Safety Officer
S-404

NFES 001599

Student Workbook
MARCH 2013

CERTIFICATION STATEMENT

on behalf of the

NATIONAL WILDFIRE COORDINATING GROUP

The following training material attains the standards prescribed for courses developed under the interagency curriculum established and coordinated by the National Wildfire Coordinating Group. The instruction is certified for interagency use and is known as:

Safety Officer, S-404
Certified at Level I

This product is part of an established NWCG curriculum. It meets the requirements of the NWCG Curriculum Management Plan and has received a technical review and a professional edit.

NWCG Executive Board Chair

Date 3/4/2013

NWCG Training Branch Manager

Date 3/4/2013

Safety Officer

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PREFACE

Safety Officer, S-404, is a recommended training course in the National Interagency Incident Management System: Wildland Fire Qualification System Guide (PMS 310-1). This course was developed by an interagency group of subject matter experts with direction and guidance from the National Wildfire Coordinating Group (NWCG) Training Branch. The primary participants in this development effort were:

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Unit 0 – Introduction

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Introduce the course coordinator, instructors, and students.
2. Discuss course logistics.
3. Present course overview.
4. Discuss instructor and student expectations.
5. Identify course reference materials.
6. Discuss position responsibilities.
7. Review pre-course work.

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I. INTRODUCTION

A. Welcome

B. Introduce Instructors and Students

C. Course Logistics

1. Breaks, snacks, drinking fountains, punctuality
2. Smoking policy
3. Location of restrooms and vending machines
4. Other local information (restaurant locations, local map)
5. Transportation
6. Cell phones

II. COURSE OVERVIEW

This course is designed to meet the training needs of a Safety Officer:

- Safety Officer Type 1 (SOF1)
- Safety Officer Type 2 (SOF2)
- Line Safety Officer (SOFR)

as outlined in the Wildland Fire Qualifications System Guide (PMS 310-1) and the position task book developed for the positions.

In most instances in this course, we will not refer to the various types of Safety Officers unless we are discussing a specific type of Safety Officer.

A. Course Objectives

At the successful completion of this course, students will be able to:

1. Arrive at the incident, properly equipped, and gather information to assess the assignment and begin initial planning activities of a Safety Officer.

2. Identify, prioritize, and mitigate hazards and risks on the incident.

3. Plan, staff, and manage the incident safety action plan to meet the needs of the incident.

4. Coordinate and plan with the command and general staff to assist in safely accomplishing the overall incident objectives.

5. Ensure that the preparation of special reports for the final incident package and incident closeout with agency administrator is completed.

B. Instructional Methods

1. Facilitation and short lectures with PowerPoint

2. Discussion

3. Exercises

C. Evaluating Student Performance

To successfully complete the course, students must:

1. Participate in all classroom discussions, exercises, and scenarios.

2. Achieve an accumulated total score of 70% or higher on all graded exercises and the final assessment.

D. Student Training Course Evaluation Form

Students are given the opportunity to comment on the course, units, and the quality of the instruction.

E. Course Reference Materials

Below is a list of materials that are referenced throughout the course:

- Incident Response Pocket Guide (PMS 461)
- Interagency Helicopter Operations Guide (NFES 1885)
- Interagency Standards for Fire and Fire Aviation Operations (Red Book) (NFES 2724)
- Wildland Fire and Aviation Program Management Operations Guide (Bureau of Indian Affairs [BIA]) (Blue Book)

III. COURSE EXPECTATIONS

A. Student Expectations

B. Instructor Expectations

IV. POSITION RESPONSIBILITIES

A. The Safety Officer in the Incident Command System

- The Safety Officer is typically designated as a primary member of the command staff of an Incident Management Team (IMT).
- The Safety Officer is supervised by the Incident Commander.

B. Roles and Responsibilities

The Safety Officer's function is to develop and recommend measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations. This role includes the entire incident area.

It should be the role of the Safety Officer to instill in all incident personnel the value of applying the risk management principles and "thinking safety" while performing all assigned duties.

C. Position Task Book (PTB) Description

The PTB contains common tasks for all Safety Officers.

The PTB is the primary tool for observing and evaluating performance.

In the current performance based system, trainees must complete the tasking in the PTB to become qualified as a Safety Officer (SOF1, SOF2, SOFR).

This PTB can only be initiated by the home unit, not at this course.

V. PRE-COURSE WORK REVIEW

The instructor will review the pre-course work, answer any questions, and identify any problems students may have had with the online pre-course work.

EXERCISE: S-404 Safety Officer Kit

The purpose of this exercise is to ensure students have identified the required items and assembled their kit as listed in the pre-course work.

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Unit 1 – Responsibilities and Interactions of the Safety Officer

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Gather information necessary to assess incident assignment and determine immediate needs and actions.

2. Interact and coordinate with command and general staff.

3. Ensure relevant information is exchanged during briefings and debriefings.

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I. SAFETY OFFICER

A. Arrival at the Incident

Meeting with Incident Commander (IC) and general staff is vital to the success of the assignment.

Information and opportunities gained at this meeting should include:

- Leader's intent
- Coordination of assignments
- Sharing information
- What are the priorities?
- Place orders for resources needed

Leadership is influencing people by providing purpose, direction, and motivation, while operating to accomplish the mission and improve the organization.

B. Type 3 Organization

Meet with the Incident Commander (in briefing).

Ask questions such as:

- What are your expectations of me as your Safety Officer?
- As the IC, what is your leader's intent?
- Use the ICS 201 Incident Briefing form or an Incident Organizer.

- What is the planning cycle?
- Are there any pertinent plans we could use?

Gather intelligence and monitor the situation; work as both the Line Safety Officer and within the team safety organization.

DISCUSSION POINT:

What are the NWCG guidelines for the qualifications of a Safety Officer serving as the primary team Safety Officer on a Type 3 team?

Documentation is essential, and a Type 3 organization should operate similar to a Type 2 organization. See if you can get additional Line Safety Officers. Don't become overwhelmed.

C. Agency Administrator Briefing

Arrive on time or a little early so you have time to mingle and find out who is who and gather additional information.

Types of questions to ask:

- How do you want me to interface with the safety manager?
- Do you have a local medical plan?
- Do you have an evacuation plan?
- Do you have a serious accident investigation plan?
- Do you have a current phone list of technical specialists?

D. Information Sources

Meet individuals from the agency you will be interacting with such as:

- Coordination center manager
- Fire Management Officer (FMO) and Assistant Fire Management Officer (AFMO)
- Unit safety manager
- Emergency Medical Services (EMS) manager
- Disaster Emergency Services (county, state and Federal)
- Local agencies, cooperators, law enforcement, and military and national guard
- Tribes/Tribal Emergency Manager
- Local ranchers and citizens (local road knowledge)
- Health department and Occupational Safety and Health Administration (OSHA)

E. Before Leaving for the Incident Command Post (ICP)

Gather as much information as you can about the assignment and the area from sources such as:

- Geographic Area Coordination Center (GACC)
- Local unit
- Internet

- Google Earth
- Contacts you made at the agency inbriefing
- Other services

Be on time for the morning briefing, and take notes to be used in the division breakout briefing.

Find and stay near your assigned division(s) during the briefing.

During the breakout briefing, interact with personnel and reinforce the Safety Officers briefing in addition to specific safety concerns for the division.

If applicable, attend aviation briefing (usually follows the morning briefing; location of briefing will be with aviation resources).

II. PLANNING CYCLE

A. Planning Topics

- Consult with the Incident Commander (IC) and/or the Planning Section Chief (PSC) on planning timeline.
- Attend the operational briefing.
- Prioritize the hazards, getting a view from the big picture.
- Meet with Fire Behavior Analyst (FBAN) and Incident Meteorologist (IMET).
- Hazard risk analysis (take notes for ICS 215A preparation).

- Be ready to prepare the medical plan ICS 206 and communication plans ICS 205 (Type 3 organization).

- Discuss and consider ordering medical and other safety staff.

DISCUSSION POINT:

What type of information would you gather from an FBAN and IMET?

TIPS:

- Try not to take on more (collateral duties) than is required for your current Safety Officer role.
- Use the Incident Pocket Organizer for note taking.
- If the complexity warrants another Incident Management Team prepare for potential transition.
- Keep looking at the big picture from the perspective of increases in operations, logistical support, or both.

B. Day Operations

- Preplanning meeting
- Exchange of information at meal time
- Planning meeting
- Debrief incoming Line Safety Officers
- Command and general staff meeting (IMTs have their own schedule for these meetings)
- Incident Action Plan (IAP) components

C. Night Operations

If your Incident Management Team (IMT) conducts night operations, you will need to duplicate all of the meetings outlined in the Day Operations section.

TIP:

You may need to modify the day information for the night shift. The required IAP components for night shift are usually completed at an earlier time during the day (1500-1600 hours).

An example is the IAP will usually be completed before the next day operational strategy meeting.

III. DAY IN THE LIFE OF A LINE SAFETY OFFICER

A. Morning Duties of a Line Safety Officer

- Morning personal preparation (be prepared for the day, morning briefing, required tools, potential assignments of the day, any overnight changes)
- Preoperational briefing (gathering of Safety Officers and operational overhead to discuss operations of the day)
- Operational briefing (brief, professional, no longer than 3 minutes)
- Operational breakout briefing
  - Participate in the briefing.
  - Identify specific hazards or risks.
  - Discuss line personnel assignment tactical risks.

– Medical personnel assigned.

– Discuss aviation support concerns (if any concerns arise, communicate them to aviation).

– Communications.

– How can I help you today?

TIP:

Breakout briefings are a good place to listen, gather information, and share expectations. Relay to the Team Safety Officer any aviation concerns from the breakout briefing so they can be discussed at the aviation briefing.

- Breakfast meeting with Team Safety Officer

  – This is an information sharing meeting.

  – Talk about today's expectations and needs.

  – Tell the Team Safety Officer where you are going to be on your assignment and what your priority is.

DISCUSSION POINT:

How will what happened yesterday affect what we are doing today?

B. Your Assignment

- Attend crew briefings and line briefings (monitor to make sure everyone on the line has the same information and an understanding of their assignment as it relates to safety).

TIP:

Safety Officer should expand the division supervisor's briefing with a risk management viewpoint.

- Operational overhead expectations

DISCUSSION POINT:

What is the benefit of exchanging expectations with line overhead?

How should we prepare to deal with the unexpected?

- Make sure safety measures and risk management process are in place.
  - Standard Firefighting Orders
  - Watch Out Situations
  - Lookout(s), Communication(s), Escape Route(s), and Safety Zone(s) (LCES)
  - Incident Response Pocket Guide (IRPG)
  - Incident-within-an-incident discussion (Incident Emergency Plan [IEP] procedures and protocol)
- As control objectives are modified on the line, work with division to ensure risk mitigations.
- Are escape routes and safety zones identified, marked, and timed?

TIPS:

- Try to get a feel for how things are going in your division. A Safety Officer needs to have a clear understanding of the fire environment conditions that create unwanted fire behavior. They should know why the risk is there, then institute the mitigation.
- Randomly ask line personnel if they know the escape routes and where the safety zones are; use your IRPG safety zone information.
- Get a feel of whether division has a clear understanding of the Operations Section Chief's expectations.

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Unit 2 – Risk Management

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Define risk management and identify the benefits of proper risk management.

2. Identify the four guiding principles of risk management.

3. Identify the three levels of risk management.

4. Use the Risk Assessment Code Matrix and the Incident Risk Assessment Worksheet to apply the five-step risk management process.

5. Discuss how to apply and integrate the risk management process and principles into planning and operations.

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I. INTRODUCTION TO RISK MANAGEMENT

This unit provides the foundational information to reinforce and clarify the application of risk management (RM) at the formal level. Most fire personnel apply risk management at an intuitive level.

RM is the principal risk-reduction process to protect personnel.

In the simplest terms, RM is a systematic process designed to:

- Reduce the risks associated with operational hazards.
- Bring personnel to a common understanding of how to identify and manage risk.
- Give management the ability to make more informed decisions by identifying and managing risks associated with all operations.

Our goal is to make risk management a routine part of both the planning and execution of operations.

The foundational concept of RM is to convert a hazard to a *risk*.

RM allows personnel to make rational decisions about how to deal with identified hazards.

Although RM is not a safety program in and of itself, it is a key component of an overall safety program.

Safety is a natural outcome of effective risk management. RM minimizes the effects of hazards that cause injury, loss of lives, and damage or destruction of equipment and should ultimately result in operational success.

DISCUSSION POINT:

Read and discuss the following statement from the Red Book: "The primary means by which we prevent accidents in wildland fire operations is through aggressive risk management. Our safety philosophy acknowledges that while the ideal level of risk may be zero, a hazard free work environment is not a reasonable or achievable goal in fire operations."

- Can we eliminate all risk?
- Have you worked or do you currently work in an organization (state, military, etc.) with differing guiding principles?

Additional information and policy regarding RM can be found in the Interagency Standards for Fire and Fire Aviation Operations (Red Book) and the Wildland Fire and Aviation Program Management Operations Guide (Blue Book).

Web sites:
http://www.nifc.gov/policies/pol_intgncy_guides.html
http://www.bia.gov/nifc/index.htm

II. WHY RISK MANAGEMENT?

Risk management is a tried and proven system.

Extensive experiments and applications by organizations have shown that subjects were able to consistently detect 50% more hazards by using RM techniques compared to "traditional" procedures (trial and error – mitigations were applied after the event or bad outcome).

Organizations that use RM techniques include:

- Nuclear Regulatory Commission (NRC)
- National Aeronautics and Space Administration (NASA)
- National Institute of Occupational Safety and Health (NIOSH)

- United Parcel Service (UPS)
- DuPont®
- Department of Defense (DOD), including Coast Guard

A. Benefits of Risk Management

Why should we conduct RM? There are significant benefits.

- Enhances mission accomplishment and efficiency
- Reduces accidents, injuries, and deaths
- Conserves resources
- Can reduce potential for adverse public opinion

B. Consequences of Failing to Manage Risks Effectively

- Death and injury to personnel, the public, or both
- Damage to equipment, property, the environment, or any or all of these
- Mission failure
- Violation of policies
- Compromising Standard Operating Procedures (SOPs)
- Legal liability
- Adverse public reaction

Although RM can do a great deal for us, we must remember that there are some things it doesn't do.

RM does not:

- Remove risk altogether
- Support a zero defects mindset
- Sanction or justify violating the law or policy
- Require a checklist
- Remove the necessity for standard drills, tactics, techniques, and procedures
- Inhibit the commander'(s) and leader'(s) flexibility and initiative

RM is designed around a dimensional concept. This dimensional approach guides you to an overall understanding of RM. Don't get hung up on memorizing all the dimensions; it is more important to understand the overall concept.

III. FOUR GUIDING PRINCIPLES OF RISK MANAGEMENT

The overall risk management process is based on four guiding principles.

Four guiding principles of RM:

1. Best to manage risk in the planning stage.
2. Do not accept unnecessary risk.
3. Make risk decisions at the appropriate level.
4. Accept risk when benefits outweigh costs, potential consequences, or both.

IV. THREE LEVELS OF RISK MANAGEMENT

The three levels of RM discussed in this unit apply to incident management and operations.

1. Planning Level (deliberate)

2. Operational Level (implementation or field)

3. Time-Critical Level (on-the-spot or rapid decision)

Decisions reached using the RM process should be made at the most effective and appropriate level of command.

V. FIVE-STEP PROCESS OF RISK MANAGEMENT

Now we will cover the elements of the five-step RM process. Agencies, publications, and program areas may use various titles for the five steps of the risk management process; however, the process is designed to meet the same intent.

The five-step RM process is a **continuous process** in which you continually reassess your situation and reapply any of the five steps.

1. Identify hazards.

2. Assess hazards.

3. Develop controls and make risk decisions.

4. Implement controls.

5. Supervise and evaluate.

DISCUSSION POINT:

Refer to the Risk Management section of the Incident Response Pocket Guide (IRPG).

Compare the five steps outlined in the IRPG with the industry standard five-step process.

Discuss the differences and similarities between the two lists.

VI. APPLYING THE FIVE-STEP PROCESS OF RISK MANAGEMENT

Before applying the five steps, it is critical to clearly define hazard and risk.

The terms *hazard* and *risk* are often used interchangeably; however, they have two distinct meanings:

Hazard – A condition or situation that exists within the working environment capable of causing physical harm, injury, or damage.

In addition, hazards may result in mission degradation.

Risk – The likelihood or possibility of hazardous consequences in terms of severity or probability (associated with human interaction).

A. Identify Hazards (Step 1)

Step 1 of the RM process is identifying those hazards likely to result in a negative impact on the mission. Consider all aspects of current and future situations, environment, and known historical problem areas.

EXERCISE: Determining Hazards and Risks

Purpose: Students will apply the definition of hazard and risk to situations and discuss.

Exercise Instructions:

Answer the following questions for each slide. Discuss the answers as a class.

1. Is this a hazard or a risk?

2. Why is this a hazard or risk?

Exercise Ends.

1. Sources of Risks

   These are the common sources and types of risk and may not be all-encompassing but are designed to provoke your thought processes:

   - Material – Design, maintenance, logistics, technical data
   - Environment – Climate, terrain, hygiene
   - Organizational – Standards, procedures, controls, financial
   - Human Element – Resource selection, performance, training, and experience

2. Hazard Detection

There are various thought processes, tools, and aids to assist you in identifying specific hazards.

- Scenario thinking (worst case)
- The High Reliability Organizing (HRO) principle of Preoccupation With Failure brings into account the "What if…?" scenario thinking.
- Experience and historical data
  - National Fire Danger Rating System (NFDRS) fire danger rating card
  - 6 Minutes for Safety
  - Firefighter: "Remember This" Series
- Create preliminary hazard list
- Operations analysis, e.g., preplanning meeting (ICS 215 and ICS 215A)
- Review existing Job Hazard Analysis (JHA) or Risk Assessment

3. How Changing Conditions Lead to Hazards or Risk

It is important to account for changing conditions within the overall incident management environment that can lead to additional hazards.

