

CHAPTER 17

TERRORISM/WEAPONS OF MASS DESTRUCTION (WMD)

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INTRODUCTION

Terrorist attacks have created new hazards and responsibilities for the First Responder, whose mission generally includes the protection of life, environment, and property. As first responders continue to be called to emergency incidents (e.g., explosions, hazardous materials (Hazmat) spills, medical responses, fires, etc.), they must now recognize that every incident has the potential of being the result of a terrorist attack. Therefore, first responders must approach each incident aware of the terrorism potential and look for signs that may indicate a terrorist attack in order to take appropriate defensive measures. In general, terrorist attacks will usually present as either hazardous materials and/or USAR (Urban Search and Rescue) events, with a likely multi-casualty result. However, establishing whether an incident is terrorist induced may take authorities hours or even days after the initial danger has passed. Therefore, first responders should refer to their First Responder - Operations (FRO) training for initial actions at such incidents.

Terrorist events manifest from a variety of weaponry: chemical, biological, radiological, nuclear, and explosive (CBRNE). The probability of terrorists using these various devices varies according to their accessibility, transportability and ease of use. Further, it is possible that terrorists could and would use a combination of weapons of mass destruction (WMD) at the same incident. The most common devices used by terrorists are explosives. The most difficult and least likely device that would be used by terrorists is a nuclear device. The least expensive device is one that is chemical or biological in origin.

Recognition clues, warning signs and indicators:

- a. Recognition clues may be found in the types of occupancies with a potential risk for a terrorist attack. They may include, but are not limited to:
 1. Government buildings
 2. Mass transit facilities
 3. Public assembly (i.e., sports and entertainment centers)
 4. Places of historic or symbolic value
 5. Religious centers
 6. Family planning centers
 7. Laboratories and testing facilities
- b. Warning signs may include, but are not limited to:
 1. Medical incidents of a suspicious nature that produce multiple victims in a non-trauma setting
 2. Explosions in high-risk occupancies
 3. Hazardous materials releases
- c. Indicators of possible chemical weapons (CW) usage:
 1. Unusual incidents of dead or dying animals with a lack of insects, or insects on the ground

2. Unexplained casualties:
 - Multiple victims
 - Serious illnesses
 - Nausea, disorientation, difficulty breathing, convulsions
 - Definite casualty patterns
 3. Unusual liquids, sprays, or vapor:
 - Droplets or oily film
 - Unexplained odors
 - Low-lying clouds or fog unrelated to weather
 4. Suspicious devices/packages:
 - Unusual metal debris
 - Abandoned spray devices
 - Unexplained munitions
- d. Indicators of possible biological weapons (BW) usage:
1. Unusual incidents of sick, dead, or dying animals
 2. Unusual casualties:
 - Unusual illness for region or area
 - Definite pattern inconsistent with natural disease
 3. Unusual liquids, sprays, or powders
 4. Unusual swarms of insects
- e. Indicators of suspected radiological or nuclear incident:
1. Simple Radiological Device (SRD), which is a deliberate act of spreading radioactive material without the use of an explosive device (i.e., placement of a radioactive isotopes or radioactive particles on surfaces, air ducts, food, etc).
 2. Radiological Dispersal Device (RDD) or “dirty bomb”, which is a combined explosive device with radiological material within. The result is that victims experience an explosion of various magnitudes and are unknowingly contaminated with the resultant radiological material.
 3. Improvised Nuclear Device (IND), which is any device designed to cause a nuclear detonation. Construction of such a device is difficult, at best. This is considered a low probability event.
 4. Nuclear reactor attacks are considered low probability events due to the high security maintained at these facilities.

DEFINITIONS

Chemical Agents

Terrorists have considered a wide range of toxic chemicals for attacks. Typical plots focus on poisoning foods or spreading the agent on surfaces to poison via skin contact, but may include broader dissemination techniques.

Cyanides

Terrorists have considered using a number of toxic cyanide compounds.

Sodium or potassium cyanides are white-to-pale yellow salts that can be easily used to poison food or drinks. Cyanide salts can be disseminated as a contact poison when mixed with chemicals that enhance skin penetration, but may be detected since most people will notice if they touch wet or greasy surfaces contaminated with the mixture.

