Overview
Heliport Design

United States Perspective

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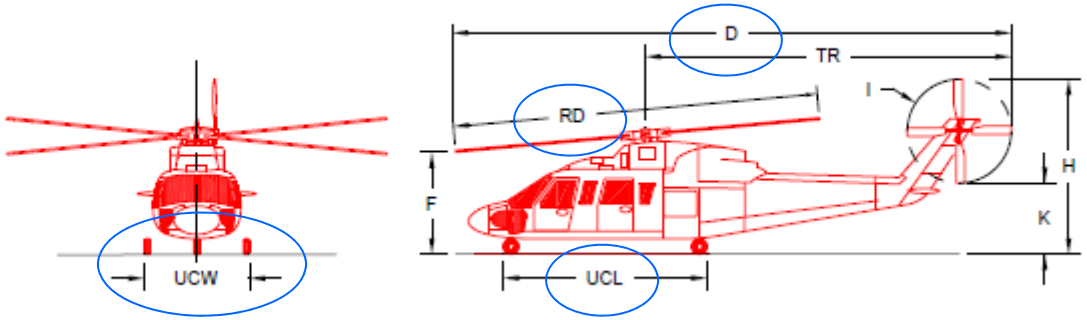
Advisory Circular AC150/5390-2C

- **Applicability:**
  - Recommended guidelines
  - Mandatory for heliports funded with federal grants.
- **Types of Heliports:**
  - General Aviation
  - Transport
  - Hospital
- **Prior Permission Required (PPR)**
  - Exclusive use and authorized by the owner of the heliport
  - Pilots are expected to be knowledgeable of:
    - ✓ Approach / Departure path characteristics
    - ✓ Preferred heading and facility limitations
    - ✓ Lighting, obstacles, size and weight limits

AC150/5390-2C

- **Prescriptive standards –** Are design guidelines that prescribe specific dimensions and instructions.
- **Approach/departure -** All protection surfaces associated with a FATO area are not based on performance or capabilities of a Helicopter.
- **Assumptions** - The advisory circular assumes that no more than one helicopter will be within the final approach and takeoff (FATO) area and the associated safety area. If there is a need for more than one touchdown and liftoff (TLOF) area at a heliport, locate each TLOF within its own FATO and within its own safety area.

Design Parameters



Design Helicopter may be a composite helicopter that reflects:

- Maximum weight, contact area, single or multiple gears
- Overall length (D), rotor diameter (RD), tail rotor arc, undercarriage dimensions