Some examples are:

- When personnel with a single task transition to multiple tasks
- When routine operational tempo quickly transitions to a fast-paced operations tempo such as chasing spot fires and responding to medical emergencies
- When span of supervisory control rapidly escalates through complexity, changes, and number of resources assigned.
- Changing environmental factors such as weather, fire behavior, snags, rolling debris, and encountering bees
- When equipment status changes and/or equipment fails

Being prepared and planning ahead for unexpected events should be part of the RM process.

B. Assess Hazards (Step 2)

Now that we have identified the hazards in Step 1 of the RM process, let's move on to Step 2, where you will learn how to assess hazards.

The assessment process begins with determining each hazard impact in terms of potential loss, cost, or mission degradation based on probability and severity. This is how you convert a hazard to a risk.

How much of a problem a hazard presents cannot be determined until the hazard is converted to a risk.

You already learned that the five-step risk management process is a **continuous process**. As conditions change or any additional hazards are identified, the hazards will need to be reassessed.

1. Determine the Level of Risk Associated With the Hazard

   After identifying and assessing the hazards, the next phase in the RM process is to determine the level of risk and establish controls.

   Our goal is to eliminate the hazard or reduce the level of risk it presents to an acceptable level.

   There are two key components in determining risk:

   a. Probability

      The likelihood that a hazard will result in a mishap or loss

      - Consider exposure – Expressed in terms of time, proximity, quantity, and repetition

   b. Severity

      The worst credible consequence that can occur as a result of a hazard

2. Assigning a Risk Assessment Code

   The RAC Matrix is a tool that can be used to determine how risky (risk level) an identified hazard is. Typically, a numerical Risk Assessment Code (RAC) is assigned to each hazard to represent its relative risk.

   The RAC Matrix is typically used at the planning level, but the thought process should be applied at the operational and time-critical levels.

Other similar tools are available; however, this RAC Matrix is the industry standard and is tied to various agencies' policies.

Keep in mind that there is a certain amount of subjectivity when applying probability and severity to the identified hazard.

Each level is identified with an alphanumeric code that will correspond with a risk level on the RAC Matrix.

The code associated with each component is expressed in terms of:

Severity Code defined:

- CATASTROPHIC (I) – Imminent and immediate, danger of death or permanent disability and/or total equipment loss

- CRITICAL (II) – Permanent partial disability, temporary total disability, and/or severe equipment damage

- SIGNIFICANT (III) – Hospitalized minor injury, reversible illness, and/or significant equipment damage

- MINOR (IV) – First aid, minor medical treatment, and/or minor equipment damage

Hazard Probability Code defined:

- FREQUENT (A) – Immediate danger to health and safety of the public, staff, or property and resources through continuous exposure

- LIKELY (B) – Probably will occur in time if not corrected, or probably will occur one or more times

- OCCASIONAL (C) – Possible to occur in time if not corrected

- RARELY (D) – Unlikely to occur but may occur in rare circumstances

After the hazard is expressed in terms of how likely it is to occur, and how serious the consequences are if it does occur (risk), then leadership can make rational decisions about how to deal with that hazard.

C. Develop Controls and Make Risk Decisions (Step 3)

Step 3 of the RM process is developing control measures that eliminate or reduce the hazard and its risk. As control measures are developed, risks are reevaluated until all risks are reduced to a level where benefits outweigh potential cost or potential consequence and are determined to be acceptable.

Control measures are a method for reducing risk for an identified hazard by lowering the probability of occurrence, decreasing potential severity, or both.

Control measures are most often described as "mitigations" within the wildland fire community.

Types of Control Measures

1. Engineering Controls

The first and best strategy is to control the hazard at its source. Engineering controls do this, unlike other controls that generally focus on the employee exposed to the hazard.

The basic concept behind engineering controls is that, to the extent feasible, the work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards.

Engineering controls can be simple in some cases. They are based on the following principles:

- If feasible, design the facility, equipment, or process to remove the hazard or substitute something that is not hazardous.

- If removing the hazard is not feasible, enclose the hazard to prevent exposure in normal operations.

- Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations.

2. Administrative Controls

Administrative controls are other measures aimed at reducing employee exposure to hazards through safe work practices. These measures are normally used in conjunction with other controls that more directly prevent or control exposure to the hazard.

Examples of safe work practices include hiring additional relief workers, providing adequate rest breaks, and rotating workers.

Wildland fire examples include:

- Lookout(s), Communication(s), Escape Route(s), and Safety Zone(s) (LCES)

- Work-rest guidelines

- Downhill line construction guidelines

- Increased supervision to manage span of control

- Base camp closure at night

3. PPE Controls

When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient additional protection, a supplementary method of control is the use of protective clothing or equipment.

Engineering and administrative control measures should be used before or applied with Personal Protective Equipment (PPE).

PPE examples include:

- Fire-resistant aramid clothing
- Chain-saw chaps
- High-visibility vests

4. Educational Controls

Educational controls are based on the knowledge and skills of the units and individuals. Effective control is implemented through individual and collective training that ensures performance to standards.

Educational examples include:

- Practical fire shelter training drill
- RT-130, firefighter refresher training
- Readiness drills

5. Avoidance Controls

Avoidance controls are applied when leaders take positive action to prevent contact with an identified hazard.

Avoidance examples include:

- Road closures
- Refuse risk (IRPG)
- Flag hazard tree areas for avoidance

DISCUSSION POINT:

Refer to the "How to Properly Refuse Risk," section in the IRPG and discuss the following questions:

What if the controls aren't acceptable and someone refuses the risk?

Have any of you ever experienced this? What was the outcome?

Criteria for Control Measures

In order for control measures to be effective, the following criteria should be taken into consideration for each control developed.

1. Suitability

   The control measure must truly remove the hazard or mitigate (reduce) the risk to an acceptable level.

2. Feasibility

   The end user will have the capability to implement the control measure.

3. Acceptability

   The end user will accept and implement the control measure.

4. Effectiveness

   Benefit gained by implementing the control measure and justifying the cost in resources and time.

   Avoid risk transfer, meaning a control measure may reduce or eliminate a specific risk but unintentionally create a greater risk.

DISCUSSION POINT:

Can you think of examples where control measures were applied, applied incorrectly, or not applied at all?

Example: A fireline all-terrain vehicle (ATV) operator wearing a hardhat versus a riding helmet.

Residual Risk

Eliminating every risk is not achievable; however, residual risk (after control measures are in place) still needs to be identified and determined if the risk is at an acceptable level.

Residual risk is the level of risk remaining after control measures have been identified and selected.

As control measures are identified and selected, the hazards are reassessed as in Step 2, and the level of risk is then revised.

This process is repeated until the level of residual risk is acceptable to the commander or leader or cannot be further reduced.

EXERCISE: Using the Incident Risk Assessment Worksheet and RAC Matrix

Purpose: Students will analyze hazards, assign them a value using the RAC Matrix, and complete the Incident Risk Assessment Worksheet.

Exercise Instructions:

For each slide in this exercise, assume there is a human component involved.

Use the RAC Matrix to determine the Severity Code and the Hazard Probability Code.

1. Complete the Pre-Control Measures section of the Incident Risk Assessment Worksheet

    - Hazard
    - Severity Code
    - Hazard Probability Code
    - RAC (Risk Assessment Code)

2. Complete the Control Measures section of the Incident Risk Assessment Worksheet

3. Complete the Post-Control Measures section of the Incident Risk Assessment Worksheet

    - Severity Code
    - Hazard Probability Code
    - RAC (Risk Assessment Code)
    - Acceptable – Yes/No

Exercise Ends.

Risk Decision

A risk decision is a decision to accept or not accept the risk(s) associated with an action.

Risk decisions apply to **all functional areas**, not just operations (e.g., logistics, finance, plans, etc.).

The risk decision brings into account all of the previous elements up to this point:

- All known hazards are identified and converted to level of risk.
- Appropriate control measures are established.
- Decisions account for residual risk.
- Benefits outweigh the cost and potential consequence.

Risk decisions should be made at the appropriate organizational level commensurate with the level of acceptable risk.

There are always options to risk decisions. Some examples are:

- Accept risk (benefits outweigh cost or potential consequence)
- Reject risk (unnecessary risk)
- Modify risk with additional control measures
- Decision requires more information
- Elevate risk decision to higher chain-of-command level
- Avoidance
- Consider alternative action (start RM process all over again)

Planning Level (Deliberate) Risk Decisions

The risk decision process at the planning level for high-complexity incidents occurs at the preplanning meetings.

The Operations Section Chief(s) along with the Safety Officer will identify the operational hazards and establish controls with the goal to reduce risk to an acceptable level.

The Incident Commander has the ultimate authority to accept incident-related risks and approve the plan.

Use the RAC Matrix and the Incident Risk Assessment Worksheet to assist in making and documenting the risk decision.

For lower complexity incidents, the planning level risk decisions should follow the same process as described above, using the Incident Risk Assessment Worksheet. These risk decisions will most likely occur between the highest ranking operational level and the Safety Officer.

Operational (Implementation) Level Risk Decision

The risk decision process at the operational level typically occurs at the supervisory level.

Supervisors must have a clear understanding of the mission assignment as outlined on the Incident Action Plan (IAP) and be thoroughly briefed on the hazards, controls.

Recognizing that conditions change, supervisors should continuously reassess using the risk management process, which is critical to safe operations.

Interaction and communication between supervisors and Safety Officers is vital to ensuring that the continuous reassessment of the risk management process is occurring.

Supervisors must make risk decisions on their own initiative based on their understanding of commander's intent and using their knowledge, skill, experience, education, values, and judgment to make decisions and to take or direct action.

Time-Critical Level Risk Decisions

Risk decisions at the time-critical level include on-the-spot rapid risk assessment and decisionmaking.

Risk decisions at this level are heavily dependent upon experience, and the situation, and can be made by any level or personnel within the organization.

Decisions at this level most likely occur during operational activities with condensed decisionmaking timeframes.

DISCUSSION POINT:

Read the following statement from the Red Book, chapter 7, "Guiding Principle," page 07-1, and discuss the questions below.

"The primary means by which we implement command decisions and maintain unity of action is through the use of common principles of operations. These principles guide our fundamental wildland fire management practices, behaviors, and customs, and are mutually understood at every level of command. They include Risk Management, Standard Firefighting Orders and Watch Out Situations, LCES and the Downhill Line Construction Checklist. These principles are fundamental to how we perform fire operations, and are intended to improve decision making and firefighter safety. <u>They are not absolute rules. They require judgment in application.</u>" [our emphasis]

How do you think varying degrees of experience affect risk decisions?

In time-critical risk decisions, what do you think about the statement, "There are no right or wrong decisions"?

Does a high level of experience coupled with a risk decision always lead to a good outcome?

D. Implement Controls (Step 4)

In Step 4 of the RM process, controls are put into place to eliminate hazards or reduce the risks to an acceptable level.

In Step 3, you learned to develop controls; now in Step 4 you will learn how to implement those developed controls.

To implement controls, leaders and subordinate personnel need to ensure that these controls are integrated into Standard Operating Procedures (SOPs), written and verbal instructions, briefings, and into the overall mission.

The critical check for this step is to ensure that controls are converted into clear, simple, and implementable direction that is understood at all levels.

1. Coordinate and Communicate

Coordinating and communicating is key to successful and effective control implementation. This relies on a leader's clear intent to supervisors on how to execute the established controls.

Implementing controls includes coordinating and communicating with:

- Appropriate chain of command
- Other Incident Management Teams for multiple incident complexes
- Adjacent resources
- Other technical specialists involved in operation (such as resource advisors)
- Other agencies involved, government or civilian
- Law enforcement (road closures and security)

- The public

2. Convey Controls

There are various ways of communicating or conveying established controls to ensure adequate understanding.

Some examples are:

- Preplanning meetings
- Visual displays such as maps, graphs, and ICS 215A
- Incident action plans that include the incident safety message and division and aviation assignments
- Standard operating procedures
- Verbal updates as the situation changes

In review from Step 3 of the RM process, some examples of controls that should be conveyed are:

- Establish LCES
- PPE used for specific mission
- Expectations of information exchange and new information
- If tactics are adjusted for changing conditions
- Request for increased supervision
- Establish trigger points for engagement and disengagement
- Call for work stoppage by Safety Officer, who has this authority at any point in time

3. Why Risk Controls Fail

Even though every effort is made to ensure that established controls are in place, successful implementation is not guaranteed.

Examples of how risk controls can fail:

- Controls selected are inappropriate and can lead to workarounds.
- Personnel do not use the established controls.
- Leaders do not use or enforce controls.
- Costs for the controls are more than anticipated; costs can include monetary and nonmonetary, for example, public opinion.
- Controls can impede mission progress more than anticipated.
- Controls get shifted when establishing priorities.
- Time or condition constraints, or both, prevent full-control implementation.
- Controls are misunderstood.

DISCUSSION POINT:

As a class, discuss the following questions regarding control measures:

Through your experience, can you give examples of why control measures failed?

What changes did you make to implement successful control measures?

E. Supervise and Evaluate (Step 5)

The objective of Step 5 of the risk management process is to oversee and enforce established controls, and to evaluate, adjust, or update previous steps in the five-step process.

During this step, leaders should:

- Continuously assess risks during operations.
- Maintain situational awareness and guard against complacency to ensure that risk control standards are not relaxed or dismissed.
- Gain insight into areas needing improvement.
- Continuously evaluate their unit(s)' effectiveness in managing mission risks.
- Determine if controls do not work; identify the problem and develop a better solution.

1. Supervise

Leaders supervise mission execution to ensure standards and controls are enforced, remain effective, and are modified as necessary.

Supervisory techniques used by leaders to supervise mission execution and to ensure standards and controls are enforced, modified as necessary, and remain effective include:

- Lead by example, walk the talk
- Spot checks and onsite observations
- Inspections, such as equipment inspections
- Situation reports and operational updates
- Buddy checks
- Request feedback, which can include:
  - Nonformal, such as end-of-shift outbriefing
  - Formal, such as SAFENETs and SAFECOMs

2. Evaluate

As the final phase of Step 5, you continually evaluate every previous component and step within the RM process.

It is important to know and remember that evaluation can and should occur at any point in the five-step process.

For example, you don't have to go through all of the steps before you evaluate the immediate effectiveness of any point in the process.

If, after you evaluate, you determine that a change or update is needed, actions should be implemented at the appropriate step.

Personnel or leaders often feel compelled to stick to their current plan even when the situation or conditions have changed. However, when the situation or conditions change, you should reevaluate and determine what changes need to be made and at what step(s) in the RM process.

VII. POSTOPERATIONAL REVIEW OF RISK MANAGEMENT PROCESS

After an operational period or incident, leaders and individuals should evaluate how well the risk management process was executed and its overall effectiveness.

A postoperational RM review can assist in:

- Determining how to ensure that successes are continued to the next operational period or incident
- Capturing and disseminating lessons learned so that others may benefit from the experience
- Determining the effectiveness of the risk assessment in identifying and accurately assessing the probability and severity of hazards
- Evaluating the effectiveness of each control in reducing or removing risk, including whether controls were effectively communicated, implemented, and enforced
- Determining whether the level of residual risk of each hazard and of the overall mission were accurately estimated

Examples of ways to conduct postoperational RM reviews include:

- Get feedback from assigned resources from Unit Logs, or Activity Logs for FEMA-managed incidents.
- Review Medical Unit Illness and Accident Reports.
- Review SAFECOMs and SAFENETs.
- Conduct daily postoperational debriefing, and After Action Reviews.
- Attend team closeout meetings.

Examples of outcomes from postoperational RM reviews include:

- Make immediate operational adjustments including strategic or tactical changes.
- Adjust or improve controls.
- Update standard operating procedures.
- Create SAFENET or SAFECOM.
- Recommend policy changes.
- Identify lessons learned.

Information gathered during the postoperational RM review should be examined to find ways to make RM more effective for future incident assignments.

If significant information is gathered through the postreview process, and you or your incident management team believes this information should be shared with the wildland fire community, this can be done through the Lessons Learned Center Web site at: www.wildfirelessons.net/Home.aspx.

VIII. RISK MANAGEMENT INTEGRATION

Risk management integration means RM principles and practices are embedded into all aspects of incident management.

RM integration is not the sole responsibility of a Safety Officer or Safety Manager. Their job is to "shepherd" the RM principles and process.

RM principles and practices should be embedded into not only every aspect of fire and aviation management but also into the organization as a whole and into individual behavior (both on and off the job).

A. Leadership Responsibilities

Leaders need to be proactive to integrate risk management into all functional areas of incident management.

This can be accomplished by:

- Integrating RM into all SOPs, processes, planning, and operations
- Employing the RM process to identify unacceptable risks
- Reinforcing risk decisions at the appropriate levels
- And ensuring communication of RM throughout the organization, both vertically and horizontally

EXERCISE: Risk Management Responsibilities

Purpose: Students will identify the position responsibilities associated with RM.

Exercise Instructions:

1. This is a closed book exercise.

2. Student groups are assigned a position from this list:

    - Section Chief
    - Safety Officer
    - Supervisor
    - Firefighter

3. Each group will identify and present to the class the RM responsibilities associated with their assigned position.

4. Instructor will facilitate discussion regarding each group's response and supplement, if necessary, with information found in the Instructor Guide.

Exercise Ends.

B. Individual Responsibilities

Let's cover individual responsibilities for organizational integration of risk management from the incident management perspective.

You have previously learned that the Incident Commander has the overall responsibility to ensure the RM process is implemented.

1. Command Staff's (Section Chief's) Role

- Apply RM in developing courses of action, both strategic and tactical.
- Apply RM during all phases of operation.
- Coordinate with the Safety Officer to develop risk control options.
- Incorporate risk controls into plans, briefs, and all aspects of operations.
- And ensure controls are enforced.

2. Safety Officer's Role

Safety personnel should be our subject matter experts on the risk management process and be prepared to advise and assist leadership and incident personnel.

The Safety Officer's role includes:

- Assist in identifying, developing, and communicating hazards and control measures. This can be documented through the use of ICS 215 and ICS 215A.
- Advise and assist command and general staff of their RM roles and responsibilities.

