HELIPORTS

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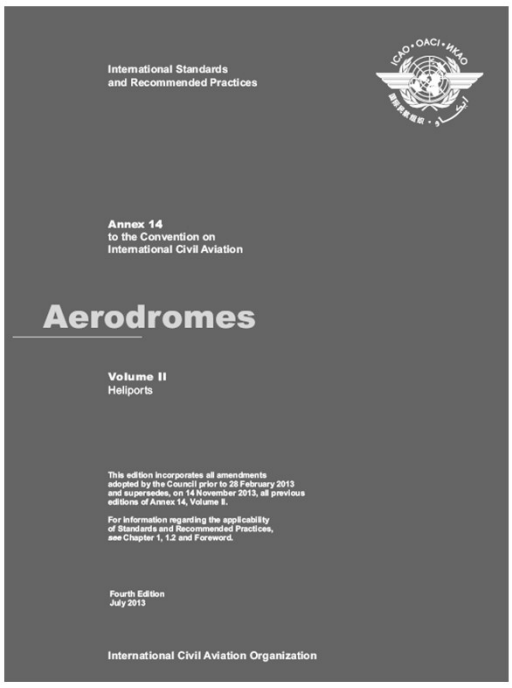

AMENDMENTS

Amendments are announced in the supplements to the *Catalogue of ICAO Publications;* the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS				CORRIGENDA			
No.	Date applicable	Date entered	Entered by	No.	Date of issue	Date entered	Entered by
1-5	Incorporated in this edition						
6	13/11/14	—	ICAO				
7	10/11/16	—	ICAO				

Checklist of Amendments to Annex 14, Volume II

	Effective date	*Date of applicability*
Fourth Edition (incorporates Amendments 1 to 5)	15 July 2013	14 November 2013
Amendment 6 (adopted by the Council on 3 March 2014)	14 July 2014	13 November 2014
Amendment 7 (adopted by the Council on 22 February 2016)	11 July 2016	10 November 2016
Amendment 8 (adopted by the Council on 9 March 2018) Replacement pages (v), (vii), (xiv), 1-3, 2-1 to 2-3, APP-1 to APP-9	16 July 2018	8 November 2018

AIRPORT STANDARDS DIRECTIVE 902
[ASD 902]

STANDARDS FOR
SURFACE-LEVEL HELIPORT

AIRPORTS STANDARDS DIVISION
DEPARTMENT OF CIVIL AVIATION MALAYSIA

ASD902
[illegible]

TYPES OF HELIPORTS

TYPES OF HELIPORTS

- Surface level heliports
- Elevated heliports
- Helidecks
- Shipboard heliports

SURFACE LEVEL HELIPORTS

- A heliport located on the ground or on a structure on the surface of the water

ELEVATED HELIPORTS

- A heliport located on a raised structure on land

HELIDECKS

- A heliport located on a fixed or floating offshore facility such as an exploration and/ or production unit used for the exploitation of oil or gas

SHIPBOARD HELIPORTS

- A heliport located on a ship that may be purpose or non-purpose built. A purpose built shipboard heliport is one designed specifically for helicopter operations.
- A non purpose built heliport is one that utilizes an area of the ship that is capable of supporting a helicopter but not designed specifically for that task.

COMMON REFERENCE SYSTEM

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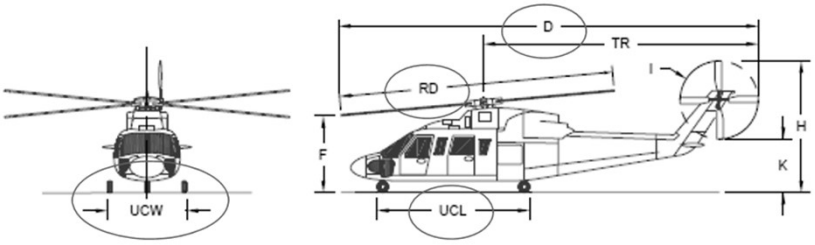
- **Horizontal Reference System**
  - World Geodetic System 1984 WGS-84
  - E.g 50°52'47" N and 4°42'01" E
- **Vertical Reference System**
  - Mean sea level (MSL) datum
- **Temporal Reference System**
  - Coordinated Universal Time (UTC)
  - Gregorian calendar

DESIGN CONSIDERATIONS

DESIGN PARAMETERS



- Maximum weight
- Contact area

  (nos. of gears or landing skids)
- Overall length (D)
- Rotor diameter (RD)
- Undercarriage dimensions
- Static load : maximum takeoff weight (MTOW)
- Dynamic load: 150% of MTOW

HELICOPTER PERFORMANCE

- **Performance Class 1**
  - A helicopter with performance such that, in the case of a critical power unit failure, it is able to land on the rejected take off area or safely continue the flight to an appropriate landing area, depending upon when the failure occurs.
- **Performance Class 2**
  - A helicopter with performance such that in case of a critical power unit failure, it is able to safely continue the flight, except when the failure occurs prior to a defined point after takeoff or after a defined point before landing, in which case a forced landing may be required.
- **Performance Class 3**
  - A helicopter with performance such that in case of a power unit failure at any point in the flight profile, a forced landing must be performed.

Design Strength

- Design static load = heli's maximum certificated take off weight applied though the total contact area of the wheels or skids
- Dynamic load = > 150 % of the maximum certificated take off weight transmitted through the main wheels or through the contact areas of a skid equipped heli.

SITE SELECTION

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

DEFINITIONS

Final Approach and Take Off Area (FATO)

- A defined area over which the final phase of the approach maneuver to hover or landing is completed and from which the take off maneuver is commenced, Where the FATO is used by helicopters operated in performance class 1, the defined area includes the rejected take off area available.
- All final approaches shall terminate at the FATO and all take-offs to climb shall start at the FATO. A touchdown or lift off may or may not be made at the FATO

Touchdown and Lift Off Area (TLOF)

- An area on which a helicopter may touch down or lift off.
- A TLOF may or may not be located within the FATO
- Support static and dynamic loads

Safety Area

- A defined area on a heliport surrounding the FATO which is free of obstacles, other than those required for air navigation purposes, and intended to reduce the risk of damage to helicopters accidentally diverging from the FATO

Protection Area

- An area within a taxi route and around a helicopter stand which provides separation from objects, the FATO, other taxi route and helicopter stands, for safe maneuvering of helicopters

Helicopter Air Taxiway

- A defined path on the surface established for the air taxiing of helicopters.

Helicopter Ground Taxiway

- A ground taxiway intended for the ground movement of wheeled undercarriage helicopters.

Helicopter Stand

- An aircraft stand which provides for parking a helicopter and where ground taxi operations are completed or where the helicopter touches down and lifts off for air taxi operations

Helicopter Taxi Route

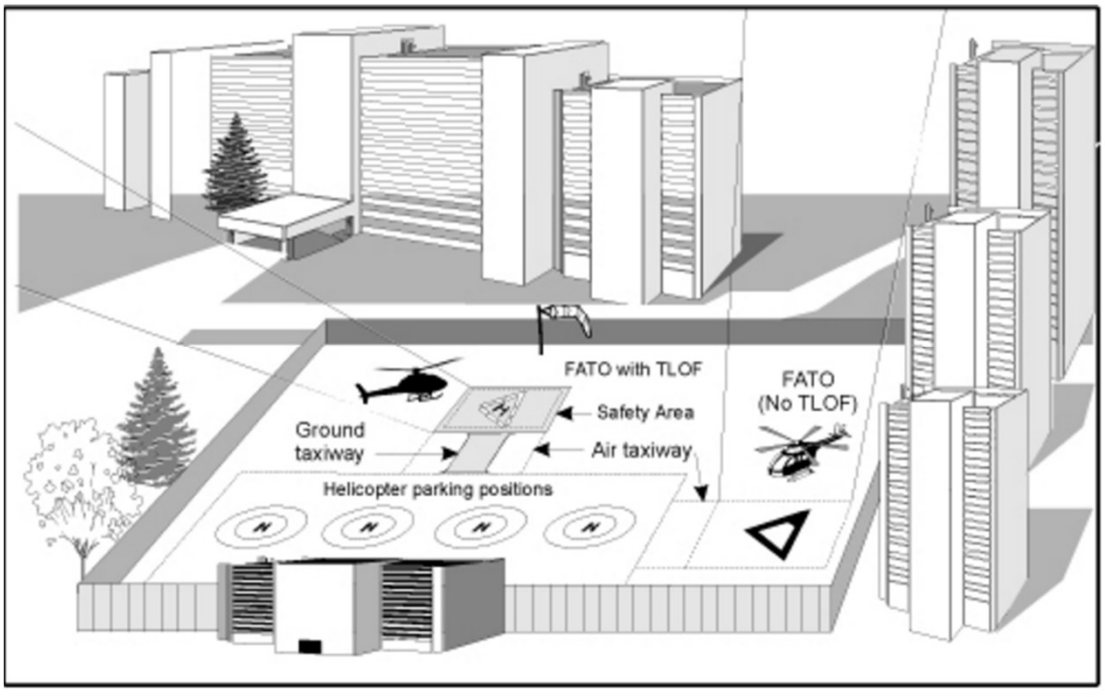
- A defined path established for the movement of helicopters from one part of a heliport to another. A taxi route includes a helicopter air or ground taxiway which is centre on the taxi route.

