

# Preparing A Landing Zone



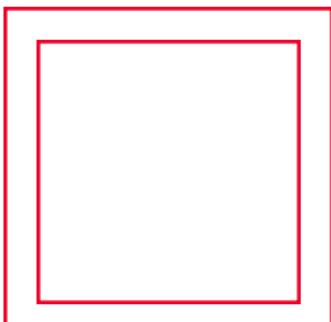
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## Selecting An On-Scene LZ

Selection of a safe LZ will be the responsibility of the requesting unit. Assign an LZ Commander who will be fully responsible for LZ Selection and Safety, all communications with the helicopter through the entire period that the helicopter is in the area.

First, determine if the area is large enough to land a helicopter safely. The landing surface should be flat and firm, free of debris that would blow up into the rotor system, such as loose dirt and snow.

Touchdown Area. The touchdown area should be a square with 100 foot sides.



100 Ft Sides

The landing site should be clear of people, vehicles, obstructions such as trees, poles and wires. Keep in mind that wires cannot be seen from the air. The landing site must be free of stumps, brush, posts and large rocks.

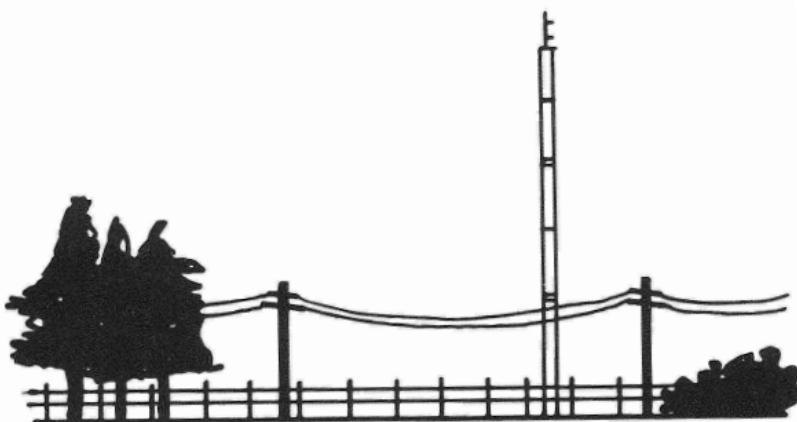
The landing site should have no more than the maximum slope that the aircraft operator recommends, usually 5 degrees. Down slope landing should be avoided.



## Wind Direction & Touchdown Area

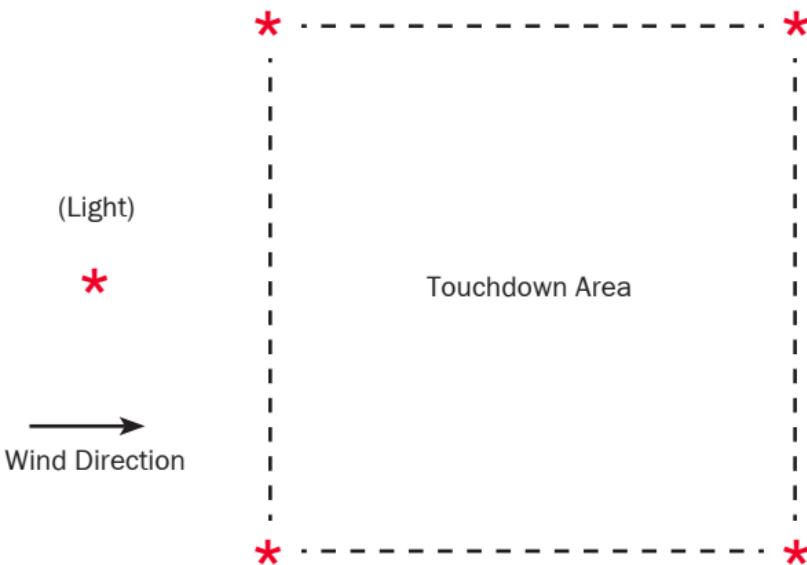
Consider the wind direction. Helicopters land and take off into the wind.