Hydrogen cyanide (HCN) and cyanogen chloride (ClCN) are colorless-to-pale yellow liquids that will turn into a gas near room temperature. HCN has a characteristic odor of bitter almonds, and ClCN has an acrid choking odor and causes burning pain in the victim's eyes. These signs may provide enough warning to enable evacuation or ventilation of the attack site before the agent reaches a lethal concentration.

- Both HCN and ClCN need to be released at a high concentration (only practical in an enclosed area) to be effective, therefore leaving the area or ventilating will significantly reduce the agent's lethality.

Exposure to cyanide may produce nausea, vomiting, palpitations, confusion, hyperventilation, anxiety, and vertigo that may progress to agitation, stupor, coma, and death. At high doses, cyanides cause immediate collapse. Medical treatments are available, but they need to be used immediately for severely exposed victims.

Mustard Agent

Mustard is a blister agent that poses a contact and vapor hazard. Its color ranges from clear to dark brown depending on purity, and it has garlic like odor. Mustard is a viscous liquid at room temperature.

- Mustard is not commercially available, but its synthesis does not require significant expertise if a step-by-step procedure with diagrams is available.

Initial skin contact with mustard causes mild skin irritation, which develops into more severe yellow fluid-filled blisters. Inhalation of mustard damages the lungs, causes difficulty breathing, and death by suffocation in severe cases due to water in the lungs. For both skin contact and inhalation, symptoms appear within six to 24 hours. There are limited medical treatments available for victims of mustard-agent poisoning.

Nerve Agents

Sarin, Tabun, and VX are highly toxic military agents that disrupt a victim's nervous system by blocking the transmission of nerve signals.

- These agents are not commercially available, and their synthesis requires significant chemical expertise.

Exposure to nerve agents causes pinpoint pupils, salivation, and convulsions that can lead to death. Medical treatments are available, but they need to be used immediately for severely exposed victims.

Toxic Industrial Chemicals

There are wide ranges of toxic industrial chemicals that—while not as toxic as cyanide, mustard, or nerve agents—can be used in much larger quantities to compensate for their lower toxicity.

Chlorine and phosgene are industrial chemicals that are transported in multi-ton shipments by road and rail. Rupturing the container can easily disseminate these gases. The effects of chlorine and phosgene are similar to those of mustard agent.

Organophosphate pesticides such as Parathion are in the same chemical class as nerve agents. Although these pesticides are much less toxic, their effects and medical treatments are the same as for military-grade nerve agents.

Biological Agents

Anthrax

Bacillus anthracis, the bacterium that causes anthrax, is capable of causing mass casualties. Symptoms usually appear within one to six days after exposure and include fever, malaise, fatigue, and shortness of breath. The disease is usually fatal unless antibiotic treatment is started within hours of inhaling anthrax spores; however, it is not contagious.

- Anthrax can be disseminated in an aerosol or used to contaminate food and water.
- Cutaneous anthrax can be caused by skin contact with *Bacillus anthracis*. This form of the disease, which is easily treated with antibiotics, is rarely fatal.

Botulinum Toxin

Botulinum toxin is produced by the bacterium *Clostridium botulinum*, which occurs naturally in the soil. Crude but viable methods to produce small quantities of this lethal toxin has been found in terrorist training manuals.

- Symptoms usually occur 24 to 36 hours after exposure, but onset of illness may take several days if the toxin is present in low doses. They include vomiting, abdominal pain, muscular weakness, and visual disturbance.
- Botulinum toxin would be effective in small-scale poisonings or aerosol attacks in enclosed spaces, such as movie theaters. The toxin molecule is likely too large to penetrate intact skin.

Ricin

Ricin is a plant toxin that is 30 times more potent than the nerve agent VX by weight and is readily obtainable by extraction from common castor beans. There is no treatment for ricin poisoning after it has entered the bloodstream. Victims show symptoms within hours to days after exposure, depending on the dosage and route of administration.

- Terrorists have looked at delivering ricin in foods and as a contact poison, although we have no scientific data to indicate that ricin can penetrate intact skin.
- Ricin will remain stable in foods as long as they are not heated, and it will have few indicators because it does not have a strong taste and is off-white in color.