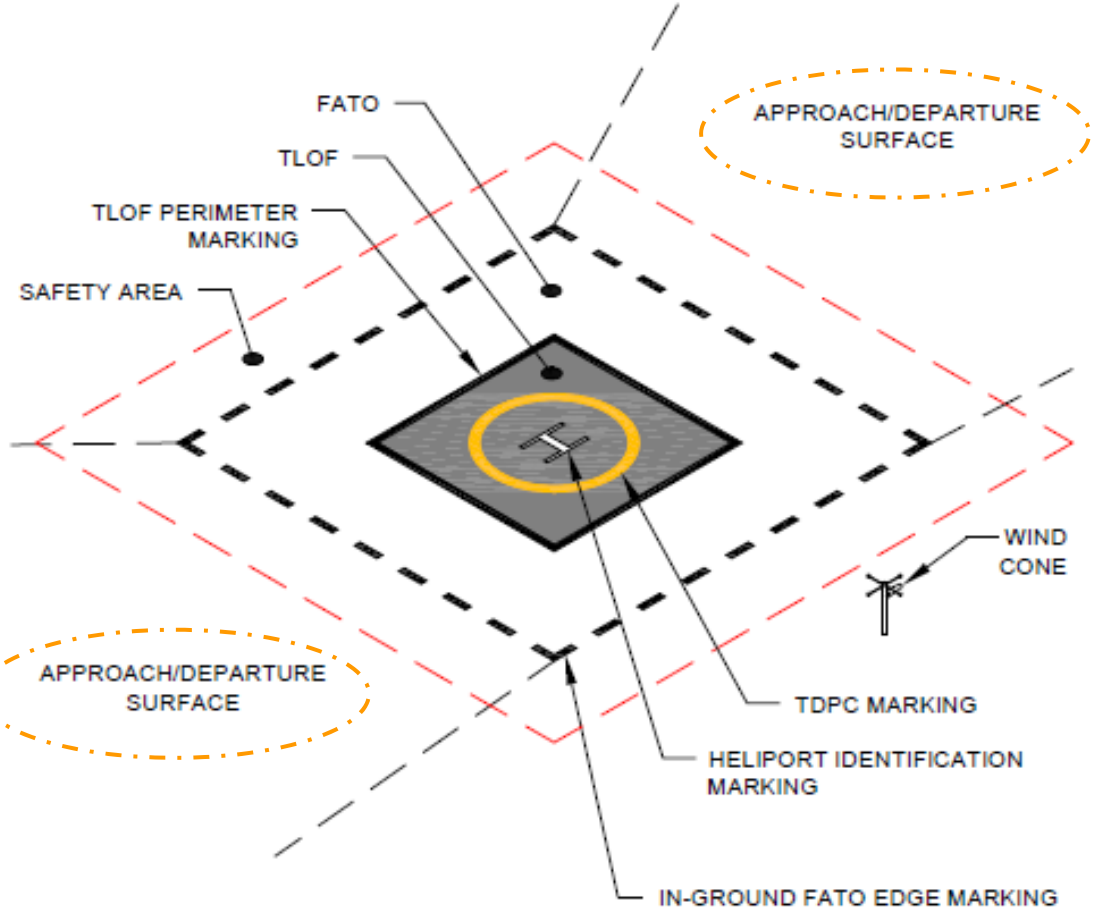
Design Loads:

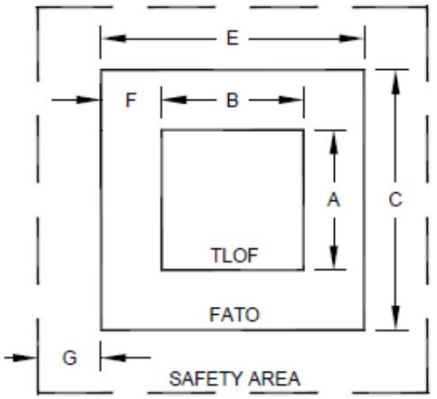
- Loads imposed by the design helicopter and any additional support vehicles and equipment.
- Static Load: maximum takeoff weight.
- Dynamic Load: is 150% of the maximum takeoff weight of the design helicopter.

Site selection

- **Planning -** future expansion, occasional military use, disaster relief.
- **Property requirements -** Hospital, wind indicator, clear approaches, approach lights, helicopter protection zone.
- **Turbulence -** Air flow, surrounding buildings, trees, terrain, roof-tops and ground-level.
- **Ground level -** Buildings, trees, light posts, logistics, etc.
- **Elevated –** Turbulence effects, adjacent structures, wind, approach / departure paths.
- **Electromagnetic effects -** presence of large metallic objects, ventilation shafts, magnetic resonance imaging, etc.
- **Helicopter Protection zone –** approach departure paths over parking lots, over or near power lines and trees, etc.

