LZ

Landing Zones and Aircraft Safety

- No smoking or open flames around any aircraft
- Always watch any aircraft in motion—they can close in on you very quickly.
- Never approach, leave work around or move around in any aircraft without the approval of the flight crew.
- If not directly working with the aircraft, keep a safe distance, especially if the aircraft is running.
- If you don't know, don't do it!!!
- Most aircraft are relatively fragile due to the lightweight materials they are made of so be careful with them.
- Helicopter Danger Areas
    - Main Rotor
        - Spins horizontally above the helicopter
        - Rotor can dip to less than 5'—directly in front is the lowest dip
        - Rotor wash of up to 200MPH
            - can blow debris everywhere
            - Secure *everything* near the LZ or it will fly away and possible cause complications in landing/take-off.
            - Close all vehicle doors in the vicinity
            - an area full of dust or similar substance(s) can create a cloud that makes it difficult for the pilot to see.
    - Tail Rotor
        - Located on the tail boom, moving in a vertical plane
        - Not visible when turning
        - Minimum height of 4' on some models
        - Causes more injuries or deaths than the mail rotor
            - "A very efficient mechanism for turning your head into a fine, pink mist."- Bill Mackreth, Pegasus Flight Paramedic
    - Jet blast
        - up to 1200 degrees F
        - can blow debris or start fires in dry grass
        - usually directed rearward and up, but not always
    - Antennas
        - can cause RF burns if touched while transmitter is on
        - the shorter the antenna, the greater the danger from RF radiation
    - Air intakes
        - not a problem on most helicopters, but could possible such in loose gear or debris
        - area of greatest noise
    - Rear half of chopper
        - totally blind to pilot
        - very small gusts of wind while hovering can swing the tail boom around.

- Can hover and operate at low altitude (wind can make this dangerous)
- off-center loading can cause a helo to swerve and crash

FLIR

Forward Looking Infrared
Mounted on the front of some State Police and Park Police Helicopters

Aircraft Search

- people get lost in the air too, however we don't look for them until they take a wrong turn into the ground.
- how do we know where they were?
  - NTSB (National Transportation and Safety Board)
    - comes to a crash scene and works with State Police
    - tracks aircraft via...
  - NTAP (National Tracking Analysis Program)
- ELT/DFing (a class in and of itself during the FTL semester)
  - ELT (Emergency Location Transmitter)
    - plane goes boom; box goes beep
  - DF (Direction Finder)
    - big antennae that locates the beeping box
- Crash Scenes are Crime Scenes!!!!

LZ--2

Landing Zones and Aircraft Safety

- LZ Location
  - ideally a large, open field with 360-degree approach
  - a ridge top or corridor where a helo can make a take-off run into the wind is acceptable
  - corridors should be long enough to allow a standard 15-degree take-off angle and still clear the barriers at the end by 10 feet; ideally 300 feet long

- Touchdown Pad
  - Point where the helo actually touches down.
  - 100' x 100' (absolute minimum of 70' x 80')
  - must be clear of all debris and brush down to one foot tall
  - ground slope must not exceed 5%
  - if area is snowy, trample the snow to prevent it from blowing about and blinding the pilot.
  - surrounding ground must not rise more than 40%
  - general rule: the height of obstacles sticking out of the ground (trees, telephone poles, buildings, etc.) should be, at most, half the value of their distance from the LZ.

- Obstacles
  - wires (e.g.telephone) are almost impossible to see from the air. Avoid, mark or remove them.
  - trees and ridges cause air turbulence that can make hovering very difficult

- Marking the LZ
  - Day
    - Mark the center of the pad with orange panels formed in an "H"
    - stake the panels down very well
  - Night
    - pad boundaries can be marked with road flares (can blow away and start a fire) or lights (preferred)
    - scene lights should be arranged so that the light is to the pilot's back as he lands. NEVER shine a light directly at a helicopter, you may blind the pilot.
    - pad can be marked with an "H" if it is well lit
    - cars or emergency vehicles may be used with LOW BEAMS.

- Marking the Wind
  - important because it is best for the pilot to approach *into* the wind, to simulate movement.

- Smoke flares in the daytime, so long as they don't obscure the pad.
- Orange streamers or a wind sock
- the "H" can be replaced with a "T"—the long tail points with the wind.

- Ground Loading
  - Approaching the Helicopter
    - Never approach until the pilot gives the OK. Stay clear while helo is in flight.
    - Always approach in the pilot's view
    - Always keep your head down
    - Never approach the helo from higher ground
    - Keep rope ends secure
    - Keep tall objects parallel to the ground
    - Never stand under a hovering helo unless assigned to work with the hoist

  - Hoist Operations
    - Avoid if at all possible
    - NEVER touch the cable until it has touched the ground
      - static charges can build up on the chopper creating a potentially fatal electric shock if not grounded
      - swinging cable can cause injury
    - Never secure the cable to any fixed object
    - Stokes litter is the only suitable way to hoist an injured person
    - There will be someone on scene to instruct and direct operations
    - *Everyone* should keep an eye on the helicopter as it hovers. If it loses power (listen for a change in engine sound), it will come down quickly, probably swerving to its left.
    - Everything going up must be secure in the litter