- Conduct onsite visits to all functional incident areas to ensure implementation of the RM process.

- And review and comment on operational planning and enforcement of the RM process and controls.

3. Supervisor's Role

    - Assist with identifying hazards.

    - Communicate and enforce control.

    - Elevate and adjust risk decisions when required.

    - Provide feedback through chain of command.

    - Ensure continuous reassessment of risk management process.

    - Adjust controls as needed.

4. Firefighter's (Individual) Role

    - Assist with identifying hazards.

    - Implement controls.

    - Elevate and adjust risk decisions (at appropriate level) when required.

    - Elevate higher level risk decisions up the chain of command.

    - Provide feedback through the chain of command.

DISCUSSION POINT:

In the context of this course, we teach the risk management principles and how they are applied to incident management. Does RM have value beyond incident management?

How do you or could you apply RM to your day-to-day job?

How do you or could you apply RM to your life outside of work?

IX. RISK MANAGEMENT GOAL

The Goal

The goal of risk management is to be the principal risk reduction process to protect personnel. This goal includes making RM a routine part of decisionmaking, planning, and execution of operations.

How Do We Get There?

…through integrating the risk management process in everything we do.

X. REVIEW ELEMENTS OF RISK MANAGEMENT

To review, these are the risk management dimensions:

A. Four Guiding Principles of Risk Management

1. Best to manage risk in the planning stage.

2. Do not accept unnecessary risk.

3. Make risk decisions at the appropriate level.

4. Accept risk when benefits outweigh costs, potential consequences, or both.

B. Three Levels of Risk Management

1. Planning Level (deliberate)

2. Operational Level (implementation or field)

3. Time-Critical Level (on-the-spot or rapid decision)

C. Five-Step Process of Risk Management

1. Identify hazards.

2. Assess hazards.

3. Develop controls and make risk decisions.

4. Implement controls.

5. Supervise and evaluate.

D. Safe and Successful Mission

Remember, the goal is to have risk management be the principal risk reduction process to protect personnel. This goal includes making RM a routine part of decisionmaking, planning, and execution of operations.

Although we teach the RM principles in the context of how they are applied to incident management, consider applying RM to your day-to-day job and your life.

EXERCISE: Risk Management Scenario

Purpose: Students will be given inputs through a PowerPoint-based scenario, and apply the information covered in this unit.

Exercise Instructions:

Review the scenario on Slides 2-80 through 2-84, complete an Incident Risk Assessment Worksheet, and discuss the questions at the end of the scenario.

1. Setting

    - Type II fire
    - Beginning third operational period
    - Zero percent containment
    - Steep, rugged terrain
    - August, central Idaho
    - Temperature: High's mid-80s
    - Elevation: 4,000–8,000 feet

2. SOFR Observations

    - SOFR notices a crew taking a break.
    - It is obvious that a couple of the crewmembers aren't feeling well.
    - A few crewmembers are holding their stomachs in the fetal position and moaning.

3. Crew Superintendent Input

    - Superintendent states that several crewmembers hadn't been feeling well, but symptoms subsided after about 24 hours.

4. SOFR Questions Superintendent

- SOFR
  - Is the illness caused by something the crewmembers ate?
  - Was everyone feeling well before arriving at the incident?
  - Is the illness spreading to other crewmembers?
  - Where is the crewmembers' sleeping area?
- Superintendent
  - One crewmember stayed home with stomach flu like symptoms.
  - A couple more crewmembers are not feeling well.
  - Doesn't think it was bad food.
  - The crewmembers' sleeping area is in the northwest corner of base camp.

5. Discussion Questions

- Who should you notify in this scenario?
- What are the potential hazards and risks?
- What are the potential residual risks?

Exercise Ends.

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Risk Assessment Code Matrix
(RAC)

Severity Code \ Probability Code		Frequent (A) Immediate danger to health and safety of the public, staff, or property and resources through continuous exposure.	Likely (B) Probably will occur in time if not corrected, or probably will occur one or more times.	Occasional (C) Possible to occur in time if not corrected.	Rarely (D) Unlikely to occur but may occur in rare circumstances.
Catastrophic Imminent and immediate, danger of death or permanent disability and/or total equipment loss.	I	1 CRITICAL	1	2	3
Critical Permanent partial disability, temporary total disability, and/or severe equipment damage.	II	1	2 SERIOUS	3	4
Significant Hospitalized minor injury, reversible illness, and/or significant equipment damage.	III	2	3 MODERATE	4 MINOR	5
Minor First aid, minor medical treatment, and/or minor equipment damage.	IV	3	4	5	5 NEGLIGIBLE

RAC levels are identified by a numerical scale 1 - 5, with RAC-1 being the most critical requiring immediate response, RAC-5 being the least critical. RACs are annotated by the RAC Number, followed by the Frequency and Severity. Examples of RAC annotations are 1(A)(I) for a RAC-1 that has catastrophic consequences and a immediate danger frequency. A 4(IV)(B) would be a low level risk, with a minor severity and a likely probability.

Risk Assessment Code (RAC)

Severity Code

Catastrophic (I)	Imminent and immediate, danger of death or permanent disability and/or total equipment loss.
Critical (II)	Permanent partial disability or temporary total disability, and/or severe equipment damage.
Significant (III)	Hospitalized minor injury or reversible illness, and/or significant equipment damage.
Minor (IV)	First aid, minor medical treatment, and/or minor equipment damage.

Hazard Probability Code

Frequent (A)	Immediate danger to health and safety of the public, staff, or property and resources through continuous exposure.
Likely (B)	Probably will occur in time if not corrected, or probably will occur one or more times.
Occasional (C)	Possible to occur in time if not corrected.
Rarely (D)	Unlikely to occur but may occur in rare circumstances.

Definitions

Probability	The likelihood that a hazard will result in a mishap or loss (Exposure in terms of time, proximity, and repetition).
Severity	The worst credible consequence that can occur as a result of a hazard.
Hazard	A condition or situation that exists within the working environment capable of causing physical harm, inury, or damage.
Risk	An expression of possible loss in terms of severity and probability (associated with human interaction).

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Incident Risk Assessment Worksheet					1. Incident Name	2. Location			
Identification of Hazards and Risk Assessment					3. Name and Title of Analyst	4. Date			
5. Pre-Control Measures					6. Control Measures (Engineering, Administrative, PPE, Avoidance, Education)	7. Post-Control Measures			
8. Location	9. Hazard	10. Severity Code	11. Hazard Probability Code	12. RAC		13. Severity Code	14. Hazard Probability Code	15. RAC	16. Acceptable Yes/No

Location	Hazard	Severity Code	Hazard Probability Code	RAC	**Control Measures** (Engineering, Administrative, PPE, Avoidance, Education, etc)	Severity Code	Hazard Probability Code	RAC	Acceptable Yes/No

Risk Assessment Worksheet Instructions

The Risk Assessment (RA) Worksheet will identify location(s) of the work project or activity, the name of employee(s) creating the RA, and date created. The approving Agency Administrator (AA), or Superintendent will review the RA and mitigation strategies to ensure risk is at an acceptable level for task or activity. A signed document will be required for apporval of the RA. The supervisor or project leader of the project/task will share information with affected employees through a safety meeting. Employees participating in the project/task will be required to sign RA acknowleding participation in safety meeting and that they have received the necessary training, and understand procedures, protocol and mitigation strategies to reduce risk with the project.

Blocks 1, 2, 3, and 4 – Self explanitory

Block 5 **Pre-Control Measures:** What hazards are involved with the project or activity?

Block 6 **Control Measures:** What mitigation or abatement strategy will minimize risk or exposure (e.g., engineering, administrative, PPE, avoidance, education, etc.)?

Block 7 **Post-Control Measures:** What hazards and risk associated with hazards are still present following mitigation or abatement strategy?

Block 8 **Location:** Where on the incident have the hazards and risks been identified, e.g., Division A, ICP?

Block 9 **Hazards:** What hazards exist with project (e.g., hazard trees, driving, rolling debris, heat, etc.)

Block 10 **Severity Code:** What are the consequences should an unplanned event occur? Refer to Severity table.

Block 11 Hazard **Probability Code:** What is the probability a hazard will be encountered during a project or activity? Refer to Probability table.

Block 12 **Risk Assessment Code (RAC):** Assign a Risk Level prior to assigning mitigation measures. List by RAC number and follow by the frequecy and severity, e.g., 1(A)(1).

Block 13 **Severity Code:** What is the severity or consequences associated with task or project following mitigation or abatement actions?

Block 14 **Hazard Probabilty Code:** What is the probability of exposure or risk following mitigation or abatement actions?

Block 15 **Risk Assessment Code (RAC):** Assign a Risk Level following mitigation strategies, listed by RAC number, followed by frequecy and severity, e.g., 1(A)(1).

Block 16 **Acceptable Level Yes/No:** Is the level of risk acceptable following mitigation or abatement actions? The decision should be made at appropriate management level.

Risk Assessment Code (RAC)

Severity Code

Catastrophic (I): Imminent and immediate, danger of death or permanent disability and/or total equipment loss.

Critical (II): Permanent partial disability or temporary total disability, and/or severe equipment damage.

Significant (III): Hospitalized minor injury or reversible illness, and/or significant equipment damage.

Minor (IV): First aid, minor medical treatment, and/or minor equipment damage.

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Definitions

Probability: The likelihood that a hazard will result in a mishap or loss (exposure in terms of time, proximity, and repetition).

Severity: The worst credible consequence that can occur as a result of a hazard.

Hazard: A condition or situation that exists within the working environment capable of causing physical harm, injury, or damage.

Risk: An expression of possible loss in terms of severity and probability (associated with human interaction).

Safety Officer, S-404

Unit 3 – Logistical Considerations

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Discuss the coordination role of the Safety Officer with the Logistics Section Chief when requesting assistance from the local health department.

2. Discuss the Safety Officer's role in monitoring food, potable water supplies, and sanitation services inspections.

3. Describe the interaction between the Safety Officer and the logistics section.

4. Describe safety hazards a Safety Officer might encounter on an inspection of the base and camp facilities.

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I. ROLE OF THE SAFETY OFFICER WHEN COORDINATING WITH THE LOGISTICS SECTION

Coordination with the Logistics Section Chief and Team Unit Leaders is essential. The key is to see that coordination is being accomplished on schedule with no surprises.

Meetings and interactions with the Logistics Section Chief and clarifying his or her expectations for the Safety Officer(s) on the incident is vital to your success.

Use the unit leaders as technical specialists. Provide review and followup when needed. Work with the Logistics Section Chief to develop your own logistical checklist related to safety.

- The Safety Officer(s) in conjunction with the logistics section at the unit leader level are required to inspect:

  – Base and remote facilities
  – Food
  – Transportation
  – Security
  – Supply and sanitation services

  Confirm the logistics section reviews or inspect contracted services on the incident.

- Use the local agency contact for information regarding area procedures, protocol, phone numbers, and contact persons.

- Coordinate a time for the inspection(s) with appropriate unit leaders and document inspection.

- In many areas of the United States, local jurisdictions (county and state health departments) and state and Federal (Occupational Safety and Health Administration [OSHA]) make unannounced camp and facility inspections.

TIP:

It is a good idea for you or the Facilities Unit Leader to contact the local health department and let them know you are there, tell them how long you think you might be operational, and schedule a time for inspections.

- Decide who will make the contacts, you or the Facilities Unit Leader (FACL); many health departments have not had to handle situations like this so they will be eager to learn about mobile kitchens, showers, etc.

- Deficiencies or suggestions should be implemented and documented by the appropriate unit leader. A followup report must be sent to the local health department and a copy kept in the incident closeout package.

DISCUSSION POINT:

Who has the authority to stop work?

What if it is an unsafe act?

What if it is contractual?

- The health department can be a great source of local knowledge such as:

  – Location of water sources
  – Location of dump sites
  – Problem contractors

II. ROLE OF THE SAFETY OFFICER IN MONITORING CONTRACTED HEALTH AND SANITATION LOGISTICAL SERVICES

Normally the logistical section performs the inspections of national contracts. Your job as a Safety Officer is to work with the logistics section to ensure that inspections were completed and deficiencies documented.

Your role in Type 3 organizations is to work with the team to ensure there are qualified technical specialists available to inspect the national contract assigned to the incident.

A. National Mobile Food Services Contracts

Inspections of the catering services should initially be done by the Food Unit Leader (FDUL) and the Safety Officer. The SOFR should be familiar with the Food Service Contract

Catering service inspections should include:

- Food preparation areas
- Location
- Cleanliness
- Sanitation
- Food handlers (cleanliness and clothing)
- Checking all catering personnel for visible or contagious health problems

Inspect the following during the catering service inspection:

1. Food Storage Areas
    - Refrigeration areas
    - Dry storage
    - Pallets
    - Proper stacking
    - Proper thaw procedures (proper temperatures)
2. Serving and Dining Areas
    - Cleanliness
    - Traffic flow
    - Tripping hazards
    - Insects
    - Positive air flow over serving windows
    - Protection from elements
    - Canopies or tents properly secured
    - Dust abatement
    - Lighting (night)
    - Seating facilities
    - Sanitation and hand wash station (location, use)

3. Potable Water

- Verify lab inspection log to ensure it is up to date for this specific incident
- Potential cross-connection (contamination) with grey water
- Ensure kitchen tank inspection is in accordance with the contract

DISCUSSION POINT:

1. Where can the Potable Water Standards be located?
2. What would you look at when inspecting a canteen-filling operation at a potable water truck and why is that important?
3. What standard does piping and fittings need to meet?
4. All potable water tanks need an access port. Why?

B. National Mobile Shower Facilities Contract (FACL)

1. Grey Water

- Potential for cross-contamination
- Access to grey water storage by heavy equipment
- Leaking bladder or hoses
- Backup plan if the grey water pump truck is late
- Permit to dump
- Ensure approval is in place for grey water disposal.

DISCUSSION POINT:

Why do you need jurisdictional agency engineer approval to dump grey water on agency roads?

Would you dump black water?

2. Potable Water

   Same contract specifications as mobile food contract.

3. Stairs and Railings

   - Slips
   - Falls
   - Wet surfaces

4. Canopies

   - Securely fastened to the ground.
   - Guide wires and ropes clearly flagged, marked, or both.

5. Access

   - For heavy service vehicles
   - Protection of sprinkler systems and grassy areas

C. National Contracts

1. Electrical Connections (FACL)

- Proper grounding
- Ground Fault Interrupt (GFI)
- Well-marked breakers
- Power management (includes too many cords on one circuit)
- Light bulb protection

2. Fuel to Contractors (GSUL)

- Access for fuel trucks
- Locations of propane shutoff valves
- Spill containment
- Proper signs and placards

3. Trash Removal (FACL)

- Grease disposal
- Adequate size and access to proper size dumpsters
- Cleanliness (overall)
- Prompt removal and disposal
- Distance from food preparation area
- Recycling plan
- Animal proofing measures in place

TIP:

All of the above apply to all incident locations.

TIPS:

Things to think about:

- Does the contractor keep up with the busy times in camp schedules?
- When are cleaning times? When are the facilities shut down?
- Who is responsible for the overall operation? Is it part of the kitchen, shower, toilet, or independent contractor?
- Make sure the cleaning schedules meet the needs of the responders as far as time of day, frequency, and the locations of facilities. Does the kitchen get their own set of toilets? What about traffic stop areas, helibases, etc.

III. ROLE OF THE SAFETY OFFICER IN MONITORING BASE SERVICES

There is no standard training for camp crew, so experience and abilities of crew members can vary widely from crew to crew. Physical condition of the crew can have an impact on the safe operation of the base camp. Work with the FACL in regards to managing camp crews.

DISCUSSION POINT:

Many injuries occur in a base or camp environment. As a Safety Officer, discuss how the following affects your incident safety record:

- Does a lot of the activity in camp occur in the dark?
- Are there more injuries when people are fatigued or bored?
- Do you spend a lot of time training camp employees in proper lifting, use of Personal Protective Equipment (PPE), and doing the job correctly the first time compared to training line personnel about the hazards they will face during the day?
- Do you worry about a snag on the line but pitch a tent or park a truck under a snag near camp or helibase?

Anytime you have electricity in camp, there is the potential for problems.

A. Normal Base Services (Incident Command Post [ICP], Base Camp, Helibase) (FACL)

- Workspace (mobile offices, yurts, schools, etc.)
- Proper location of base facilities initially can save time, money, and exposure. This may apply to an established camp that you inherited.
- Temporary facilities need to be built to withstand varying conditions (human, climatic, etc.)
- Accessibility standards
- Environmental factors (heat, light, air conditioning, dust control, ventilation, etc.)
- Electrical and electronic wiring and connections
- Stairs, handrails, and entryways
- Guide wires and connections to the ground
- Occupant capacity (mixing unlike resources, overhead, and overcrowding)
- Noise factor (work environment)
- Signage (language, clarity, location, legality)
- Designated smoking area
- Fire extinguishers (adequate, current, and marked)

1. Sleeping Areas (FACL)

   - Overhead hazards
   - Guide wires and connections
   - Parking control
   - Traffic routes
   - Noise factor (generators, highways, etc.)
   - Day sleeping
   - Capacity (overcrowding)
   - Security
   - Sanitation
   - Animals and pests to include plants
   - Cultural and legal requirements
   - Designated smoking area
   - Emergency notification procedures

2. Refrigerated Units (Noncontracted) (FDUL)

   - Landings and steps meet OSHA standards
   - Proper use of pallets (plastic)
   - Stacking and lifting hazards
   - Distributed load (within trailer)
   - Temperatures and cleanliness (food safety standards)

- Date on lunch should say, “Consume by [month/day]”
- Chock blocks and stable landing gear
- Fueling safety (fuel spill)

3. Toilets (FACL)
   - Pumped on schedule (meets demand)
   - Clean
   - Number and distribution (1 to 20)
   - Location (spike, helibase, staging, road closure, check points)
   - Clear of hazards (common sense location instead of convenience)

DISCUSSION POINT:

Where would pack it in, pack it out apply?

What are the safety concerns?

4. Washing Facilities (FACL)

- Location (sleeping area, eating area, and toilets)

DISCUSSION POINT:

What is the difference between toilet contract wash stations and national contract wash stations?