Radiological and Nuclear Devices

Radiological Dispersal Devices (RDD)

An RDD is a conventional bomb, not a yield-producing nuclear device. RDD's are designed to disperse radioactive material to cause destruction, contamination, and injury from the radiation produced by the material. An RDD can be almost any size, defined only by the amount of radioactive material and explosives.

- A passive RDD is a system in which unshielded radioactive material is dispersed or placed manually at the target.
- An explosive RDD (often called a "dirty bomb") is any system that uses the explosive force of detonation to disperse radioactive material. A simple explosive RDD consisting of a lead-shielded container (commonly called a "pig") and a kilogram of explosive attached could easily fit into a backpack.
- An atmospheric RDD is any system in which radioactive material is converted into a form that is easily transported by air currents.

Varieties of radioactive materials are commonly available and could be used in an RDD, including Cesium-137, Strontium-90, and Cobalt-60. Hospitals, universities, factories, construction companies, and laboratories are possible sources for these radioactive materials.

Improvised Nuclear Device (IND)

An IND is intended to cause a yield-producing nuclear explosion. An IND could consist of diverted nuclear weapon components, a modified nuclear weapon, or indigenous-designed device.

- IND's can be categorized into two types: implosion and gun assembled. Unlike RDD's that can be made with almost any radioactive material, IND's require fissile material (highly enriched uranium or plutonium) to produce nuclear yield.

PERSONAL SAFETY CONSIDERATIONS

When approaching a scene that may involve chemical, biological, or radiological materials the most critical consideration is the safety of oneself and other responders. Be cognizant that the presence and identification of hazardous agents may not be immediately verifiable, especially in the case of biological and radiological agents. The following actions/measures to be considered by first responders are applicable to either a chemical, biological, or radiological incident. The guidance is general in nature, not all encompassing, and its applicability should be evaluated on a case-by-case basis by the first responders.

Actions to Be Considered:

1. If outside, approach or evacuate upwind of the suspected area.
2. If outside, don available protective mask and clothing immediately. Cover all exposed skin surfaces and protect the respiratory system as much as possible. Personal Protective Equipment (PPE) up to and including self-contained breathing apparatus, and organic vapor respirators will help provide protection.
3. If inside and the incident is inside, evacuate while minimizing passage through the contaminated area, keep windows and doors not used closed.
4. If inside and the incident is outside, stay inside. Turn off air conditioning, seal windows and doors with plastic and tape.
5. If radiological material is suspected, remember to minimize exposure by minimizing time around suspected site, maximizing distance from the site, and trying to place some shielding (e.g. buildings, vehicle, land feature such as a hill, etc.) between yourself and the site.
6. Deploy CBR detection equipment, if available.
7. Report information to the appropriate authorities.

INITIAL RESPONSE

Incident priorities for a suspected or confirmed terrorist incident shall include:

1. Protection of life/health
2. Protection of the environment
3. Protection of the crime scene
4. Protection of property and equipment
5. Preservation of crime scene evidence

At the first indication that an incident may be of a terrorist nature, the first arriving public safety officer shall relocate to a safe location (uphill/upwind/upstream) and institute First Responder Operational (FRO) procedures. Having recognized the extraordinary circumstances of the incident, the first arriving public safety officer may depart from usual FRO procedures and establish an exclusion zone large enough to encompass the number of victims in the affected area and the amount of equipment necessary to accomplish emergency decontamination, plus an area designated as a Safe Refuge Area (SRA).

An artificial line shall be established called the Isolate and Deny Entry (IDE) line to keep unauthorized persons out and to discourage victims from leaving until a more definitive care operation is established; Multi-casualty, Mass Decontamination (MCMD) or Multi-casualty Incident (MCI). The first arriving public safety officer shall make the appropriate notifications with respect to the type of CBRNE weapon suspected or discovered at the incident. PPE appropriate for the anticipated hazards of a suspected terrorism related incident should be worn or kept readily available. This may include agency authorized respiratory protection, Mark-1 (atropine, 2-pam/cl) auto-injectors and a personal dosimeter.

The first arriving public safety officer will establish an Incident Command Post that is suitable for the large number of agencies that will respond and participate in this type of incident.

