, scrapes, and nicks and should not be dropped, thrown, or used as supports. This applies especially to helmets that are intended to afford protection against electrical hazards.

Industrial protective helmets should not be stored or carried on the rear-window shelf of an automobile, since sunlight and extreme heat may cause degradation that will adversely affect the degree of protection they provide. Also, in the case of an emergency stop or accident, the helmet might become a hazardous missile.

The addition of accessories to the helmet may adversely affect the original degree of protection. When precautions or limitations are indicated by the manufacturer, they should be transmitted to the wearer and care taken to see that such precautions and limitations are strictly observed.

## **B8. Safe Condition**

Neither the impact resistance requirements (see 7.2) nor the electrical insulation requirement (see 7.1) should be construed to indicate the safe impact level or safe voltage to which the industrial worker may be subjected. The maximum voltage against which insulating safety headgear will protect the wearer depends on a number of variable factors, such as the characteristics of the electrical circuit and the equipment involved, the care exercised in maintenance of equipment, and weather conditions. Therefore, the safe and proper local use of insulating safety headgear is beyond the scope of ANSI Z89.1.

# ANNEX F

## Suppression Considerations in Meeting Operational Objectives

### Table

**While meeting DNRC suppression objectives for fires escaping initial attack, firefighters should be Mindful of the following during all operational activities.**

**“When opportunities are present during suppression operations give consideration to the following”.**

<b>Resource or Activity</b>	<b>CONSIDER</b>	<b>ATTEMPT TO AVOID</b>
<b>Strategy / Planning</b>	At in-briefing, meet with Line Officer and clearly identify fire progression points at which you will get back together and review goals and objectives.	Keeping original control goals and objectives long after the fire behavior and size has changed.
<b>Base and spike camps</b>	Asking the local Unit/Area Office or their assigned representative if weed free base and spike camp locations have been identified, or need to be identified.	Set up of base and spike camps without asking the local Unit/Area Office on weed status for the site you are considering.
<b>Line Construction</b>	Building only line you feel confident you can hold and safely patrol.	Contingency line construction without specific approval of the Line Officer.
	Mapping all line by location (including ones not used) and type as you build it – report and provide line map at end of every shift to Plans unit.	Building line without mapping it or assume someone else will find and repair it.
	Selecting the appropriate equipment for the job. Use in the following priority: <ol style="list-style-type: none"> <li>1. Natural barriers</li> <li>2. Handline or FLE</li> <li>3. Excavator</li> <li>4. Skidgens</li> <li>5. Feller Bunchers/Clippers</li> <li>6. Dozers</li> <li>7. Logging is last choice</li> </ol>	Determination of line construction type solely on excess equipment that might have been ordered or is available.
	Building fireline out of riparian areas and at least 50 feet from stream channels. Consult Agency Rep as needed.	Avoid building mechanical fireline down a stream bed, defined draw or in a riparian area.
	Minimizing disturbance to riparian vegetation, large woody debris and riparian filters.	<ol style="list-style-type: none"> <li>1. Cutting riparian vegetation unless it is scouted and perpendicular to the stream channel.</li> <li>2. Clean-out of Large Woody Debris from streams or cut riparian logs into short rounds.</li> </ol>

<b>Resource or Activity</b>	<b>CONSIDER</b>	<b>ATTEMPT TO AVOID</b>
	Minimizing width of fuel breaks and constructed line. Base width upon current and predicted fire behavior.	Constructing wide lines as fuels decrease or the line is crossing natural barriers.
<b>Use of Dozers</b>	Asking yourself how “ <b>you</b> ” are going to repair the line to pre-fire condition as it is being built	Building dozer/cat line thinking it will be someone else’s job to repair the line.
	Scout all mechanical equipment line locations prior to line construction.	Letting operators build line without specific direction from the dozer boss.
	Scouting and selecting dozer creek crossings where there are gentle and/or hardened banks. <b>Always</b> lift blade when crossing. If crossing location is soft, lay 6-8” dia trees in the stream and drive (walk) equipment across them.	Allowing a dozer to run up or down a creek channel or cross a channel with very soft banks.
	When building mechanical (dozer or excavator) line make every attempt to assign crews to hold and patrol it.	Building mechanical line and leave unpatrolled when the fire is nearby.
	If possible, Blading soil and seed from weed infestations <b>TOWARD</b> a road that cat line is anchoring to or an already infested area when feasible.	Blading soil and seed from weed infestations into uninfested areas.
	Minimizing damage to structures, fences, reference posts, and other structural improvements. If it is not possible to avoid fences, attempt to cut the wire, and not tear down with equipment.	Fences and other structural improvements during line construction.
	Handling, storing and dispensing fuel, lubricants and other chemicals at least 50 feet from a drainage way <ul style="list-style-type: none"> <li>• Use approved containers for fuel, lubricant and chemicals</li> <li>• Properly store and discard all empty containers.</li> </ul>	1. Refueling on a bridge or within 50 feet of a drainage way. 2. Leaving any hazardous materials on-site after the incident.
<b>Water/Diversion/Pumps</b>	Diverting water from creeks at low rates and developing storage. Ask Unit Office for possible drafting site locations and map.	Diverting water at high rates and dewatering that can significantly reduce instream flow, and complete draw down of a water dip source.

