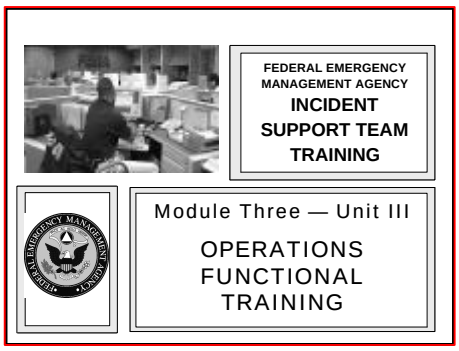
MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING



Introduction

- **Objectives**
  - **Identify specific functions of the Operations Section and the interaction among the IST and other entities, including:**
    - **Strategic versus tactical objective development**
    - **Task force capabilities and operational procedures**

2

Introduction

- **Objectives**
  - **Chart the flow of information and forms through the Operations Section**
  - **Review the key duties and responsibilities of all Operations Section positions**
  - **Identify Operations Section specific responsibilities in the action planning process**

3

Introduction

- **Operations Section interactions:**
  - **US&R task forces**
  - **Other ESF-9 resources**
  - **Other Federal resources**
  - **Local emergency responders**
  - **Local agencies / private contractors**
  - **Other sections of the IST**

4

A. INTRODUCTION

IST Operations Role and Responsibilities

- Specific functions of the Operations Section include the interaction among the IST Operations Section and:
  - US&R task forces.
  - Other ESF-9 resources.
    - Technical specialists.
  - Other Federal resources.
    - FBI.
  - Local emergency responders.
  - Local agencies / private contractors.
  - Other sections of the IST.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

A. INTRODUCTION

Introduction

- **The IST Operations Section does not usually provide direct command and control of US&R task force tactical operations:**
  - **Is responsible for ensuring that the US&R mission is met**
  - **This is done through the Task Force Leader(s)**

5

Introduction

- **IST Operations Section**
  - **Management and coordination of US&R operations**
- **IST Ops Section Chief**
  - **Assigns/supervises Ops Section**
  - **Requests/reassigns/releases ESF-9 resources**
  - **Recommends changes to AP**

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IST Operations Role and Responsibilities (continued)

- The IST Operations Section does not usually provide direct command and control of US&R task force tactical operations but is responsible for ensuring that the US&R mission is met through the Task Force Leader(s).

- IST Operations Section: Responsible for management and coordination of operations directly related toward accomplishing US&R mission strategic goals and objectives.
  - Act as the operational conduit between the local rescue operations and the US&R task forces.
  - Assess US&R needs.
  - Prioritize available resources.
  - Advise the local OIC regarding the best use of Federal US&R resources.
  - Coordinate and ensure the continuity of US&R rescue operations, especially for long term or multi-task force operations.
  - Provide technical advice to the US&R task forces.

- IST Operations Section Chief: Assigns and supervises organization elements within Operations section. Request, reassigns, or releases ESF-9 resources with the concurrence of IST Leader and IST ESF-9 Leader. Recommends expedient changes to the IST Action Plan (AP) as necessary and leads preparation of the Operations section of the AP. Ops Section Chief reports to the IST Leader.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

A. INTRODUCTION

Introduction
- **Operations Branch Director**
  - **Implementation of Ops portion of the AP**
- **IST Division/Group Supervisors**
  - **Implements AP assignments**
  - **Division — geographic area**
  - **Group — functional assignment**

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Introduction
- **TFLs usually report to the IST Ops Section Chief**
- **May report to Branch Director or Division/Group Supervisor**
- **Review Operations Section position descriptions and operational checklists**

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IST Operations Role and Responsibilities (continued)

- IST Operations Branch Director: When activated, responsible for the implementation of that portion of the IST AP, participates in planning and briefing meetings as directed. Reports to the Ops Section Chief.

- IST Division/Group Supervisors: responsible for the implementation of assigned portions of the IST AP. Reports to the Ops Chief or Branch Director. Participates in planning and briefing meetings, as directed.

  - Division — a defined geographical area such as a floor of a building, multiple buildings, or section of a city.

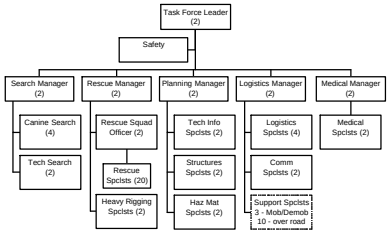
  - Group — composed of resources assembled to accomplish a specific function not necessarily within a single geographical area.

- Note: Task Force Leaders usually report to the IST Operations Section Chief, but may report to a Branch Director or Division/Group Supervisor depending on the scope of the operation.

- Review position descriptions / checklists
  - Operations Section Chief
  - Operations Branch Director
  - Operations Division/Group Supervisor

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

Task Force Composition



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Task Force Capabilities

- **Management**
  - **Task Force Leader**
  - **Safety Officer**
  - **Planning**
  - **Search Manager**
  - **Rescue Manager**
  - **Logistics**
  - **Medical Manager**

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Task Force Capabilities

- **Search**
  - **Canine Search Specialists**
  - **Technical Search Specialists**
- **Function**
  - **Canine search**
  - **Electronic search**

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Task Force Capabilities

- **Rescue**
  - **Rescue Squad Officer**
  - **Rescue Specialists (5)**
  - **Heavy Rigging Specialist**
- **Function**
  - **Victim extrication**

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B. TASK FORCE CAPABILITIES

- Team Composition
  - 62-member team

- Management
  - Task Force Leader
  - Safety Officer
  - Planning Manager
  - Search Manager
  - Rescue Manager
  - Logistics Manager
  - Medical Manager
  - Functions — provides overall management and coordination of task force operations.

- Search
  - Canine Specialists and search canines
  - Technical Search Specialists
  - Functions — utilizes canines and technical/electronic search to locate trapped victims.

