

# LZ BOOK

How to prepare a helicopter Landing Zone

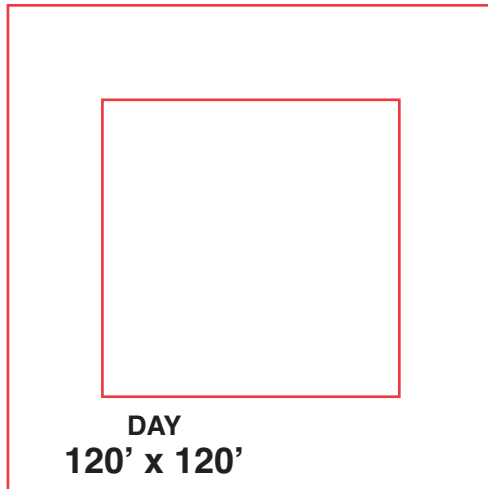


## Selecting a Scene Flight Landing Zone (LZ)

If the situation requires the use of a helicopter, check first to see if there is an area large enough to safely land the aircraft.

The landing zone or, LZ, should be level, firm and free from loose debris that could possibly blow up into the rotor system.

### LZ Size (day & night)



The landing zone should be clear of people, vehicles and obstructions such as trees, poles and wires. Be sure to remember that wires are difficult to see from the air. The LZ must be free of stumps, brush, road signs, posts, large rocks and cell phone towers. Advise the pilot of any obstacles within one quarter mile of the LZ on all sides (cell phone towers, electrical transmission lines, hills, etc.)

Keep spectators back at least 200 feet. Keep emergency vehicles 100 feet away and, if available, have fire equipment standing by. If eye protection is available, ensure that it is in place during landings and take-offs. Also make sure hats are removed; if helmets are worn, chin straps must be securely fastened.

If the LZ is extremely dusty and fire fighters are available, wet down the LZ.

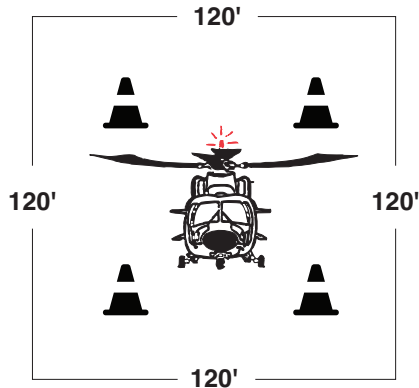


## Wind Direction and Touchdown Area in the LZ

Check to determine the wind direction. Helicopters land and take off into the wind.

If any obstructions exist, ensure they are either marked or communicated to the pilot on the initial radio call.

## Day Landing Zone

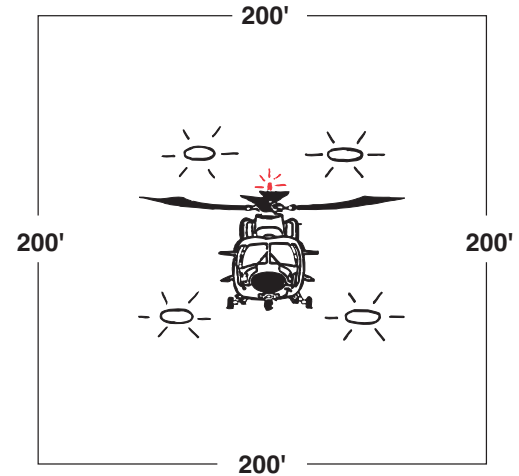


## Night Landing Zones

Mark the helicopter touchdown area within the landing zone with the light kit.

**Note:** Pyrotechnics (road flares) are not recommended to mark the LZ.

## Night Landing Zone



## Ground Guide

At night, spotlights, flood light and hand lights used to define the LZ are not to be pointed at the helicopter. Turn off non-essential lights. White lights such as spotlights, flash bulbs and high beam headlights ruin the pilot's night vision and temporarily blind him. Red lights, however, are very helpful in finding accident locations and do not affect the pilot's night vision.

During night operations, radio contact between the LZ coordinator and the pilot is **mandatory**.

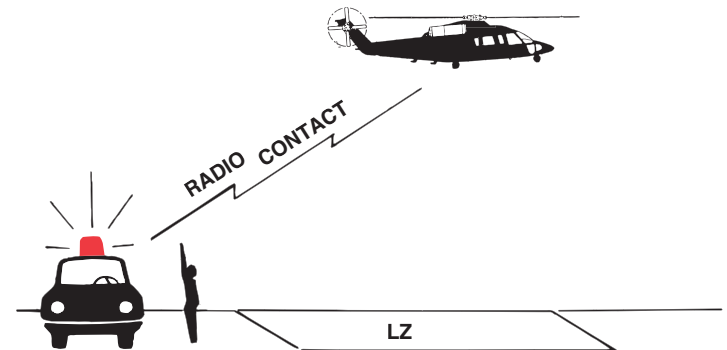
### Night Landing Zone Using Other Lights



When the helicopter is sighted, the LZ coordinator should provide course corrections to the aircraft from the pilot's point of view. Eye protection should be worn if available. The specialist should stand with his or her back to the wind and arms raised overhead. For night operations, hold a flashlight in each hand.