<b>Resource or Activity</b>	<b>CONSIDER</b>	<b>ATTEMPT TO AVOID</b>
	Having spill kits, extra containment pads and tarps with all pumps.	The use of pumps or storage of fuel next to a creek without containment pads.
	Storing fuel and oils on containment pads away from the water's edge.	Refueling pumps right next to or over live water.
	Recording locations of aerial water dip sites used.	
<b>Retardant</b>	Maintain a buffer when flying retardant parallel to a drainage way, avoid when possible.	Dropping retardant over water or riparian areas.
	Mixing and loading retardant at least 300ft. from streams and riparian areas.	Mixing or loading retardant within 300ft. of streams and riparian areas.
<b>Potential Low Impact Practices</b>	Building only the necessary line needed, and consider how you will rehab the line to pre-fire condition as you build it.	Building fire line thinking it will be someone else's job to repair it.
	Packing out all your litter and any other litter you find at all times.	Dropping litter, leaving litter you find, or assuming someone else will pick it up later.
	Using cold-trail, wet line or a combination when appropriate.	Building line when the fire is out.
	Minimizing the fireline standard where firelines connect with roads especially on Private ground.	Building high standard line into roads because they may develop into non-system roads or ATV trails after the fire.
	Minimizing bucking and cutting of trees and the number of cut surfaces and resulting "rounds" or logs.	Cutting down or felled logs into lots of short sections.
<b>Helispots</b>	Checking potential helibases and helispots for noxious weeds BEFORE using the site – if possible use only weed free sites or mitigate prior to use.	Use of weed infested sites for helibases, helispots, staging, parking, landing, cargo loading or loading areas.
	Asking the local Unit/Area Office if weed free helibases and helispots have been identified.	Set up of a helibase or helispots without asking the local Unit/Area Office the weed status on the site you are considering.
	Minimizing weed spread at helibases by incorporating weed prevention and containment practices such as mowing, flagging or fencing weed patches, designating weed-free travel routes.	Establishing or use of a weed-infested area for a helibase, helispot or landing zone.



<b>Resource or Activity</b>	<b>CONSIDER</b>	<b>ATTEMPT TO AVOID</b>
	Providing weed prevention briefings for helibase staff.	The assumption that helibase staff will know weed prevention practices or local noxious weed species.
	Inspecting, and if necessary cleaning, contract fuel and support vehicles before and after each incident when travelling off road or through weed infestations.	Allowing helibase vehicles to drive through or park in weed infested areas.
	Inspecting and removing weed seed and plant parts from all cargo nets.	Loading nets or cargo in weed infested areas.
	Avoiding helispot locations that are wet or may have sensitive vegetation.	Creating openings that are larger than needed to safely accomplish the objective.
	Flight paths into and out of helispots to avoid flying over live water and riparian areas.	Landing aircraft in or near riparian areas.
<b>Weed Prevention Practices</b>	Discussing the weed situation with the Unit Rep at initial briefing.	Beginning without discussing weeds with local Agency Rep.
	Setting up a weed washing station for all ground transportation no later than two shifts after commencing with ground disturbing activities.	Operating past the first two shifts if a weed washing station has not been set up.
	Posting; weed identification and prevention posters at readily visible locations around camp.	Not educating all fire personnel on the incident of weed issues and concerns.
	Blading soil and seed from weed infestations <i>TOWARD</i> a road that cat line is anchoring to or an already infested area when feasible.	Blade soil and seed from weed infestations into uninfested areas.
	Inspecting all fire going vehicles regularly to assure that undercarriages and grill works are kept weed seed free. All vehicles sent off Unit for fire assistance should be cleaned before they leave or return to their home.	Demobing vehicles until they have had an undercarriage wash.
	Minimizing weed spread in camps by incorporating weed prevention and containment practices such as: mowing, flagging or fencing weed patches, designating weed-free travel routes and washing equipment.	Establishing camps in weed infested areas.