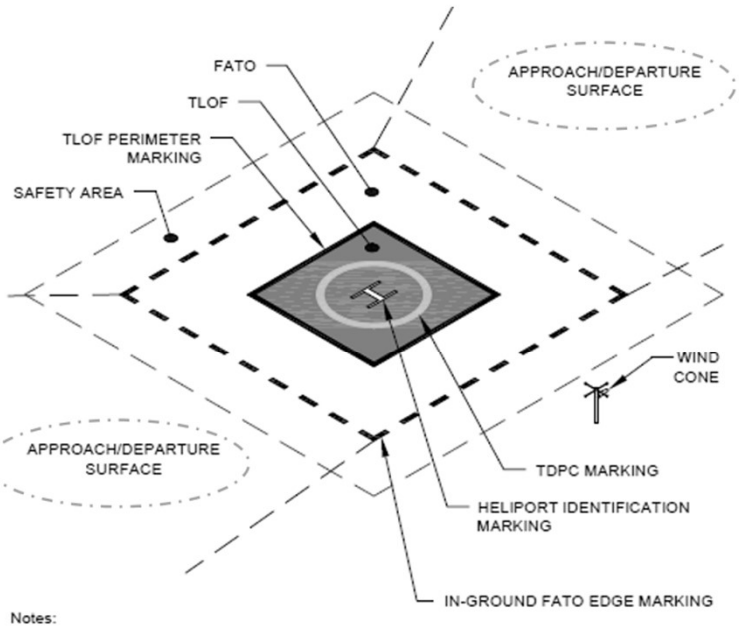
Dynamic Load Bearing Surface

- A surface capable of supporting the loads generated by a helicopter conducting an emergency touchdown on it

Static Load Bearing Surface

- A surface capable of supporting the mass of a helicopter situated upon it.





Notes:

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

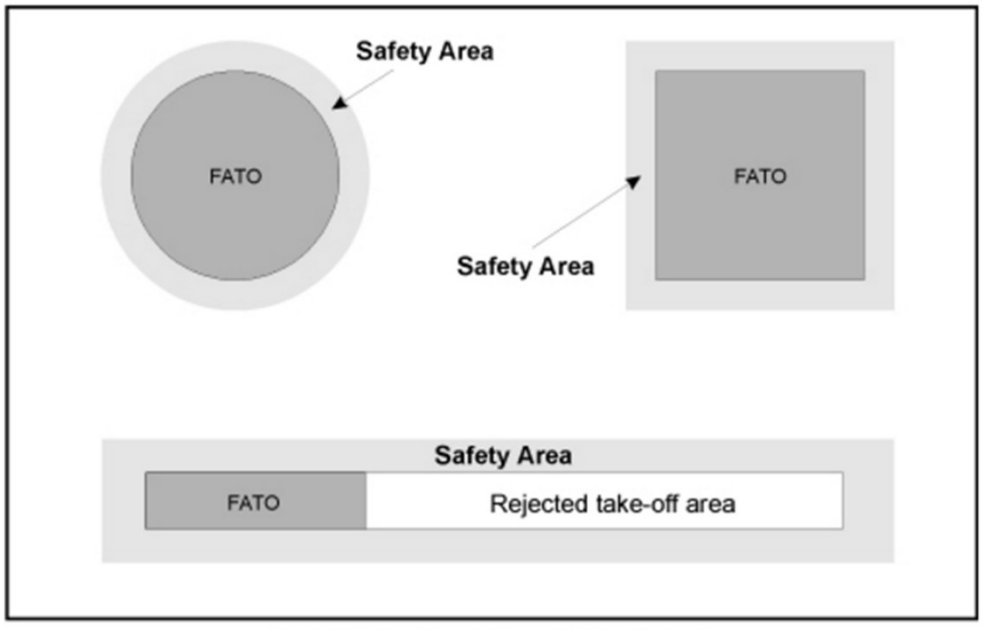
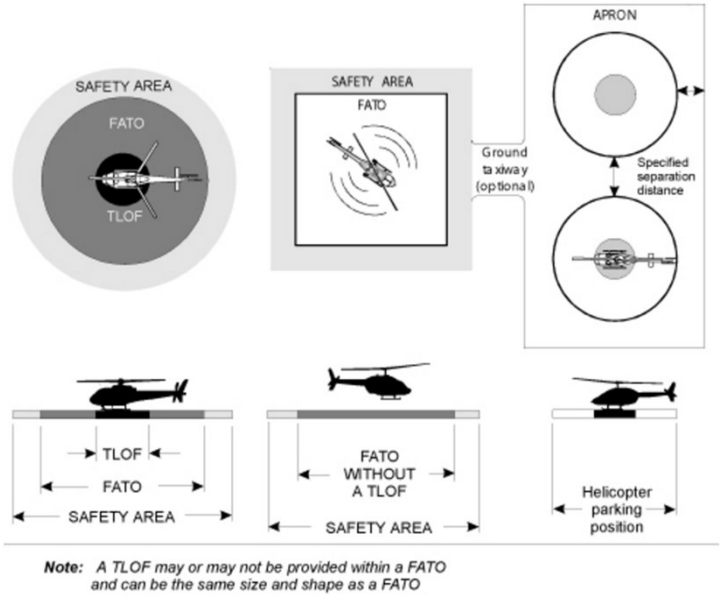


Figure 3-2. Location and orientation of safety area

FATO and TLOF



Note: *A TLOF may or may not be provided within a FATO and can be the same size and shape as a FATO*

PHYSICAL CHARACTERISTICS OF SURFACE LEVEL HELIPORTS

Final Approach and Take-Off Areas (FATO)

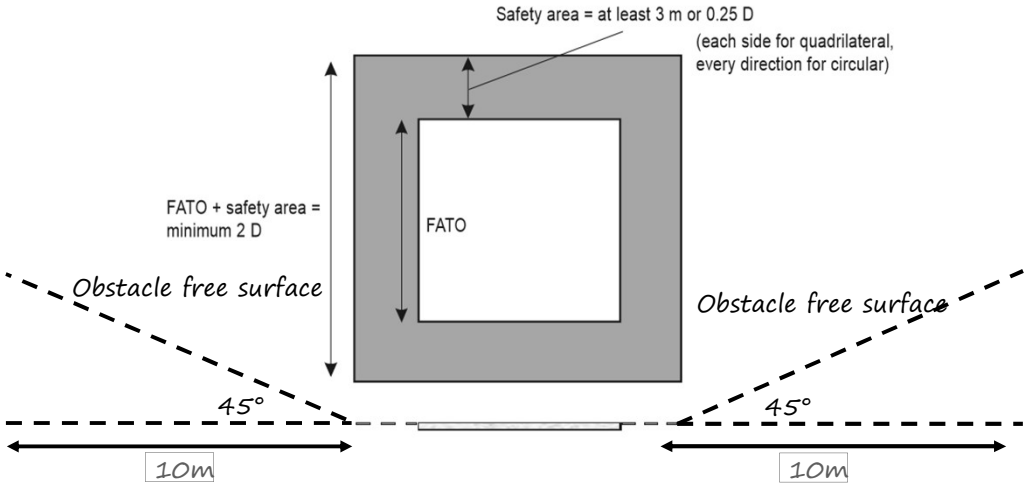
- A FATO shall be obstacle free
- Width of FATO = 1D of the largest helicopter
- Pavement Slope =< 3% in any direction
- The surface shall:
  - Be resistant to the effects of rotor downwash
  - Be free of irregularities that would adversely affect the takeoff or landing of helicopters
- Surface of FATO surrounding TLOF shall be static load bearing