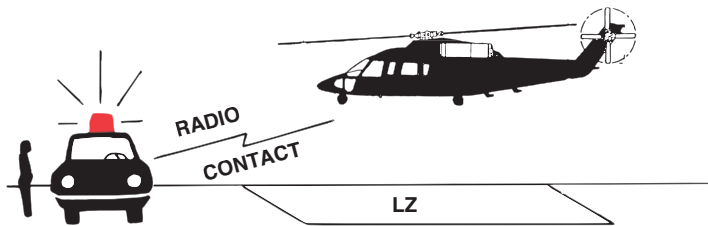
The pilot should then confirm the LZ by radio. Once the pilot has identified the LZ, the ground guide should move out of the LZ. A distance of 100 feet is recommended.

Note: Medical personnel are usually very busy at this time with the patient. If possible, it is recommended that the LZ specialist be someone other than medical personnel.



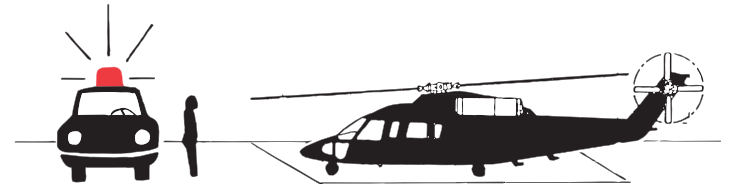
## Assisting the Crew

As the helicopter turns into the wind and begins to descend, and it is determined the LZ is not safe, the LZ specialist should provide assistance by means of radio contact or use the unsafe signal to wave off the aircraft. The LZ specialist should also be far enough from the touchdown area to maintain visual contact with the pilot.



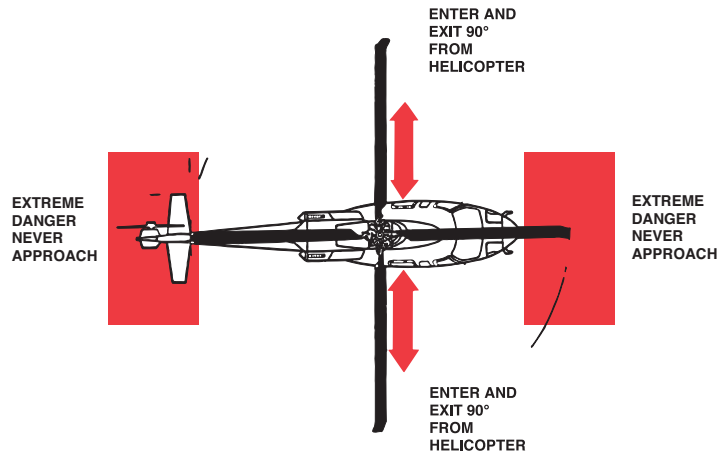
After the helicopter has landed, do not approach the aircraft. The crew will approach you.

Please be prepared to help the crew by providing security for the helicopter. If you are asked to provide security, do not allow anyone but the crew to approach the aircraft.



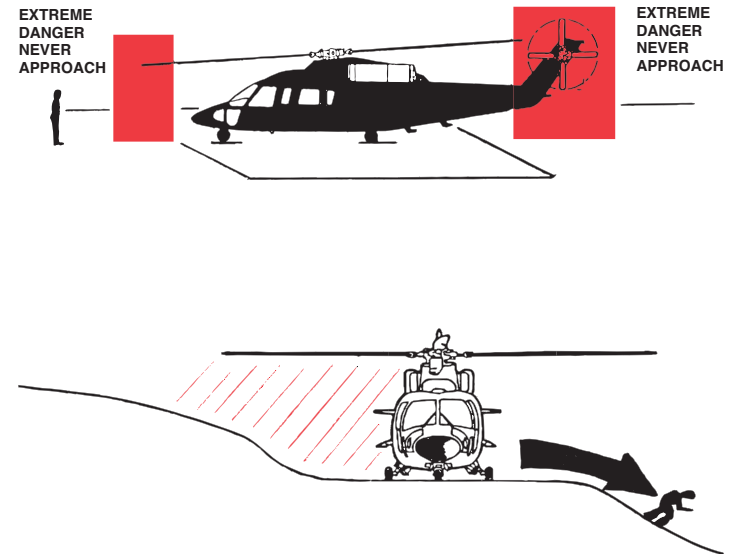
## General Rules

Once the patient is packaged and ready to load, allow the crew to open the helicopter doors and guide the loading of the patient. When approaching or departing the helicopter, always be aware of the tail rotor and always follow the crew's directions.