- Rescue
  - Rescue Specialists organized into four squads with leader and five specialists, and includes
  - Heavy Rigging Specialists.
  - Functions — performs extrication of trapped victims. Skilled in cutting, shoring, lifting and breaching steel and reinforced concrete.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

B. TASK FORCE CAPABILITIES (continued)

Task Force Capabilities
- **Medical**
  - **Physicians**
  - **Medical Specialists**
- **Function**
  - **Pre-hospital emergency care**
  - **Confined space medicine**
  - **Crush syndrome treatment**

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- Medical
  - Physicians and Medical Specialists at the paramedic or equivalent level.
  - Functions — provides pre-hospital and emergency care for task force members and crush syndrome/confined space medicine for rescued victims.

Task Force Capabilities
- **Planning**
  - **Structures Specialists**
  - **Haz Mat Specialists**
  - **Tech Info Specialists**
- **Function**
  - **Support to overall US&R mission**

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- Planning
  - Structural Engineers, Hazardous Materials Specialists, Technical Information Specialists.
  - Functions — provides support to the overall search and rescue mission to include planning, hazards evaluation, structural integrity assessments, and technical documentation.

Task Force Capabilities
- **Logistics**
  - **Logistics Specialists**
  - **Communications Specialists**
  - **Support Specialists**
- **Function**
  - **Logistics support for US&R mission**

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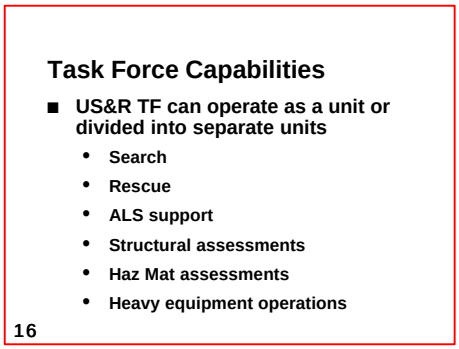
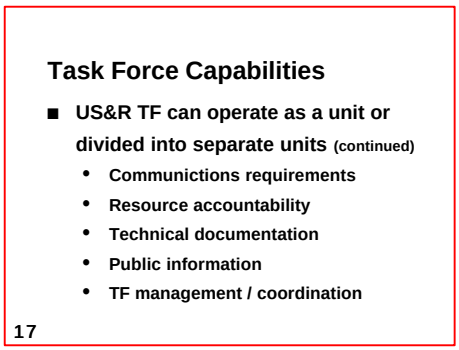
- Logistics
  - Logistics Specialist.
  - Communications Specialists.
  - Support Specialists.
  - Functions — provides support to the overall search and rescue mission to include logistical, communications, mobilization and demobilization, and transportation.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

B. TASK FORCE CAPABILITIES (continued)





- Task forces operate as a unit or can be separated into individual groups and perform the following:
  - Physical, canine and electronic search capability.
  - Rescue operations in a variety of structures, including wood frame, steel frame, non-reinforced concrete, and reinforced concrete.
  - Advanced life support (ALS) capability, specializing in crush syndrome and confined space medicine.
  - Structural integrity assessments of structures in rescue operations.
  - Hazardous materials assessments in rescue operations.
  - Heavy equipment operations for rescue efforts.
  - Communications within the task force, with the IST, and with the home jurisdiction.
  - Resource accountability, maintenance, and equipment procurement.
  - Technical documentation.
  - Public information.
  - Task Force management and coordination.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

C. STRATEGY AND TACTICS

Strategy & Tactics

- **Standardization**
  - **Effective rescue operations**
  - **Better resource utilization**
  - **Integration of TF disciplines**
  - **Incorporation of outside assistance**

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Strategy & Tactics

- **Standardization** (continued)
  - **Simultaneous / mulitple-site ops**
  - **Increased TF efficiency**
  - **Increased safety**
  - **Rapid victim extrication**
  - **24-hour operations**

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- The overall benefit of having standardized rescue strategy and tactics will promote the following:
  - Effective management and coordination of rescue operations.
  - Better utilization and coordination of task force resources.
  - Proper integration of all task force disciplines (i.e., medical, hazardous materials, and structures specialists, etc.) in the rescue operations.
  - The incorporation of assistance from entities outside the task force.
  - Simultaneous, multiple-site rescue operations.
  - Standardize training and increase efficiency within the task force prior to deployment and during mission operation.
  - Increase safety for all task force members involved in rescue operations.
  - Organized and rapid victim extrication.
  - Provide around-the-clock (24) operations.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

C. STRATEGY AND TACTICS (continued)

Deployment of Personnel

- 1st 8-12 hours > All personnel
  - TF set up
  - S&R ops
- Next 4-6 hours > ½ TF relieved
  - Food/sleep
- Subsequent 12-hour periods > Half of TF works, other half eats/sleeps

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Deployment of Personnel

- Operational shift change
  - Overlap required
  - Briefings
  - Operational scaleback at end of first operational cycle

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Deployment of Personnel

An important strategic consideration is the deployment of task force personnel at the start of mission operations. When a task force arrives at the assigned location, conditions may dictate committing all task force personnel to the initial objectives. It may be appropriate to attempt the following deployment guideline:

- First 8-12 hours of operation — all personnel committed to:
  - Task force set-up.
  - Search and rescue operations.
- Next 4-6 hours of operations:
  - Half of the personnel are relieved for feeding/sleep (after first 8-12 hours).
  - Those personnel assigned base camp set-up and organization should be relieved first.
- Subsequent 12 hour:
  - Half of the task force works, the other half operational periods rests/eats/ sleeps.

When the task forces are operating in alternating 12-hour operational periods, there should be an overlap of the shifts to allow for briefings and information exchange to promote the continuity of operations. As the operations near the end of the initial 8–12 hour time frame, it may be necessary to scale back to handling only one or two simultaneous operations. This reduction in rescue operations is the trade off for allowing sleep rotations for each half of the task force.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

C. STRATEGY AND TACTICS (continued)

Strategy & Tactics

- **Deviation from guidelines may be required**
  - **Incident conditions**
  - **Rescue opportunities**
- **"Blitz" attack**
  - **All TF resources committed for a 24-30 hour duration**
  - **Then stood down**

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Deviations from the suggested guideline might be required, depending upon the conditions. There is the possibility that the ongoing size-up and planning information could indicate there being a specific number of viable rescue opportunities that could be accomplished. In that case it may be most appropriate to deploy all task force personnel for a full-scale "blitz" of the planned 24-30 hour duration. This would necessitate the full stand down of the task force at the conclusion of this blitz.