<b>Resource or Activity</b>	<b>GIVE CONSIDERATION TO</b>	<b>ATTEMPT TO AVOID</b>
<b>Snags</b>	Minimizing snag felling.	Felling snags that are not a safety hazard or will have no benefit to suppression efforts
	Leaving snags standing that are a potential hazard <i>but not</i> close to the line or posing a safety risk	Felling snags that are well beyond designated mop-up distances
	Avoiding snagging in riparian areas but if you have to, directionally fall snags towards the channel with no more than 50% of the tree length within the active channel.	Cutting felled snags into small rounds when in riparian areas.
<b>Revegetation</b>	Using DNRC/Local direction for Seed Mixes and current seeding guidelines, this will be included in the Suppression Repair Plan.	Using species substitutions without consulting the Agency Rep.
	Consider using only Blue Tag/weed free seed only.	Use of any seed of unknown origin and is not certified and tagged weed seed free.
	Using only certified weed-free or weed-seed-free straw used for erosion control.	Using straw of unknown origin or that is weed infested.
	Using mechanical/aerial seeding of dozer line and mechanically cleared areas when appropriate.	The assumption that later rehabilitation efforts will do revegetation of suppression activities.
	Retaining enough crews or the proper equipment to accomplish revegetation needs.	Under estimating the revegetation needs under suppression rehab.

# ANNEX G

## EXAMPLE

### FIRE SUPPRESSION REPAIR PLAN TEMPLATE

#### Montana Department of Natural Resources and Conservation

This template is designed to give a general outline of what is required to be prepared for a visiting IMT and/or documentation purposes of local repair efforts. Use what is necessary within this template to prepare your fire suppression repair plan.

**PREPARED BY:**

\_\_\_\_\_  
(Name)  
(Agency)

\_\_\_\_\_  
**Date**  
(Title)

**Fire Suppression Repair Team Members Contributing to this plan include: (if more than one)**

**APPROVED BY:**

\_\_\_\_\_  
(Incident Commander)

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
(Name)  
(Unit Manager/Area Manager)

\_\_\_\_\_  
**Date**

## GOALS:

This fire suppression repair plan is designed to guide the planning and implementation of repair measures on the \_\_\_\_\_ fire, which burned on lands managed by the Montana Department of Natural Resources and Conservation, and private lands including commercial timber lands managed by \_\_\_\_\_, and timber/ranch lands managed by approximately \_\_\_\_\_ small private owners.

The **intent of this fire suppression repair plan** is to mitigate or eliminate resource or other damage occurring as a result of fire suppression activities not to complete all long-term land rehabilitation/restoration needs.

Implementation of this plan will be in compliance with management direction and standards and guidelines contained in the Montana DNRC Wildland Fire Suppression (900) Manual.

## RESPONSIBILITIES:

This plan provides consistent fire suppression repair standards in order to provide seamless implementation of repair activities, reduce repair costs, and protect common resource values impacted by suppression activities. Implementation of this plan will be conducted by the Incident Management Team under the authority of resource advisors and the agency Line Officer.

Repair activities on Montana DNRC Lands, county access lands/roads and other private lands will be conducted by the IMT under the authority of the Montana Department of Natural Resources and Conservation. Activities conducted on private ownerships will be coordinated by the Montana DNRC with each private property owner.

Repair of the Incident Base Camp or other sites on private lands used as staging areas and drop points will follow repair standards outlined in this plan or as displayed within individual rental agreements.

## OBJECTIVES:

The following objectives will be met for all rehabilitation work completed on the \_\_\_\_\_ fire:

1. **Firefighter Safety** – Ensure all suppression repair work is done in a safe and efficient manner.
2. **Vegetation and Soils** – Avoid accelerated soil erosion.