Is the approach and departure path free of obstructions (wires, poles, antennas, trees, etc.)? On initial radio call, inform the helicopter crew if there are obstructions. Always inform the pilot on the high reconnaissance of the direction the wind is blowing from and speed.



Mark the touchdown area with five lights or glow sticks (one in each corner and one indicating wind direction).

**\*Note: Road Flares are an intense source of ignition and as such must be closely managed. Other light sources are preferred, if available.**



## Personal Safety & Night Landing

The LZ commander should be prepared to “wave off” the landing if a hazard develops at any time via the radio or hand signals. The term “ABORT” or “GO-AROUND” should be used immediately upon observation of a hazard. Keep spectators and moving vehicles at least 200 feet from the touchdown area. Keep emergency service personnel at least 100 feet away. Have fire equipment (if available) standing by. Assure that everyone who will be working near the helicopter wears eye protection. If helmets are worn, chin straps must be securely fastened (no loose hats blowing up through rotors). During snow operations, ensure the landing zone is well marked and snow is packed down to reduce the risk of



“white-out” conditions. Have firefighters wet down the touchdown area if it is extremely dusty. **When the helicopter has landed, do not allow anyone to approach the aircraft, until told to do so by a flight crew member.**

At night . . . Assure that spotlights, floodlights and handlights used to define the area are not pointed toward the helicopter. Turn off non-essential lights. White lights, such as spotlights, flash bulbs and hi-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.

Note on night operations for helicopter operators that utilize night vision devices. . . The red revolving lights on emergency vehicles can be blinding for the pilot; therefore once the landing zone is identified, the flight crew may request that these lights be secured off.

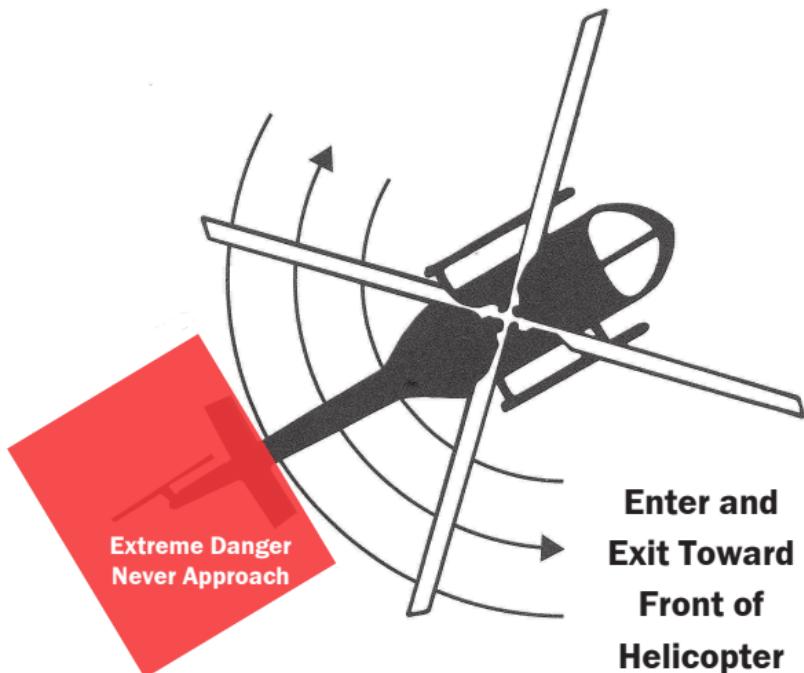
## **Assisting The Crew**

**Once the helicopter has landed, do not approach the helicopter.** The crew will approach you when it is safe to do so.

Please be prepared to assist the crew by providing security for the helicopter. If asked to provide security, **do not allow any vehicle or anyone but the crew to approach the helicopter or enter the landing zone area.**

The pilot and crew will determine if the situation warrants a “hot or cold load” based on the landing zone safety, security and patient situation as well as aircraft weight or fuel requirements.