Strategy & Tactics

- **TF equipment cache**
  - **Prompt availability**
  - **Tracking / sharing**
- **Search activities assistance**
  - **Assess/prioritize rescue ops**
- **Rescue site management**
  - **Only one OIC at each site**

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- Task Force Equipment Cache — The overall effectiveness of the task force depends upon the prompt availability of the tools, equipment and supplies in the cache. If operations are on-going at multiple sites, equipment sharing may be required or additional resources must be requested.

- Assistance with Search Activities — At times it may be necessary to assign additional task force personnel to search operations to identify, assess and prioritize rescue opportunities. This is the benefit of having crossed trained personnel.

- Rescue Site Management and Coordination — Each rescue site must have only one person in charge to maintain unity of command. The Incident Command System must be implemented.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

Strategy & Tactics

- **Rescue site communications**
  - **And between TF and IST**
- **Non-TF resource requests**
  - **Requirements from outside IST**
  - **Military**
  - **Utility contractors**
  - **Heavy equipment operators**

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Tactical Considerations

- **Rescue integration in search**
  - **Search Team may require assistance**
    - **Safety assessments**
    - **Void access**
    - **Deploying equipment**
    - **Physical search operations**
    - **Shoring / stabilization**

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Tactical Considerations

- **Rescue site management**
  - **Size up**
  - **Site control**
  - **Plan of action development**
  - **Safety assessment**
  - **Emergency signaling**

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C. STRATEGY AND TACTICS (continued)

- Rescue Site Communications — One of the most important areas of operation. Communication between Task Force personnel and IST is essential.

- Non–Task Force Resource Request — In certain situations, it may be necessary to request assistance from personnel or organizations outside the IST structure. This could include assistance from military personnel, utility contractors, heavy equipment operators, etc. These requests should directed through IST command structure.

D. TACTICAL CONSIDERATIONS

Rescue Integration in Search Activities

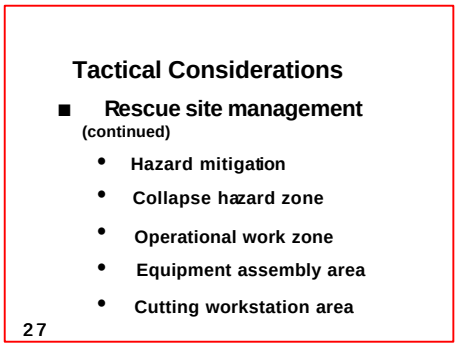
Task force rescue personnel may be required to assist the canine and technical search personnel. This may include safety assessments at collapse sites, gaining access to voids and other difficult areas, deploying equipment and conducting physical search operations. Many of these operations may require shoring and stabilization prior to entry. This is making full utilization of all crossed trained personnel engaging in search activities.

Rescue Site Management and Coordination

- Size-up and site control activities should be completed before rescue operations begin.

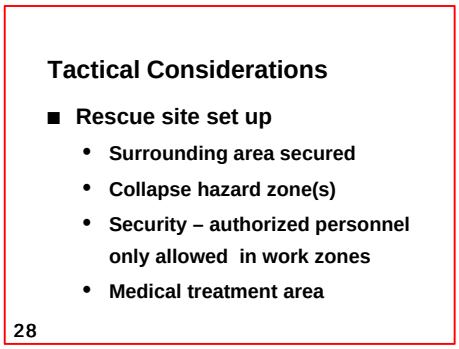
MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

D. TACTICAL CONSIDERATIONS (continued)



■ Upon completion of size-up, a plan of actions should be developed. A short team briefing should be conducted to include safety considerations, structural concerns, hazard identification, and emergency signaling and evacuation procedures.

■ Formalize a site management procedure to ensure the safe, effective operation of all personnel. Include the following considerations:
- Hazard assessment and mitigation. This could include removing trip hazards, boards with exposed nails, shutting off utilities, etc.
- A collapse hazard zone (hot zone) should be established and clearly defined along with the operational work area.
- All bystanders should be excluded from the operational work area.
- All equipment assembly areas and cutting workstation should be organized at an advantageous locations.



<u>Rescue Site Set-Up</u>

■ The area immediately surrounding the selected work site should be secured.

■ Collapse/Hazard Zone must be established. (use criss-crossed flagging or rope).

■ Only authorized personnel involved in search or extrication of victims allowed in zone.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

D. TACTICAL CONSIDERATIONS

Tactical Considerations

- **Rescue site set up** (continued)
  - Personnel staging area
  - Rescue equipment area
  - Cribbing/shoring area
  - Access/entry routes
  - Security / protection

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Rescue Site Set-Up (continued)

- Consider the needs of the following activities and must be provided for and properly identified:
  - Medical treatment area
  - Personnel staging area
  - Rescue equipment staging area
  - Cribbing/shoring working area
  - Access/entry routes
  - Security and environmental protection

Tactical Considerations

- **Inter-discipline coordination**
  - Maximum use of all task force disciplines in all operations

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Inter-discipline Coordination

- Make maximum use of all task force disciplines in all operations.

Tactical Considerations

- **Site / Personnel Safety**
  - Paramount consideration
  - Emergency signaling
    - Cease Ops: 1 long blast
    - Evacuate: 3 short blasts
    - Resume Ops: 1 long / 1 short
  - Personnel R&R

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Site/Personnel Safety

- Safety of all operating personnel is the single most important consideration during mission operations. As a minimum, the following considerations should be addressed for rescue operations.

