

Docket No. SA-530

Exhibit No. 6B

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Patient Transport Request
NEMSPA Pamphlet
Preparing a Landing Zone

(20 Pages)

Preparing A Landing Zone



NEMSPA
National EMS Pilots Association

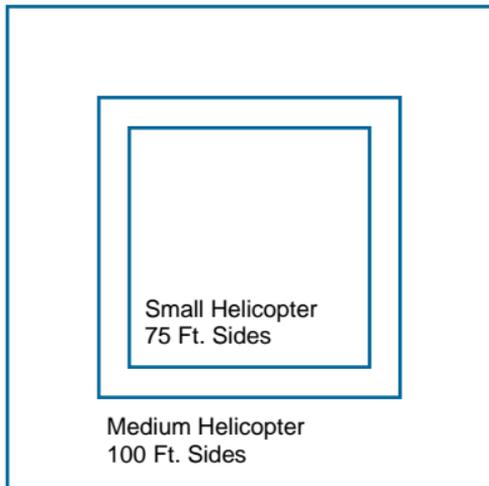


Selecting An On-Scene LZ

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. Small helicopter: the touchdown area should be a square with 75-foot sides, 100 x 100 ft. at night. Medium-size helicopter: the touchdown



Large Helicopter
150 Ft. Sides

area should be a square with 100-foot sides, 125 ft. at night. Large helicopter: the touchdown area should be a square with 150-foot sides, 200 ft. at night.

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.

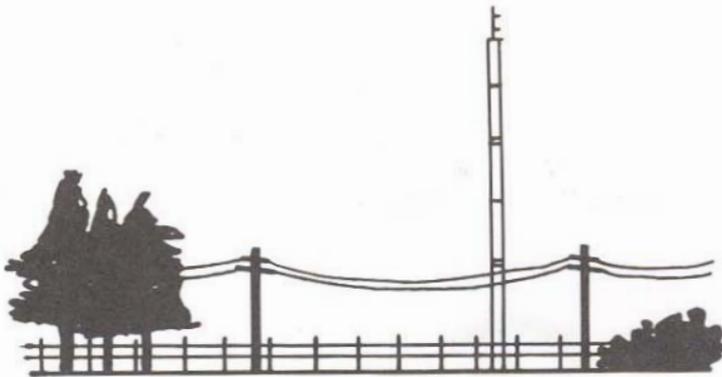
The landing site should have no more than the maximum slope that the aircraft operator recommends, usually 5 degrees. Down slope landing should be avoided.



Wind Direction & Touchdown Area

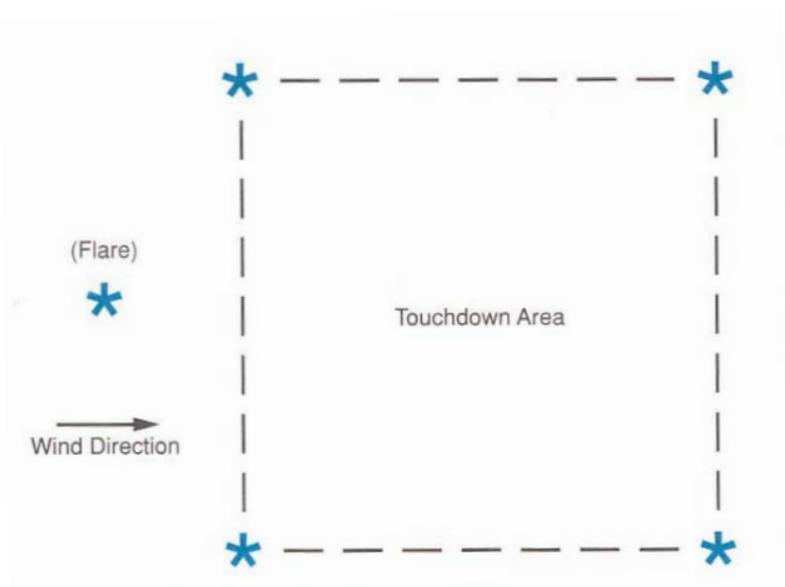
Consider the wind direction. Helicopters land and take off into the wind.

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, glow sticks or road flares (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 secure 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





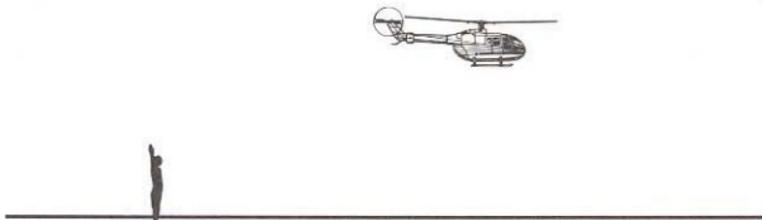
it is extremely dusty. When the helicopter has landed, do not allow anyone to approach the aircraft, until told to do so by a flight crew member.

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.

Ground Guide

Unless a ground guide has been trained to the standards of the helicopter operator, we do not recommend use of a ground guide. Ground operations should be in accordance with OSHA standards 1910.183 and hand signals consistent with a standard similar to the CA Forestry Code 8300. When you see the helicopter, one person should help guide the helicopter into a safe landing, and another person should be available on the assigned tactical frequency. The ground guide must wear eye protection. He should stand with his back to the wind and with his arms raised over his head to indicate the landing direction.



