Chapter 5

Response Tactics and Strategies
Objectives

• Understand the grim realities—including the multitude of sights, sounds, and smells—you may encounter at the scene of a large-scale aircraft crash, as well the need to prepare for this emotionally overwhelming information and how to deal with it

• Understand how to safely and precisely approach a downed aircraft
Objectives (con’t.)

• Understand tactical considerations for the following conditions:
  – Crashes of various impact levels (high, medium, and low)
  – Crashes on hard surfaces and difficult terrain
Objectives (con’t.)

• Understand basic information about fire extinguishing agents:
  – Water fog/spray
  – Class B firefighting foams
  – Dry chemical
  – Dry powder
Objectives (con’t.)

• Understand how to assist airport fire departments and other responders in the following activities:
  – Firefighting
  – Rescue and removal of passengers
  – Resupply
Objectives (con’t.)

• Understand how, while assisting an airport fire department, to effectively respond to mass casualty incidents:
  – Protecting yourself
  – Basic triage

• Understand common helicopter operations, including aeromedical evacuations (medevac)
Objectives (con’t.)

• Develop strategies for planning ahead, including:
  – Developing a tactical check list
  – Engaging in airport emergency exercises
  – Caring for your crew
Introduction

• Aircraft crashes are complex to manage
• Responding to incidents will raise many questions
• Aircraft incidents range from:
  – Simple crash-landing with minor injuries
  – Large-frame aircraft with fuel and passengers
  – Military aircraft with weapons on board
• Aircraft incidents tax many resources and organizations
The Grim Realities of a Crash Scene

• Aircraft accidents are shocking, chaotic, and stunning
• Prepare mentally by knowing what to expect
• Initial shock may interfere with abilities to function effectively
• Manage the stress by:
  – Remaining focused and apply the PORT acronym
  – Minimizing exposure to smells and remains
Approaching Aircraft Accidents

- Safe approach is important because fires from the crash require rapid control and containment
- Extinguishing a fuel fire can be accomplished by mass applications of a fire-extinguishing agent
- Exercise caution when approaching a scene:
  - Be aware of victims and survivors whereabouts
    - Pay attention to possible ejected crewmembers
  - Drive your vehicle carefully and watch for external fuel tanks or munitions
Tactical Considerations

• Approach incidents from upwind to gain the best view
• Determine the best vehicle positioning
  – Locating the aircraft main entry door is important
  – Adjust for military aircraft to avoid weapons
• Rescuing personnel is the next concern
• Determine type of downed aircraft
  – If military, a National Defense Area (NDA) may need to be established
Tactical Considerations (con’t.)

• Once personnel are rescued, determine the best emergency escape route
• Firefighting agents need to be directed towards rescuers and exiting plan occupants
• Determine the level of impact
  – High impact: extensive breakup of the airplane
  – Medium impact: fuselage broken in large pieces
  – Low Impact: intact fuselage, many survivors
• Aggressive rescue response increases survival
Figure 5-4  A private jet making an off-airport crash landing
Case Study

• In Feb. 2005, a low impact crash occurred in NJ
  – The airplane landed, crossed a busy highway, crashed and caught fire
  – All crew and passengers survived due to an coordinated, effective unified command

• Surfaces and terrain are considerations
  – Hard surfaces present the best conditions
  – Anticipate all types of terrain (water and hills)
  – Topography is easier to read during the day
Fire-Extinguishing Agents

• Know the type and the proper application techniques for the agents available to use
• Water fog/spray is risky and requires specialized training for fuel fires
  – Is used for class A materials and cooling the post fire debris (mop up phase)
  – Class B firefighting foam creates a foam blanket
  – Dry chemical firefighting agents can be used alone or in combination with water or foam
  – Dry powder firefighting agents are used during fires involving metals (Class D)
  – Gaseous agents: Halon, Carbon Dioxide
Assisting Airport Fire Departments

• Understand the methods used by the department you are assisting to be effective
  – Firefighting
    • Have specialized training and protective fire fighting clothing
    • Manage aircraft fire-suppression operations
  – Rescue
    • Prioritize rescue/medical care; safety is top priority
  – Resupply airport fire fighting vehicles with fire extinguishing agents such as water and foam
    • Rescue and fire fighting are the highest priority
Figure 5-11 A simulated fire attack with resupply in progress using structural/brush apparatus and water tenders
Mass Casualty Issues

• You may be required to help with mass casualties generated by aircraft accidents
• Protect yourself by taking universal precautions
  – Use personal protective equipment (PPE)
• Expect the unexpected; be ready for anything
• Triage is the task of sorting patients according to the severity of injury sustained
Helicopter Operations

• Survivors may require transport via aeromedical evacuation; most involve helicopters
• Plan for an aeromedical evacuation (medevac)
• Establish a helicopter landing zone
  – Create a safe landing zone of 100x100 feet
  – Should be at 500 feet from the crash
  – Should contain very few obstacles and hazards
• Position emergency standby crews
Helicopter Operations (con’t.)

• Practice specific safety procedures
• Learn and use the appropriate hand signals
  – Both arms outstretched and pointing to indicate the landing zone
  – Mark the landing zone clearly at each corner
• Exercise caution during night-flight operations
  – Use flashlight wands
  – Turn off all non-essential lights
• Know and indicate surface wind directions
Strategies for Planning Ahead

• Develop a tactical check list
  – Understanding different aircraft characteristics helps define and plan operations
• Practice airport emergency exercises regularly
  – Review plan every 12 months
  – Exercise airport emergency plan every three years
• Conduct frequent workshops involving agencies that need to work together in case of an incident
• Coordinate with military and civilian fire chiefs
Case Study

• An accident involving a gasoline tanker truck occurred late at night in a suburban area
  – Gasoline leaked into the storm drains
  – The military base nearby was unable to respond
    • Created animosity towards military personnel
• Cooperation between military and civilian could have avoided this problem
• Training with other fire departments is important
Figure 5-18  Structural firefighters training with airport firefighters
Case Study (con’t.)

• Using airport resources can be helpful
  – Airports’ response check lists may mirror your own
  – Airports may provide unusual equipment necessary for incident response
  – Local merchants may provide items as well
Caring for your Crews

• The crew is often pushed to limits emotionally and physically
• Monitor personnel for signs of fatigue, heat exhaustion, and psychological stress
• Rotate crews often to help sustain rescuers’ strength
• Provide a private rehab area for rescuers
  – Include chaplain services and stress-debriefing counselors
Caring for your Crews (con’t.)

- Incident commander: accountable for safety during the entire operation
- In-person, face-to-face briefing must be conducted with the operation’s successor before operational control is transferred
- Debris clean-up will occur after emergency mitigation is complete
Summary

• Your role as the answer to someone’s cry for help
• What you may face at a crash scene
• Being overwhelmed by the initial shock of encountering an aircraft accident
• Approaching the incident
Summary (con’t.)

• Assisting airport fire departments
• Mass casualty incidents
• Services you may be required to provide
• Helicopter (medevac) operations
• Using check lists