

# ICAO Heliport Design

The following information is for the preliminary planning of a heliport. Recommendations and standards for heliport design are found in ICAO Annex 14, Vol. II - Heliports. Flight Light recommends that anyone constructing or modifying a heliport should determine all site-specific requirements and consult with your local planning authority.

## Basic Layout

A heliport should include at least one Touchdown and Liftoff (TLOF) area centered in a Final Approach and Takeoff (FATO) area and a peripheral safety area.

## Heliport Lighting

For night operations, the TLOF, FATO, taxiways, taxi routes, and windsock should be lighted. Other useful visual aids include: floodlights, approach lights, taxiway lights, a heliport identification beacon, and a heliport approach slope indicator.

## Touchdown and Liftoff (TLOF) Lights

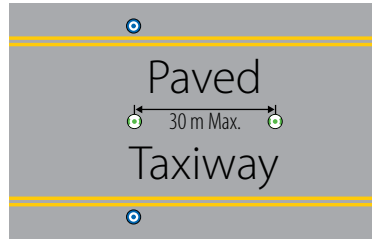
Green lights should be used to define the TLOF perimeter. Use a minimum of four light fixtures per side of a square or rectangular TLOF (including one at each corner). Define a circular TLOF using a minimum of 14 lights, uniformly spaced. TLOF perimeter lights should be uniformly spaced at intervals of not more than 5 m for surface-level heliports (3 m for elevated heliports and helidecks). Locate lights within 1.5 m inside or outside of the TLOF perimeter. The perimeter lights should not exceed a height of 25 cm and should be inset when a light extending above the surface could endanger helicopter operations.

## Final Approach and Takeoff (FATO) Lights

White lights (with a reading of 100 candelas or more) MUST BE used to define the FATO perimeter. Use a minimum of four flush or raised light fixtures per side of a square or rectangular FATO. Space lights at intervals of not more than 50 m. Locate a light at each corner, with additional lights uniformly spaced between the corner lights. To define a circular FATO, use a minimum of ten lights at intervals of not more than 5 m. The lights should not exceed a height of 25 cm and should be inset when a light extending above the surface would endanger helicopter operations.

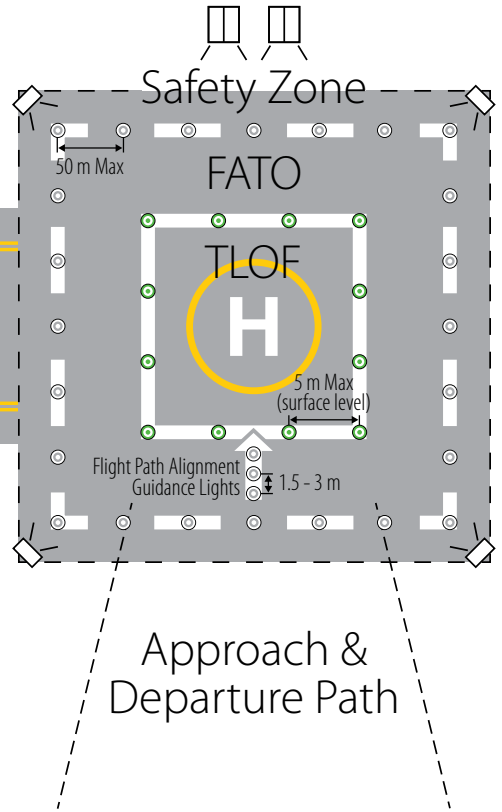


This drawing is not to scale and is for informational purposes only. All heliports must comply with ICAO Annex 14, Vol. II - Heliports. Contact your local planning authority with questions.



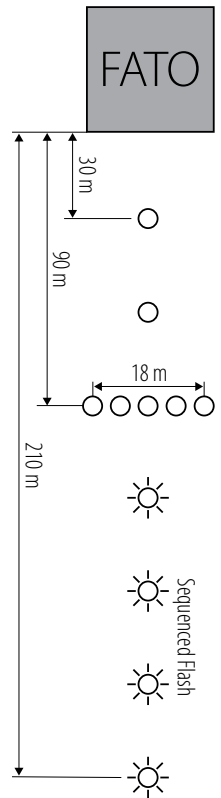
## Legend

- Omnidirectional Inset Light - Green
- Omnidirectional Light - White
- Bi-directional Inset Light - Green
- Omnidirectional Light - Blue
- Floodlight
- Heliport Beacon
- Visual Approach Slope Indicator
- Lighted Windsock



## Approach Lighting System

An approach lighting system may be provided at a heliport to indicate a preferred approach direction. The approach lighting system should be located in a straight line along the preferred direction of approach. An approach lighting system should consist of a row of three white lights spaced uniformly at 30 m intervals and of a crossbar 18 m in length at a distance of 90 m from the perimeter of the FATO. The lights forming the crossbar should be in a horizontal straight line at right angles to, and bisected by, the line of the centerline lights and spaced at 4.5 m intervals. Where there is the need to make the final approach course more conspicuous, additional lights spaced uniformly at 30 m intervals should be added beyond the crossbar. The lights beyond the crossbar may be steady or sequenced flashing, depending upon the environment.