Initial Action Checklist for the First Responder:

- Size-up: Location by address or intersection
 Incident type: HazMat, MCI, Building Collapse, etc
 Is the incident dynamic or static?
 Is there fire involved?
 How many victims: their signs and symptoms?
 Special instructions: safe approach, Staging, PPE, etc.
- Safety: PPE
 Weather
 Topography
 Safe distances
 Secondary devices
 Consider all unknown substances lethal until proven otherwise

Incident assignments (recommended):

- Establish Unified Command
- Notifications to responsible agencies (local, state and federal)
- Determine incident objectives
- Determine an Exclusion Zone
- Establish perimeter control
- Traffic/crowd control
- Emergency decontamination
- Create Safe Refuge Area
- Determine resource needs
- Logistical Support.

UNIFIED COMMAND

Unified Command shall be implemented at all Terrorism/WMD incidents when multiple agencies or jurisdictions with statutory or political authority and financial responsibility are involved. Unified Commanders involved in Unified Command shall be collocated. A single Command Post is the best method to ensure effective communications, coordination of resources and overall operational management of the incident.

ICS MODULAR DEVELOPMENT

The flexibility and modular expansion design of the Incident Command System provides a number of ways that public safety and contract resources can be arranged and managed. A series of modular development examples are included to illustrate several possible methods of expanding the incident organization based on existing emergency conditions, available resources and incident objectives.

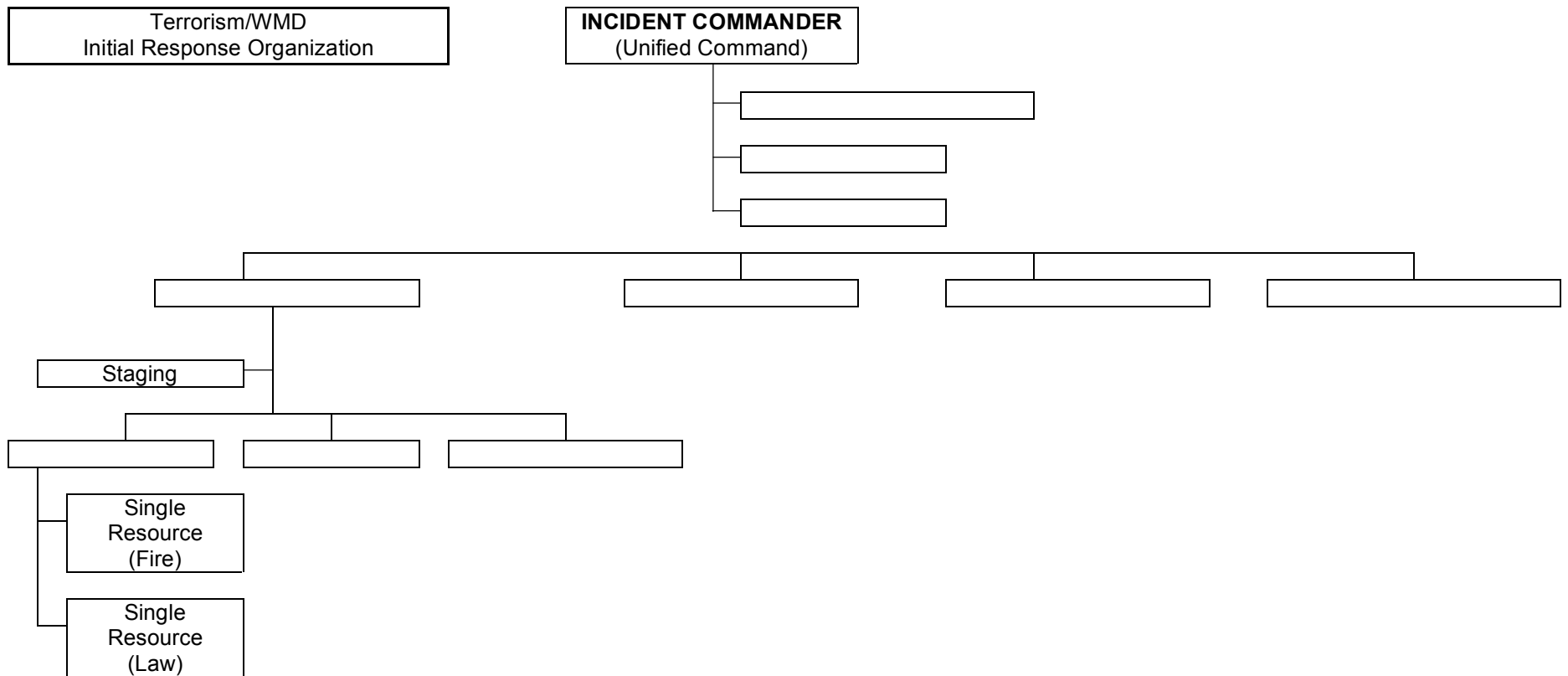
The ICS Modular Development examples shown are not meant to be restrictive, nor imply these are the only ways to build an ICS organizational structure to manage resources at a