General Aviation





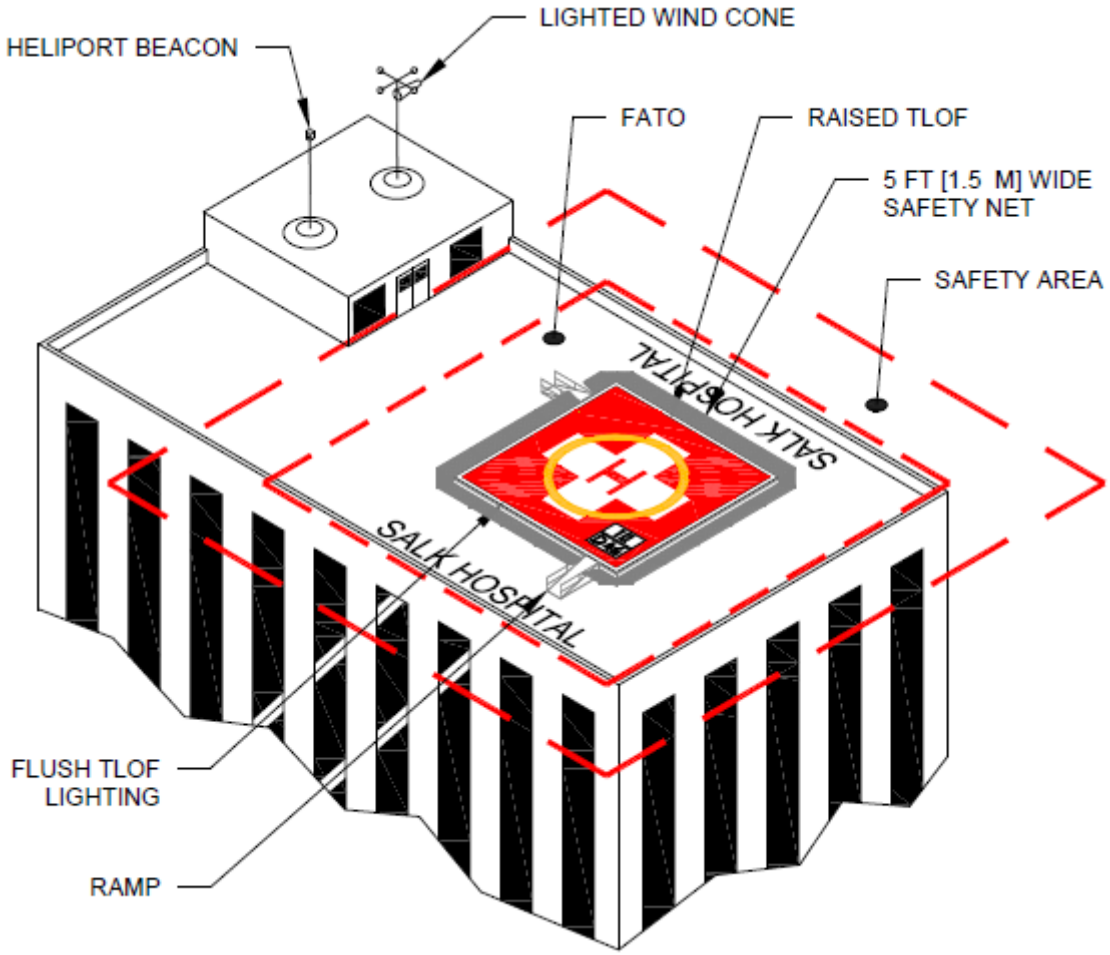
DIM	ITEM	VALUE
A	Minimum TLOF Length	1 RD
B	Minimum TLOF Width	1 RD
C	Minimum FATO Length	1 ½ D
E	Minimum FATO Width	1 ½ D
F	Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD
G	Minimum Safety Area Width	See Table 2-1

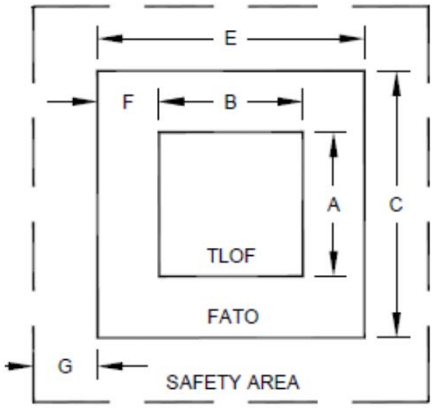
Notes:

1. Locate the wind cone so that it will not interfere with the Approach/Departure Path or Transitional Surface.

2. TLOF size and weight limitation box omitted for clarity.

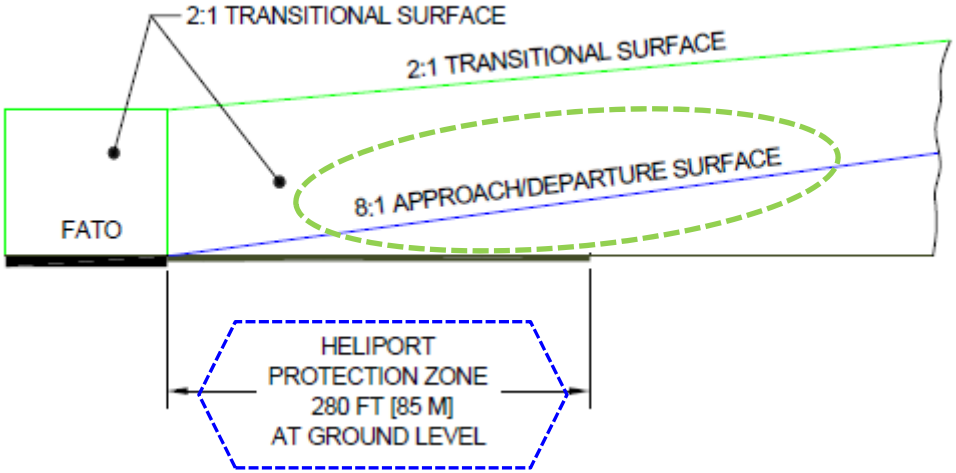
Hospital Heliport

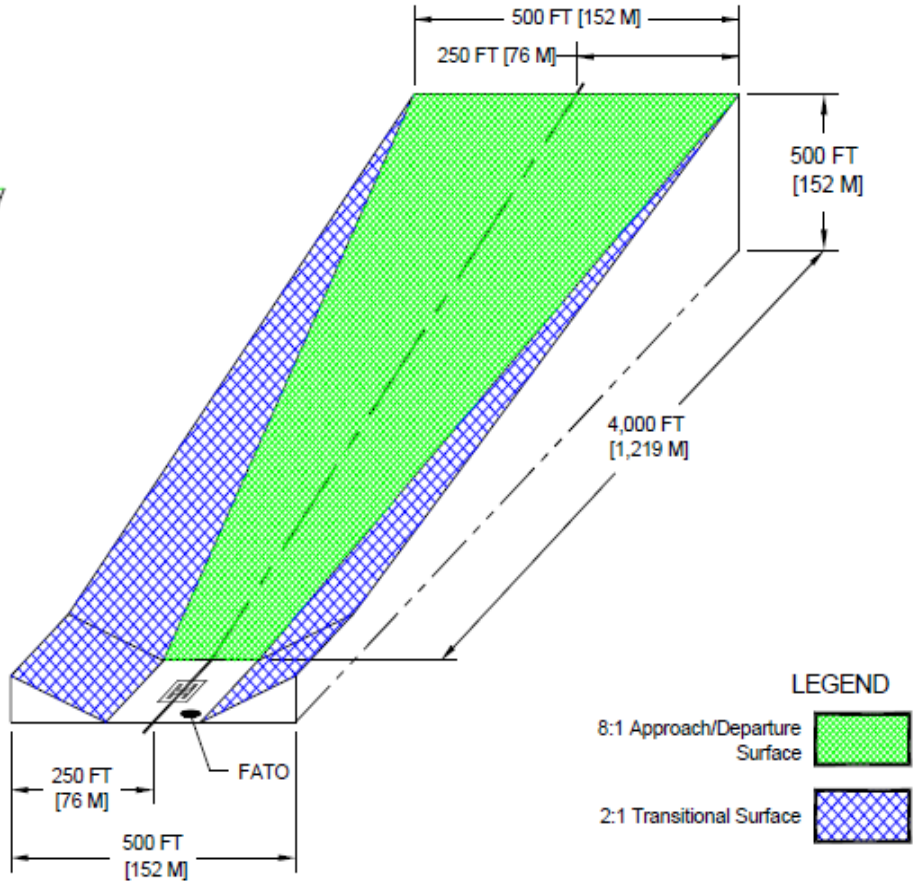




ITEM	VALUE
Minimum TLOF Length	1 RD but not less than 40 ft [12 m]
Minimum TLOF Width	1 RD but not less than 40 ft [12 m]
Minimum FATO Length	1 ½ D
Minimum FATO Width	1 ½ D
Minimum Separation Between the Perimeters of the TLOF and FATO	¾ D - ½ RD
Minimum Safety Area Width	see Table 4-1