Touchdown and Lift-off Areas (TLOF)

- At least one TLOF shall be provided at a heliport
- Width of TLOF = 0.83D of the largest helicopter
- Pavement slopes =< 2%
- When TLOF within FATO; TLOF shall be dynamic load bearing
- When TLOF within helicopter stand; TLOF shall be static load bearing

Safety Area

- FATO shall be surrounded by a safety area which need not be solid
- A safety area surrounding a FATO shall extend outwards from the periphery of the FATO for a distance of at least 3 m or 0.25 D, whichever is greater, of the largest helicopter the FATO is intended to serve and:
- a) each external side of the safety area shall be at least 2 D where the FATO is quadrilateral; or
- b) the outer diameter of the safety area shall be at least 2 D where the FATO is circular.
- There shall be a protected side slope rising at 45 degrees from the edge of the safety area to a distance of 10 m, whose surface shall not be penetrated by obstacles, except that when obstacles are located to one side of the FATO only, they may be permitted to penetrate the side slope surface



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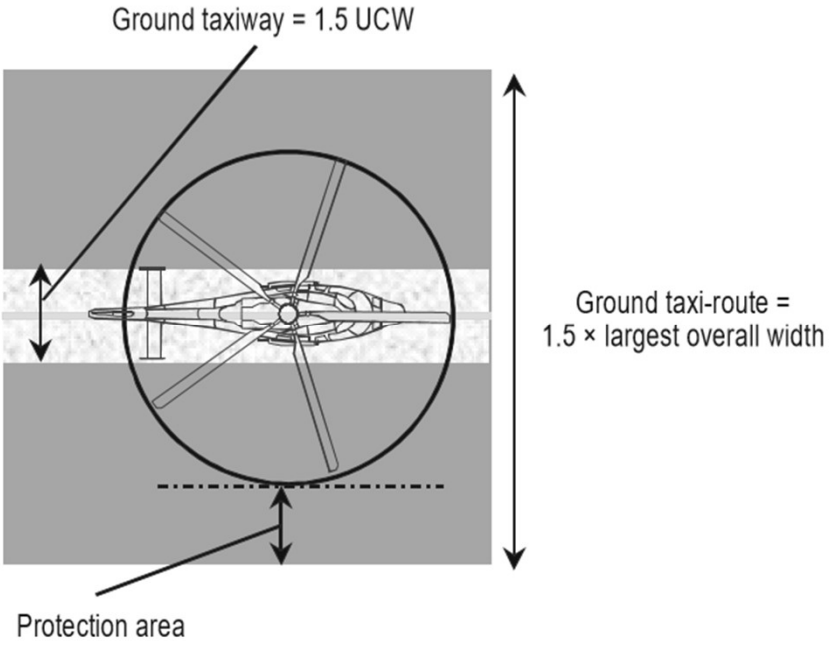
Objects in Safety Area

- No fixed objects except FRANGIBLE objects that must be located on the area for its function
- Objects located within safety area shall be
  - =<5cm height if located <0.75D from centre of FATO
  - Starting at 25cm sloping upwards and outwards at a gradient of 5% if located =>0.75D from centre of FATO
- No mobile objects during helicopter operations
- Slope on Safety Area =<4%

Helicopter Ground Taxiways and Taxi-Routes

- Width ground taxiways >= 1.5 UCW
- Width ground taxi-route = 1.5 D
- Longitudinal slope =< 3%
- Transverse slope =< 2%
- Ground taxi routes shall be static load bearing and able to withstand the traffic of helicopters it is intended to serve



Objects in Ground Taxi Route

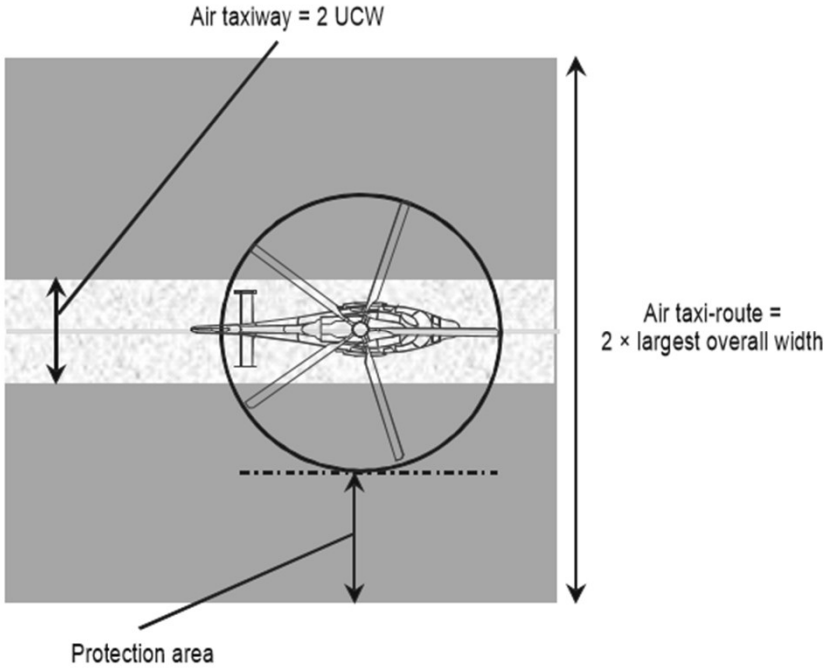
- No mobile objects during helicopter operations
- No fixed objects shall be located on ground taxi route except FRANGIBLE objects that must be located on the area for its function
- No frangible objects shall be located at a distance of less than 50 cm from edge of ground taxiway
- If frangible objects located >= 50cm from edge of ground taxiway
  - 25cm height and sloping upwards and outwards at a gradient of 5%

Helicopter Air Taxiways and Taxi-Routes

- Width air taxiways = 2 UCW
- Width air taxi-route = 2 D
- Longitudinal slope =< 7%
- Transverse slope =< 10%
- The surface of air taxiway shall be static load bearing

Objects in Air Taxi Route

- No fixed objects shall be located on air taxi route except FRANGIBLE objects that must be located on the area for its function
- No mobile objects during helicopter operations
- No frangible objects shall be located at a distance of less than a distance of 0.5D from edge of air taxiway
- Distance >= 0.5D from edge of air taxiway
  - 25cm height and sloping upwards and outwards at a gradient of 5%

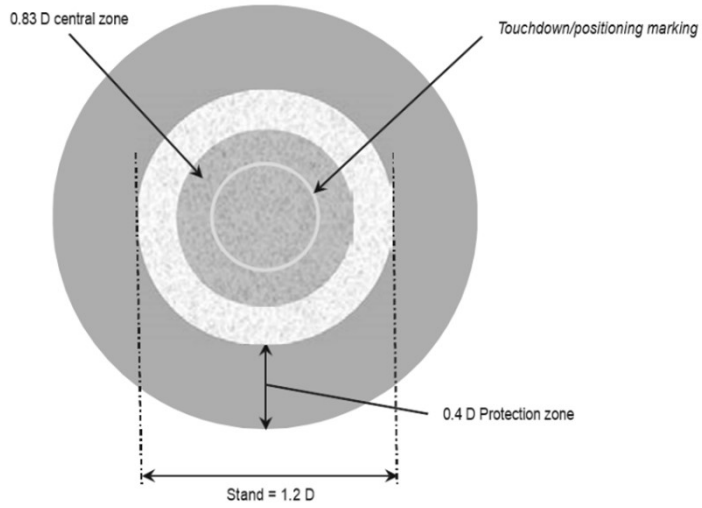


Helicopter Stands

- When TLOF is collocated with helicopter stand, the protection area of the stand shall not overlap the protection area of other helicopter stand or associated taxi route.
- Pavement slope =<2%
- Pavement shall be static load bearing on area :
  - Diameter >= 0.83D
  - For taxi through stand, with no turn, the same width as the helicopter ground taxiway