Terrorism/WMD incident. To the contrary, the ICS Modular Development examples are provided only to show conceptually how one can arrange and manage resources at the incident that builds from an initial response to a multi-branch organization:

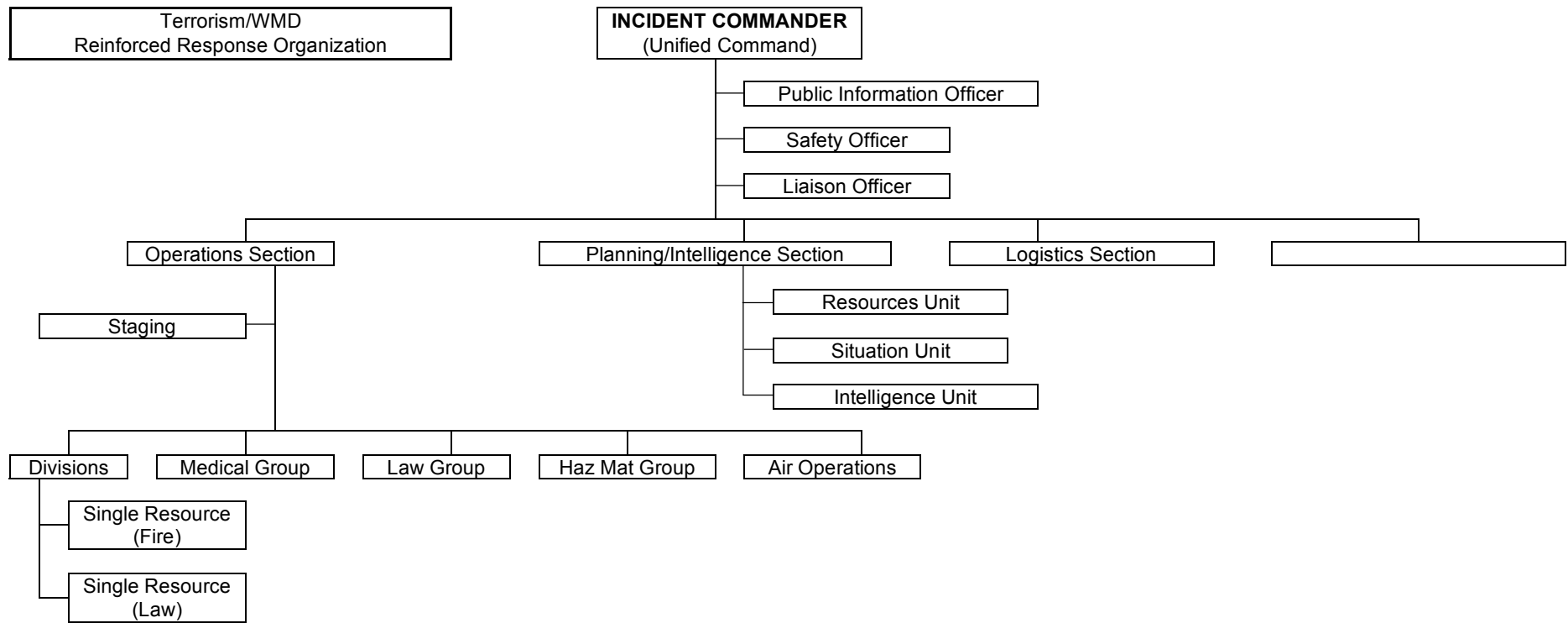
Initial Response Organization (example): The engine company has arrived to find an unknown and suspects that it is a hazardous device. The engine company initiates immediate actions to isolate and evacuate the area. The Company Officer has assumed Incident Command and requested the jurisdictional law enforcement agency to respond and establish Unified Command.