3. **Water Quality and Watershed Values** – Minimize sediment delivery into streams and/or drainages to maintain water quality.
4. **Cultural Resources** – Protect any cultural resource sites that were impacted and repair areas where fire suppression activities destabilized slopes near sites.
5. **Travel Management** – Restrict unintended/undesired motorized vehicle access that may have been created by the construction of dozer lines. Provide for reestablishment of pre-incident road closures and reestablish administratively desired roadway widths/conditions to pre-disturbance widths/conditions.
6. **Cleanup** – Remove suppression related equipment, (debris, trash, signing, flagging) at facilities used by suppression personnel.
7. **Facilities** – Restore access roads, camps, equipment staging areas, helibases, helispots, retardant plants, and other sites to original pre-fire condition.
8. **Resource Recovery** – Stage (deck) commercial materials generated during fireline construction for salvage by respective land owners.
9. **Private Land Values** – Provide consistent fire suppression repair treatments that are responsive to various land owner needs.
10. **Cost Containment** – Ensure that treatments are feasible and costs are considered while developing and implementing fire suppression repair treatments.

## **GUIDELINES:**

Specific sites in need of repair will be categorized by geographic area and identified by geographic area and/or Branch or Division where applicable. A **Repair Operations Guide** may be developed and coordinated with the Incident Management Team (IMT) to ensure timely repair. The Resource Advisor or designee will provide the IMT with recommended amendments to this plan for Incident Action Plan preparation. The following general guidelines will be followed during all repair activities:

1. Agency Resource Advisor(s) will be available to work with fireline personnel during implementation of suppression repair.
2. Assessments will be ongoing, based on operations and events as they occur within the \_\_\_\_\_ fire perimeter. Additional sites that are discovered in the field should be subsequently mapped and repaired.
3. Motorized equipment used for repair will be thoroughly cleaned of any plant materials that could potentially contain noxious weed seeds prior to entering planned repair work areas. In addition, all vehicles involved in the fire incident will be re-cleaned prior to demobilization from the incident to reduce the risk of transporting noxious weed seed to other areas. Vehicle washing logs will be completed to document compliance if so requested.

4. All materials used in repair efforts will be certified noxious weed free (straw, seed, etc.) Weed free certification will be provided to the Incident Management Team upon purchase or transport of materials.
5. Implementation monitoring will occur concurrently with completion of repair work. Any adjustments to prescriptions based on monitoring will be recommended to the Operations Section for inclusion or modification of Incident Action Plans.
6. To ensure safety of personnel performing suppression repair work, an onsite analysis of the hazards will be discussed and addressed each day before work is begun.
7. Where operations were established on private land, additional repair requests beyond those cited in this plan (as identified by the landowner) must be agreed to in writing by the Incident Management Team with concurrence by the Resource Advisor and Line Officer prior to completion.
8. No repair work shall commence at identified cultural sites without consultation with the Resource Advisor or other applicable agency representative.

## **STANDARDS:**

### **Salvage of Merchantable Timber:**

When applicable, salvage merchantable timber from firelines prior to rehabilitation.

- Skid logs to designated locations along established roads.
- Use intersections and switchbacks where feasible to reduce need for developing new landings.
- If needed and possible sort by ownership.

### **Dozer Lines, Staging Areas, Safety Zones, Helispots:**

After salvage of merchantable timber

- Evenly reposition litter and organics, top soil, and large woody debris onto disturbed areas. Scarify compacted areas to a depth of 18 inches. Scatter additional unused material to eliminate berms and debris piles. Where cut and fill has occurred (benched fireline) re-contour fireline to natural slope gradient prior to placement of litter, organics, and woody debris. Eliminate evidence of the line as much as practical.
- Construct water bars (see specifications below). Applicable to firelines and restricted/closed roads.
- Seed disturbed areas with Seed Mix (See specifications below).
- Restore stream crossings (Insert specifications below).

- Block off motorized access. Where available, use boulders and large woody debris.
- Remove all trash, equipment, and flagging.

**Hand Lines:**

- Reposition litter and organics, top soil, and large woody debris onto disturbed areas. Scatter additional unused material to eliminate berms and debris piles along the fireline. Eliminate evidence of the line as much as practical.
- Construct water bars (insert specifications below).
- Block off motorized access. Where available, use boulders and large woody debris.
- Remove all trash, equipment, and flagging.

**Pumping and Drafting Sites:**

- Restore all water sources that were used to supply hose lays, tenders, and engines during the suppression efforts to their pre-fire condition.
- Restore natural contour.
- Seed disturbed areas with Seed Mix (insert specifications below)
- Remove any dams or other devices used to pool water and all litter, trash, and flagging.
- Remove hazardous material containment pads, if used, and dispose of properly.