- Cleanliness
- Power connection
- Lighting
- Servicing
- Hand sanitizer

TIP:

Alternative washing facility methods (bath in a bag or baby wipes) – this will help with Type 3.

5. Traffic Plan (in Camp)

- Control early.
- Plan for heavy vehicle access where needed.
- Correct signage.
- Public safety.
- Speed limit.
- One-way access.
- Designated parking.
- Separate vehicles and pedestrians.

6. Parking Areas

- Designated parking.
- Dust control.
- Adequate space.
- Signage.

7. Communications

- Information Technology (IT) wiring, routing, and grounding.
- Antenna and masts installed and secured correctly.
- Battery storage and disposal.
- Mountain-top repeater sites (coordination with ground support and aviation).

8. Electrical

- Proper transformer and generator needs to meet camp requirements.
- Qualified electrician.
- Electrical backup plan (in case of power failure).
- Cut out/lock out power protection available (OSHA requirement).
- Generators wired correctly.
- Fire extinguisher provided at each generator.

TIP:

- Try to reduce extension cord length whenever possible.
- Mark and weatherproof any connections with plastic and tape.
- Know who did the wiring and make a wiring diagram.
- Know the loads on the circuit and keep them below the load rating.

EXERCISE: Electrical Safety

Purpose: Generator safety

Instructions:
Ask students to do the following:

1. In a camp or base environment, list five items you would look at in relation to generator safety.

2. In a camp or base environment, list five items you would look at in relation to supplying power from a generator to users who need light, power, air conditioning (AC) units, portable heaters, copiers, electronics, and other electrical needs.

End of Exercise.

9. Supply Unit (SPUL)

- Space management (layout, design, access, and drainage)
- Vehicle access
- Loading and unloading trucks
- Licensed operators (forklift)
- Lifting (proper procedures)
- Stacking
- Proper PPE
- Material Safety Data Sheets (MSDS)
- Hazardous materials containment and spill plan
- Hazmat storage (propane, fussees, gas, oil, antifreeze, aerial ignition devices, batteries)
- Fire extinguishers
- Tripping hazards
- Security (signage, barriers, lighting)
- Hose rolling

10. Laundry (FACL)

- Potential of cross-contamination (poison oak, poison ivy, petroleum products, lice, ticks, etc.)
- Laundry unit inspections are similar to shower unit inspections, but the laundry unit is not under a national contract so a local contracting officer is the technical specialist.

DISCUSSION POINT:

Laundry service: How is laundry being packaged? Are temperature and soap effective to remove oils in poison oak, poison ivy, and petroleum products, and to kill lice and ticks, etc.?

11. Pedestrian Areas

- Traffic flow
- Proper footwear (common sense versus comfort)
- Hazard identification
- Night lighting
- Inclement weather
- Mud or dust issues
- Secure area

12. Briefing Area

- Stage construction (stairs, handrails, supports, stability)
- Bulletin boards and display areas
- Sound system
- Sterile environment (no distractions)
- Capacity
- Hazard identification
- Securing of temporary facilities (tents, large tent flies)
- Lighting
- Ventilation

13. Medical Unit

- Location and accessibility to crews and vehicles
- Designated parking for emergency medical transport vehicles
- Security
- Communications
- Power
- Space requirements
- Privacy and treatment issues
- Oxygen (use and storage)
- Hazardous biological waste disposal
- Signage
- Controlled substances

EXERCISE: Hazard Responsibility

Purpose: To identify which unit leaders are responsible for hazards.

Instructions:
List on a flip chart ten (10) potential hazards that may be found at the incident base or camps. Identify the appropriate unit leader for corrective action.

Groups will present their answers to the class.

End of Exercise.

Safety Officer, S-404

Unit 4 – Ground Support and Communications Unit Considerations

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Identify and document deficiencies including vehicle and mechanical equipment and driver or operator qualifications.

2. Describe the interaction between the Safety Officer and the Ground Support Unit Leader.

3. Describe the interaction between the Safety Officer and the Communications Unit.

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I. GROUND SUPPORT UNIT CONSIDERATIONS

The complexities of ground support can be as vast as a “spider web” and can extend well beyond the boundaries of the immediate incident.

The Ground Support Unit is responsible for all the transportation, vehicle, and heavy equipment needs for the incident ranging from personnel pickup and delivery pickup to supporting vehicles for overhead. Their duties include working with agency personnel, ADs, and contract drivers.

The range of support from the Ground Support Unit can include driving on narrow mountain roads or in congested inner cities, or providing medical transport. The interaction the Safety Officer must have with the Ground Support Unit is complex and vital to the safe operations at the incident.

II. GROUND SUPPORT RESPONSIBILITIES

The Ground Support Unit Leader has a responsibility to coordinate with the Safety Officer about any safety related concerns related to Ground Support responsibilities.

A. Equipment Management (ALL Contracted Equipment)

- Inspections
- Agency equipment (rentals, heavy equipment, crew engines, crew carriers, structural, dozers, pack string, boats)
- Proper documentation
- Rentals

B. Operator Management

- Defensive driving practices (congestion, speed, pedestrians, driver skills, fatigue, distractions)
- Driver and operator qualifications and certifications
- Briefing and familiarizing drivers with routes, destinations, and hazards
- Managing shift length to reduce fatigue (no more than 10 hours of driving in a 16-hour duty day; for driver or operator with Commercial Driver's License [CDL], no more than 11 hours of driving in a 14-hour duty day)
- Issuing and requiring use of Personal Protective Equipment (PPE), tools, first aid kit, radio, fire shelter, specialized equipment (chains, tow strap)
- Daily safety meetings (reinforce above, identify changing or changed conditions)

C. Incident Transportation Management

- Signage (route, drop points [DPs], parking) – Incident Sign Ordering Catalog and Incident Sign Installation Guide
- Drivers unfamiliar with incident conditions
- Short sight distances (winding, hilly, brushy roads)
- Narrow, steep roads; single access, no escape route
- Limited parking or backing areas (congestion)
- Prepare and review incident transportation plan
- Inspect roads and bridges used for the transportation of personnel and equipment (driving or parking hazards)

- Inspect parking, repair, and maintenance areas
- Fueling areas
  - Fuel containment procedures
  - Hazardous material storage (mixed fuels, antifreeze, oily rags)
  - Proper signage for fueling area (no smoking, placards, flammables)

DISCUSSION POINT:

Changes in operational plans that affect Ground Support operational safety (sense of urgency, exposure to unscouted access routes, extended driver shifts, inadequate vehicles for conditions and needs)

1. Where would you look to see drivers' hours for personnel who were assigned to Ground Support as drivers?
2. Explain your role in safety management within the Ground Support function.
3. What are five items you would be looking for while in the Ground Support area?

III. COMMUNICATIONS UNIT CONSIDERATIONS

The Communications Unit is responsible for managing incident communications, which includes frequency assignment, technical support, communications center operations, telephones, cell phones, and radios (internal and external).

The Communications Unit works with the national radio communications unit, personnel assigned to the incident, local units, cooperating agencies, contractors, and other incident communication units assigned to fires in the general vicinity to ensure there is no conflict in frequency assignment or coverage.

Challenges for the Communications Unit in supplying effective and reliable communications support can range from multiple incidents, a large city environment, and very remote locations.

As a Safety Officer, your interaction with the Communications Unit will include mitigation, correction, and suggestions.

A. Incident Radio Coverage

- Dead spots and dead zones challenges. Mitigation would be a repeater tower or human repeater.
- Interference with other users (local and sunspots)
- Coordination with medical personnel, air operations, NIFC frequency coordinators, and line personnel

B. Frequency Management

- Multiagency coordination
- Management of various radio systems or multiple agencies communication problems. Mitigation is to order a national radio system.
- Communications plan

C. Systems Management

- Internal team network and internal crew frequencies. Mitigation is to limit use and require incident communication protocols be followed.
- Competition for frequency
- Phone system (cellular and landline)
- Radio cache (priority issues)
- May include satellite service (Digital Subscriber Line [DSL])
- Reprogram radios, repeater maintenance, radio repair
- Clear text in both radio and written communications (language)
- Responder phone roster current and complete

D. Emergency Procedures

- Existing local plans. Mitigation is to blend the incident emergency plan with the local Emergency Operations Center (EOC).
- New or modified plans
- Incident specific
- Incident within an incident (concurrence of the incident management team incident emergency plan)
- Contingency plan in the event of mechanical communication failure

EXERCISE: Communications Mitigation

Purpose: Identify mitigations

Instructions:

1. Groups will be assigned one of the sections from the Communications Unit:
    - Incident radio coverage
    - Frequency management
    - Systems management
    - Emergency procedures
2. Groups Assignment:
    - Pick one topic from their assigned section.
    - Identify an associated hazard.
    - Using the Risk Assessment Code Matrix, assess the probability and severity.
    - Write mitigations, controls, warnings, and remedies.
    - Determine residual risk levels.
3. Group Presentations:
    - Topic and identified hazards
    - Describe how the Risk Management Process was used to determine risk levels.
    - Mitigations, controls, warnings, and remedies

End of Exercise.

Safety Officer, S-404

Unit 5 – Medical Unit Considerations

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Identify roles and responsibilities of the Medical Unit Leader (MEDL) and Safety Officer.

2. Identify wildland fire medical resources.

3. Discuss common misconceptions about Emergency Medical Services (EMS) in wildland fire.

4. Discuss scope of practice and licensing.

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I. INTRODUCTION TO MEDICAL UNIT CONSIDERATIONS

Wildland firefighting, disaster response, and catastrophic events require a unique array of medical services due to remoteness, terrain, scale of the event, and multiple agencies involvement.

There may be a different set of skills required for medical responders in an incident Medical Unit than for the typical 911 or other prehospital short-term patient contact(s).

The incident Medical Unit is responsible for the emergency medical and occupational health care of personnel on incidents. They also monitor and evaluate illnesses or injuries for incident personnel.

Wildland fire operations are structured into two categories—Medical Units to include line-qualified Emergency Medical Technicians (EMTs), ambulance, and medical facility (trailer, yurt, tent); and initial attack medical resources to include Type 3 Incident Management Organization.

Key components of an effective Medical Unit include:

- Using properly licensed personnel
- Practicing sound protocols
- Establishing communications
- Establishing and maintaining relationships with local medical resources

II. INTERACTION WITH THE MEDICAL UNIT

It is important for Safety Officers to form a close working relationship with Medical Unit personnel.

- By keeping an open-door policy with the Medical Unit Leader (MEDL).

- Become familiar with the Incident Command Post (ICP) and spike camp Medical Unit operations.

- Ensure all aspects of injuries and illnesses are addressed for incident personnel.

The Safety Officer and Medical Unit Leader should develop and continually reevaluate the Medical Unit medical transport plans for ground and air, accident trend analysis, and occupational health issues.

The expectation is that the Safety Officer will routinely coordinate with the Medical Unit.

Adequate medical staffing is essential and must constantly be reevaluated to ensure appropriate levels of incident staffing.

A. Medical Unit and Safety Officer Interactions

Medical Unit and Safety Officer interactions will include:

- Review and approve ICS 206 Medical Plan daily:
  - Identify who will be involved in medical transport decisions, ensuring roles and responsibilities are clearly defined and communicated.
  - Staffing and equipment
  - Air-to-ground medical transport protocols (Medical Transport Communication and Coordination chart)
  - Procedures for complex medical transport
- Evaluate medical staffing for daily incident needs (ICS 204, ICS 215, ICS 215A, and ICS 220).

- Review and monitor illness and injury documentation for trend analysis. The documentation may include:

  – Medical Transport Checklist
  – Medical Unit log
  – I-Suite Injury and Illness Module data
  – Compensation for claims documents

- Obtain daily briefings from the Medical Unit Leader.

DISCUSSION POINT:

Why are the daily interactions so important?

B. ICS 206

The Medical Unit prepares the Medical Plan form, ICS 206, but in some instances the Safety Officer or Logistics Section Chief may have to develop an interim plan for medical services until the medical personnel arrive.

C. Lower Complexity Incident Organization

Normally, initial attack, extended attack, and Type 3 incident management organizations use medical resources from their local area.

Lower complexity incidents should be evaluated for the need of emergency medical services. A tool to help determine this need is the Interim NWCG Minimum Standards of Incident Emergency Medical Services (reference Red Book, chapter 7, appendix K).

As a SOFR (Type 3 Safety Officer), you may be asked to assist in determining the need for incident emergency medical services.

Lower complexity incident organizations (Type 3) sometimes use the Incident Commander's Organizer (NFES 2906) as a tool to develop a medical plan for the incident. As a SOFR (Type 3 Safety Officer), you may want to use this publication as a tool as well.

Local dispatch centers are a good resource from which to obtain local unit emergency medical plans.

D. Air and Ground Medical Transport

Considerations:

- Risk exposure to pilot and flight crew
- Lengthy patient extraction time
- Multiple patients
- Terrain or road conditions that may restrict ground transport capabilities.
- Distance or flight time to the appropriate emergency medical facilities or burn centers.

DISCUSSION POINT:

- What are other considerations for medical transport?
- How are nonemergency medical patients transported from the line?
- What are the implications when there are multiple patients requiring air transportation?
- Where would you document your decisions for aviation and ground transport?

E. Burn Injury Criteria

As a Safety Officer, it is important that you know and understand the burn injury criteria in order to interact with the Medical Unit Leader when they determine the medical response for burn injuries.

Burn injury criteria is outlined in Chapter 07 of the Interagency Standards for Fire and Fire Aviation Operations (Red Book) and in the NWCG memo, reference number NWCG#012-2008.

III. WILDLAND FIRE MEDICAL RESOURCES AND TOOLS

There are various resources and tools that the Safety Officer should be familiar with.

- The National Wildfire Coordinating Group (NWCG) Incident Emergency Medical Subcommittee (IEMS) has established some standards for Medical Units. (www.nwcg.gov/branches/pre/rmc/iems/index.html)
  - NWCG Minimum Standards for Medical Units document
  - NWCG Clinical Treatment Guidelines

DISCUSSION POINT:

Instructor will go to the IEMS Web site (www.nwcg.gov/branches/pre/rmc/iems/index.html) to review the various links and topics and initiate a discussion with the students on the resources and tools available on the Web site.

- Local unit's Incident Emergency Plan
- I-Suite/E-Suite Injury/Illness Module

  A module created to identify and track injuries and illnesses that occur on an incident. Once information is uploaded into the system, real-time trend data is available.

DISCUSSION POINT:

Who inputs I-Suite/E-Suite information?

How does the patient care report get transported with the patient?

- Who needs this information?
- Who can document this information?

IV. LEGAL ISSUES

It is important that incident Safety Officers and medical personnel recognize and understand the liabilities and risks associated with providing medical care.

A. Misconceptions

- The Good Samaritan Law will protect Emergency Medical Services (EMS) operations on wildland fires.
- Wildland fire is on "Federal" land so State Law does not apply.
- A medical responder with a National Registry EMS card is qualified under scope of practice to function as an EMT on an incident (EMTs are required to have a state license).

B. Liability

- Good Samaritan laws do not necessarily protect medical personnel from liability for incident EMS.
- The most appropriate protection from liability is for EMS providers to operate within their scope of practice.

C. Scope of Practice

The most appropriate protection from liability for EMS providers and the agencies is for EMS providers to understand and to operate within their scope of practice.

Components

There are four required components that define the scope of practice for medical personnel.

- Trained in the appropriate EMS level.
- Must be certified as capable (tested based on criteria).
- State licensed to practice.
- Authorized by a medical director.

D. Scope of Practice Issues

EMS providers may assume that a National Registry certification card enables them to practice. They may present this certification card to the Incident Qualifications and Certification (IQCS) training official who may add the EMT rating to their red card.

This information is then entered into the Resource Ordering and Status System (ROSS), and these individuals often end up as EMS personnel on wildland fires even though they are not legally licensed to practice.

A National Registry certification card only identifies that the individual has successfully completed the training required for their EMS level.

A state license card verifies the EMS provider has a medical director and is licensed in the state to practice at the identified EMS level.

An incident qualifications card (red card) should reflect the correct level of certification at which the EMS provider is licensed.

E. Limited Request for Recognition Form

1. Purpose

The purpose of the Limited Request for Recognition form is to advise the state EMS office (in the state where the incident is located) that you have established a Medical Unit within their jurisdiction, and you are identifying out-of-jurisdiction (the state's) EMS personnel who are going to be rendering care for a limited period of time.