Reinforced Response Organization (example): The potential Terrorism/WMD incident has been reinforced and a Group organization has been created to assist with the management of the incident. Law Enforcement responsibilities of scene security, hazardous device disposal, and crowd and traffic control will be assessed and handled by the appropriate Units/Groups. The Planning Section Chief will accomplish initial planning and resource tracking. The Unified Command will determine the Objectives and the Federal, State and Local agency notification requirements.

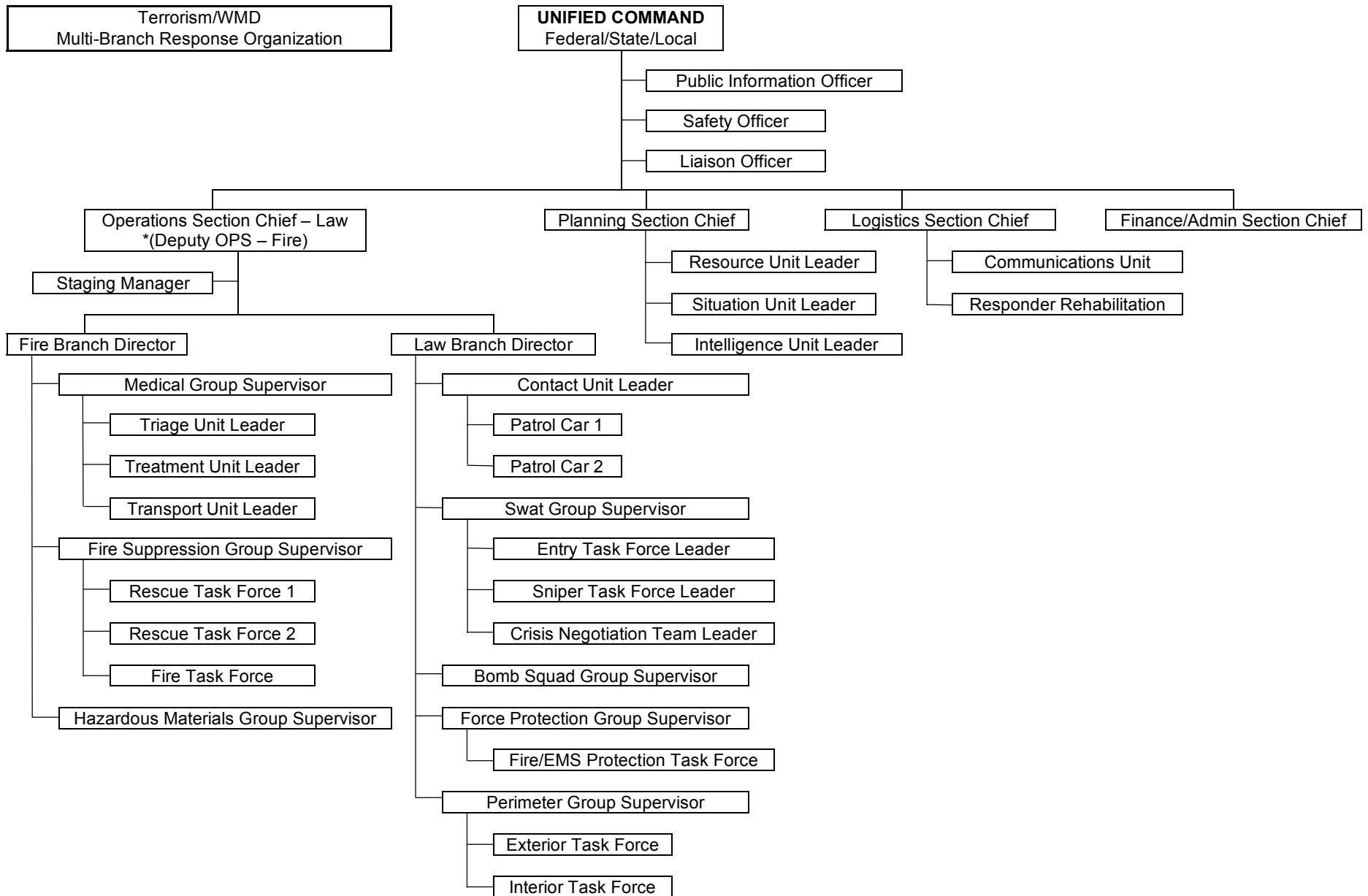
Multi-Branch Response Organization (example): As the incident begins to become more complex, the Unified Command decides to create a Law Enforcement Branch and potentially a Fire Branch to address the risks of the incident. Planning and Logistics Sections are partially established to support the resource needs and written action plan. The Unified Command is joined by additional responsible agencies as the incident potential grows.