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### Aiming Point Lights

An aiming point should be provided at a heliport where it is necessary for a pilot to make an approach to a particular point above a FATO before proceeding to a TLOF. The aiming point should be located within the FATO. The aiming point marking is an equilateral triangle with the bisector of one of the angles aligned with the preferred approach direction. The aiming point can be marked with a pattern of at least six flush omnidirectional white lights.

### Flight Path Alignment Guidance Lights

You may indicate available approach and/or departure path directions by placing white lights in a straight line along the direction of approach and/or departure flight paths. If necessary, extend the lights across the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO or safety area. Install three or more lights spaced uniformly a total minimum distance of 6 m. Intervals between lights should not be less than 1.5 m and should not exceed 3 m. Where space permits there should be 5 lights.

### Visual Approach Slope Indicator

The heliport visual approach slope indicator provides visual course and descent cues that helps pilots guide a helicopter to the desired position within the FATO. A visual approach slope indicator should be located adjacent to the nominal aiming point and aligned in azimuth with the preferred approach direction.

### Floodlights

If ambient light does not adequately illuminate markings for night operations, floodlights should be used to illuminate the TLOF, the FATO, and/or the parking area. Floodlights should be placed so they do not constitute an obstruction hazard. Aim floodlights down to provide adequate illumination on the surface. Make sure floodlights do not interfere with pilot vision during takeoff and landings.

### Lighted Wind Cone

A heliport should be equipped with at least one wind cone that gives a clear indication of the direction of the wind and a general indication of the wind speed. The wind cone must be placed outside the safety zone and away from flight paths.

### Heliport Identification Beacon

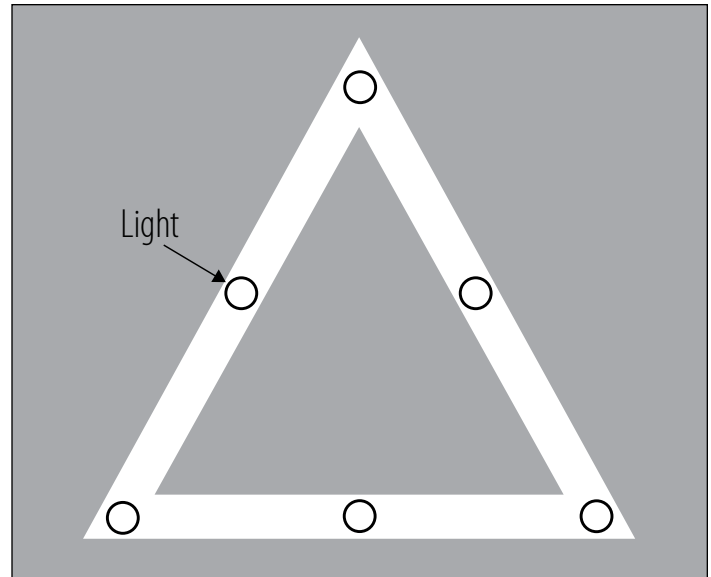
A heliport beacon should be provided at a heliport where long-range visual guidance is considered necessary and is not provided by other visual means; or identification of the heliport is difficult due to surrounding lights. The heliport beacon should emit repeated series of equispaced short duration white flashes.

### Taxiway Lights

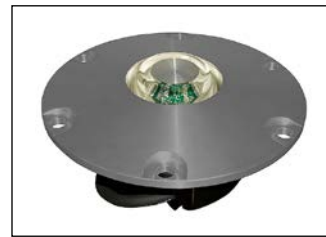
Taxiway centerlines are defined with flush bi-directional green lights spaced at maximum 30 m intervals. Blue lights spaced at maximum 60 m intervals are used to define the edges of the taxi route.

### Obstruction Lights

Difficult-to-see objects should be marked with a red obstruction light. Contact your local planning authority with questions.



*Aiming Point Lights*



*TLOF Light Fixture*



*Floodlight*



*FATO Light Fixture*



*Heliport Identification Beacon*



*Wind Cone*



*Obstruction Light*