- The safety of personnel operating around collapse/compromised structures. Emergency signaling and evacuation procedures. Hailing devices shall be used to sound the appropriate signals as follows:
  - Cease Operations/All Quiet — l long blast (3 seconds)
  - Evacuate the Area — 3 short blasts (1 second each)
  - Resume Operations — 1 long and l short blast

- Personnel rest and rehabilitation.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

Tactical Considerations

- **Site / Personnel Safety** (continued)
  - **Critical incident stress**
    - **Debriefings**
    - **Defusings**
  - **Personal hygiene**
    - **Universal Precautions**
    - **Inhalation**
    - **Absorption**

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D. TACTICAL CONSIDERATIONS

Site/Personnel Safety (continued)

- Critical incident stress debriefing or defusing may be required.
- Personal hygiene — Considerations would be the exposure and/or contact with victim body fluids, inhalation or ingestion of dusts and contaminated atmospheres, water, etc. and minor injuries.

Search Strategy & Tactics

- **Close interaction of all TF elements**
  - **Management**
  - **Search**
  - **Rescue**
  - **Medical**
  - **Technical**

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E. SEARCH STRATEGY AND TACTICS

Search and rescue operations in the urban disaster environment require close interaction of all task force elements (management, search, rescue, medical and technical) for successful victim extrication's. It is incumbent on supervisory personnel to implement coordinated search tactics and strategy, collect and collate related information, and develop an effective overall rescue operation.

Search Strategy & Tactics

- **Search standardization**
  - **Reduced confusion**
  - **Better utilization**
  - **Work site engagement**
  - **Improved confidence**
  - **Detailed documentation**
  - **Increased efficiency**
  - **Increased safety**

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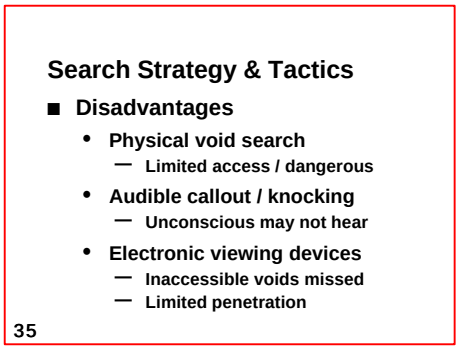
- Standard search strategy and tactics will result in the following:
  - Reduced potential confusion of responsibilities.
  - Better task force resource utilization and coordination.
  - Smoother work site engagement and disengagement.
  - Improved confidence in the search operation.
  - Detailed documentation of the incident operations.
  - Standardized training and increased efficiency of the task force.
  - Increased safety profile for rescue and search personnel.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING



E. SEARCH STRATEGY AND TACTICS (continued)

The following list the current tactics available for locating trapped victim and their corresponding advantages and disadvantages. Generally, no single tactic is sufficiently effective on its own to ensure that a complete search has been conducted.

Tactical Operation / Disadvantages

- Physical void search (visual/vocal)
  - Limited access to all voids in building. Proximity required is dangerous to search personnel.

- Audible call out/knocking method (rescuer hailing method)
  - Unconscious or physically weak person cannot be detected.

- Use of electronic viewing devices (observation holes)
  - Extended or inaccessible voids cannot be viewed due to the flexible nature of the fiberoptic cable and the limited light source.
  - Limited penetration of the equipment.

- Infrared/thermal imaging
  - Unit cannot detect heat differential through solid mediums.
  - Sources of heat other than persons buried under debris are also indicated which creates confusion.

- Use of electronic listening devices
  - Unconscious person cannot be detected. Ambient site noise is intrusive. Victim must create a recognizable sound pattern. Range is limited (acoustic – 25 feet, seismic – 75 feet).

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

E. SEARCH STRATEGY AND TACTICS

Search Strategy & Tactics

- **Advantages**
  - **Physical void search**
    - **Anyone can perform**
  - **Audible callout / knocking**
    - **Anyone can perform**
  - **Electronic viewing devices**
    - **Victim condition noted**
    - **Can be used for verification**

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Search Strategy & Tactics

- **Advantages** (continued)
  - **Infrared/thermal imaging**
    - **Readily available**
    - **Assesses large, open areas**
  - **Electronic listening devices**
    - **Cover large areas**
    - **Capable of picking up faint noises**
  - **Search canine**
    - **Cover large area in short period**

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Tactical Operation / Disadvantages (continued)

- Use of search canine
  - Extent of operation is limited; performance may vary according to individual handler and canine capabilities.

Tactical Operations / Advantages

- Physical void search (visual/vocal)
  - Does not necessarily require specialists, canine, or sophisticated electronic equipment. People could quickly be trained to support the effort.
- Audible call out/knocking method
  - Same as above. Personnel can inform victim of expected response. This procedure can be modified and used in conjunction with listening devices.
- Use of electronic viewing devices
  - Provides the general position and condition of the victim. Can be used to verify other search tactics prior to commencing rescue operations. Can be used to monitor victim during rescue operations.
- Infrared/thermal imaging
  - Equipment is sometimes readily available with some responding local organizations. Can be used to survey large, open, dark areas.
- Use of electronic listening devices
  - Able to cover larger search areas and sometimes triangulate on victim position. Capable of picking up faint noises and vibrations.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

E. SEARCH STRATEGY AND TACTICS

Tactical Operations / Advantages (continued)

- Use of search canine
  - Can search large areas in short period of time. Can traverse or gain access voids and other opportunity sources.

An effective search strategy would be to blend all viable tactical capabilities into a logical plan of operation. That would include canine search, electronic search, electronic viewing devices and physical search.

F. SEARCH STRATEGY

Large Scale Search Prioritization — One of the initial determinations that supervisory personnel may have to make at the inception of a mission would be what area should be searched first.

- There are two general strategies that can be used to decide how to deploy task force resources.
  - An area may be sectored by city block or other easily definable criteria. The sector strategy may work well for smaller areas but would most likely be impractical for larger because of limited search team resources.
  - Another method is to determine the search priorities based on the type of occupancies affected. Those that present the highest likelihood of survivability in terms of type of construction and the number of potential victims would receive priority. Occupancies such as schools, hospitals, nursing homes, high rise and multi-residential buildings, office buildings, etc. would be searched first.