Helicopter Stands at Aprons

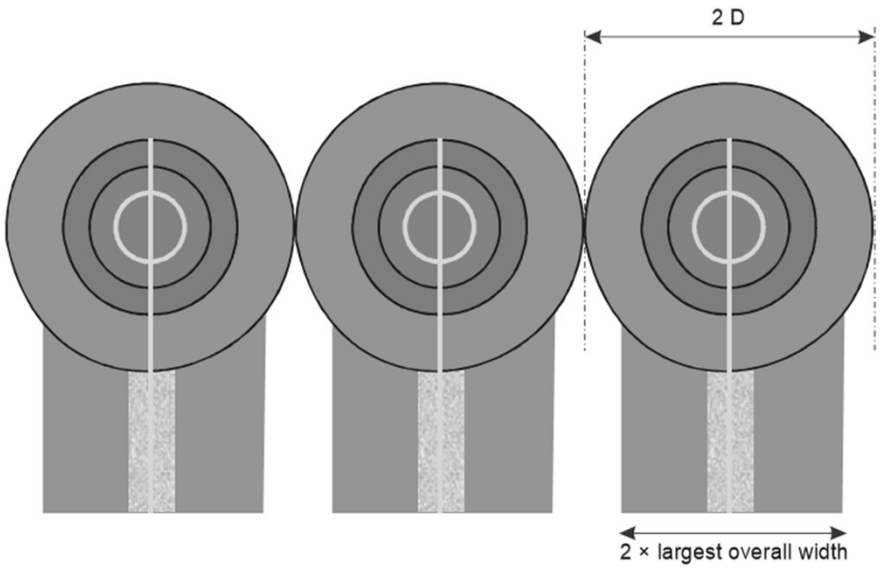
- Diameter of Touchdown/ positioning = 0.5D
- Diamater of central zone = 0.83D
- Diameter of Stand = 1.2 D
- Diameter Stand + Protection Area = 2 D



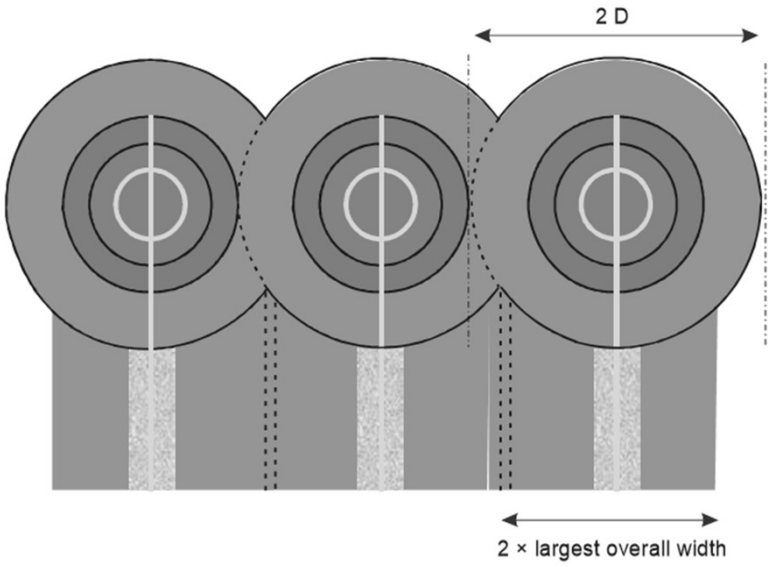
Helicopter Stands

- A helicopter stand intended to be used by helicopters turning in a hover shall be of sufficient size to contain a circle of diameter >= 1.2 D of the largest helicopter the stand is intended to serve
- Where a helicopter stand is intended to be used for taxi-through and where the helicopter using the stand is not required to turn, the minimum width of the stand and associated protection area shall be that of the taxi-route.
- Where a helicopter stand is intended to be used for turning, the minimum dimension of the stand and protection area shall be >= 2 D
- Where a helicopter stand is intended to be used for turning, it shall be surrounded by a protection area which extends for a distance of 0.4 D from the edge of the helicopter stand.
- For simultaneous operations, the protection areas of helicopter stands and their associated taxi-routes shall not overlap

Helicopter Stands for Simultaneous Operations



Helicopter Stands for Non Simultaneous Operations



Objects in Helicopter Stands

- No fixed objects shall be located in the protection area except FRANGIBLE objects that must be located on the area for its function
- No mobile objects during helicopter operations
- Distance <0.75 D from centre of helicopter stand
  - 5 cm height
- Distance >=0.75 D from centre of helicopter stand
  - 25cm height and sloping upwards and outwards at a gradient of 5%

Location of FATO in Relation to Runway and Taxiway

- FATO shall not be located
  - Near taxiway intersections or holding points where jet engine efflux will cause air turbulence
  - Near areas where aeroplane vortex wake generation is likely to exist

If aeroplane mass and/or helicopter mass are	Distance between FATO edge and runway edge or taxiway edge
up to but not including 3 175 kg	60 m
3 175 kg up to but not including 5 760 kg	120 m
5 760 kg up to but not including 100 000 kg	180 m
100 000 kg and over	250 m

OBSTACLE ENVIRONMENT

Obstacle Limitation Requirements

- New objects or extension of existing objects shall not be permitted above any of the obstacle limitation surface, except when, in the opinion of the Authority, the new object or extension would be shielded by an existing immovable object.
- Existing objects above any of the obstacle limitation surface, should, as far as practical be removed except when, in the opinion of the Authority, the object is shielded by an existing immovable object or, after an aeronautical study, that the object would not adversely affect the safety or significantly affect the regularity of operations of helicopter
- A surface-level heliport should have at least two approach and take-off climb surfaces to avoid downwind conditions, minimize crosswind conditions and permit for a balked landing.

Single Approach and Take Off

- An aeronautical study shall be undertaken by an appropriate authority when only a single approach and take-off climb surface is provided considering as a minimum, the following factors
  - the area/terrain over which the flight is being conducted;
  - the obstacle environment surrounding the heliport;
  - the performance and operating limitations of helicopters intending to use the heliport; and
  - the local meteorological conditions including the prevailing winds.

Obstacle Limitation Surface

SURFACE and DIMENSIONS	*SLOPE DESIGN CATEGORIES*		
	A	B	C
APPROACH and TAKE-OFF CLIMB SURFACE:			
Length of inner edge	Width of safety area	Width of safety area	Width of safety area
Location of inner edge	Safety area boundary (Clearway boundary if provided)	Safety area boundary	Safety area boundary
Divergence: (1st and 2nd section)			
Day use only	10%	10%	10%
Night use	15%	15%	15%
First Section:			
Length	3 386 m	245 m	1 220 m
Slope	4.5% (1:22.2)	8% (1:12.5)	12.5% (1:8)
Outer Width	(b)	N/A	(b)
Second Section:			
Length	N/A	830 m	N/A
Slope	N/A	16% (1:6.25)	N/A
Outer Width	N/A	(b)	N/A
Total Length from inner edge (a)	3 386 m	1 075 m	1 220 m
Transitional Surface: (FATOs with a PinS approach procedure with a VSS)			
Slope	50% (1:2)	50% (1:2)	50% (1:2)
Height	45 m	45 m	45 m

- Slope A
  - Corresponds with helicopter Class 1
- Slope B
  - Corresponds with helicopter Class 3
- Slope C
  - Corresponds with helicopter Class 2