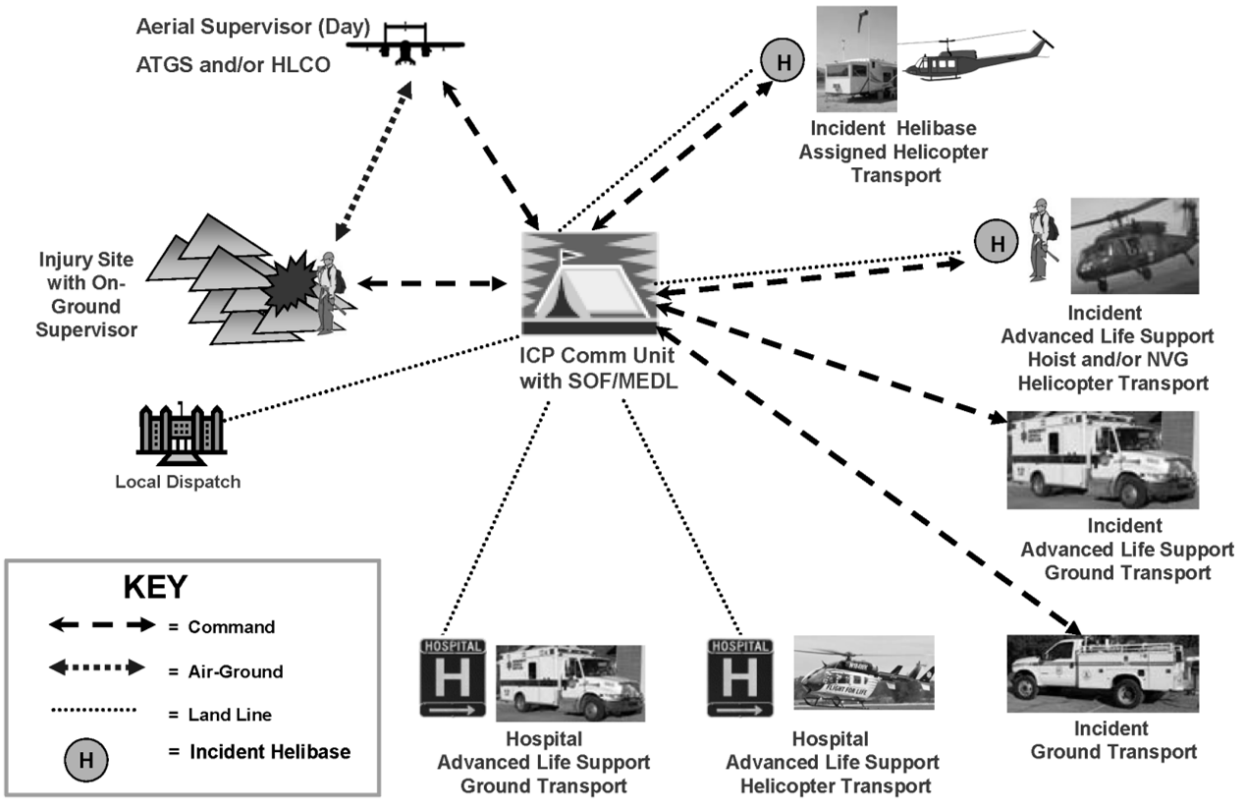
This form does not provide certification or licensure reciprocity (mutual exchange of state EMS licenses). It only notifies authorities of the presence of out-of-state EMS resources.

2. Process

A new Limited Request for Recognition form must be completed and submitted to the appropriate state EMS office within 24 hours after EMS operations have been established.

Not all states recognize the Limited Request for Recognition form. It is the responsibility of the Medical Unit Leader (or the Incident Medical Specialist Manager or Alaska Firemedic Manager, if so designated) to ensure compliance with each state's process.

Medical Transport Communication and Coordination



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MEDICAL TRANSPORT CHECKLIST

End State: Patient has been stabilized and transported to definitive care in the timeliest manner possible.
Definitions:
Patient Severity (stable or unstable): Equates to urgency and whether situation is "medevac" or "non-emergency medical transport."
Medevac: Unstable patient has a life threatening injury or illness. One or more major body systems (Respiratory, Circulatory, and/or Neurological) are involved.
Non-Emergency Medical Transport: Stable patient has a non-life threatening injury or illness that causes them to be non-ambulatory.

1. COMMAND/CONTROL			
Incident Name: Geographic Name + 'Medical' (Ex: Trout Meadow Medical)			
IC Name:		MIC (Medic in Charge):	

2. PATIENT ASSESSMENT			
Patient #1	M / F	Age:	Weight:
	Nature of Injury:		
	Breathing: YES / NO		Conscious: YES / NO

3. PATIENT CURRENT LOCATION	
Datum WGS84	*Example: N 0° 00.00' x W 0° 00.00'*
LAT/LONG:	
Geographic Location Example: Spike Camp, H-3, DP 21, 3 miles NW of Guard Station, etc.	

4. MEDICAL TRANSPORT NEEDED	
MEDEVAC	IMMEDIATE EVACUATION IS CRITICAL; URGENT NEED FOR ADVANCED LIFE SUPPORT GROUND OR HELICOPTER TRANSPORT
NON-EMERGENCY MEDICAL TRANSPORT	EVACUATION IS NOT CRITICAL; NON-URGENT NEED FOR GROUND OR HELICOPTER TRANSPORT

5. ADDITIONAL RESOURCES AND EQUIPMENT (Check as applicable)	
◯ Trauma Bag	◯ Paramedic
◯ Spinal Immobilization Device	◯ Personnel or Crews
◯ Oxygen	◯ Litter **or** ◯ Wheeled Litter
◯ IV/Fluids	◯ Rope Rescue
◯ EPI	◯ Other:
ETA(s) on Scene:	

6. COMMUNICATIONS		
Frequency Name/Function (e.g., Air/Grnd)	Receive (Rx)	Transmit (Tx)
Air/Air VHF-AM Frequency		
If aerial supervision available, Call Sign:		

7. LOGISTICAL TRANSPORT (Evacuation method is situationally dependent and is based on risk mgmt: terrain, road access, day/night, weather, visibility, distance to helispot or road, etc.)	
EXTRACTION	**RESOURCE(S) (Check as needed)**
◯ Self-Extract With Driver	◯ Ground Transport
◯ Currently at Road	◯ Advanced Life Support Ground Transport
◯ Carry-Out to Road	◯ Incident Assigned Helicopter Transport
◯ Carry-Out to LZ	◯ Advanced Life Support Heli Transport
◯ Hoist/Short-Haul	◯ Hoist/Short-Haul Equipped Helicopter
◯ Other:	◯ Night-Vision (NVG) Equipped Helicopter
ETA(s) on Scene/Notes:	
ATD of Patient Via:	At (Time):
ETD: Scene to Medical Facility:	Facility:

8. PATIENT LZ/EVAC LOCATION (Pick-Up Location)	
Datum WGS84	*Example: N 0° 00.00' x W 0° 00.00'*
LAT/LONG:	
If applicable, Hazards and Safety Notes at LZ for air evacuation	

9. CONTINGENCY PLANNING (Considerations: If primary options fail, what actions can be implemented in conjunction with primary evacuation method?)

NOTES

MEDICAL PLAN	1. Incident Name	2. Date Prepared	3. Time Prepared	4. Operational Period

5. Incident Medical Aid Stations

Medical Aid Stations	Location	Paramedics	
		Yes	No

6. Transportation

A. Ambulance Services

Name	Address	Phone	Paramedics	
			Yes	No

B. Incident Ambulances

Name	Location	Paramedics	
		Yes	No

7. Hospitals

Name	Address	Travel Time		Phone	Helipad		Burn Center	
		Air	Grnd		Yes	No	Yes	No

8. Medical Emergency Procedures

9. Prepared by (Medical Unit Leader)	10. Reviewed by (Safety Officer)

ICS 206 8/78 NFES 1331

Incident Communication Center Protocol Standard Elements	
COML/designee will ensure the following information is obtained and recorded during medical emergencies:	
1. Determine the nature of the emergency.	
2. Medical injury/illness? If injury/illness is it life threatening?	
3. If life threatening, clear designated frequency for emergency traffic.	
4. Identify the on-scene Point of Contact (POC) by resource and last name (i.e. POC is TFLD Smith).	
5. Contact Medical Unit Leader immediately.	
6. Request POC to provide number injured, patient assessment, and location (geographic and GPS coordinates).	
7. Identify on-scene medical personnel by position and name (i.e. on-scene medical personnel is EMT Jones).	
8. Request preferred method of patient transport.	
9. Determine if any additional resources and/or equipment are needed.	
10. Document all information received and transmitted on the radio or phone.	
11. Document any changes in the on-scene Point of Contact or medical personnel as they occur.	
Prepared by (Medical Unit Leader)	10. Reviewed by (Safety Officer)

Reference:
NWCG#025-2010 Memorandum, dated 5/25/10 – Attachment B

ICS 206 – Block 8, Emergency Medical Procedures (cont'd)

In the event of a medical emergency provide the following information to the Communications Unit

1. Declare the nature of the emergency.
    a. Medical injury/illness? If injury/illness is it Life Threatening?
2. If Life Threatening, then request that the designated frequency be cleared for emergency traffic.
3. Identify the on-scene Point of Contact (POC) by Resource and Last name (i.e. POC is TFLD Smith),
4. Identify nature of incident, number injured, patient assessment(s) and location (geographic and GPS coordinates),
5. Identify on-scene medical personnel by position and name(i.e. EMT Jones),
6. Identify preferred method of patient transport,
7. Request any additional resources and/or equipment needed,
8. Document all information received and transmitted on the radio or phone,
9. Identify any changes in the on-scene Point of Contact or medical personnel as they occur,

Emergency Medical Procedures (Provide detailed emergency medical procedures by Division/Group, Spike Camps, etc. or any staffed incident or event location)

Prepared by (Medical Unit Leader)	10. Reviewed by (Safety Officer)

Instructions for Completion of ICS 206 Block 8, Emergency Medical Procedures

As appropriate the following information should be included in the emergency medical procedures for any staffed incident or event location. The plan must be reviewed and/or updated and approved at each Planning Meeting.

- Include timeframes (ETEs and ETAs) from and to specific locations
- Include GPS coordinates for key locations such as spike camps, drop points, helispots, etc.
- List all potential evacuation resources and/or equipment assigned to the incident/event
- Identify other resources and/or equipment (types, capabilities, availability) not assigned to the incident/event but possibly available if requested
- Identify contingencies (alternate plan or procedure if the preferred option becomes unavailable or identified resources cannot perform the mission)
- Identify specific concerns by location (division, group, geographic area or location)
- Identify environmental influences or factors and resource status changes that might keep the preferred option from working
- Compare to 215-A for mitigation of specific hazards associated with lengthy travel times to access Advanced Life Support
- If the primary evacuation plan is to use aviation, then a secondary plan should be identified including time frames for patient extraction

The procedures must be communicated to the entire incident/event and any external partners/cooperators involved with the incident.

Reference:
NWCG#025-2010 Memorandum, dated 5/25/10 – Attachment C

NATIONAL WILDFIRE COORDINATING GROUP

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

MEMORANDUM

Reference: NWCG#012-2008

To: NWCG Executive Board

From: NWCG Chair

Date: July 10, 2008

Subject: Standards for Burn Injuries

The following standards will be used when any firefighter sustains burn injuries, regardless of agency jurisdiction.

After on-site medical response, initial medical stabilization, and evaluation are completed; the agency administrator or designee having jurisdiction for the incident and/or firefighter representative (e.g. Crew Boss, Medical Unit Leader, Compensations for Injury Specialist, etc.) should coordinate with the attending physician to ensure that a firefighter whose injuries meet any of the following burn injury criteria is immediately referred to the nearest regional burn center. It is imperative that action is expeditious, as burn injuries are often difficult to evaluate and may take 72 hours to manifest themselves. These criteria are based upon American Burn Association criteria as warranting immediate referral to an accredited burn center.

The decision to refer the firefighter to a regional burn center is made directly by the attending physician or may be requested of the physician by the agency administrator or designee having jurisdiction and/or firefighter representative.

The agency administrator or designee for the incident will coordinate with the employee's home unit to identify a Workers Compensation liaison to assist the injured employee with workers compensation claims and procedures.

Workers Compensation benefits may be denied in the event that the attending physician **does not agree** to refer the firefighter to a regional burn center. During these rare events, close consultation must occur between the attending physician, the firefighter, the agency administrator or designee and/or firefighter representative, and the firefighter's physician to assure that the best possible care for the burn injuries is provided.

Burn Injury Criteria

- Partial thickness burns (second degree) involving greater than 5% Total Body Surface Area (TBSA).
- Burns (second degree) involving the face, hands, feet, genitalia, perineum, or major joints.
- Third-degree burns of any size are present.
- Electrical burns, including lightning injury are present.
- Inhalation injury is suspected.
- Burns are accompanied by traumatic injury (such as fractures).
- Individuals are unable to immediately return to full duty.

When there is any doubt as to the severity of the burn injury, the recommended action should be to facilitate the immediate referral and transport of the firefighter to the nearest burn center.

As list of possible burn care facilities can be found at:
http://www.blm.gov/nifc/st/en/prog/fire/im.html.

For additional NWCG incident emergency medical information see:
http://www.nwcg.gov/teams/shwt/iemtg/index.html

If you have any questions, please contact your agency representative to the Safety and Health Working Team.

Safety Officer, S-404

Unit 6 – Operational Considerations

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Identify correct incident personal protective equipment (PPE) use.

2. Discuss significant changes in weather, fire behavior, and identified hazards. Ensure they are communicated to incident personnel.

3. Discuss operational safety and tool and equipment inspection procedures.

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In Unit 1, Responsibilities and Interactions of the Safety Officer, you learned firefighter safety information. This unit describes your duties as a Line Safety Officer within your assigned area.

I. FIRELINE OPERATIONS

As a Line Safety Officer, you are expected to be visible and available for line personnel. Continually monitor your radio for any unusual or safety-related conversations.

You are expected to keep overhead aware of your location and check in and check out with line supervision.

Remember, you are a role model for personnel on the line so you need to have full Personal Protective Equipment (PPE), including a tool.

TIP:

Use your operational personnel and mentor trainees (share work).

II. GENERAL GUIDELINES

A. Supervision

- Are there enough experienced personnel, is there appropriate supervision, and is the span of control within parameters to accomplish the task at hand?

- Is the risk management process being used?

  – Changes in complexity
  – New hazards
  – Acceptable risk
  – Lookouts posted

- Do we have control of the work environment?
  - Are actions being coordinated by the division supervisor?
  - Are adjoining forces communicating?
  - What is the plan for a worst-case scenario?

B. Personnel Factors

- Correct use of PPE
- Fitness and qualifications
- Radio congestion
- Monitor interpersonal relationships
- Hydration
- Fatigue
- Does everybody understand the plan?

C. Communication

- Is adequate communication in place (Incident Command Post [ICP], between divisions, with aircraft)?
- What are the communication pathways (verbal, radio) between operations and nonfire personnel (bus drivers, supply drivers, ologists, etc.)?
- Are unpredicted weather changes being communicated?
- Are air-to-ground frequencies and air attack being used properly?
- Are the tactical channels sufficient for the geographical areas?

D. Transportation

- Driving
- Travel route times
- Are drop points properly marked?
- Traffic congestion at drop points
- Have the bus drivers been properly briefed and do they understand how to get out?
- Is there a plan to get people out in a worst-case scenario?
- Road management (snags and rolling debris)

E. Tools and Equipment

- Proximity of line personnel working with hand and power tools.
- All-terrain vehicles (license, topography, safe techniques, policy requirements).
- Do we have the proper equipment for the job; e.g., are chainsaws being used when we could be using specialized equipment?
- Are tools being used in the proper way, e.g., proper felling techniques, helimopping?
- Are the crews staying the proper distance from heavy equipment?
- Is it really necessary to use aviation resources?
- Are they practicing safe bucket procedures?

F. Firing Operations

- Qualification
- Communication and coordination when implementing burnout operations
- Proper transportation and storage
- Proper techniques and use of equipment
- Aerial ignition (Plastic Sphere Dispenser [PSD], helitorch, RX plan)

G. Fire Environment

- Is the safety zone adequate for everyone on the line?
- Do I need to concentrate on escape routes versus safety zones?
- Are crews prepared and is there a plan for inclement weather?
- Are risk management practices being applied?
  - Fire environment
  - Tactics
- Urban interface
  - Are urban interface "watch out situations" being applied?

DISCUSSION POINT:

What are we missing?

What will the work environment look like in 3 days?

Safety Officer, S-404

Unit 7 – Aviation Considerations

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Given the tools, be able to coordinate with the appropriate personnel to complete a risk assessment of aviation operations and enact mitigations to lower the risk to an acceptable level.

2. Given the tools, be able to participate in a safety briefing at an airbase (helibase, tanker base, Single Engine Air Tanker [SEAT] base, air attack base).

3. Given the tools, ensure helibase fire protection and crash-rescue are up to Interagency Helicopter Operations Guide (IHOG), Chapter 12, standards.

4. Given the tools, be able to brief the Incident Commander (IC) on aviation hazards related to the incident.

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I. INTRODUCTION TO AVIATION OPERATIONS

Aviation operations can be complex. Mishaps may result in serious injuries or fatalities. The Safety Officer should monitor air operations (rotary-wing and fixed-wing) on an incident along with the aviation function.

Monitor Aviation Operation Activities

The Incident Management Team is responsible for the safety of all incident aviation operations.

Aviation operations should be examined to ensure they do not pose hazards to people on the ground, for example:

- Retardant drops knocking branches out of trees
- Bucket drops not being coordinated with ground personnel
- Longline operations and clearance from obstacles

EXERCISE: Klamath Longline Fatality Video

Purpose: To give students experience with potential issues with longline delivery.

Materials Needed: Blue pages of the Incident Response Pocket Guide (IRPG) (aviation section)

Instructions:

1. View the Klamath Longline Fatality Video.
2. Discuss and document the items listed below as they relate to the Longline Mission (aviation section) in the IRPG.
    - Longline operations
    - Crew placement
    - Communication with pilot
    - Crew briefings (see something, say something, speak up)

3. Group presentations of findings.

End of Exercise.

DISCUSSION POINT:

After viewing Sky Crane video, class will discuss crew placement, communications, reporting incidents, investigation, etc.

EXERCISE: IHOG, Appendix F – Daily Helicopter Operations Briefing/Debriefing Checklist

Purpose: The purpose of this discussion is to ensure students are aware of the tools available to assist them with safety issues related to briefing and debriefing air base personnel.

Materials Needed: Interagency Helicopter Operations Guide (IHOG), Appendix F – Daily Helicopter Operations Briefing/Debriefing Checklist

Instructions:
Refer to the IHOG, Appendix F. Discuss the following questions:

- Are load Calculation Forms completed and accurate?
- Are Flight Hazard Maps current and posted?
- Are Safety Messages briefed and posted?
- Are SAFECOMS being used and shared?
- Is a Crash-Rescue Plan in place?
- Are flight safety briefings and debriefings being conducted?
- Are there any concerns regarding helispots, dip sites, or longline drop sites that need to be brought forward?

As a Safety Officer, you need to ensure that aviation safety requirements are being implemented and followed. Appendix F will help you to identify potential safety deficiencies.

Additionally, use aviation personnel as subject matter experts to validate your observations.

End of Exercise.

II. INTERACTION WITH AIR OPERATIONS BRANCH

Safety Officers may not know all the details of a safe aviation operation. Be sure you enlist the advice of the air operations personnel. Use common sense and observation when visiting these locations. Be open, friendly, and ask questions, and let them know you are available to help them learn and that you may need their expertise.