Search Strategy

- **Large scale prioritization — two methods**
  - **Area sectored**
    - **Works well for smaller areas**
  - **Priority by occupancy**
    - **Highest likelihood of survivability**
    - **Number of potential victims**

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MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

F. SEARCH STRATEGY (continued)

Search & Recon Team

- **Staffing**
  - **Search Team Manager (1)**
  - **Canine Seach Specialists (2)**
  - **Tech Search Specialist (1)**
  - **Medical Specialist (1)**
  - **Structures Specialist (1)**
  - **Haz Mat Specialist (1)**
  - **Rescue Specialists (2)**
  - **Safety Officer (optional)**

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Search and Reconnaissance Team

It may be advantageous to deploy task force search and reconnaissance teams when initiating operations at an assigned location. Task force staffing allows for two nine-person search and reconnaissance teams. It may be necessary to deploy a search and recon team to a remote location during the course of a mission, or they could both be deployed initially when the task force begins operations.

- Search and Reconnaissance Team staff
  - Search Team Manager (1) — functions as search /recon team supervisor sketches and records information, and communicates details and recommendations back to the TF.
  - Canine Search Specialists (2) — conducts canine search operations and redundant verifications of alerts.
  - Technical Search Specialist (1) — conducts electronic search operations including acoustic/seismic listening devices and/or electronic viewing equipment equipment.
  - Medical Specialist (1) — provides medical treatment for located victims and/or search/recon team members.
  - Structures Specialist (1) — provides analysis and advice regarding building stability, shoring and stabilization.
  - Hazardous Materials Specialist (1) — monitors atmospheres in and around voids and confined spaces. Assesses, identifies, and marks hazardous materials dangers.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

F. SEARCH STRATEGY

Search and Reconnaissance Team (continued)

- Rescue Specialists (2) — provides assistance to the search/recon team, including drilling/breaching for electronic viewing equipment and/or deployment of listening arrays. Assists with overhead functions.
- Task forces may consider adding additional positions, such as a Safety Officer, to the team.

■ Duties of the team:
- General area and building search, reconnaissance, and evaluations.
- Victim location identification. This includes canine, electronic, and physical search operations. The location of viable victims would be denoted by marking the exact location with International Orange spray paint or orange surveyors tape.
- Hazard identification/flagging. Any type of personal hazard should be assessed and identified, such as overhanging building components, structural instability, secondary collapse zones, hazardous materials, live utilities, etc. Hazard zones should be conspicuously cordoned off with surveyors tape or Fire Line tape.
- Assess general atmospheric conditions in/around confined spaces or voids.
- Sketch the general search area and note all significant issues.
- Communicate findings and recommend priorities to the TFL.

Search & Recon Team

■ **Duties**
- **General area search**
- **Victim location identification**
- **Hazard identification**
- **Structural assessment**
- **Confined space monitoring**
- **Area sketches**
- **Communicate findings**

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MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

F. SEARCH STRATEGY

Search & Recon Team

- **Equipment**
  - **Electric hammer-drills**
  - **Electronic viewing equipment**
  - **Electronic listening devices**
  - **Atmospheric monitoring**
  - **Marking materials**
  - **Alerting devices**
  - **Medical equipment**
  - **Personal / safety gear**

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Search and Reconnaissance Team (continued)

- Specific equipment and materials are necessary to fully support a deployed search and recon team. The following equipment and supplies, as a minimum are required:
  - Electric hammer-drills, preferably battery operated. If not, a small electric generator, fuel and cord are required.
  - Electronic viewing equipment.
  - Electronic listening devices.
  - Atmospheric monitoring equipment.
  - Marking materials (orange spray paint/surveyors tape and fire line tape, etc.).
  - Alerting devices (bullhorn for hailing, aerosol horns for emergency signaling).
  - Medical gear (physician or paramedic backpack).
  - Personal gear (safety equipment, food, water, etc., for each person).

Search Strategy

- **General Considerations**
  - **Establish priorities**
  - **Employ a variety of methods**
  - **Viable victims located ASAP**
  - **Structural assessment / stability assessed simultaneously**

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General Considerations

The combined use of physical, canine, and electronic search tactics will enable the task force supervisors to better establish priorities and focus on the most important rescue activities. It is always important to establish whether or not the team in involved in a live victim rescue.

- It is essential that every possible search method be employed to enable task force supervisory personnel to locate viable victims before committing rescue resources to any prolonged operation.

- Structural Specialists should coordinate with search and rescue personnel during search operations to provide initial assessments of relative building stability and safety.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

F. SEARCH STRATEGY

Search Strategy
- **General Considerations**
  - **Area reassessment**
  - **Building profiles change over time**
  - **Heavy equipment operations**
  - **Repeat search operations**

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General Considerations (continued)

- An important consideration during a mission is the need to reassess previously searched structures. If the profile of a building/structure has been significantly reduced because of debris removal by heavy equipment or secondary collapse, it may be necessary to treat the structure as a new opportunity, and repeat the various search procedures.

G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM

Triage, Assessment & Marking
- **Designed to:**
  - **Identify**
  - **Select**
  - **Prioritize**

  buildings with the highest probability of live victims

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Designed to help identify, select, and prioritize the buildings with the highest probability of success with respect to finding and rescuing live victims. Information related to building identification, conditions and hazards, and victim status are posted in standardized fashion.

Initial Size Up

Triage, Assessment & Marking
- **Initial Size Up**
  - **Identify buildings individually**
  - **General area triage**
  - **Hazard assessment**
  - **Building marking**

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- A Task force may need to perform the following activities prior to beginning search and rescue operations:
  - Identify buildings individually (i.e., by address, physical location, unique design, etc.).
  - General area triage (i.e., to identify separate buildings, from many in a given area, that offer the highest potential for viable rescue opportunities).
  - Hazard assessment and marking of buildings.
  - Search and rescue marking of buildings.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM

Initial Size Up (continued)

- There may be two potential conditions when a task force arrives at a assigned location:
  - Local emergency response personnel may have already identified viable search or rescue opportunities. The location and/or identification of separate buildings may be clearly identified. General size-up issues may have been conducted by the local personnel and task force managers would base their action plan and assignment of resources on this information. Information provided by local sources must be reviewed for validity.
  - There may be little or no reconnaissance information when the task force arrives. They may be faced with a geographic area (several buildings, part of a block, several block area, etc.) with no tangible information as to where to concentrate their efforts.