Note: Consult with helicopter operator

SURFACE and DIMENSIONS	SLOPE DESIGN CATEGORIES A	B	C
APPROACH and TAKE-OFF CLIMB SURFACE:			
Length of inner edge	Width of safety area	Width of safety area	Width of safety area
Location of inner edge	Safety area boundary (Clearway boundary if provided)	Safety area boundary	Safety area boundary
Divergence: (1st and 2nd section)			
Day use only	10%	10%	10%
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First Section:			
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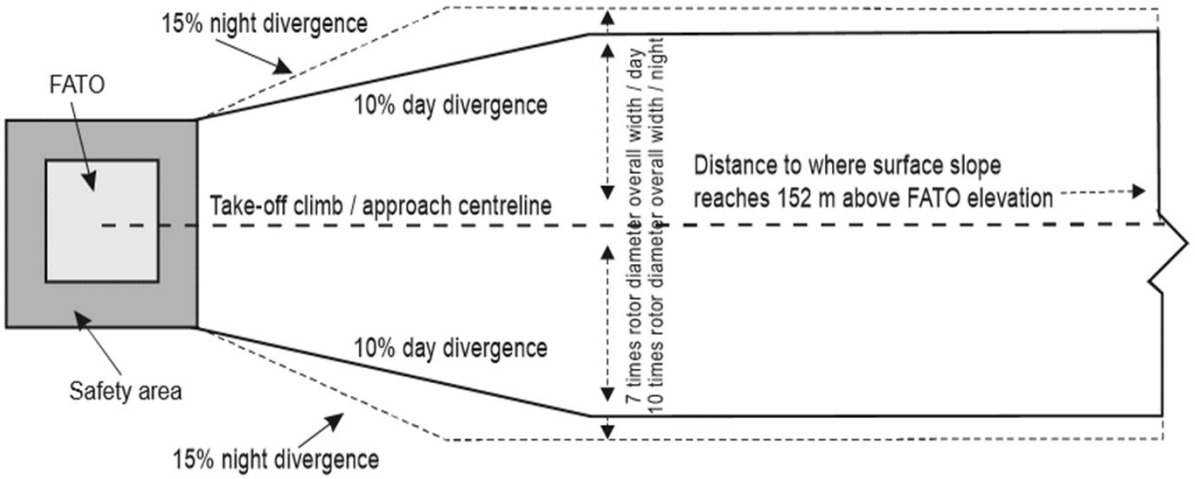
Total Length from inner edge (a)	3 386 m	1 075 m	1 220 m
Transitional Surface: (FATOs with a PinS approach procedure with a VSS)			
Slope	50% (1:2)	50% (1:2)	50% (1:2)
Height	45 m	45 m	45 m

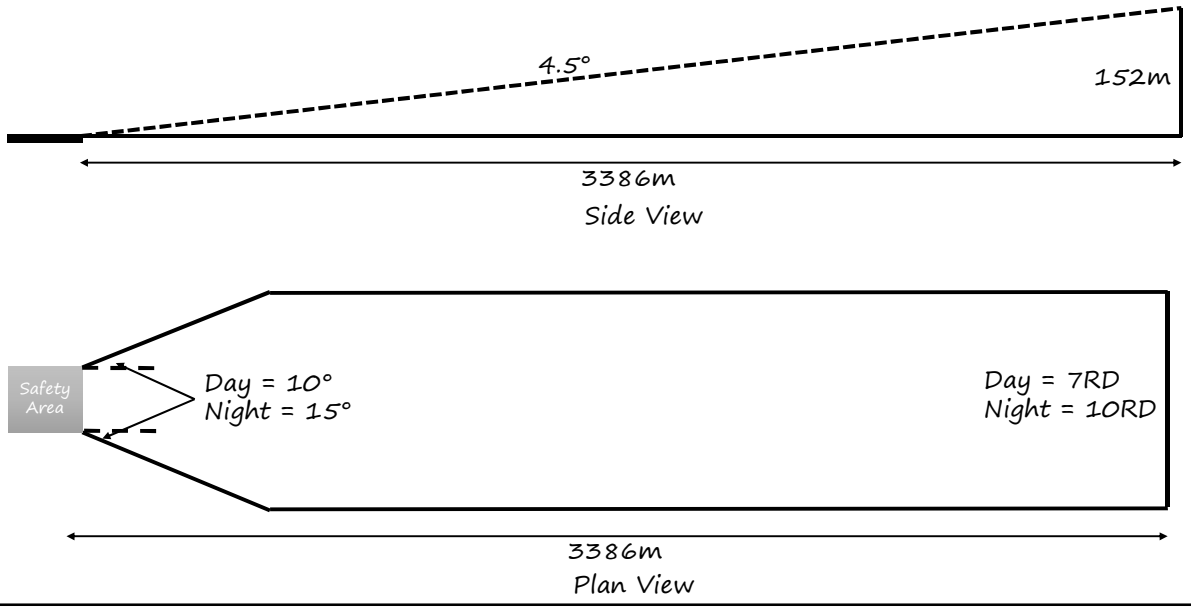
- Transitional slope for instrumented take off/ approach only

SURFACE and DIMENSIONS	SLOPE DESIGN CATEGORIES A	B	C
APPROACH and TAKE-OFF CLIMB SURFACE:			
Length of inner edge	Width of safety area	Width of safety area	Width of safety area
Location of inner edge	Safety area boundary (Clearway boundary if provided)	Safety area boundary	Safety area boundary
Divergence: (1st and 2nd section)			
Day use only	10%	10%	10%
Night use	15%	15%	15%
First Section:			
Length	3 386 m	245 m	1 220 m
Slope	4.5% (1:22.2)	8% (1:12.5)	12.5% (1:8)
Outer Width	(b)	N/A	(b)
Second Section:			
Length	N/A	830 m	N/A
Slope	N/A	16% (1:6.25)	N/A
Outer Width	N/A	(b)	N/A
Total Length from inner edge (a)	3 386 m	1 075 m	1 220 m
Transitional Surface: (FATOs with a PinS approach procedure with a VSS)			
Slope	50% (1:2)	50% (1:2)	50% (1:2)
Height	45 m	45 m	45 m

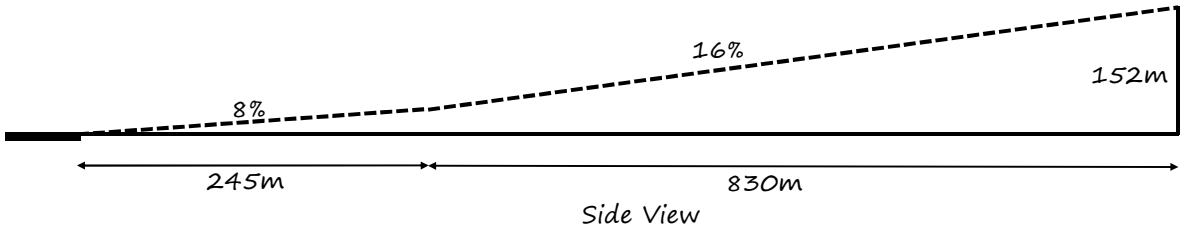
Obstacle Surface for Straight Approach/ Takeoff



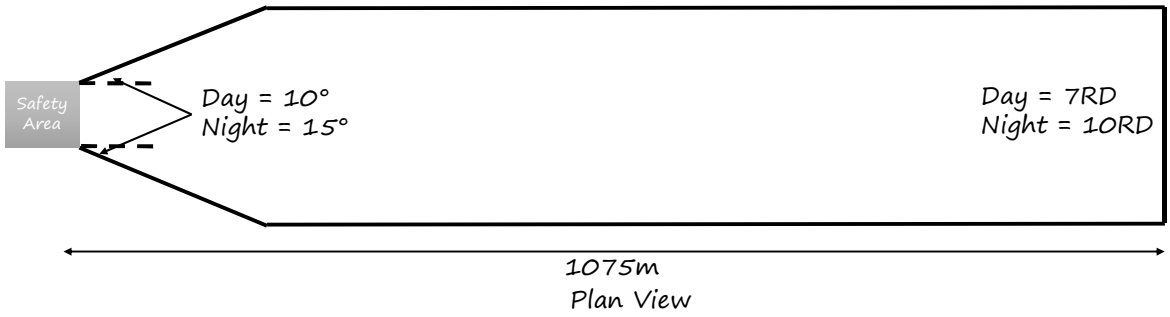
Take Off Climb/ Approach Surface Slope Cat A