As the helicopter turns into the wind and begins a descent, the ground guide should begin directing the approach using approved hand signals. The ground guide should be far enough from the touchdown area that he can maintain eye to eye contact with the pilot.

At night, a ground guide should have suitable guide lights or remain completely clear of the LZ. Reflective clothing or markings must be worn by all personnel within the LZ.



Assisting The Crew

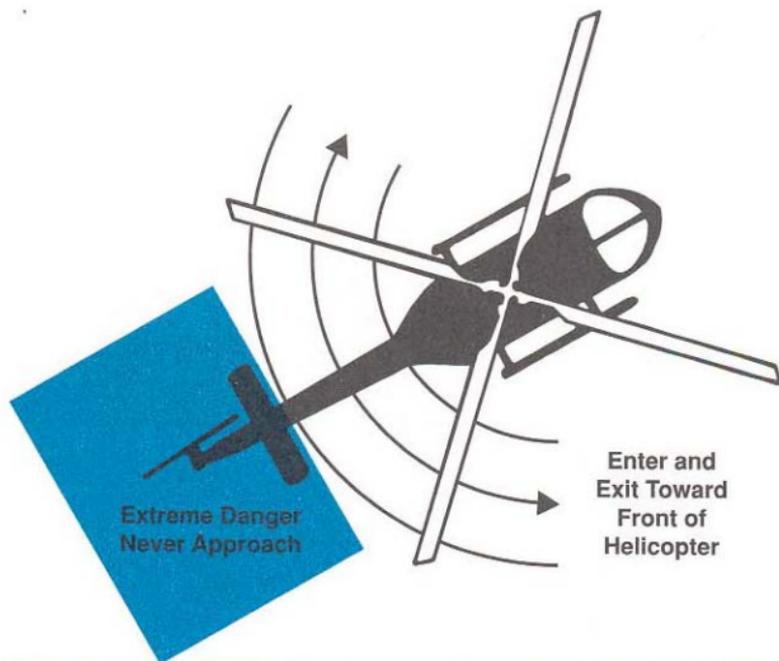
Once the helicopter has landed, do not approach the helicopter. The crew will approach you when it is safe to do so.

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.

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.



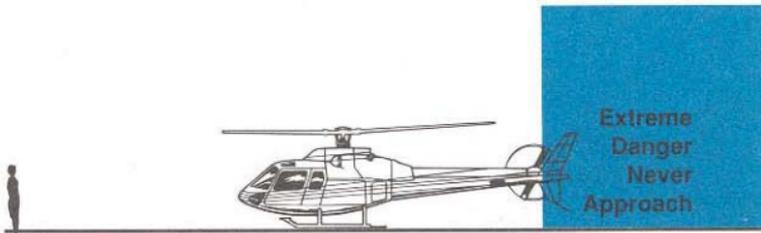
Once the patient is packaged and ready to load, allow the crew to select two or three personnel to assist loading. The flight crew will brief instructions on how to assist in the patient loading procedure. When approaching or departing the helicopter, always be aware of the tail rotor and always follow 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 so you can see the pilot, and he can see you. When approaching the helicopter, remember to keep low to avoid main rotor, because winds can cause the rotor to flex down.

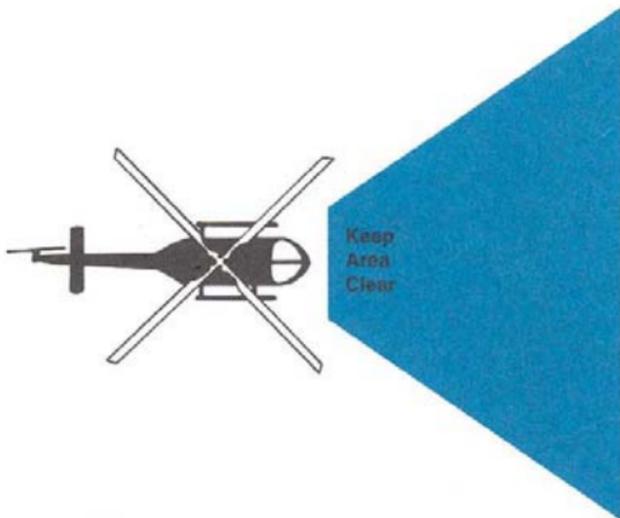
If the helicopter is landed on a slope, approach and depart from the down-slope side only.



When the helicopter is loaded and ready for take off, keep the departure path free of vehicles and spectators.

If an emergency were to occur, the pilot would need this area to execute our landing.

It is recommended that the ground LZ commander remain on the assigned frequency until the aircraft is well clear of the area.



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 the case, that 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

The National EMS Pilots Association assumes no responsibility or liability for incidents or damages in connection with the use of this product. This material is intended for informational use only and does not purport to address all safety considerations involved with aircraft operations.

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LZ Unsafe



Go Down



Go Up



Move Right



Move Left



Move Back



Move Forward

**Recommended Reading in
FAA Advisory Circular
135-14A**



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