The following rationale can be used during the first hours of arrival at an assigned location within an affected jurisdiction, if faced with the situation of little or no information.

- Structure Triage
  - One or two task force structure triage teams may be deployed into the area in question. As a minimum, a team should be comprised of one Structures Specialist and one Hazardous Materials Specialist. Each team would conduct a short triage of the buildings in the area. The identification of structure location would be established during the triage process.

Triage, Assessment & Marking

- **Initial Size Up** (continued)
  - **Two potential conditions on arrival**
    - **Search / rescue opportunities already identified by local personnel**
    - **Little or no advance reconnaissance when TF arrives**

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Triage, Assessment & Marking

- **Structure triage**
  - **One or two structural triage teams deployed**
  - **Team comprised of:**
    - **1 Structures Specialist**
    - **1 Haz Mat Specialist**
  - **Each team conducts short triage of buildings in the area**

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MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

Triage, Assessment & Marking

- **Search and reconnaissance**
  - **Done at conclusion of rapid structure triage**
  - **TF Search & Recon Team(s) deployed to evaluate viable buildings**

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Triage, Assessment & Marking

- **Structure triage**
  - **Large area / many buildings**
    - **Structure triage**
    - **2 teams may be used**
  - **Go / No Go determinations**
  - **Triage is a judgment call**
  - **Triage criteria re-evaluated**
  - **No structure marking now**

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Triage, Assessment & Marking

- **Structure Identification**
  - **Buildings clearly differentiated**
    - **Jurisdictional areas**
    - **Sectors**
  - **Identifications consolidated with IST and CP**
  - **Has impact on overall safety**

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G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM

Initial Size Up (continued)

- Search and Reconnaissance
  - At the conclusion of the rapid structure triage, task force search and reconnaissance teams should be deployed to evaluate each building deemed viable for continued search and/or rescue operations. Structure and search marking should be performed during this phase and prior to the initiation of rescue operations.

Structure Triage

- The following assumptions relate to the structure triage performed at the task force level:
  - If a large area or many buildings were involved, two structure triage teams would probably perform triage. It is imperative that the teams compare assessment criteria before and after triage to assure uniformity.
  - There will be some buildings that will have significant hazards so that operations cannot proceed until the hazards are mitigated. These would be given “NO GO” assessments (i.e., structure on fire, collapse hazard, significant hazardous material spill, etc.). Follow-up marking of the structure must occur during the search and reconnaissance phase.
  - Triage assessments will be based upon judgments made on rapidly obtained information and should always be subject to a common sense review and adjustment by the TFL and task force supervisory personnel.
  - Triage criteria should be re-evaluated after the initial search, in light of live victim locations.
  - It is not anticipated that structure marking would occur during the initial triage phase.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

Triage, Assessment & Marking

Structure ID

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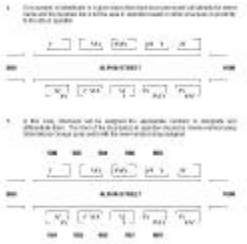
Triage, Assessment & Marking

Structure ID



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Triage, Assessment & Marking

Structure ID

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Triage, Assessment & Marking

- **Structure Triage — 3 steps**
  - **Building identification**
  - **Rapid assessment**
  - **ID of buildings requiring more detailed assessment**

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G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM (continued)

Structure Identification With A Geographic Area

A structure triage team is to clearly differentiate buildings in groupings by blocks or jurisdictional areas/sectors. This geographic identification of buildings would be consolidated with the IST and/or at the command post and used to deploy resources. It is imperative that each structure with a geographic area is clearly identified. This identification is important from a technical documentation perspective. Structure identification has a significant impact on overall scene safety and the safety of task force personnel.

It is important to clearly identify each separate structure with a geographic area. The primary method of identification should be the existing street name, hundred block, and building number.

- Review — Urban Search and Rescue Response System Operations Manual (Pages D-5 – D-7)

Structure Triage

- Structure triage would consist of a three-step process:
  - The concise identification and location of buildings for reference.
  - A rapid assessment of the affected area.
  - The identification of potential buildings that require more detailed assessment.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM

Triage, Assessment & Marking

- **Structure Triage**
  - **Rapid visual assessment**
    - **General structural conditions**
    - **Occupancy type**
    - **Access**
  - **Building sketch**
  - **Assessment form**

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Structure Triage (continued)

- When evaluating an area encompassing many buildings, it is necessary to perform a rapid visual assessment of each building. This assessment should determine the general structural condition, the probable occupancy and whether or not obvious access to the interior exists. The structure triage team will prepare a rough sketch of the general area and identify each building. Using the assessment forms that have been developed to assist in this process.

Triage, Assessment & Marking

- **Structure Triage**
  - **Search priorities determined:**
    - **Occupancy**
    - **Collapse mechanism**
    - **Time of day**
    - **Information from bystanders**
    - **Resources available**
    - **Building conditions**

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- Once a general sweep and rapid assessment of the assigned area has been completed the team should consult with task force supervisory personnel to identify a priority for a more detailed analysis of potential rescue work sites. The following factors should be considered in the determination of priorities for search and rescue operations:
  - Occupancy — refers to building use, not the number of occupants.
  - Collapse Mechanism — how the building failed will provide an indication of the potential for voids wherein a victim could survive.
  - Time of Day — refers to the time of the event that caused the collapse. This is a critical factor when combined with the occupancy type.
  - Information from the general public relating to known trapped victims.
  - Search and Rescue Resources Available — does the particular building require resources beyond what is readily available to the task?
  - Structural Condition of the Building — can search and rescue operations proceed with minimal stabilization effort?