A. General Considerations

- Identify and discuss hazards or unsafe conditions with aviation personnel for immediate mitigation.
- Review compliance with agency flight duty policy and duty limitations with appropriate manager.
- Review aircraft incident and accident reports with aviation personnel.
- Provide assistance to aviation personnel in implementing preventative measures to ensure risks have been minimized or eliminated.
- Confer daily with the aviation personnel on general aviation activities.
- Periodically attend the aviation briefings and debriefings.
- Monitor radio communications for congestion (check out Very High Frequency [VHF] radio if possible from Communication Unit).
- Ask the appropriate air operations personnel if critical aviation positions are staffed to ensure appropriate span of control.

B. Helibase Considerations

Topics to discuss with aviation personnel at bases could include:

- Generators in secure (risk of fire and noise minimized) location; fire extinguishers available and positioned for emergency access
- Briefings attended; briefing environment “sterile” (no distractions, attendees attentive)
- Sleeping areas free of rolling (vehicles) and overhead hazards (snags)
- Helibase entrance considers traffic patterns, congestion, and vehicle type; traffic signage in place; risks from distracted public recognized and mitigated
- PPE in use on deck; full mission briefings provided to overhead (contractors in accordance with the contract)
- Changing conditions and hazards recognized, communicated and mitigated
- Medevac procedures and protocol in place (insertion and medical equipment on-site; air, helibase, and medical personnel prebriefed)
- Aerial and overfly hazards identified and mitigated (in accordance with the unit hazard map)
- Crash-rescue plans developed, briefed, practiced, frequently refreshed
- Incident Action Plan (IAP) Medical Plan aligned with medevac procedures at helibase (phone numbers, latitude and longitude, contact procedures consistent between documents)
- Fueling operations and procedures approved and confirmed, and containment procedures in place

C. Fixed-Wing Base Considerations

Topics to discuss with aviation personnel at bases could include:

- Adequate communications – discuss with air base personnel Air Tactical Group Supervisor (ATGS) if frequencies are adequate and ground personnel are using proper procedures and terminology.

- Internet access for pilots and ATGS for weather, notice to airmen (NOTAMs), temporary flight restrictions (TFRs), incident action plans (IAPs)

- Proper facilities for pilots and ATGS (rest area, bathrooms, eating facilities, etc.)

- Pilot read file

- Staffing and overhead assigned to supervise operations

- PPE in use on deck; full mission briefings provided to pilot

- Changing conditions and hazards recognized, communicated, and mitigated

- Medevac procedures and protocol in place; ensure ATGS has a copy of the medical plan and incident emergency plan.

D. Hazardous Materials Considerations

Hazardous materials are often stored and handled at helibases and at fixed-wing bases. Topics to discuss with aviation personnel at bases could include:

- Secured containers
- Hazardous materials placards
- Proper storage (Occupational Safety and Health Administration [OSHA] standards)
- Spill containment

E. Operational Considerations

- Tactical and mission objectives clear (mission necessary; only personnel necessary to the mission being flown)
- Assess sense of urgency. Are tactical, logistical, and administrative operations calm and deliberate?
- Operational helispots preapproved by qualified overhead; aerial hazards identified and mitigated
- Retardant and helibucket drop zones confirmed clear of ground personnel
- Changed or changing conditions recognized, communicated, and accounted for
- Ensure that spike camps do not encroach on helispots.
- Ensure that helispots are staffed appropriately
- Is dip site staffing necessary?

III. AERIAL IGNITION OPERATIONS

Firing Operations

- Operations conducted in accordance with the Interagency Aerial Ignition Guide

- Communication plan in place; ensure discreet frequencies are available

- Aerial ignition (burn plan)

- Helitorch

  – Crew qualifications current
  – Pilot qualifications, aircraft
  – PPE
  – Use restrictions
  – MSDS sheets
  – Proper storage and spill containment

- Plastic sphere dispenser

  – Pilot, operator, aircraft qualifications
  – Proper storage

EXERCISE: IHOG, Chapter 12 – Fire Protection and Crash-Rescue

Despite the best efforts of all involved in aviation operations, it is recognized that accidents can and do occur. Within the limits inherent in operating at remote bases, the potential for accidents demands immediate and correct response to prevent serious injury and/or property damage.

Purpose: To have students consider catastrophic events at a helibase or air base.

Materials Needed: IHOG, Chapter 12

Instructions:
Refer to the IHOG, Chapter 12. Discuss the following questions:

- Is there an adequate crash-rescue plan in place?
- Have crews been briefed on the plan and know what to do?
- Have drills been conducted or simulated on a regular basis?
- Is there a fire department in the local area? Have they been contacted to support the helibase?

End of Exercise.

EXERCISE: IHOG, Appendix C – Emergency Response and Incident, Hazard, and Accident Reporting

Purpose: Have students consider preparations for catastrophic events offsite.

The type of information listed below should be supplied by the host unit, but you need to work with your Medical Unit Leader and your Air Operations Branch Director to confirm this information is correct and ensure it is shared between functions.

Materials Needed: IHOG, Appendix C; Medical Plan ICS 206; and SAFECOM Aviation Safety Communiqué on hospital latitude and longitude (HO 7-1)

Instructions:
Refer to the IHOG, Appendix C, the Medical Plan ICS 206 from Unit 5: Medical Unit Considerations and the SAFECOM on hospital latitude and longitude (HO 7-1).

Discuss potential problems and options related to agency aircraft landing at medical facilities using the following questions:

- Has latitude and longitude been confirmed?
- Is the hospital landing area approved for agency aircraft and will hospital allow it?
- Have radio frequencies been verified for emergency traffic?
- Has information been obtained and posted for landing restrictions and helipad capabilities?
- Have alternate landing sites for emergency transport been verified and posted?

End of Exercise.

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Safety Officer, S-404

Unit 8 – Reporting and Accident Investigation

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Identify the importance of reporting, and discuss the different types of reporting tools.

2. Discuss the Safety Officer's role and responsibilities with regard to incident emergency procedures and accident investigations.

3. Identify the basic steps for incident emergency procedures, accident investigation, and documentation.

4. Identify different types and levels of authority of accident investigations.

5. Discuss protocols when conducting accident investigations.

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I. INTRODUCTION TO REPORTING AND ACCIDENT INVESTIGATION

The ultimate goal of a safety program is to prevent accidents from occurring. To achieve this goal, we need to recognize small indicators before they result in accidents.

Reporting and taking appropriate followup actions (e.g., including accident investigation) will improve safety and effectiveness for organizational operations. It is important to understand and follow the overall process for accident investigations.

This unit is **not** designed to train you to be an accident investigator. Basic accident investigation courses are widely available and are recommended as a valuable continuing education that will assist you in fully functioning as a Safety Officer.

II. SAFETY TRIANGLE AND REPORTING

The Safety Triangle graphic represents the results of studies over the years beginning in the industrial revolution. These studies have found that, statistically, for every 600 near misses when appropriate control measures are not put into place, a disabling injury or fatality is likely to occur. (This ties back to the Risk Management unit.)

A. Safety Triangle

- Disabling Injury or Fatality
- Significant Injury or Property Damage
- Minor Injury or Property Damage
- Near Miss

"A reporting culture is a safety culture."
(Weick and Sutcliff)

B. Reporting

As illustrated in the safety triangle, most events occur with small indicators or weak signals; these indicators are often called near-miss events. This is why it is critical to encourage and support reporting of all incidents (close calls and near misses), not just the events that lead to accidents.

Respective agencies have agency-specific reporting requirements and systems that should be followed.

However, the following reporting tools are available for the entire wildland fire community.

- SAFENET – A tool for reporting and documenting correction of unsafe situations or close calls in wildland fire.

- SAFECOM – Used to report any condition, observation, act, maintenance problem, or circumstance with personnel or the aircraft that has the potential to cause an aviation-related mishap.

III. EMERGENCY PLANNING

The Safety Offer should assist with establishing Incident Management Team (IMT) Standard Operating Procedures (SOPs) for emergency responses; within the SOPs, an Incident Emergency Plan (IEP) shall be included.

It is helpful to get a copy of local unit's incident emergency plans during in-briefing. These plans should include unit's medical emergency plans and protocols for ordering local area emergency medical response resources.

Ensure medical emergency actions are implemented according to the standard Medical Emergency Procedures found in the IEP.

- Ensure accident scene is secured.
- Determine type of accident.
- Start the preliminary investigation.

A. Initiating Emergency Response Protocols

The Dutch Creek Fatality in 2008 resulted in the establishment of protocols and guidelines that are included as part of the National Wildfire Coordinating Group (NWCG) standards for incident emergency planning and response.

Protocols for initiating emergency situations are established in the IEP. Once an emergency has been declared, the IEP will be implemented.

The Safety Officer must ensure that all command and general staff personnel have reviewed and understand the protocols outlined in the IEP.

It is a recommended business practice for the IMT to run a table top simulation to validate the plan and ensure all team members have a clear understanding of their role in an emergency.

B. Emergency Reporting

Any incident personnel can initiate emergency medical actions according to the procedures outlined in the Incident Medical Plan (ICS 206).

Emergency reporting has seven basic steps. Once an emergency situation has been declared, the following seven basic steps can be found in the IEP:

1. Step 1

   First priority is to ensure onsite medical care is given for the injured.

2. Step 2

   Make notifications as outlined in the IEP.

3. Step 3

   Assign personnel to secure the scene from further injuries or disturbance (flagging, barricades, signing, etc.).

4. Step 4

   Start the preliminary investigation:

   - Document site, gather only perishable evidence, and take photos.
   - Gather names and contact numbers for witnesses.
   - Begin completing Motor Vehicle Accident Report, SF-91, and Statement of Witness, SF-94, for motor vehicle related accidents.
   - Document all medical treatment that occurred.

5. Step 5

   Determine level of accident investigation. The level of the accident will determine followup actions.

6. Step 6

   Notify and coordinate with the local authorities that have jurisdiction (local unit, law enforcement agency, etc.).

7. Step 7

   Ensure that initial accident documentation is complete. For wildland fire fatalities or entrapments, complete form "PMS Form 405-1 Wildland Fire Fatality and Entrapment Initial Report" (available on Publications Management System [PMS] Web site, in Other Form's section).

IV. ACCIDENT INVESTIGATION

Do not lose continuity of operations; remember why you are there, to manage the incident.

Accidents, serious injuries, fatalities, deployment of fire shelters, or any or all of these should not interfere with the primary duties and responsibilities of the Safety Officer, but may require involvement during the initial stages.

Depending on the complexity of the accident, determine the need for Subject Matter Experts (SMEs) to conduct or assist with the accident investigation.

A. Types and Levels of Investigation

Investigation Authority

Federal wildland fire agencies:

The Review and Investigation Requirements matrix, located in the Interagency Standards for Fire and Fire Aviation (Red Book, BIA

Blue Book)**,** outlines the wildland fire event, review and investigation type, and management level of investigation authority.

State and local jurisdictions:

Level of investigations (other than Serious level) may vary among state and local jurisdictions and will require contact with the respective jurisdictional agency to determine levels and processes.

1. Serious Wildland Fire Accident (National Authority)

   An unplanned event or series of events that resulted in death, injury, occupational illness, or damage to or loss of equipment or property. For wildland fire operations, a serious accident involves any of the following:

   - One or more fatalities.
   - Three or more personnel who are inpatient hospitalized as a direct result of, or in support of, wildland fire operations.
   - Property or equipment damage of $250,000 or more.
   - Consequences that the Designated Agency Safety and Health Official (DASHO) judges to warrant Serious Accident Investigation.

   Remember – authority for conducting serious accidents is **only** at the national level (IMTs nor local unit have authority at this level). The national level may delegate down to lower organizational level.
   Be prepared to provide a liaison to Serious Accident Investigation Team.

   The level of authority for the types of accidents listed below is based upon the severity of the incident or accident.

2. Wildland Fire Accident

An unplanned event or series of events that resulted in injury, occupational illness, or damage to or loss of equipment or property to a lesser degree than defined as “serious wildland fire accident.”

3. Near-miss

An unplanned event or series of events that could have resulted in death, injury, occupational illness, or damage to or loss of equipment or property but did not.

4. Entrapment

A situation in which personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised.

Entrapment may or may not include deployment of a fire shelter for its intended purpose (NWCG Glossary of Wildland Fire Terminology, www.nwcg.gov/pms/pubs/glossary/p.htm).

Entrapment may result in a serious wildland fire accident, a non-serious wildland fire accident, or a near-miss.

An additional definition that is sometimes used in conjunction with “entrapment” is “burnover”:

Burnover, as defined by NWCG Glossary: An event in which a fire moves through a location or overtakes personnel or equipment where there is no opportunity to utilize escape routes and safety zones, often resulting in personal injury or equipment damage.

5. Fire Shelter Deployment

Fire shelter deployment is the removing of a fire shelter from its case and using it as protection against fire (NWCG Glossary of Wildland Fire Terminology).

Fire shelter deployment may or may not be associated with entrapment. Fire shelter deployment may result in a serious wildland fire accident, a wildland fire accident, or a near miss.

6. Considerations for Conducting Accident Investigations

Determine if level of accident investigation can be conducted internally…remember not to let the investigation interfere with the primary duties and responsibilities of your role as a Safety Officer.

Determining level of investigation may require direction from local agency administrator and by injured employee's agency.

If needed, obtain appropriate SMEs to conduct accident investigation.

Higher level (beyond minor injury or property damage) accident investigations may need approval or delegation of authority from the jurisdictional agency administrator, or both.

Critical Incident Stress – after experiencing a significant or traumatic event (e.g., accident or close call); those who were involved may need to be offered Peer Support or Critical Incident Stress Management. Coordinate with local jurisdictional agency with request.

B. Resources and Information

Additional accident investigation information can be obtained from:

NWCG Interagency Serious Accident Investigation Guide. (This guide is pending approval. A course update will be posted when it is available.)

Accident Investigation Resources
(www.nifc.gov/safety/safety_reprtsInvest.html)

NWCG Interagency Incident Business Management Handbook, Chapter 70 (motor vehicle accident forms)
(www.nwcg.gov/pms/pubs/large.html#iibmh)

NWCG Incident Response Pocket Guide (IRPG) – Vehicle Accident Operations (yellow pages)

Interagency Standards for Fire and Fire Aviation (Red Book), Chapter 18
(http://www.nifc.gov/policies/pol_intgncy_guides.html)

BIA Wildland Fire and Aviation Program Management and Operations Guide 2011, Chapter 18
(http://www.bia.gov/nifc/bluebook/index.htm)

EXERCISE: **Burnover and Shelter Deployment Scenario**

Purpose: Students will apply the knowledge they gained from the unit to identify the proper steps of Emergency Response and Accident Investigation procedures.

Materials Needed: Expanded (72 Hour) Report for the Mudd Fire – Fireshelter Deployment, Elko, Nevada

Instructions:

1. Identify the proper procedures to be taken by the Safety Officer when this accident occurred. Although the accident's 72-hour report indicates accident occurred during "initial attack," for the purposes of the exercise, assume incident occurred after an IMT took over the incident.

2. Identify the actions that should be taken with consideration of the "seven basic steps for incident emergency procedures, accident investigations and documentation."

3. Reference the Consideration for Burn Injury Criteria covered in the Unit 5.

4. Record findings on a flip chart or note paper.

5. Student Presentations.

End of Exercise.

V. SUMMARY

Although you as a Safety Officer may not be directly involved in the accident investigation, it is important that you know and understand the processes, roles, and responsibilities as outlined in this unit. Should a near miss or an accident occur, you will be a key player in advising the Incident Commander and coordinating the accident investigation process.

Allen Biaggi, *Director*
Department of Conservation
And Natural Resources

KENNY C. GUINN
Governor

Pete Anderson
State Forester Firewarden

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
NEVADA DIVISION OF FORESTRY
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August 26, 2006

To: Bureau of Land Management - Director, National Office of Fire and Aviation
Bureau of Land Management - Chief, Division of Operations
Nevada Division of Forestry – State Forester Firewarden

Subject: Expanded (72 Hour) Report for the Mudd Fire - Fireshelter Deployment
Elko, Nevada

Narrative:
The Mudd Fire began on August 23 at approximately 1500 as a result of a hot diesel exhaust emission. The fire is located in Nevada Division of Forestry (NDF) jurisdiction and managed by the Elko County Fire Protection District.

Initial attack resources were dispatched and responded to the fire in the Snow-Bowl area North of Elko, Nevada. These resources included a Bureau of Land Management (BLM) Task Force consisting of four engines without a designated Taskforce leader. The engines included a local Carlin BLM Type 4 heavy engine E1947, a Carson City BLM Type 4 heavy engine E3943, a Bakersfield BLM Type 6 light engine E3144, and a Kingman BLM Type 6 light engine E263 with chase vehicle.

Making contact with the Division Supervisor the engine were staged at a safe location while a scouting party looked the west flank for a possible burn out operation. The scouting party consisted of the engine bosses for engines 263, 1947, 3144, and one crewmember.

The engines were ordered up the road and departed the staging area with engine 3144 taking the lead. A short time later the contact was made with the scouting party and it was reported that fire was threatening 5th Street road and the engines were turning around. Engine 1947, 263, and 3943 turned around and proceed to a second safe staging area. Engine 3144 however, had out distanced the others and did not receive the order to turn around. Repeated attempts to contact them failed with only one response from 3144 which was “stand by” no other contact was made by the engines. Communications were established between the Engine Boss of 3144 and the engine itself on their local tactical frequency.

Engine Operator (ENOP) for 3144, and a crewmember saw fire blocking the road in front and behind them. Searching for an alternate route they selected the only available path to the top of the ridge and a possible route to a mountain top communications site for a safety area. The two-track was steep, rough and primitive and caused a flat on the left rear outside dual tire also damaging the rim.

Upon reaching the top of the ridge, they momentarily lost view of the path and upon seeing it had to reverse the engine in an attempt to get back on track. During this maneuver the engine lost traction and eventually slipping off a rock ledge becoming high centered.