**Open Roads used as Firelines or Contingency Lines:**

- Remove vegetation debris (cut limbs and brush) from road cuts and ditches and culvert catch basins and scatter on road fills outside of the travel way. Where excessive amounts of materials prevent scattering, pile or windrow material along the road fill outside of the travel way.
- Restore all existing drainage features, i.e. culverts, rolling dips, cross-drains, belted drains, and ditches damaged during fireline construction.
- Remove debris from culverts that have been blocked or made ineffective due to suppression efforts.
- Grade road surface to reestablish original road widths and ensure a smooth driving surface free of rocks and obstructions.
- Clean ditches and culvert lead-ins during grading activities to remove debris and allow for free flow.
- If dry conditions exist, water roads as necessary during grading activities to ensure missing road surfacing materials and to eliminate generation of additional surface fines.

**Restricted (gated or bermed) Roads used as Firelines or Contingency Lines:**

- Remove vegetation debris (cut limbs and brush) from road cuts and ditches and culvert catch basins and scatter on road fills outside of the travel way. Where excessive amounts of materials prevent scattering, pile or windrow material along the road fill outside of the travel way
- Restore all existing drainage features, i.e. culverts, rolling dips, cross-drains, belted drains, and ditches damaged during fireline construction.

- Where surface drainage is not evident, construct drivable water bars generally every 500 feet. At stream crossings, water bars shall be constructed on each side of the crossing to prevent surface flow into the stream crossing. Near streams, water bars shall drain into a buffer area and not directly into the stream channel.
- Grade road surface to reestablish original road widths and ensure a smooth driving surface free of rocks and obstructions.
- If dry conditions exist, water roads as necessary during grading activities to ensure missing of road surfacing materials and to eliminate generation of additional surface fines.
- Clean ditches and culvert lead-ins during grading activities to remove debris and allow for free flow.
- Remove debris from culverts that have been blocked or made ineffective due to suppression efforts.
- Restore road restriction devices (gates, berms, barriers) removed or damaged to provide access for fire suppression activities. Replace locks, lock-Ts, signs and other damaged items.
- If necessary to prevent erosion and only with Line Officer approval, seed road surfaces and cut/fill slopes with Seed Mix (insert specifications below).

**General Access Roads:**

- Grade road surface to remove ruts, rills, and washboards. Light or Spot Grading may be performed where road surface imperfections are not evident.
- Grade ditches only where fire vehicle traffic has damaged ditch profile or deposited debris within the ditch.
- If dry conditions exist, water roads as necessary during grading activities to ensure mixing of road surfacing materials and to eliminate generation of additional surface fines.
- All litter, trash, equipment, signs and flagging will be removed.

**Fire Camps/Spike Camps/Helibases/Retardant Plants:**

- Areas where excessive retardant was spilled will be mitigated by removing as much of the retardant as practical and farming or diluting the remainder into the soil. Specific actions will be developed jointly with Landowners or their representatives.
- Wood chips should be raked to remove the majority of litter and the remainder raked evenly across the area (if chips were used).
- If necessary and only with Line Officer approval seed all disturbed areas with Seed Mix (insert specifications below).
- Repair and fence and replace any gate that was cut or moved to access suppression activities.
- All litter, trash, equipment, signs and flagging will be removed.
- Restore natural topography where power and telephone lines were trenched.



- Refer to rental agreements with specific landowners for other requirements.

**Vehicle (Weed) Washing Station (if applicable):**

- Collect and dispose of all organics, debris, and washing waste in approved landfill.
- Grade road surface to remove ruts and surface imperfections.
- All litter, trash, equipment, and signs will be removed.
- Monitor annually for 2 years. Apply herbicides as necessary to remove weed germinates.

**SPECIFICATIONS:**

**Water Bars:**

- Cut water bars diagonal to fire line.
- Ensure that each water bar has a direct outlet and drains into a vegetation or rock filter.
- Utilize Excavators (preferred over dozers if possible) for repair of dozer lines and along roadways that have been cleared for firelines. Dozers may only be used to perform final construction of water bars on dozer lines. Excavators should be used to pull berms and redistribute side cast fills and woody debris (eastside open prairie utilization of Road Graders may be preferred). Dozers may also be utilized on larger safety zones, especially those near roads.
- Water bars for dozer lines should be 12” deep and 18-24” high for the berm. If soil is loose, augment water bar with woody debris and/or rocks if available.
- Hand line water bars should be 8” deep and 12-18” high for the berm. If soil is loose, augment water bar with woody debris and/or rocks.