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM (continued)

Triage, Assessment & Marking

- **Triage Scoring**
  - **Categories:**
    - **ZERO – no probable occupants**
    - **Total number of potentially trapped victims**
  - **Time of day**
  - **Type of collapse**
  - **Review Table D-1**

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Triage Scoring

The following factors will be evaluated to obtain a numerical score for each structure assessed. The intent of the score is to calculate a figure, where a higher number represents a better risk/benefit ratio. The following categories will be scored:

- Zero occupants probable — A notation of "ZERO" would be written in the score column if the earthquake occurred at a time of day when the type of occupancy contained in the structure was such that the building would have been normally unoccupied. (Schoolrooms on Sunday, retail shops at 6:00 AM, etc.). The Triage Team would then proceed to the next building.

- Total number of potentially trapped victims — This will be assessed knowing the type of occupancy, the floor area of the collapsed (entrapping) structure, the time of day that the incident occurred, and the type of collapse. Table D-1 suggests average totals for the number of occupants for various occupancies.

- Review table D-1 from Urban Search and Rescue Response System Operations Manual, Page D-9.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM (continued)

Triage, Assessment & Marking
- **Structure Triage**
  - **Condition of voids**
  - **Time required to access victims**
  - **Chance of secondary collapse**
  - **Special occupancy information**
  - **Go / No Go conditions**

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Structure Triage

- Conditions of voids — This criterion will attempt to assess the degree of survivability of the trapped victims. Open, survivable voids are often found under wooden floor panels that are collapsed into angular, interlocking planes, and in reinforced concrete structures where floors have projecting beam elements, parts of columns/walls and furnishings that hold the slabs apart. Partially collapsed structures may have large triangular blocked avenues or exits. These large voids have the best chance of having surviving entrapped victims. The numerical value of the criterion will vary from 1 to 20.

- Time required to access victims — This will be an estimate of the time required to get to the first victim. It should include the time it would take to mitigate hazards, cut through floors, walls, roof, etc., and to shore and brace the access route as well as appropriate adjacent structures. The numerical value will vary from 1 (for taking more than one day) to 20 (for taking less than two hours).

- Chance of secondary collapse — The numerical value will be represented by a negative number, and will vary between –1 (for low probability) to –20 (for high probability), assuming that the proposed shoring and bracing has been installed.

- Special occupancy information — Increased attention will be given to certain types of target hazards, especially those involving children. 25 points will be added to the aggregate score if the occupancy is a school, day care center, hospital, etc. In addition, 5 points should be added for each confirmed live victim that is identified by previous intelligence, search operations, etc.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

G. STRUCTURE TRIAGE, ASSESSMENT, AND MARKING SYSTEM

Structure Triage (continued)

- GO / NO GO conditions — These would include structures that are on fire, have significant hazardous material spills or exposures, or otherwise have conditions that would make search and rescue operations too perilous. Buildings with a "NO GO" rating would be expected to be re-evaluated when those conditions were mitigated.

Triage Analysis

Once the structure triage team completes the initial information gathering process, the information must be consolidated, summarized, and presented to the task force supervisory personnel for planning and tasking purposes. The TFL and appropriate specialists will then analyze the information and develop and Action Plan.

Triage, Assessment & Marking
- **Triage Analysis — information:**
  - **Consolidated**
  - **Summarized**
  - **Presented to TFLs and IST**
- **Incorporated into Incident Action Plan**

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H. TASK FORCE MARKING SYSTEMS

It is imperative that the information derived from a coordinated building triage be consolidated by the task force supervisory personnel to be used to identify operational priorities, and assist with their overall assessment of the event.

- Information gathered by task force personnel must be represented in a standardized fashion to ensure uniformity and clarity. The FEMA US&R Task Force Marking System is identified and divided into two sections:
  - Structure/Hazards Evaluation Marking
  - Search Assessment Marking

Task Force Marking Systems
- **Standardization of information**
  - **Uniformity**
  - **Clarity**
- **Two sections**
  - **Structure/Hazards Marking**
  - **Search Assessment Marking**

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MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

H. TASK FORCE MARKING SYSTEMS (continued)

Task Force Marking Systems

- **Structure/Hazard Marking**
  - **Normally completed first**
  - **Specific info for each building**
  - **Conspicuous symbols**
  - **Internat'l Orange color**

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- The Structure/Hazards Evaluation and Search Assessment marking procedures are designed to identify specific information pertinent to each affected building. Each component can be completed independent of the other, although normally the Structure/Hazards Evaluation would be completed first. Symbols will be conspicuously made with spray paint of International Orange color to permanently identify and mark safe entrances to a structure. The Search Assessment findings would be similarly denoted with same orange spray paint. The two marking systems use differing formats to distinguish between the two as outlined in their respective sections.

Task Force Marking Systems

- **Structure/Hazard Marking**
  - **Structures & HM Specialists**
  - **Search & Recon Teams**
- **Search Assessment Marking**
  - **Addressed by the balance of the task force**

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- It is expected that the task force Structures and Hazardous Materials Specialists on the search and recon team address the Structure/Hazards Evaluation marking while the balance of the team addresses the Search Assessment marking. The Structure/Hazard Evaluation Form will be used to record critical information regarding building type, framing, occupancy, victim location, hazards, search and rescue access, etc., for each structure. The appropriate structure/hazard mark will then be recorded on the form and on the building.

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

Task Force Marking Systems

- **Structure/Hazard Marking**
  - **2'X2' square box**
  - **Adjacent to entrance**
  - **Int. Orange coloring**
  - **Mark all entry points**

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Task Force Marking Systems

- **Structure/Hazard Marking**
  - **Markings made inside box**
    - **Structure condition**
    - **Arrow: to safe entrance**
- **Review TF marking systems**

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H. TASK FORCE MARKING SYSTEMS (continued)

Structure/Hazards Evaluation Marking

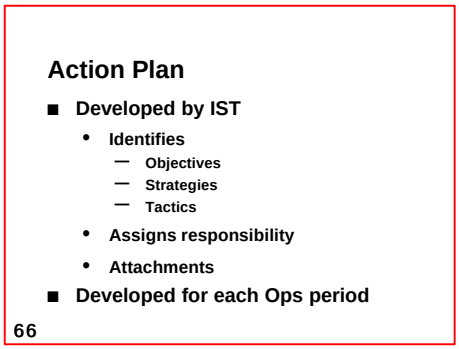
- The Structures Specialist and other task force members as appropriate, will outline a 2' X 2' square box at any entrance accessible for entry into a compromised structure. Aerosol cans of spray paint, International Orange color, will be used for this marking. It is important that an effort is made to mark all normal entry points to a building under evaluation to ensure that task force personnel can identify that it has been evaluated.