The two firefighters exited the engine and began burning around it for protection while deploying the hard line for water. Deciding their position was untenable the ENOP of 3144 notified his engine boss that they were abandoning the engine. Directing the crewmember to gear up and grab a tool, they began running for the communication towers approximately 1 mile distant. Both firefighters attempted to burnout the road as they ran. Progressing along the ridge for 1/3 of a mile they saw the fire coming and the ENOP instructed the crewmember to drop his gear, grab his shelter and prepare to deploy. An attempt to light an escape fire using a fusee had limited success. The ENOP deployed his shelter in a sparsely fueled saddle and instructed his crewmember to do likewise however not liking the site and the crewmember continued to run approximately 800 feet around a small knob. Seeing a black area, he ran through a flaming front and then deployed.

Communication was lost for a short time and then "emergency transmission, deployment" was heard.

Air Attack was enlisted to help search for the two burned over fire fighters and to coordinated aerial support. The burn over location was not readily known and took several minutes to find. Medical resources were mobilized and were ready to receive any injured personnel. Helicopters spotted both firefighters and transported them to a waiting ambulance. They were treated for 1st and 2nd degree burns at the Elko Northeastern Nevada Regional Hospital. Both are expected to recover 100%. They have been transported home. Both will receive further treatment at a burn center to be determined.

Actions Taken to Date:
An Interagency Deployment Investigation Team was ordered and is in place in Elko, Nevada.

Coordination with Incident Management Teams, Crew representatives, and local agency personnel is occurring.

A visit to the accident site by the investigation team, interviews of involved personnel, and fact gathering is ongoing.

A Critical Incident Stress debriefing occurred August 26, 2006.

/s/ Robert Ashworth /s/ Vince Mazzier

cc Michelle Ryerson, Bureau of Land Management
Mike Dondero, Nevada Division of Forestry

Safety Officer, S-404

Unit 9 – All Hazard Assignments

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Identify and modify required products for the specific task or mission of an all hazard assignment.

2. Discuss the impact of assignment diversion on the mission.

3. Discuss roles and responsibilities involving working with all hazard teams.

4. Identify indicators of behavioral changes related to critical stress on all hazard assignments.

5. Discuss the Stafford Act of 1988 and the National Response Framework.

6. Discuss preparations timeframes related to all hazard assignments.

7. Identify eight categories of hazards relating to situational awareness for all hazard assignments.

8. Discuss resources for technical experts for all hazard assignments.

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I. INTRODUCTION TO ALL HAZARD ASSIGNMENTS

Your role as Team Safety Officer on an all hazard assignment is to provide for the health and welfare of resources assigned to the incident.

The responsibilities, processes, and procedures for an all hazard assignment are similar to those for a wildland fire assignment, but the hazards, risks, and mitigations are usually different and may require assistance from technical specialists.

A. Required Products

Safety management products that you are expected to modify and deliver for the specific task or mission include:

- Risk Management Analysis
- ICS 215A and Risk Assessment Code Matrix
- Briefings
- Safety message
- Safety action plan (Incident Emergency Plan [IEP])

Modifying these products may require expertise and assistance from technical specialists.

The risk management assessment approach can be adapted and applied to an all hazard environment.

Members of an Incident Management Team (IMT) must work together to apply the risk management principles.

Acronyms used by all hazard responders may be different from the acronyms you are familiar with.

B. Length of Assignments

Length of assignments for all hazard assignments may last up to 30 days. Fatigue and stress may be outside the normal experiences your team is accustomed to.

TIP:

Possible staggered-shift rotation may alleviate stress and cumulative fatigue.

C. Assignment Diversion (Mission Creep)

Assignment diversion, commonly known as mission creep, is common in all hazard assignments.

Mission creep occurs when members of the IMT take on duties that are not assigned on the mission statement. The biggest risk factor is diversionary. This can become a distraction and turns your attention away from where it should be. If you are dealing with an all hazard assignment in an unfamiliar area, these distractions become more pronounced as you may be learning as well as managing the situation.

Mission creep can have an unforeseen or hazardous effect on the overall mission.

As a Safety Officer, you need to be aware of possible mission creep and help the IMT to guard against taking on duties outside the scope of the mission statement.

Example of mission creep:

Your team is assigned to support the local fire department with their normal duties at a hurricane. All infrastructure has ceased, including sanitation services.

Mission creep: Team personnel start assisting the sanitation department with trash disposal.

Your assignment was to support the local fire department, not dispose of trash. The safety-related issue in this mission creep is that trash could contain toxic or hazardous material, and your team is not trained or equipped to do this job.

II. WORKING WITH ALL HAZARD TEAMS (FEMA, AREA COMMAND, UNIFIED COMMAND, ETC.)

All hazard assignments usually include working in an expanded interagency team atmosphere with various all hazard response agencies with whom you do not normally work. Emergency Operations Centers may have direct influence on your team's operations, and coordination is a vital task of the Command Staff.

Stress levels may be elevated, and ICS may be very generalized and different from what you are accustomed to.

An example is that all hazard teams may have specialized medical, environmental, search and rescue, or hazmat cleanup units that use equipment and terminology with which you may not be familiar.

A. Communication

1. Radio Use

You may be communicating or negotiating with various outside agencies that are unfamiliar with wildfire radio protocol and usage. It is vital that you use clear text. Do not use acronyms.

Work with the Communications Unit Leader to ensure that all personnel are familiar with frequency management and emergency communication procedures.

2. Roles and Responsibilities

Responding agencies may have different roles, responsibilities, policies, and procedures. All hazard teams generally have their own safety officers; consequently responsibilities and interpretations may be different. It is important to start a dialog to ensure there is a common understanding.

B. Stress

Stress levels may be very high with local agencies that have been affected by the disaster.

All responders to the incident will be exposed to stressful situations that include isolation, death, disease, devastation, etc., which will affect each individual in a different way.

Patience and sensitivity toward individuals affected by these stressful situations may require Human Resource specialist expertise.

C. Information Requests

As a Safety Officer, you may be requested to provide specific information to different agencies for statistical purposes.

Be sure to have a clear understanding of the type of information being requested.

For example, the Center for Disease Control (CDC) may be looking for statistics on a specific infectious disease, or Federal Emergency Management Administration (FEMA) may require specific statistics on injuries as a result of a search and rescue mission.

III. ALL HAZARD – CRITICAL INCIDENT STRESS MANAGEMENT (CISM)

Critical stress can have serious short-term and long-term effects on personnel assigned to an all hazard incident. The ability to identify situations that may cause critical stress to incident personnel is paramount to managing and minimizing its effects.

Critical stress may not become evident for an extended period of time after the incident. It is important to ensure that home units are aware of the possibility of the delayed effects of critical stress.

A. Taking Care of Yourself

Being put into a disaster situation that includes property destruction and suffering on a mass scale is outside the scope of normal stress management. Often you are the last one to see a change in your behavior.

You are not immune to human suffering and stress. You need to be able to identify trigger points in your behavior and seek help as needed.

B. Taking Care of the Team

- Look at team interactions, process, and procedures; note any unusual behaviors due to high stress situations.
  - Behavior is out of character.
  - Dysfunctional team interaction.
  - Not following process.
  - Group think can be a result of behavioral changes.
- Have a clear understanding of how agencies handle critical issues.
- Coordinate with the Incident Commander (IC) if professional support is needed.
- After Action Review (AAR) information may be found on the internet regarding how other teams handled similar situations.

C. Medical

The command and general staff may need to prepare for unusual trends, and incident exposures.

This may result in the need to bring in different technical specialists or professional expertise.

IV. STAFFORD ACT OF 1988

Federal support to States and local jurisdictions takes many forms. The most widely known authority under which assistance is provided for major incidents is the Stafford Act.

The Stafford Act authorizes the President of the United States to provide financial and other assistance to:

- State and local governments
- Certain private nonprofit organizations
- Individuals

V. NATIONAL RESPONSE FRAMEWORK

The National Response Framework (NRF) presents the guiding principles that enable all response partners to prepare for and provide a unified national response—from the smallest incident to the largest catastrophe.

The NRF defines the key principles, roles, and structures that organize the way we respond as a Nation.

Mission Assignment

DHS and FEMA may issue mission assignments to other Federal agencies. A mission assignment has some similarities to a resource order. A mission assignment describes specific tasks to do, whereas a resource order is an assignment to an incident in a qualified position.

It is important to make sure tasks stay within the mission assignment to avoid mission creep.

The mission assignment is issued to an agency by using FEMA Form 90-129, and should include applicable:

- Funding
- Funding limitations
- Requirements of the task(s) to be performed
- Completion date
- State cost-share requirements.

VI. ASSIGNMENT PREPARATION

A. Preplanning

All hazard response presents some of the most difficult and complex management challenges that our agencies face.

Potential incidents include:

- Hurricanes
- Floods
- Animal disease outbreaks
- Terrorist attacks
- Search and rescue operations
- Large hazardous materials releases

Examples of assigned tasks in mission assignments for agency personnel may include management of:

- Logistical distribution centers
- Staging areas
- Base camps for emergency responders
- Clearing roadways and debris
- Law enforcement and security duties
- Support for wildfire or structural fire suppression

TIP:

More information can be gathered at the All Hazard Response Guide Web site (www.fs.fed.us/r8/allhazardresponse/).

Preplanning for an all hazard assignment is essential for you and your team's health and welfare. Long-range preparations may include passports, vaccinations, and research.

- Prepare for these at least 6 months in advance.

TIP:

More information on vaccinations can be found at the Centers for Disease Control and Prevention Web site (www.cdc.gov/).

B. Understanding the Geographic Area and Mission Assignment

Where am I going? What am I going to? How am I going to operate in that environment?

Internet and technical specialists are very good resources to help prepare for some of the cultural differences you may encounter on an all hazard assignment in or out of the country.

VII. SITUATIONAL AWARENESS FOR ALL HAZARD ASSIGNMENTS

A. Culture

- Local customs
- Language
- Religious beliefs
  - Religious practices may affect work schedules.
- Perceptions
  - Can go both ways (e.g., team, inmate crews, Hispanic, and locals)
  - Bias can influence decisionmaking

B. Hazards

- Environmental
  - Disaster aftermath
  - Downed vegetation
  - Water
  - Topography
  - Weather
    - Wet and cold – extremes
    - Disaster reoccurrence
    - Heat index

- Mud – slides and avalanches
- Floods
- Wind events

– Animals and reptiles

– Insects

• Infrastructure

TIP:

Be prepared to work in an environment where you do not have access to technology.

– Gas leaks

– Lack of sanitation

– Raw sewage

– Water system (lack of or contamination)

– Road and bridge systems

– Power lines

– Lack of telephone and data lines

– Structural fire protection

– Structural damage (toxic gases or weakened structural integrity)

- Dam integrity
- Medical facilities (biohazard and radiation)

TIP:

Mobile hospital and medical responders, disaster medical assistance teams, and DHS – available under FEMA declaration.

- Biological
  - Mold and mildew
  - Pathogens and pandemics
  - Viral and bacterial
  - Human made and natural
  - Hazmat
  - Toxic plants
- Chemical
  - Spills
  - Aerosols
  - Contact
    - Asbestos
    - Polycarbons

- Radiological
  - Nuclear waste
  - Military
  - Medical facilities
- Explosive
  - Unexploded ordinance
    - Personal defense stockpiles (personal reloading equipment)
    - Military
  - Time sequential explosives and secondary devices
  - Suicide bombers and terrorism
  - Gas and oil wells
  - Pipe bombs
  - Propane
  - Other (chemicals)
- Human
  - Drug trafficking
  - Human trafficking
  - Unauthorized personnel
  - Criminal activity
  - Fatalities

C. Transportation

- Other agencies involved
- Navigation
- Communication system and coverage

D. Supply Chain

How do you obtain supplies?

- Local purchase
- Cache (local, FEMA, mobile cache)

E. Personal Safety and Security

- Antigovernment
- Gang activity
- Criminal activity
- Looting
- Evacuation plan
- Base camp security
- Staging area security
- Incident Emergency Plan

VIII. TECHNICAL EXPERTS

You will need to work with various agencies and departments to find the technical experts you will need.

A. Contacts

- Department of Defense for unexploded ordinance
- Weather service
- Local emergency management for evacuation plans – safety areas, shelters, evacuation centers,
- Environmental Protection Agency for toxic materials
- Red Cross and Salvation Army for evacuation support
- Local fire departments and search and rescue, recovery, hazmat, Emergency Medical Services (EMS)
- Animal control
- National Guard
- Local law enforcement for security and search and rescue
- Health department (varies with the level of disaster)
- Federal Aviation Administration (FAA) and Federal Communication Commission (FCC) for frequency assignment

B. Resources

All of the agencies listed below have Web sites with useful information.

- Center for Disease Control (CDC)
- Occupational Safety and Health Administration (OSHA)
- National Institute for Occupational Safety and Health (NIOSH)
- National Weather Service (NWS)
- Federal Emergency Management Administration (FEMA)
- National Interagency Fire Center (NIFC)
- Red Cross and Salvation Army
- U.S. Department of Homeland Security (DHS)
- U.S. Department of Transportation (DOT)
- National State Department of Transportation
- State emergency services and health and welfare
- Law enforcement (Federal, state, and local)
- Others

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Safety Officer, S-404

Unit 10 – Incident Safety Products

OBJECTIVES:

Upon completion of this unit, students will be able to:

1. Identify elements of an Incident Safety Action Plan.

2. Identify resources for information related to safety messages.

3. Discuss the importance and information contained in the Unit (Activity) Log, ICS 214.

4. Discuss the purpose and attendees of the preplanning and planning meetings.

5. Discuss components of effective safety briefings.

6. Identify safety components of the final incident (fire) package.

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I. ELEMENTS OF AN INCIDENT SAFETY ACTION PLAN

The Incident Safety Action Plan establishes parameters for a safe working environment, and identifies and summarizes potential risks and hazards associated with the incident.

It is an individualized plan tailored to each incident but is not necessarily a formal, written document.

Although the Safety Officer is responsible for completing the plan, the focus is on all the actions, roles, and responsibilities associated with risk management throughout the incident. This involves working with the entire command and general staff as well as unit leaders.

A. Purpose

The purpose of the plan is to provide for responder and public safety by identifying, monitoring, and managing all safety hazards and risks for the duration of the incident.

B. Policy

Policy is normally set by the Incident Commander. Most Incident Management Teams (IMTs) have a section in the team Standard Operating Procedures (SOPs) document describing the team's safety policy.

C. Roles and Responsibilities

The IMT and every person on the incident have roles and responsibilities associated with incident risk management.

"If it is not being asked, ask it; if not being said, say it. Share what you know, when you know it."

The Incident Safety Action Plan outlines these roles and responsibilities. Below are some examples.

1. Incident Commander

    - Establishes commander's intent for overall safety on the incident.

    - Provides operational leadership and management oversight.

2. Safety Officer

    - Monitors and implements safety policy and plan(s).

    - Identifies and tracks accidents, injuries, and near misses.

3. Operations Section Personnel

    - Ensure policies and procedures are followed.

    - Ensure that the risk management process is applied.

4. Functional Group Leaders

    - Communicate risk management practices to assigned personnel, and monitor and document safety decisions during daily group breakouts.

5. Support Personnel

    - Follow SOPs, and protocols for each group within the IMT.

    - Have daily meeting to discuss risk management, issues, ideas, and concerns.

6. Team Emergency Procedures

- Command and general staff will follow the Incident Emergency Plan (IEP), as SOPs.
- Team should conduct a simulation during the later phases of the incident to provide training opportunities for team personnel.
- Test the emergency protocols through discussions, briefings, and breakouts.

D. Hazard Examples Within Functions

1. Ground Support (Transportation)

a. Description

The description is a narrative describing the transportation environment.

Example: Access to the north perimeter of the fire from the Incident Command Post (ICP) involves approximately 30 to 45 miles of improved narrow, gravel and primitive, native surface road.

b. Major Hazards

Examples:

- Extremely rough, rutted, narrow, and steep roads
- Excessive vehicle speed on improved gravel roads
- Steep dropoffs
- Limited road shoulders

c. Risk Assessment of Hazards

Examples:

- Heavy dust contributed to increased collision risks.
- Excessive speeds on washboard roads, blind corners, and hill crests compromised vehicle control and increased the risk of collision with other vehicles.
- Loss of vehicle control.

d. Control Measures

Examples:

- Drivers are required to drive with headlights on.
- Speed limits of incident traffic on gravel roads are limited to 35 mph.
- Use experienced drivers.
- Drive in the daylight hours.
- After control(s), is the residual risk high, moderate, or low?

2. Air Operations

a. Description

The description is a narrative describing the air operations environment.

Example: Air operations involves a mixture of rotor and fixed-wing aircraft.

b. Major Hazards

- Mixing aircraft type(s) operating on the fire.
- Communications may be compromised by numerous frequencies, distance, and terrain.

c. Risk Assessment

- Mixed aircraft concurrently operating over the fire contribute to the risk of inflight collision.
- Failure to adhere to air operations communication plan would compromise operational safety and effective rescue response.

d. Mitigating Actions

- The Air Tactical Group Supervisor (ATGS) and/or the Helicopter Coordinator (HLCO) are used when mixing types and multiple aircraft.
- All aviation resources must adhere to the air operations communication plan.
- After mitigation(s), is the residual risk high, moderate, or low?

3. Tactical Operations (Line)

a. Description

The description is a narrative describing the operational environment.

Example: A mix of dense to sparse juniper and dense pine, located on steep slope, which have been stressed by drought, insects, and disease may contribute to extreme fire behavior.

b. Major Hazards

- Thunderstorm winds and lightning
- Extreme fire behavior
- Steep, rocky terrain

c. Risk Assessment

- Lightning and strong thunderstorm winds increase the risk of electrocution, snag-fall injuries, slick roads, and stranding firefighters and equipment on the fireline overnight.
- Extreme fire behavior poses the risk of injury, and threatens to entrap firefighters.
- Steep, unstable terrain poses significant risk of falls, strains, and fractures.

d. Controls

- Lookout(s), Communication(s), Escape Route(s), and Safety Zone(s) (LCES) analysis is to be conducted in the strategy meeting and communicated to incident personnel through operational period briefings and Incident Action Plans (IAPs).