Take Off Climb/ Approach Surface Slope Cat B

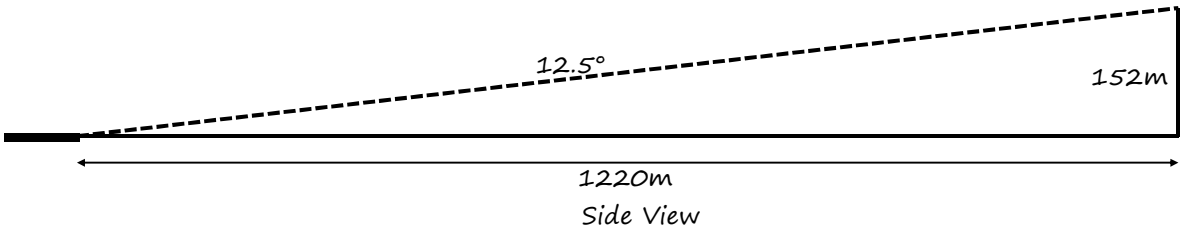


Side View

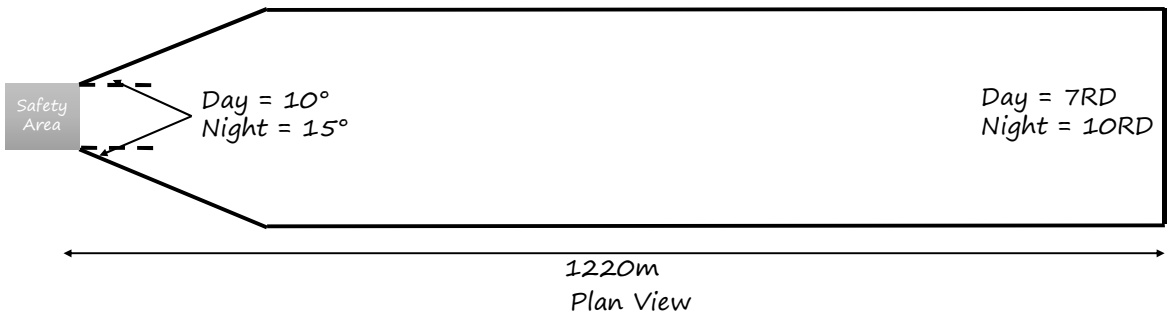


Plan View

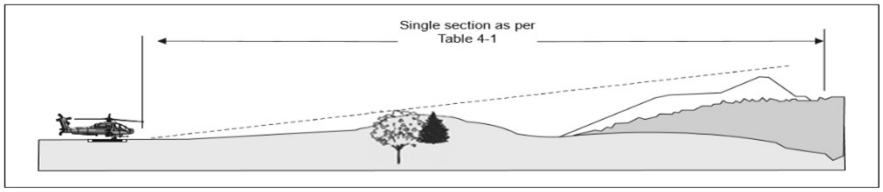
Take Off Climb/ Approach Surface Slope Cat C



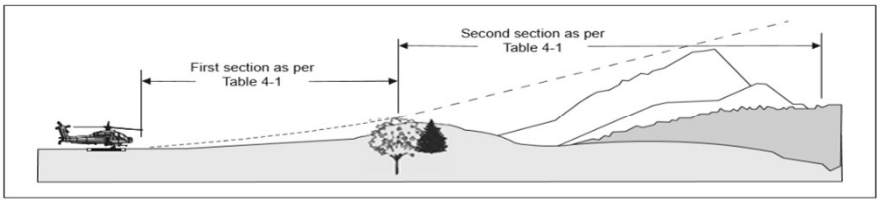
Side View



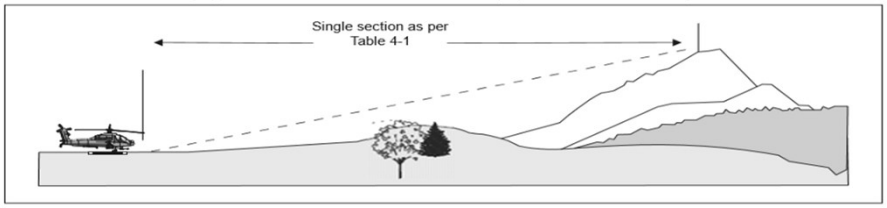
Plan View



a) Approach and take-off climb surfaces - "A" slope profile - 4.5% design

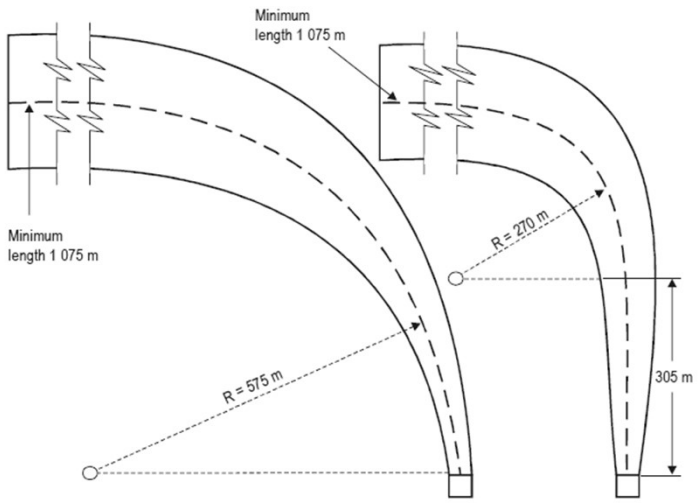


b) Approach and take-off climb surfaces - "B" slope profile - 8% and 16% design



c) Approach and take-off climb surfaces - "C" slope profile - 12.5% design

Obstacle Surface for Curved Approach/ Takeoff



Note 1.— Any combination of curve and straight portion may be established using the following formula: S+R ≥ 575 m and R ≥ 270 m where S = 305 m, where S is the length of the straight portion and R is the radius of turn. Note any combination ≥ 575 m will work.

Note 2.— The minimum length of the centre line of the curve and straight portion is 1 075 m but may be longer depending upon the slope used. See Table 4-1 for longer lengths.

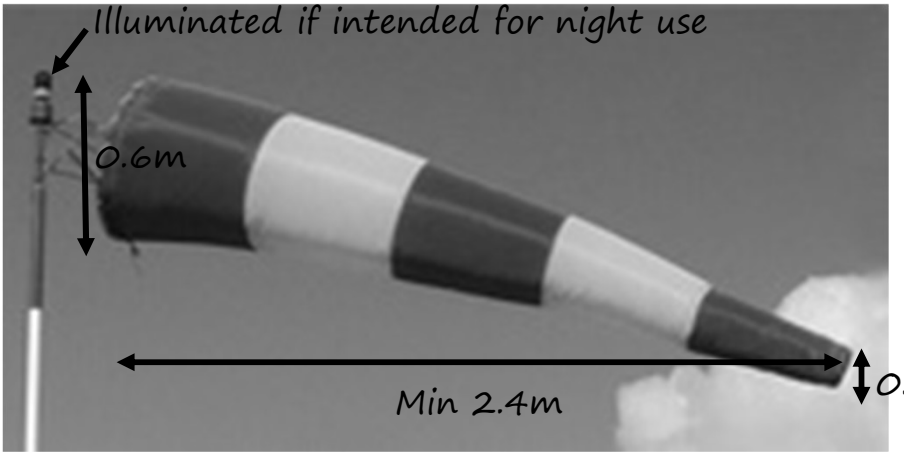
Note 3.— Helicopter take-off performance is reduced in a curve and as such a straight portion along the take-off climb surface prior to the start of the curve should be considered to allow for acceleration.

VISUAL AIDS

Wind Direction Indicator

- A heliport SHALL be equipped with one wind direction indicator.
- Wind direction indicator shall be located so as to indicate the wind conditions over the FATO and TLOF and in such a way as to be free from the effects of airflow disturbances caused by nearby objects or rotor downwash. It shall be visible from a helicopter in flight, in a hover or on the movement area.

Wind Direction Indicator



Mandatory Markings

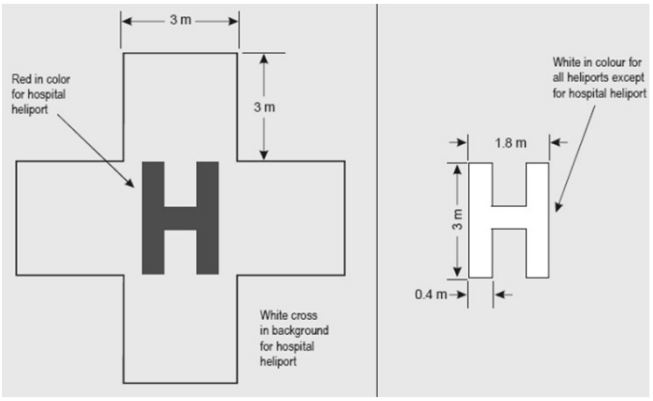
- Heliport identification marking
- FATO area marking
- TLOF area marking
- Maximum allowable mass marking

Other Important Markings

- FATO area designation marking
- Aiming point marking
- Touchdown marking
- Heliport name marking

Heliport Identification Marking

- WHITE coloured letter "H" except at hospital area
- RED coloured letter "H" with a white cross at hospital area
- Located at the centre of the FATO
- Oriented so that the crossarm of the "H" is at right angles to the preferred final approach direction.