- Specific markings will be clearly made inside the box to indicate the condition of the structure and any hazards at the time of this assessment. Normally the square box marking would be made immediately adjacent to the entry point identified as safe. An arrow will be placed next to the box indicating the direction of the safe entrance if the Structure/Hazards Evaluation marking must be made somewhat remote from the safe entrance.

- Review task force marking systems.

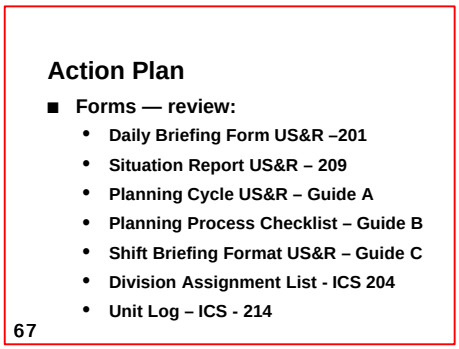
MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

I. ACTION PLAN



■ This document is developed by the IST and identifies all incident objectives, strategies and tactics, assigns responsibilities and has several subplans attached including communications, logistics, medevac, etc.

- An AP is developed for each operational period.
- The Operations Section Chief input into the AP must be done during an operational period for the next operational period. Consideration must be given to changes in tactics based on weather, safety concerns, etc.
- Progress or lack of progress during an operational period can impact the operational plan developed for the next operational period.
- The Operations Section Chief should advise the IST Leader if it is necessary to deviate from the established plan.



■ Forms:

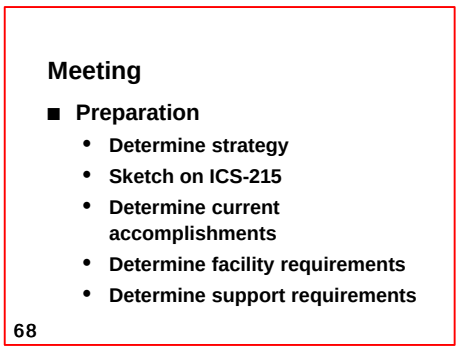
- Daily Briefing Form US&R –201
- Situation Report US&R – 209
- Planning Cycle US&R – Guide A
- Planning Process Checklist – Guide B
- Shift Briefing Format US&R – Guide C
- Division Assignment List - ICS 204
- Unit Log – ICS – 214

MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

I. ACTION PLAN (continued)

Meeting

- Preparation:
  - Determine strategy
    - From on-site visit.
    - Recommendations from TFL.
  - Sketch on ICS-215:
    - Do this prior to Planning Meeting.
    - If this is known well in advance, provide Planning Section with an ICS-215, they will put on large display for meeting purposes.
  - Determine current accomplishments:
    - Provide this information to the IST Planning Section for use in Situation Briefing.
  - Determine facility and support requirements:
    - For every work assignment you describe, be sure to be prepared to show support requirements from Logistics needed to support the assignment (I.e., water fuel, saw blades, meals, etc.) .
    - If a new facility is needed, like a staging area, be prepared to identify where it will be placed, and what will be needed to support it.

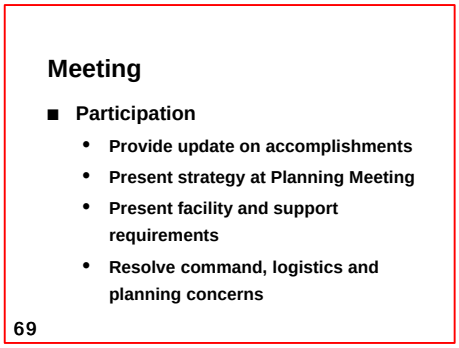


MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING

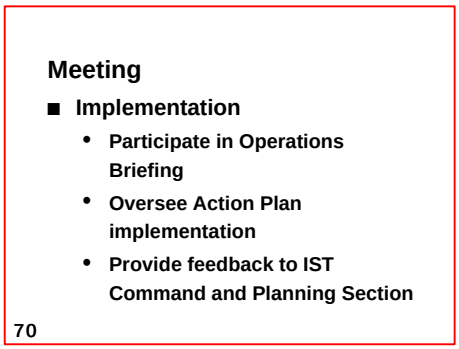
I. ACTION PLAN

Meeting (continued)

- Participation
  - Provide update on accomplishments:
    - Using the map or sketch displayed by the IST Planning Section, use a marker and update accomplishments, so far during the current operational period.
    - Also identify what planned accomplishments may not be met.
  - Present tactics at Planning Meeting:
    - Explain the work assignments you have shown.
  - Present facility and support requirements:
    - Identify this on the 215. There is a column on the 215 to do this.
    - Verbalize what you want, a recorder will be present to write the information on the 215 for you.
  - Resolve command, logistics and planning concerns:
    - Some of your work assignments/ support requirements you describe will lead to questions or clarification from mostly Command, Logistics and Plans.
    - Make sure everyone fully understands what you are planning on accomplishing.
    - Meeting your accomplishments is dependent on the level of support you get from rest of the IST. It is important that everyone understand your objectives.



MODULE 3: UNIT III — OPERATIONS FUNCTIONAL TRAINING



I. ACTION PLAN

Meeting (continued)

- Implementation:
  - Participate in Operations Briefing:
    - Briefing will have a specific format. You are the key briefer.
    - Use the Action Plan as your briefing document.
    - Describe work assignments and who is assigned to do the work.
    - Include any specific support actions taking place planned to support them.
  - Oversee Action Plan implementation:
    - Maintain dialogue with Task Force Leader on progress of meeting objectives as identified in the Plan.
    - Do not provide direct supervision to Task Force members, this is the job of the Task Force Leader.
  - Provide feedback to IST Command and Planning Section:
    - If you have to deviate from the Plan for any reason, be sure to pass this information to the Plans Section.