- Lookouts are to be used to monitor changes in fire behavior and weather.

- Lightning safety protocols are to be discussed with incident personnel.

- After controls(s), is the residual risk high, moderate, or low?

4. Camp(s)

a. Description

The description is a narrative describing the incident base, spike camps, and staging areas.

Example: ICP and base camp are located at the local elementary school. IMT functional work areas and sleeping, food service, sanitation, showering, and parking areas are all provided at the ICP.

b. Major Hazards

- Traffic congestion (camp and town)

- Excessive vehicle speed

- Illness

c. Risk Assessment

- Incident and public traffic pose a risk of backing, parking, and vehicle collisions.
- Excessive vehicle speed in camp poses a significant risk of collision and pedestrian accidents at ICP.

d. Control Measures

- Traffic patterns, parking areas, and fueling site are identified and managed by Ground Support Unit Leader (GSUL) and Facilities Unit Leader (FACL).
- Speed limits are posted and enforced through ICP.
- After control(s), is the residual risk high, moderate, or low?

E. Summary

A short, written narrative describing the Incident Safety Action Plan for personnel is mandatory.

Example: The IMT wants all personnel assigned to the incident to have a safe assignment. Follow protocol established by the IMT through IAPs, camp safety plans, and other SOPs as outlined in the team guide.

Are you and the IMT willing to accept the residual risk AFTER control measures, remedies, and warnings are in place?

F. Signatures

Signatures by the Incident Commander and Safety Officer are required on the Incident Safety Action Plan to make the plan the SOP for the incident.

II. SAFETY MESSAGES AND INFORMATION

The safety message is a tool that is used to relay the most serious hazards and risks to line personnel. It should contain the most relevant and current information.

The safety message is normally one page and is in every operational period IAP. It should contain three to five hazards and associated control measures to manage exposure. It can also contain special emphasis material such as 6 Minutes for Safety.

Accuracy of information requires feedback from the field. Know what resources are assigned and the incident environment.

Safety messages are:

- Completed within the Planning Section Chief's (PSC's) timeframes
- The safety message should be:
  - Formatted in an outline or brief sentences
  - Easy to follow, clear, and concise
  - Organized with information grouped logically
  - Signed by the Safety Officer (SOF) (add cell phone number)
  - Relevant and not repetitious

    The safety message should not repeat the information in the special instructions section of the Assignment List, ICS 204.

Dissemination of accurate safety information is an important duty of the Safety Officer. Information posted should be current, pertinent, and not repeating information that is in your safety message (Lyme disease, human factors, urine chart, etc.).

Places to post safety information include:

- Information board
  - Base camp
  - Spike camp
  - Helibase
- Other
  - Portable toilets
  - Showers and wash basins
  - Laundry Unit
  - Ground support (checkpoints, road blocks)
  - Sleeping areas

DISCUSSION POINT:

Where would a safety message be viewed most often other than in the IAP and why?

EXERCISE: Safety Message

Purpose: To write a safety message.

Instructions:

1. Read scenario and identify hazards and risks, and prioritize the hazards.

2. Write a safety message addressing the significant hazards.

3. Group presentation.

Scenario:

Date: July 17, 20XX

Conditions:

- Prolonged drought
- Low RH
- Temperatures in the mid 90s
- Winds 5-10 mph
- Expected fire behavior is moderate to high

Fire is located in mountainous terrain in the Northern Rockies. The Ground Support Unit is tasked with delivering firing, holding, water, and additional supplies in support of a firing operation for the next operational period. The distance from the base camp to the drop point is 37 miles. The route includes 25 miles of well-maintained road and 12 miles of narrow, mountainous road with turnouts and steep dropoffs. The route also includes one (1) section with one-way traffic only. Delivery of equipment is required at the beginning of the shift.

End of Exercise.

III. UNIT (ACTIVITY) LOG, ICS 214

The Unit Log or Activity Log (FEMA) is used to document significant events that occurred during the day. It should be filled out as an event occurs and turned in to the Resource Unit at the end of the operational period.

Unit Logs are official documents and can be used in court. A signature is required on all Unit Logs.

TIP:

Make a copy of your Unit Logs for your team Safety Officer before submitting to the Resource Unit.

Important things to document are:

- Preventative actions
- Observations regarding changing conditions and trends
- Near misses and unsafe practices
- Emergency events and responses
- Unresolved issues
- Identification of new hazards
- Listing of significant events

Information from the Unit Logs can be used for:

- Briefings
- After Action Reviews (AARs)
- Safety messages
- Investigations
- Refinement of tactical hazards section of the Incident Action Plan Safety Analysis, ICS 215A
- Documentation for the incident narrative and transition plan
- Modification of the Incident Safety Action Plan (customizing to area)

IV. OPERATIONAL SAFETY ANALYSIS

Operations Section Chief will work with the planning section before the planning meeting to complete the Operational Planning Worksheet, ICS 215.

The Safety Officer will collaborate with the Operations Section Chief to analyze the tactical hazards for the operational period.

The ICS 215 contains the base information needed to analyze risks and control measures. The Safety Officer and the Operations Section Chief work together to identify operational hazards and to adjust tactics to eliminate or minimize exposure. This information is then documented on the ICS 215A.

A. Operational Planning Worksheet, ICS 215

There are four major elements of the ICS 215 that have relevant information to the ICS 215A. They are division location, work assignments, resource assignments, and reporting location.

- Division location

  Examples:

  – Accessibility

  – Extraction

  – Communication

  – Terrain

  – Fuel types

  – Structures

  – Other hazards (mining, unexploded ordinances, etc.)

- Work assignments

  Examples:

  – Firing operations

  – Downhill line constructions, falling operations

  – Heavy equipment operations

  – Hose lay

  – Structural protection

  – Aviation requirements

- Specialized equipment (brush hog, fireline explosives, chippers, etc.)
- Mop up
- Expected weather changes and fire behavior
- Day or night operations

- Resources assigned

  Examples:

  - Resource experience level (Type) to meet the complexity of the assignment.
  - Span of control
  - Fatigue
  - Quantity
  - Correct equipment and resources to meet control measures

- Reporting location

  Examples:

  - Length of travel
  - Road conditions
  - Helicopter transportation
  - Appropriate vehicle
  - Security

DISCUSSION POINT:

What other examples can you think of?

B. Incident Action Plan Safety Analysis, ICS 215A (called Risk Hazard Analysis or LCES Mitigations)

The ICS 215A is site and functional group specific and is the NWCG form used by the Safety Officer to document hazards and mitigations that resulted from collaborating with the Operations Section Chief on information obtained from the ICS 215.

There are modified versions of the ICS 215A being used in the field. All versions must contain the elements listed below.

- Location

  Division or group

- Tactical analysis elements

  Identified hazards within a specific division or group

- Risk mitigations, remedies, and warnings

  Mitigations established to minimize exposure within a specific division or group

- Other risk analysis elements

  Identified hazards that may affect the entire incident (HazMat, wildland urban interface, etc.)

- Date (daily) prepared by OPS and SOF and approved by SOF

The modified Risk Management ICS 215A also includes:

- Hazard identification and risk level
- Controls, mitigations, remedies, and warnings
- A reevaluation of risk management levels based on the controls, mitigations, remedies, and warnings, giving us a residual risk level (Risk Assessment Code Matrix)

C. Other Applications for Information From the ICS 215A

- Briefing information
  - Strategy meeting
  - Briefing line safety
  - Morning briefing
  - Trends
  - Information for cooperators, agency administrators, etc.
- Special instructions (ICS 204) (division, group work assignments)
  - Operational breakouts
  - Site-specific hazards and mitigations
- Safety messages
  - Obvious hazard trends

- Line Safety Officer staffing
  - Priorities for placement
  - Experience
  - Fitness
- Emergency resource staffing (ambulance, Emergency Medical Technician [EMT], and paramedic)

TIPS:

- Mitigation should be specific actions; do not use jargon, e.g., LCES, defensive driving.
- Ensure mitigations are adhered to, e.g., if using air attack for multiple aircraft, air attack is the mitigation and MUST be used.
- Plan for contingencies.

V. PREPLANNING AND PLANNING MEETINGS

The Incident Command System places considerable emphasis on developing an effective IAP. A planning process has been developed to assist the PSC in developing a plan in an orderly and systematic manner.

Most IMTs conduct the planning process in two meetings, a preplanning meeting and a planning meeting.

A preplanning meeting is normally held among the Resources Unit Leader, Safety Officer, Operations Section Chief, and Logistics Section Chief.

The preplanning meeting is an opportunity to discuss strategy and tactics, to "pencil in" the ICS 215 (Operational Planning Worksheet), and to complete the ICS 215A (Incident Action Plan Safety Analysis).

The second part of the meeting is the formal planning meeting. The planning meeting is used to put the final touches on the ICS 215 and ICS 215A. Each section at the planning meeting must support the plan for the Incident Commander to approve it for the operational period (command and general staff concurrence).

Personnel that normally attend a planning meeting are:

- Planning Section Chief
- Incident Commander
- Resources Unit Leader
- Operations Section Chief
- Logistics Section Chief
- Documentation Unit Leader
- Safety Officer
- Fire Behavior Analyst (FBAN), Incident Meteorologist (IMET), or both
- Agency administrators
- Cooperators and partners

Depending on the complexity of the incident, the preplanning and planning meetings may not have all of the personnel listed above in attendance. Community members might also be present (county commissioners, police, sheriff, etc.).

VI. EFFECTIVE SAFETY BRIEFINGS

An operational briefing is held at the beginning of each operational period (day and/or night) to review the IAP with operations personnel. Each member of the command and general staff who has a part in the IAP makes a short presentation.
Effective briefings are essential. Safety Officers need to have the ability to communicate risk management expectations and responsibilities to large or small groups.

Remember, there are different listeners at the briefing (line, camp, contractors, etc.). Tailor the briefing by importance to the audience.

Elements of an effective safety briefing:

- Leader's intent and clearly stated goals.
- Briefing should be short and concise, no more than 3 minutes.
- Communicate known and potential hazards and associated risks, and reference Risk Management Process.
- Avoid using language and topics from the safety message.
- Emphasize the importance of decision points, the need for analyzing associated risks, and the need for another safety briefing before tactically engaging.
- Ask audience if there are questions or comments on the briefing.

BRIEFING TIPS:

- Always consider your listening audience, and tailor the message to them.
- Avoid jargon or slang.
- Speak clearly, and make eye contact.
- Try to give a briefing in an area that is quiet.
- Pay attention to feedback.
- Practice makes perfect.
- Prepare ahead of time.
- Listen to others, and use the briefing styles you admire.
- Recognize nervousness.
- Be well prepared.
- Teaching classes is a good way to gain confidence and refine your speaking style.

VII. SAFETY COMPONENTS OF THE FINAL INCIDENT (FIRE) PACKAGE

The final incident package is a summary of the Incident Management Team's actions during the incident and supporting documentation prepared while on the incident.

The final incident package is essential for the responsible agencies to followup on fiscal matters, meet obligations agreed upon during the incident, plan and implement rehabilitation, address litigation, and other important management considerations.

The Planning Section Chief is responsible for supervising the coordination and assembly of the final incident package (Documentation Unit Leader [DOCL]).

The command and general staff are responsible for preparing their portions of the final incident package.

The Safety Officer's responsibility for their portion of the final package includes:

- Incident transition plan (transitioning to a higher or lower complexity incident, or both)
  - Staff transition recommendations

    Identify and recommend type and number of Safety Officers remaining on the incident.
  - Conference calls

    Schedule of conference calls that have been established for the region
  - Cooperator involvement and contact information (name, phone numbers, e-mail addresses)
    - Local health department
    - Law enforcement
    - Highway department
    - Others
  - Hazard(s) identification

    Summary of major hazards and control measures implemented on the incident
  - Status of unresolved issues for the host unit
    - Ongoing accident investigations
    - Ongoing personnel issues
    - Pending control measures

- Incident safety narrative (summary)
  - General review

    General safety overview of the incident
  - Chargeable accidents and injuries

    Work with finance section for information.
  - Medical visits

    Work with Medical Unit Leader for number of medical visits and personnel injuries.
  - Statistical summaries
    - Lost time accidents
    - Number of hours worked
    - Number of SAFENETS
    - Accident frequency rate
  - Public safety

    Events that could have impacted local public safety, e.g., evacuations, local events, traffic management

- Investigations and special reports
  - Accident investigations
  - Special event documentation (unusual events or hazards that could have impacted personnel safety)
  - Key decision log

    Major decisions made during the incident based on the safety of personnel

    Summarize significant events that were documented in the ICS 214, Unit Logs.
- Commendations of host unit personnel, community members, and leaders

TIPS:

Including copies of the Safety Officer's Unit Logs can support the key decision log and special event documentation.

Try to have a face-to-face meeting with the incoming Safety Officer to discuss the topics in the transition plan and any other pertinent information.

Safety Products Exercise (Graded)

For this exercise refer to the following information:

- Scenario
- Completed ICS 215
- Risk Assessment Code Matrix
- Blank ICS 204
- Blank Safety Message form
- Blank Briefing form
- Incident Action Plan Safety Analysis (ICS 215A) wall poster

Use the scenario and the ICS 215 provided to complete the information required in the ICS 215A. Write a narrative of how you use the Risk Management Process to mitigate hazards.

Write a safety message using the information provided in this exercise (graded).

Write the information required to complete the special instructions block for the ICS 204 (graded).

Write a morning briefing based on the information provided in the scenario and information learned in the course. This briefing can be written in narrative or bullet form (graded).

Safety products include:

- Briefing (graded)
- Safety message (graded)
- Narrative describing how you use the Risk Management Process to mitigate hazards in the ICS 215A
- ICS 204 special instructions section (graded)

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Scenario

It is July 25 and you are the primary Safety Officer on a Type 2 incident management team assigned to a wildland fire incident. Your team has been on the fire for 2 days now and you are about to go into the 1700 team preplanning meeting for tomorrow's operational period.

The fire is 2,500 acres and fuels are a mixture of dead and dying conifers with heavy fuels on the ground. The terrain is steep, with 70-80% slope. There is a narrow logging road along the base of the fire.

Weather has been hot and dry with high temperatures in the 90s and humidity in the lower teens. The area has been in prolonged drought. Strong winds are predicted for tomorrow afternoon.

The fire behavior has been moderate in the a.m. and more active with some crowning and short runs in the p.m.

At this time, 50% of the fire has a handline around it.

The fire has been divided into four divisions. Division A is along the road, Division B is along the east flank, Division C is along the top of the fire, and Division D is along the west flank.

The objective is to continue flanking the fire on Divisions B and D. Use aerial resources to hold (flare-ups) in Division C and engines to patrol and mop up along the road in Division A.

Today, the resources assigned are four Type 1 crews, two Type 2 crews, one strike team of Type 4 engines, two water tenders, one Type 1 helicopter, one Type 2 helicopter, four Division Supervisors, and one Strike Team Leader. One field observer, and one Safety Officer are unassigned at this time. Air Attack Group Supervisor and one heavy air tanker are available upon request.

Known major hazard is a closed mine shaft located in Division C.

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OPERATIONAL PLANNING WORKSHEET	Incident Name **Who**	Date Prepared **July 24** Time Prepared **1500**	Operational Period (Date/Time) **July 25, 0700 – 1900**

DIVISION OR OTHER	Work assignment	Resources				Reporting location	Requested arrival time
A	Mopup 50 feet and patrol Road 3650 for rolling debris and possible spot fires below road. Fall hazard trees.	ENG ENG ENG ENG ENG WT STEN DIVS	E-25 E-81 E-159 E-166 E-89 E-32 O-46 O-12	Type 4 Type 4 Type 4 Type 4 Type 4 Type 2		Drop point 1 Drop point 1 Drop point 1 Drop point 1 Drop point 1 Drop point 1 Drop point 1 Drop point 1	0700 0700 0700 0700 0700 0700 0700 0700
B	Continue handline from Division AB break north. Establish hoselay to mopup 50 feet in. Use minimum impact suppression tactics.	CREW CREW CREW DIVS	C-5 C-6 C-7 O-13	Type 1 Type 1 Type 2		Drop point 2 Drop point 2 Drop point 2 Drop point 2	0700 0700 0700 0700
C	Use aerial resources to monitor and hold perimeter spread.	DIVS	O-15			Helibase	0700
D	Continue handline from Division AD break north. Establish hoselay to mopup 50 feet in. Use minimum impact suppression tactics.	CREW CREW CREW WT DIVS	C-3 C-4 C-8 E-39 O-14	Type 1 Type 1 Type 2 Type 2		Drop point 1 Drop point 1 Drop point 1 Drop point 1 Drop point 1	0700 0700 0700 0700 0700

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ICS 204

1. BRANCH	2. DIVISION/GROUP	**ASSIGNMENT LIST**
3. INCIDENT NAME		4. OPERATIONAL PERIOD DATE _____ TIME _____

5. OPERATIONAL PERSONNEL

OPERATIONS CHIEF _____ DIVISION/GROUP SUPERVISOR _____

BRANCH DIRECTOR _____ AIR TACTICAL GROUP SUPERVISOR _____

6. RESOURCES ASSIGNED THIS PERIOD

STRIKE TEAM/TASK FORCE/ RESOURCE DESIGNATOR	EMT	LEADER	NUMBER PERSONS	TRANS. NEEDED	PICKUP PT./TIME	DROP OFF PT./TIME

7. CONTROL OPERATIONS

8. SPECIAL INSTRUCTIONS

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV/GROUP TACTICAL					GROUND TO AIR				

PREPARED BY (RESOURCE UNIT LEADER)	APPROVED BY (PLANNING SECT. CH.)	DATE	TIME

204 ICS [illegible]

NFES [illegible]

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HEALTH AND SAFETY MESSAGE

SAFETY starts with ***YOU***

We are **ALL** accountable for **SAFE** behaviors

For Day Operations:

INCIDENT:	DATE: TIME:
Major Hazards and Risks: • • • •	
Watchout or Fire Order of the Day • • •	

Name: _____ Date: _____

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Name _____

Briefing Form

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Name _____

Risk Management Process Narrative

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