

# Central Joint Fire District

## Standard Operating Procedure



Central Joint Fire District

SUBJECT: Helicopter Safety and Landing Zones      SOP Number: 417  
Effective Date: 5/2/93  
Revised Date:  
Approved:

**PURPOSE:** This standard shall provide information necessary to properly establish a landing zone and direct a helicopter to a safe on-scene landing.

**SCOPE:** This standard applies to all members of the Central Joint Fire District, as all members may at some time be required to perform these tasks.

**ENFORCEMENT:** The Training Officer shall conduct annual reviews of the information in this standard.

### APPLICATION:

As Central Joint Fire District may at times be served by various medical helicopters on emergency incidents, the following steps have been developed from the information in the pamphlet *Preparing a Landing Zone* by the National EMS Pilot's Association (1987) and are considered aids to properly prepare for and direct a helicopter landing.

417.1 Request all radio traffic on WC Fire 2 - 154.220.

#### 417.2 Selecting an On-scene Landing Zone

- a. Select a flat, firm, square landing area with sides approximately 200 feet in length.
- b. The landing site is to be clear of people, vehicles, and obstructions such as trees, poles, and wires. Remember that wires cannot be seen from the air!
- c. The landing site is also to be free of stumps, brush, posts, large rocks, and debris that may blow up through the rotor.

#### 417.3 Wind Direction and Touchdown Preparation

- a. Determine the wind direction. Helicopters must land and take off into the wind.
- b. The approach and departure path is to be kept free of obstruction and the helicopter crew is to be made aware of any unavoidable obstructions.
- c. The square touchdown area is to be marked with five lights/road flares, one in each corner of the square and one indicating the direction where the wind is coming from. (Figure 1)

Figure 1  
Landing Area Set-up

417.4 Personnel Safety During Approach

- a. Spectators are to be kept at least 200 feet from the touchdown area.
- b. Emergency service personnel are to be kept at least 100 feet away.
- c. Have fire equipment standing by, if available. Wet down the touchdown area if it appears extremely dusty.
- d. Everyone who is working near the helicopter must wear eye protection. If helmets are worn, chin straps must be securely fastened to avoid loose helmets blowing up through the rotors.
- e. During landing, no one is to approach the helicopter.

417.5 Ground Guide

- a. When the helicopter is visualized, one person is to help guide the helicopter to a safe landing. This person must wear eye protection and should stand with his back to the wind with arms raised over his head to indicate the landing direction.
- b. As the helicopter turns into the wind and begins a descent, the ground guide will begin directing the approach using approved hand signals listed below in Future 2. The ground guide must be far enough from the touchdown area so that he can maintain eye contact with the pilot.

Figure 2, approved Hand Signals.

#### 417.6 Assisting the Crew

- a. Do not approach the helicopter once it has landed. The crew will approach the scene when it is safe to do so.
- b. Be prepared to assist the crew by providing security for the helicopter. If asked to provide security, do not allow anyone but the crew to approach the aircraft.
- c. Once the patient is packaged and ready to load, the crew will select two or three personnel to assist with loading. If selected, always be aware of the tail rotor (Figure 3) and always follow the crew's direction for your safety.

#### Figure 3, Danger Zones

#### 417.7 Night Landing

- a. Spotlights, floodlights, and hand lights used to define the landing area are not to be pointed towards the helicopter.
- b. Non-essential lights are to be turned off since white lights, such as spotlights, flash bulbs, and headlights will cause temporary blindness and thus diminish the pilot's night vision. Red lights however are very helpful in finding accident locations and do not affect the pilot's night vision.

#### 417.8 Departure

- a. When the helicopter is loaded and ready for take-off, be sure the departure path remains free of vehicles, spectators, or other obstruction.
- b. Realize that an emergency may necessitate a quick landing in the departure path.

#### 417.9 General Safety Rules

- a. When working around helicopters, never approach the aircraft from the rear. Always approach and depart the aircraft towards the front so you can see pilot and he can see you.
- b. When approaching the helicopter, remember to keep low to avoid the main rotor because winds can cause the rotor blades to flex downwards.
- c. If the helicopter has landed on a slope, approach and depart from the down-slope side.

#### 417.10 Hazardous Materials

- a. Accidents involving hazardous materials require special handling by Fire/Rescue units on the ground and thus toxic, poisonous, flammable, explosive, irritating, or radioactive materials are a concern since helicopter crews normally do not carry equipment to work with such materials.
- b. Before approach, the helicopter crew must be told of any hazardous materials on the scene since the crew could be poisoned and/or the engines could develop mechanical problems after flying through hazardous gases.
- c. Never assume that the crew has already been informed. Patients or victims contaminated by hazardous materials may require special precautions in packaging.
- d. Crews must be specifically advised if the victims may be contaminated by radioactivity.

#### 417.11 Hazardous Materials Landing Zones

- a. Landing zones must be selected to avoid all possibility of compromising the safety of the helicopter and its crew.
- b. If explosives, poisonous gases/vapors, or chemicals in danger of exploding or burning are on the emergency site, helicopter landing zones must be prepared upwind, at least one mile from the hazardous materials accident site and never in a low-lying area. The toxic gases or vapors may be heavier than air and gather in these low-lying areas.
- c. For hazardous material accidents involving radioactive materials, the helicopter landing zone must be prepared upwind, at least one-quarter mile from the accident, unless there are radioactive gases (steam or smoke) and in that case the landing zone will be established at least one mile upwind of the accident site.