Terrorism/WMD – Initial Response Organization (example): This chart depicts the initial response organization for a Terrorism/WMD incident.



Terrorism/WMD – Reinforced Response Organization (example): As additional resources arrive, the IC has activated the Operations Section along with multiple Divisions to supervise emergency responder activities. Groups may be assigned certain functions such as medical care for victims, hazardous materials handling or law enforcement activities. Air Operations will coordinate helicopters used for evacuations and reconnaissance. The Planning Section is activated to track and document resource, intelligence and situational status. The Logistics Section is assigned to provide for the service and support needs of the incident.



Terrorism/WMD – Multi Branch Response Organization (example): *Operations Section Chief and Deputy Operations can switch positions based upon the demands and objectives of the incident.

POSITION DESCRIPTIONS

INTELLIGENCE UNIT LEADER/GROUP SUPERVISOR – Initially reports to the Incident Commander, Planning Section Chief or the Operations Section Chief. In a large or complex incident, Intelligence may report to the Law Enforcement Group Supervisor or Branch Director. Based on the needs of the incident, Intelligence may be assigned as a Unit under Planning or a Group under Operations/Branch:

- a. Coordinates with investigative Unit Leader.
- b. Collect and process situational information.
- c. Focus on identification of potential suspects.
- d. Develop and maintain a working relationship with local, state and federal law enforcement agencies.
- e. Obtain, compile and provide intelligence with Operations/Planning Section Chiefs.
- f. Review method of operation by suspect(s).
- g. Gather information of suspects and victims.
- h. Consider other additional support needs.
- i. Maintain Unit/Activity Log (ICS Form 214).

INVESTIGATION UNIT LEADER/GROUP SUPERVISOR – Initially reports to the Incident Commander, Planning Section Chief or the Operations Section Chief. In a large or complex incident, Investigation may report to the Law Enforcement Group Supervisor or Branch Director. Based on the needs of the incident, Investigation may be assigned as a Unit under Planning or a Group under Operations/Branch:

- a. Determine mission and projected length.
- b. Determine work location and support requirements.
- c. Coordinate with other law enforcement and emergency response agencies.
- d. Coordinate intelligence information.
- e. Report mission status with the chain of command.
- f. Maintain Unit/Activity Log (ICS Form 214).

SECURITY UNIT LEADER/GROUP SUPERVISOR – Initially reports to the Incident Commander, Logistics Section Chief or the Operations Section Chief. In a large or complex incident, Security may report to the Law Enforcement Group Supervisor, Branch Director or Logistics Section Chief. Based on the needs of the incident, Security may be assigned as a Unit under Logistics or a Group under Operations/Logistics or Branch:

- a. Determine the security needs of the incident.
- b. Determine the scope of the perimeter.
- c. Provide incident perimeter and property security.
- d. Provide protection for the emergency responders and civilian bystanders.
- e. Provide protection to the environment.
- f. Control the incident from a safe distance to prevent it from spreading.
- g. Facilitate the ingress and egress of emergency resources assigned to the incident.
- h. Maintain Unit/Activity Log (ICS Form 214).

HAZARDOUS DEVICE UNIT LEADER/GROUP SUPERVISOR – Initially reports to the Incident Commander or the Operations Section Chief. In a large or complex incident, Hazardous Device may report to the Law Enforcement Group Supervisor, Branch Director or Operations Section Chief. Based on the needs of the incident, Hazardous Device may be assigned as a Unit Leader or a Group Supervisor under Operations/Branch:

- a. Identify the types of hazardous devices at the incident.
- b. Determine the location of chemical, biological, radiological, nuclear and explosive devices and to make those devices safe.
- c. Determine and communicate the location of safe zones for responders working in the area of hazardous devices.
- d. Coordinate with Security to determine the appropriate safe perimeter including fragmentation/inhalation radius.
- e. Maintain Unit/Activity Log (ICS Form 214).