Maximum Allowable Mass Marking

- Shall be displayed at an elevated heliport, a helideck and a shipboard heliport.
- Recommended to be displayed on surface level heliports
- Located within the TLOF or FATO and readable from approach direction
- Consists of a one, two or three digit number
- Expressed in tonnes rounded to the nearest 1000 kg followed by the letter "t".
- Decimal point to be marked with 30cm square.
- Colour to contrast with background
- Size = FATO > 30m : Follow figure 5.4

  FATO 15m – 30m : minimum 90cm height

  FATO < 15m : minimum 60cm height

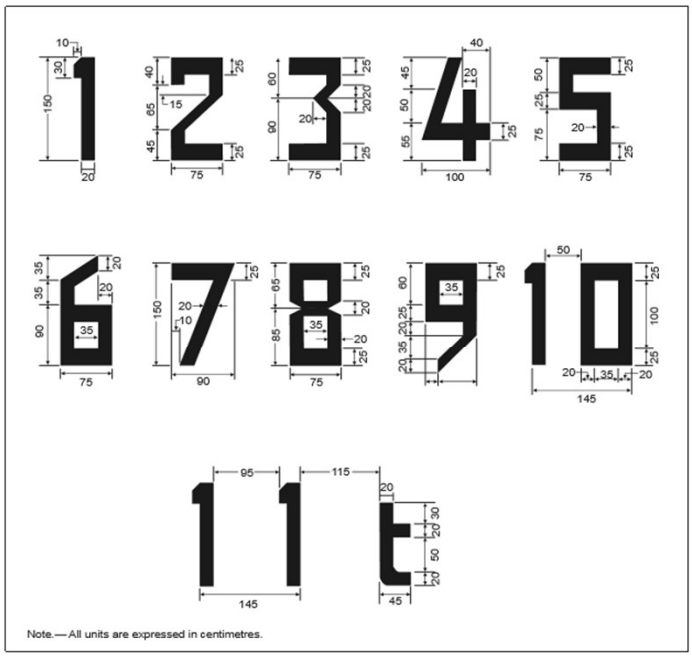
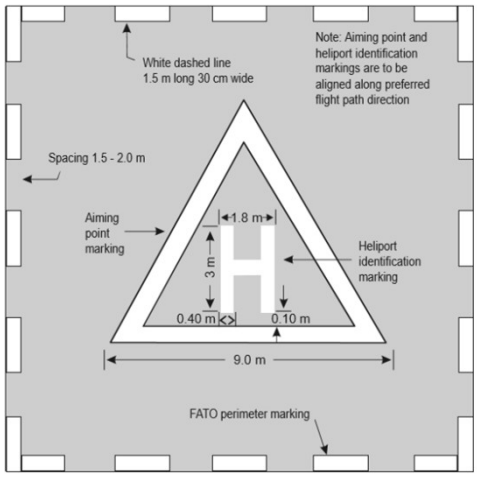


Figure 5-4. Form and proportions of numbers and letters

FATO with Aiming Point Marking

- Square area – at equal intervals of not more than 50m with at least three markings on each side including a marking at each corner.
- Circular area – at equal intervals of not more than 10m with a minimum number of five markings
- A FATO area marking and markers shall be WHITE



Note: *The aiming point, heliport identification and FATO perimeter markings are white and may be edged with a 10 cm black border to improve contrast*

Aiming Point Marking

- Shall be provided where it is necessary for a pilot to make an approach to a particular point before proceeding to the TLOF area
- Equilateral triangle with the bisector of one of the angles aligned with the preferred approach direction.
- Located within the FATO area
- Continuous white line. Width 1m

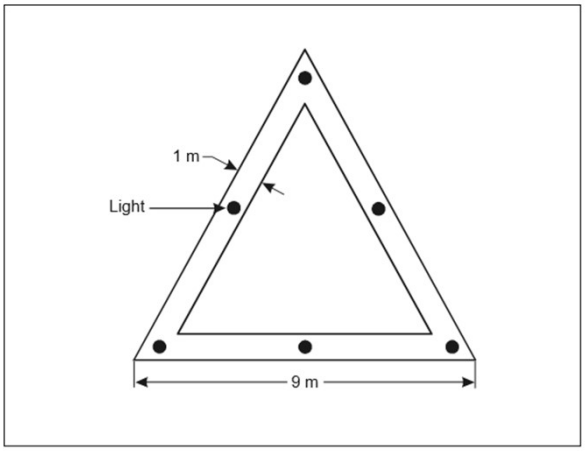


Figure 5-6. Aiming point marking

TLOF Area Marking

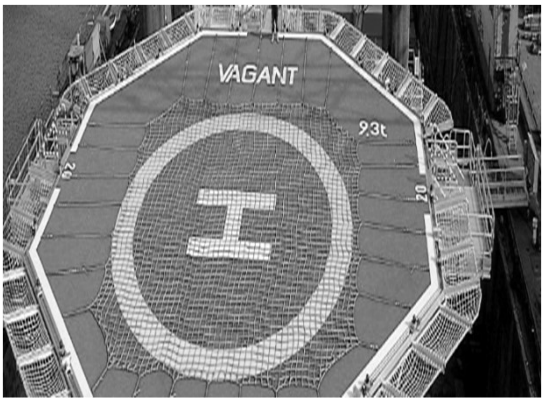
- Located along the perimeter of the TLOF area
- Continuous WHITE line with a width of at least 30cm
- Heliports where FATO = TLOF, TLOF marking to prevail.

Touchdown Marking

- Shall be provided where it is necessary for a helicopter to touchdown in a specific position. Shall be provided on a helicopter stand designed for turning.
- Located so that when a helicopter for which the marking is intended is positioned, with the main undercarriage inside the marking and the pilot situated over the marking, all parts of the helicopter will be clear of any obstacle by a safe margin.
- YELLOW circle and have a line width of at least 0.5m. Inner diameter shall be 0.5D of the largest helicopter

Heliport Name Marking

- Shall be provided at a heliport where visual identification of the heliport is necessary
- Placed so as to be visible, as far as practical, at all angles above the horizontal.
- Consists of the name or alphanumeric designator of the heliport as used in R/T communication
- The characters shall not be less than 3m height and colour to contrast from background
- Illuminated if used at night



Ground Taxiway Marking

- Centreline – YELLOW with width at least 15cm and continuous in length
- Edge – Continuous double YELLOW lines each 15cm in width and spaced 15 cm apart (nearest edge to nearest edge)

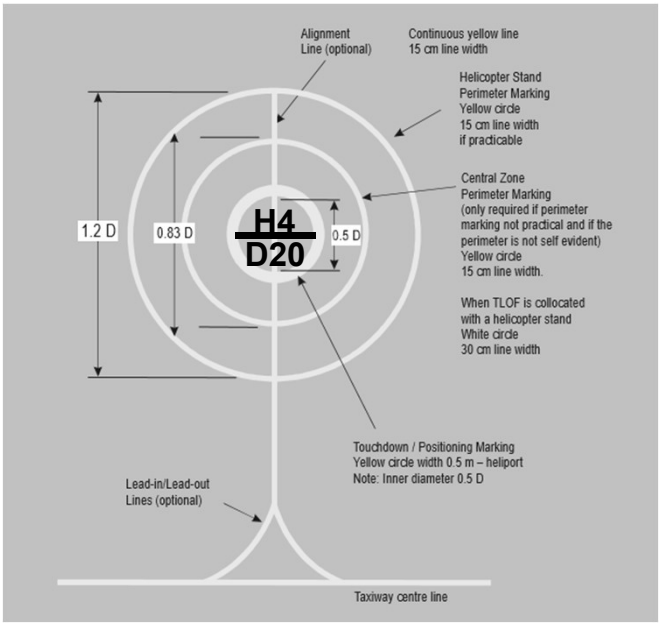
Air Taxiway Marking

- Centreline – Continuous YELLOW line 15cm in width
- Edge – Continuous double YELLOW lines each 15cm in width and spaced 15 cm apart (nearest edge to nearest edge)