<b>Fire Line Slope</b>	<b>Suggested Spacing (feet)</b>
10-20%	100
20-30%	75
30-40%	50
40-50%	25
50%+	20

**Seeding:**

**Seed Certification (if applicable)**

- Certified, blue-tagged seed shall be used where a name variety or cultivar is specified. Blue tags, that are removed to mix or spread the seed will be saved and provided to the host agencies Resource Advisor.
- All seed purchased will be certified free of seeds from weeds listed on the current “All States Noxious Weeds List”.
- The origin of wildland native seeds is verified by a certification of the “Source Identified Class” with an attached yellow tag.

- When using commercially purchased seed check with the supplier for the seed source point of origin. Point of origin should be as close to the re-vegetation project as possible. Seeding elevations should be within 1000 feet below or 500 feet above the seed origin elevation. Seed origin should be within a 500 mile radius of the re-vegetation site.

**Seed Mix and Application:**

- Apply seed following completion of repair activities (i.e. replacement of organics and debris and road grading activities).
- Do not mix seed and fertilizer in spreaders. Apply seed and fertilizer separately to prevent scarification of the seed hull by abrasive fertilizer.

**Seed Mix: Montana State DNRC**

Apply to all firelines, safety zones, and repair areas.	
Species	Pounds PLS per Acre
(example): Annual Ryegrass (I) Lolium Multiflorum	(example): 14
(example): Slender Wheatgrass (N) Elymus trachycaulus (Revenue)	(example): 6
<b>Total</b>	

**Fertilizer Application:**

- Apply \_\_\_\_\_ dry fertilizer at rate of \_\_\_\_\_ lbs/acre
- Apply fertilizer only to roads used for firelines. Do not apply to dozer or hand constructed firelines. Do not apply to general access roads.

**Stream Crossings:**

- Remove all litter, top soil, and small woody debris (brush and branches) positioned within the stream during line construction.
- Re-contour disturbed soils to blend with the natural stream banks above and below the crossing. Place large woody debris (>10 inches diameter as available) within the floodplain or along stream banks so as to not fully obstruct stream flows. **Note:** large wood may enter the stream channel as long as it is fully secured (partially or fully buried) within the floodplain beyond the stream channel so as to prevent movement during high flows.
- Construct water bars above both sides of the crossing where runoff can be diverted onto non-erodible materials and dissipated before it reaches the channel.
- Minimize additional damage to riparian vegetation and disturbance to soils.
- Install slash filter windrows at base of slopes parallel to stream channel. Windrows should be placed at least 10 feet from stream edge as to not infringe upon natural stream flow and floodplain function.

## ADMINISTRATIVE RULES OF MONTANA (ARM)

### 18.10.111 DYED SPECIAL FUEL ALLOWANCE

(1) The department will allow the state of Montana, cities, counties, school districts, and federal and tribal governments to use dyed, low sulphur special fuel on the public roads if the following criteria are met:

(a) The vehicles are owned by a governmental entity (state of Montana, city, county, school district, federal or tribal government) ; or

(b) The vehicles are leased by the governmental entities (state of Montana, city, county, school district, federal or tribal government) and the lease terms meet the criteria for a "long term lease" as defined in ARM [18.10.302](#).

History: [15-70-104](#) and [15-70-330](#), MCA; IMP, [15-70-301](#) and [15-70-330](#), MCA; NEW, 1999 MAR. p. 645, Eff. 4/9/99; TRANS, from ARM [18.9.323](#), 2001 MAR p. 2143, Eff. 10/26/01.

STATE OF MONTANA  
**DEPARTMENT OF JUSTICE**  
MONTANA HIGHWAY PATROL DIVISION

Steve Bullock  
Attorney General



2550 Prospect  
PO Box 201419  
Helena, MT 59620-1419

May 10, 2012

Department of Natural Resource and Conservation  
Bruce Suenram, Deputy Chief  
2705 Spurgin Road  
Missoula, MT 59804

Dear Deputy Chief Suenram:

The Montana Highway Patrol (MHP) recognizes the need for fire program vehicles owned and operated by the Department of Natural Resources and Conservation (DNRC). We agree that these vehicles are imperative to the protection of our wild lands and they are used to respond to fires in an emergency capacity. Therefore, MHP endorses the use of the fire program fleet and authorizes their emergency vehicle status.

Thank you for contacting the MHP office with your request for authorization. If you have any questions or concerns, you can reach our Headquarters office at 406-444-3780.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Tooley".

Colonel Michael Tooley  
Chief Administrator

mtt/klm

**RECEIVED**

MAY 14 2012

Forestry Division  
Missoula

Telephone (406) 444-3780 Fax (406) 444-4169