If needed, the crew will request assistance from ground personnel. The flight crew will brief instructions on how to assist in the patient loading procedure. When approaching or departing the helicopter, always be aware of the tail rotor and always follow the crews directions for your safety.



## General Helicopter Safety Rules

**When working around helicopters, never approach from the rear.** Always approach and depart the aircraft towards the front or side so you can see the pilot, and he can see you. Only approach the helicopter under the supervision of a flight crew member. When approaching the helicopter, remember to keep low to avoid main rotor, because winds can cause the rotor to flex down.

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

It is recommended that the ground LZ commander remain on the assigned frequency until the aircraft is well clear of the area. Keep the landing zone clear until this time.



Extreme  
Danger  
Never  
Approach

## **Ground Guide**

We do not require or recommend the use of a ground guide for the landing site.

## About Lasers and Drones

With the increased availability and use of handheld laser pointing devices, aircrews across the country are reporting an increasing number of laser illumination events. Aiming a laser at an aircraft is a serious safety risk and violates federal law. Many high-powered lasers can completely incapacitate pilots, who are most vulnerable when attempting to land. If you observe any persons in the vicinity of the landing zone with a laser, ensure the laser is not in use at any time aircraft are in the vicinity. If necessary, request the assistance of law enforcement personnel to prevent anyone, whether intentional or not, from shining a laser at an aircraft.

An unmanned aircraft system (UAS), sometimes called a drone, is an aircraft without a human pilot onboard – instead, the UAS is controlled from an operator on the ground. In addition to certain airspace restrictions, UAS operations are prohibited

in the vicinity of manned aircraft. If you observe a UAS at any time in the vicinity of a landing zone, immediately notify the helicopter pilot, and request the UAS operator land and shut down his UAS until the helicopter has departed the area. If the operator can not be located, the helicopter pilot will remain clear of the area, or on the ground, until he can determine the UAS is no longer a threat. If necessary, request the assistance of law enforcement personnel to prevent anyone from operating a UAS in the vicinity of the landing zone. Recreational operators are required to give notice for flights within five miles of an airport to BOTH the airport operator and air traffic control tower, if the airport has a tower.

The FAA lists the following safety guidelines for UAS operations:

- Fly at or below 400 feet
- Keep your UAS within sight
- Never fly near other aircraft,  
especially near airports
- Never fly over groups of people
- Never fly over stadiums or sports  
events
- Never fly near emergency response  
efforts such as fires
- Never fly under the influence
- Be aware of airspace requirements

## Hazardous Materials

Accidents involving hazardous materials require special handling by Fire/Rescue units on the ground. Just as important are the preparations and considerations for helicopter operations in these areas.

Those hazardous materials of concern are those which 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 hazardous materials.

The helicopter ambulance crew must be told of hazardous materials on the scene, in order to avoid the contamination of the crew. Patients/victims contaminated by hazardous materials will require decontamination before loading on aircraft for the medical crew's protection.

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 engine 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.



## **Radioactive Materials**

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

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



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

When explosives, poisonous gases/vapors, or chemicals in danger of exploding and burning are on site, helicopter landing zones must be prepared *upwind*, at least *one mile* from the hazardous material accident site and never in low-lying areas. The toxic gases or vapors may be heavier than air and gather in these low-lying areas.

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 must be at least *one mile upwind* of the accident site.

## **A Final Note**

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

## **NOTICE**

**This material is intended for informational use only and does not purport to address all safety considerations involved with aircraft operations.**

**To request Life Flight:  
713.704.4357  
1.800.392.HELP (4357)**

**Questions about Landing Zone Safety,  
or to request a Landing Zone class,  
contact:**

**[lifeflightsafety@memorialhermann.org](mailto:lifeflightsafety@memorialhermann.org)**

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