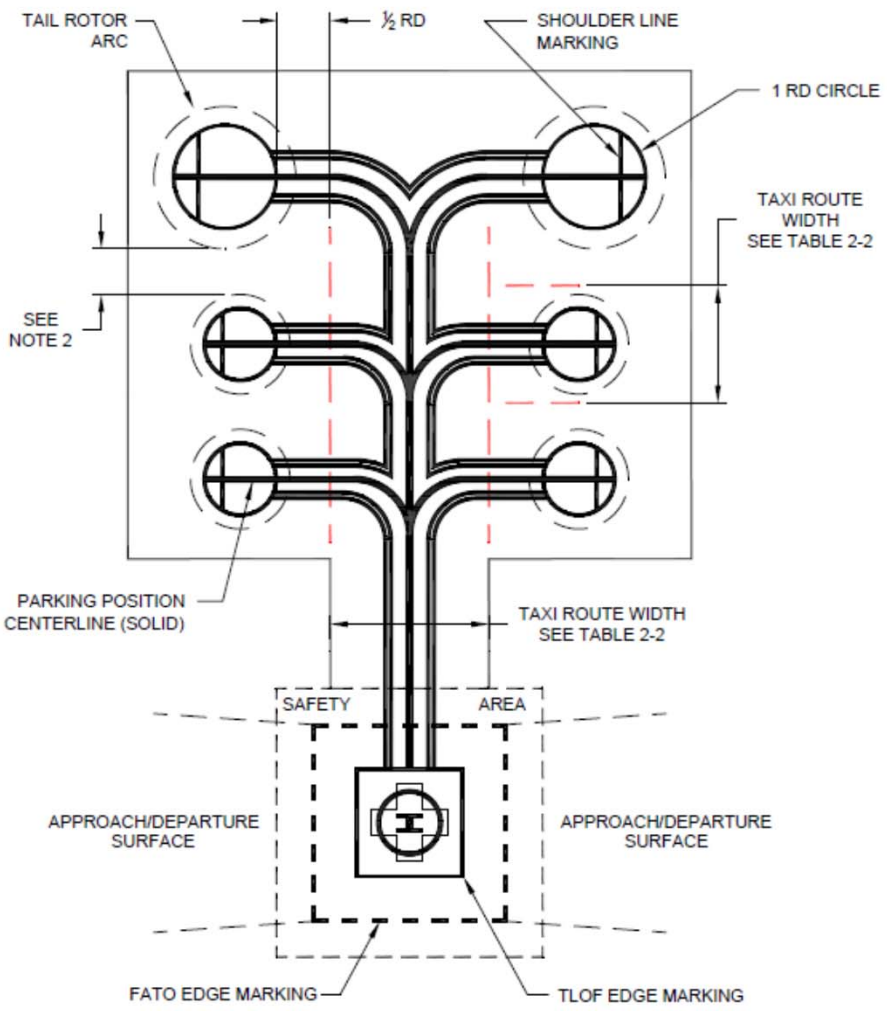
Approach Departure Surfaces



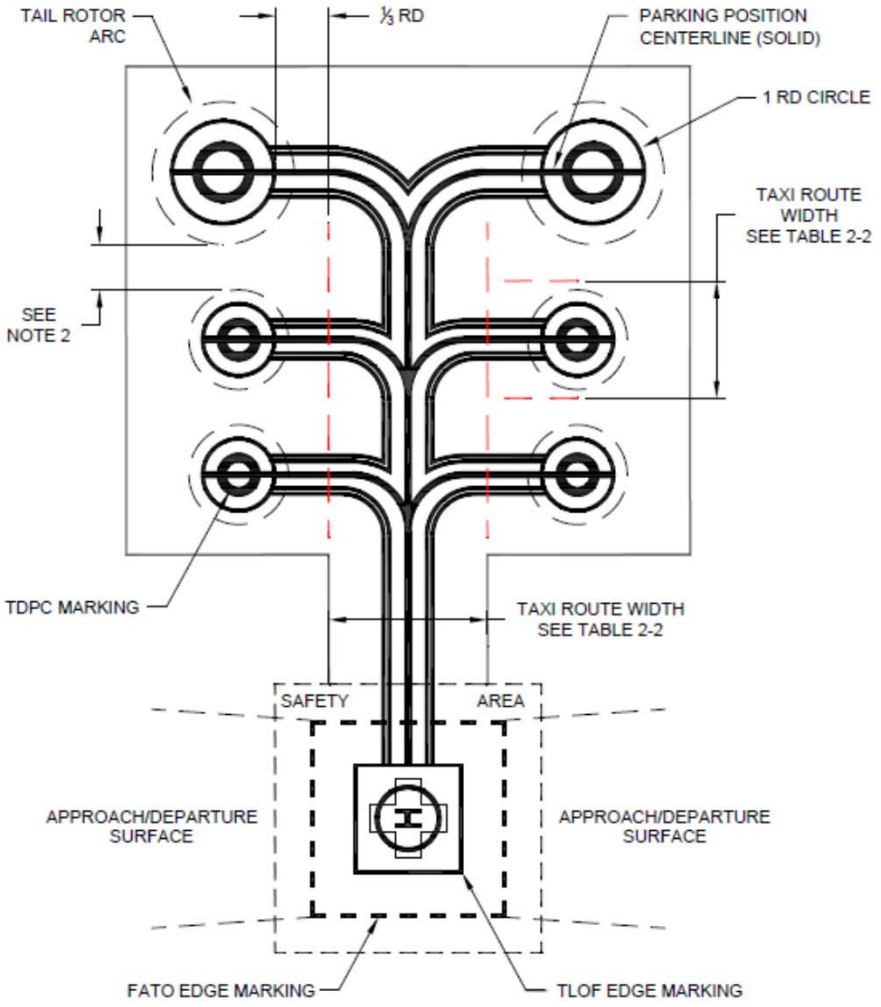


HPZ is for the protection of people and property on the ground below the flight paths.

Parking Positions



Back-out



Turn-around

Heliport on Airport

- **Distance between FATO center to runway centerline for VFR Operations:**

Airplane Size	Small Helicopter 7,000 lbs or less	Medium Helicopter 7,001 to 12,500 lbs	Large Helicopter over 12,500 lbs
Small Airplane 12,500 lbs or less	300 feet (91 m)	500 feet (152 m)	700 feet (213 m)
Large Airplane 12,500 lbs to 300,000 lbs	500 feet (152 m)	500 feet (152 m)	700 feet (213 m)
Heavy Airplane Over 300,000 lbs	700 feet (213 m)	700 feet (213 m)	700 feet (213 m)

Hospital Heliport

Thank you!

Questions!