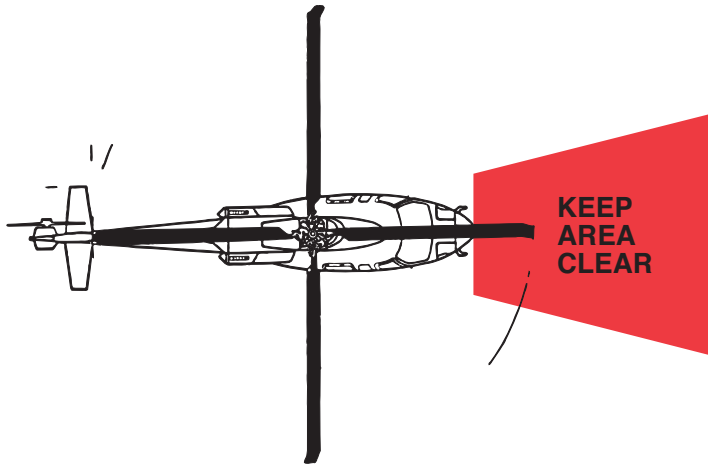


As a rule, never raise anything over your head in order to prevent injury or damage.

If the helicopter has landed on a slope, approach and depart from the down slope side only.



When the helicopter is loaded and ready for take-off, keep the departure path free of vehicles and spectators. The aircraft may need this area to execute an emergency landing.



## Hazardous Materials

Accidents involving hazardous materials require special handling by fire and rescue units on the ground. Preparations and considerations for helicopter operations in these areas are very important.

Hazardous materials of concern are those that are toxic, poisonous, flammable, explosive, irritating or radioactive in nature. Helicopter ambulance crews normally don't carry protective suits or breathing apparatus to protect them from these materials.

To avoid contamination, the helicopter ambulance crew must be told of hazardous materials on the scene prior to landing. For everyone's safety, patients and/or victims who are contaminated by hazardous materials may require special packaging precautions before they are loaded on the aircraft.

## Hazardous Chemicals and Gases

Hazardous chemicals and gases are extremely dangerous to the unprotected person and may be fatal if inhaled or absorbed through the skin.

Upon initial radio contact, the helicopter crew must be made aware of any hazardous gases in the area. Never assume that the crew has already been informed. If the aircraft were to fly through the hazardous gases, the crew could be poisoned and/or the engines could develop mechanical problems.

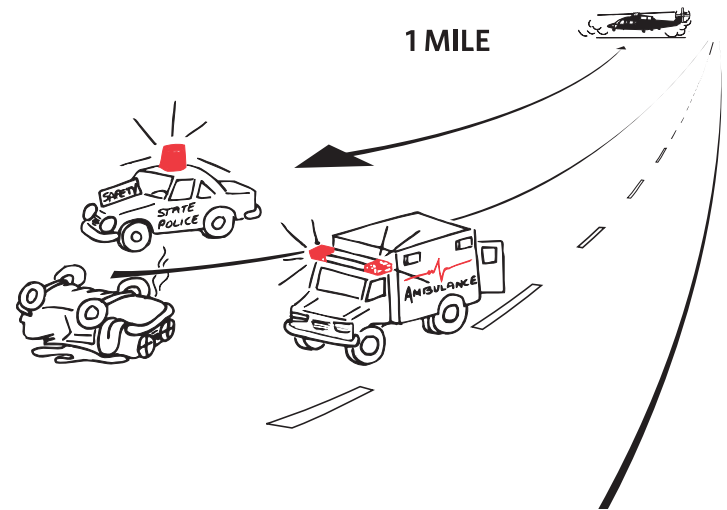
Poisonous or irritating gases may cling to a victim's clothing and go unnoticed until the patient is loaded and the doors of the helicopter are closed. The crew is then compromised.



## Hazard Materials Landing Zones

Helicopter landing zones must be selected to avoid ALL possibility of compromising the safety of the helicopter and its crew.

If explosives, poisonous gases, vapors or chemicals in danger of exploding or burning are present on the site, helicopter landing zones must be prepared **upwind**, at least **one mile** from the accident site and never in a low-lying area. Toxic gases or vapors may be heavier than air and gather in these low-lying areas.





## Radioactive Materials

For hazardous material accidents that involve radioactive materials, the helicopter landing zone must be prepared **upwind**, at least **one quarter mile** from the accident. If there are radioactive gases (steam or smoke) present, the landing zone must be at least **one mile upwind** of the accident site.

Some radioactive materials are more dangerous than others. It depends on the type and amounts of those materials. In general, radioactive materials are difficult to ignite, but will burn. The smoke is toxic to humans.

Helicopter crews should be advised if victims may be contaminated by radioactivity.



## Approved Hand Signals



**LAND HERE  
(DAY)**



**LZ UNSAFE  
(DAY)**



**LAND HERE  
(NIGHT)**



**LZ UNSAFE  
(NIGHT)**

## A Final Note

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This helicopter ambulance can serve you only if we arrive safely. Our welfare and the welfare of people on the ground depend on you, the professionals on the scene.

### Notice

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