Helicopter Stand Markings

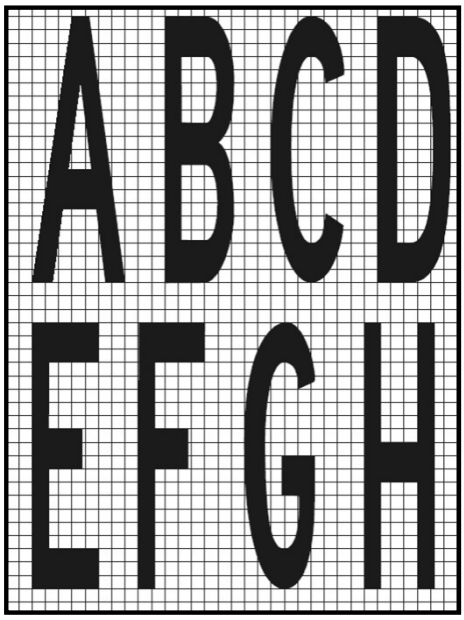
- A helicopter stand perimeter marking shall be a yellow circle and have a line width of 15 cm.
- A central zone perimeter marking shall be a yellow circle and have a line width of 15 cm, except when the TLOF is collocated with a helicopter stand, the characteristics of the TLOF perimeter markings shall apply.
- For a helicopter stand intended to be used for taxi-through and which does not allow the helicopter to turn, a yellow stop line shall not be less than the width of the helicopter ground taxiway and have a line thickness of 50 cm

Helicopter Stand Markings



Helicopter Stand Markings

Form & proportions of pavement markings



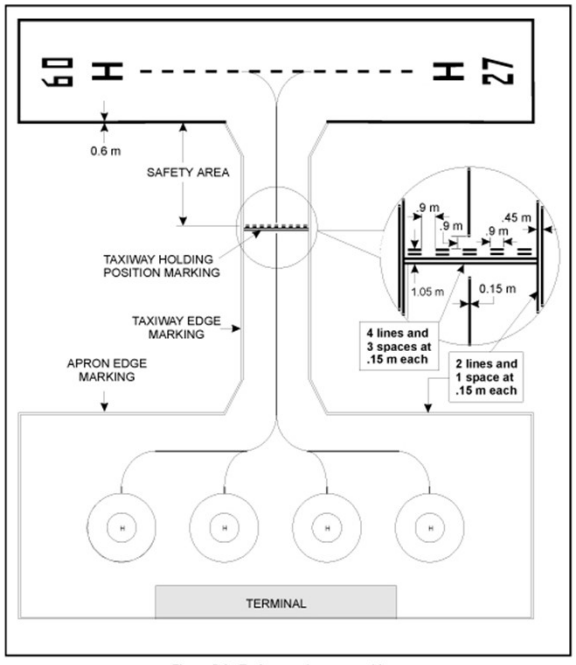
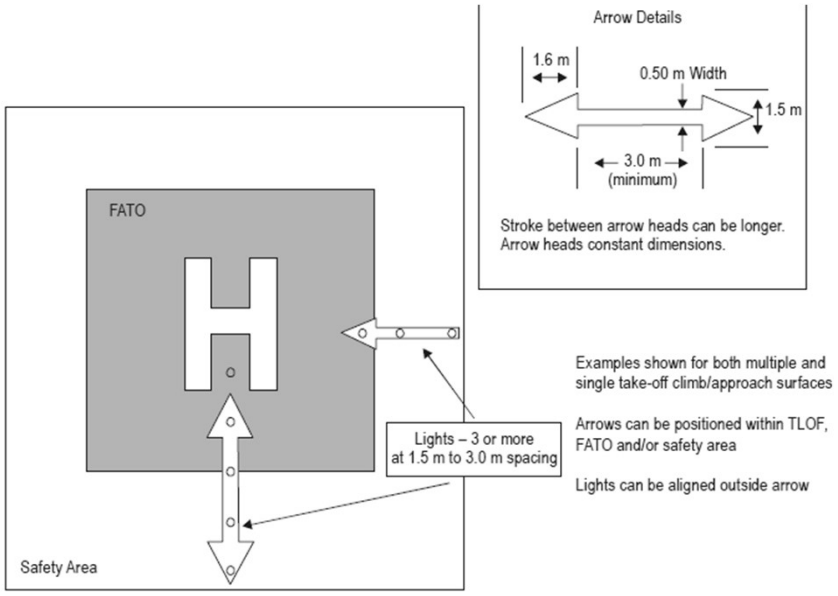


Figure 5-8. Taxiway and apron markings

Flight Path Alignment Guidance Marking

- Flight path alignment guidance marking(s) should be provided at a heliport where it is desirable and practicable to indicate available approach and/or departure path direction(s)
- The stroke of the arrow(s) shall be 50 cm in width and at least 3 m in length.
- The markings should be in a colour which provides good contrast against the background colour of the surface on which they are marked, preferably white.

Flight Path Alignment Guidance Marking



Lights

- The following lights shall be provided at heliport intended for use by night or in restricted visibility condition by day or night
  - Heliport beacon
  - FATO area lights
  - TLOF area lights
  - Obstacle Lights
- Aiming points lights shall be provided where an aiming point is established
- Taxiway lights shall be provided where helicopter ground taxiway is established.

Heliport Beacons

- Shall be provided 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.

FATO Area Light

- FATO area lights shall be provided except that they may be omitted where the FATO area and the TLOF area are coincidental.
- Omni directional WHITE light

TLOF Lights

- TLOF area lights SHALL be provided
- Omni directional showing green

Obstacle Lights

- At a heliport intended for use at night, obstacles shall be floodlighted if it is not possible to display obstacle lights on them

Taxiway Lights

- To follow recommendations in Annex 14 Volume 1

Aiming Point Lights

- When an aiming point marking is provided at a heliport intended for use at night, aiming point light should be provided
- Omnidirectional WHITE light

RESCUE & FIRE FIGHTING

Level of Protection

- Level of protection shall be based on overall length of the longest helicopter NORMALLY using the heliport.
- During anticipated periods of operations by smaller helicopters, the heliport fire fighting category may be reduced to that of the highest category of helicopter planned to use the heliport during that time
- In the case of a heliport located on an aerodrome, it may be assumed that the rescue and fire fighting services and equipment provided for aeroplanes will be at least equal to those required for the longest helicopter normally using the facility and that the response time to the helicopter does not exceed two minutes.

Level of Protection

Category	Helicopter over-all length *
H1	up to but not including 15 m
H2	from 15 m up to but not including 24 m
H3	from 24 m up to but not including 35 m

* Helicopter length including the tail boom and rotors

Extinguishing Agents

Table 6-2. Minimum usable amounts of extinguishing agents for surface-level heliports

	Foam meeting performance level B		Complementary agents			
Category	Water (L)	Discharge rate foam solution (L/min)	Dry chemical powders (kg)	or Halons (kg)	or CO_2 (kg)	
(1)	(2)	(3)	(4)	(5)	(6)	
H1	500	250	23	23	45	
H2	1 000	500	45	45	90	
H3	1 600	800	90	90	180	

- For surface level heliports, it is permissible to replace all or part of the amount of water for foam production by complementary agent. The following equivalent shall be used :

  1 kg. dry chemical powder or 2 kg. CO2 = 0.66 L water for production of foam meeting performance level B

Response Time

- Response time is defined as the time between the initial call to the rescue and firefighting service and the time when the first responding vehicle is in position to apply foam at a rate of at least 50% of the allowable discharge rate

- A response time not exceeding two minutes in optimum conditions of visibility and surface conditions shall be achieved

Response Equipment

	Heliport HF category	
Equipment	**H1 and H2**	**H3**
Adjustable wrench	1	1
Axe, rescue, non-wedge or aircraft type	1	1
Cutters, bolt, 60 cm	1	1
Crowbar, 105 cm	1	1
Hook, grab or slaving	1	1
Hacksaw, heavy duty complete with 6 spare blades	1	1
Blanket, fire resistant	1	1
Ladder, length appropriate to Helicopter in use	-	1
Lifeline, 5 cm, 15 m in length	1	1
Pliers, side cutting	1	1
Set of assorted screwdrivers	1	1
Harness knife complete with sheath	1	1
Gloves, fire resistant	2 pairs	3 pairs
Power cutting tool	-	1

THANK YOU