Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 1 Reference 1.2.3 **Standard**	1.2.3 Unless otherwise specified, the specification for a colour referred to in this Annex shall be that contained in Appendix 1 to Annex 14, Volume I.	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.1.1 **Standard**	**CHAPTER 2. HELIPORT DATA** **2.1 Aeronautical data** 2.1.1 Determination and reporting of heliport-related aeronautical data shall be in accordance with the accuracy and integrity classification required to meet the needs of the end-users of aeronautical data. *Note.— Specifications concerning the accuracy and integrity classification of heliport-related aeronautical data are contained in the PANS-AIM (Doc 10066), Appendix 1.*	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.1.2 **Standard**	2.1.2 Digital data error detection techniques shall be used during the transmission and/or storage of aeronautical data and digital data sets. *Note.— Detailed specifications concerning digital data error detection techniques are contained in the PANS-AIM (Doc 10066).*	CARs.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 2 Reference 2.2.1 **Standard**	**2.2 Heliport reference point** 2.2.1 A heliport reference point shall be established for a heliport not collocated with an aerodrome. *Note.— When the heliport is collocated with an aerodrome, the established aerodrome reference point serves both aerodrome and heliport.*	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.2.2 **Standard**	2.2.2 The heliport reference point shall be located near the initial or planned geometric centre of the heliport and shall normally remain where first established.	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.2.3 **Standard**	2.2.3 The position of the heliport reference point shall be measured and reported to the aeronautical information services authority in degrees, minutes and seconds.	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.3.1 **Standard**	**2.3 Heliport elevations** 2.3.1 The heliport elevation and geoid undulation at the heliport elevation position shall be measured and reported to aeronautical information services to the accuracy of one-half metre or foot.	CARs.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 2 Reference 2.3.2 **Standard**	2.3.2 The elevation of the TLOF and/or the elevation and geoid undulation of each threshold of the FATO (where appropriate) shall be measured and reported to aeronautical information services to the accuracy of one-half metre or foot. *Note.— Geoid undulation must be measured in accordance with the appropriate system of coordinates*.	CARs.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 2 Reference 2.4.1 **Standard**	**2.4 Heliport dimensions and related information** 2.4.1 The following data shall be measured or described, as appropriate, for each facility provided on a heliport: a) heliport type — surface-level, elevated, shipboard or helideck; b) TLOF — dimensions to the nearest metre or foot, slope, surface type, bearing strength in tonnes (1 000 kg); c) FATO — type of FATO, true bearing to one-hundredth of a degree, designation number (where appropriate), length and width to the nearest metre or foot, slope, surface type; d) safety area — length, width and surface type; e) helicopter taxiway and helicopter taxi-route — designation, width, surface type; f) apron — surface type, helicopter stands; g) clearway — length, ground profile; and h) visual aids for approach procedures, marking and lighting of FATO, TLOF, helicopter taxiways, helicopter taxi-routes and helicopter stands.	AC139-8, 2.1	Less protective or partially implemented or not implemented	Item g) is not specified; i) is not applicable.	
Chapter 2 Reference 2.4.2 **Standard**	2.4.2 The geographical coordinates of the geometric centre of the TLOF and/or of each threshold of the FATO (where appropriate) shall be measured and reported to aeronautical information services in degrees, minutes, seconds and hundredths of seconds.	CARs.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 2 Reference 2.4.3 **Standard**	2.4.3 The geographical coordinates of appropriate centre line points of helicopter taxiways and helicopter taxi-routes shall be measured and reported to aeronautical information services in degrees, minutes, seconds and hundredths of seconds.	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.4.4 **Standard**	2.4.4 The geographical coordinates of each helicopter stand shall be measured and reported to aeronautical information services in degrees, minutes, seconds and hundredths of seconds.	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.4.5 **Standard**	2.4.5 The geographical coordinates of obstacles in Area 2 (the part within the heliport boundary) and in Area 3 shall be measured and reported to the aeronautical information services authority in degrees, minutes, seconds and tenths of seconds. In addition, the top elevation, type, marking and lighting (if any) of obstacles shall be reported to aeronautical information services. *Note.— PANS-AIM (Doc 10066), Appendix 8, provides requirements for obstacle data determination in Areas 2 and 3.*	CARs.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 2 Reference 2.5 **Standard**	**2.5 Declared distances** The following distances to the nearest metre or foot shall be declared, where relevant, for a heliport: a) take-off distance available; b) rejected take-off distance available; and c) landing distance available.	CARs.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 2 Reference 2.6.1 **Standard**	**2.6 Coordination between aeronautical information services and heliport authorities** 2.6.1 To ensure that aeronautical information services units obtain information to enable them to provide up-to-date pre-flight information and to meet the need for in-flight information, arrangements shall be made between aeronautical information services and heliport authorities responsible for heliport services to report to the responsible aeronautical information services unit, with a minimum of delay: a) information on heliport conditions; b) the operational status of associated facilities, services and navigation aids within their area of responsibility; c) any other information considered to be of operational significance.	CARs.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 2 Reference 2.6.3 **Standard**	2.6.3 Of a particular importance are changes to aeronautical information that affect charts and/or computer-based navigation systems which qualify to be notified by the aeronautical information regulation and control (AIRAC) system, as specified in Annex 15, Chapter 6. The predetermined, internationally agreed AIRAC effective dates shall be observed by the responsible heliport services when submitting the raw information/data to aeronautical information services. *Note.— Detailed specifications concerning the AIRAC system are contained in the PANS-AIM (Doc 10066), Chapter 6.*	CARs.	Less protective or partially implemented or not implemented	Not specified.	Note: heliport details published in AIPNZ are amended in accordance with the AIRAC cycle.

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 2 Reference 2.6.4 **Standard**	2.6.4 The heliport services responsible for the provision of raw aeronautical information/data to aeronautical information services shall do that while taking into account accuracy and integrity requirements necessary to meet the needs of the end-user of aeronautical data. *Note 1.— Specifications concerning the accuracy and integrity classification of heliport-related aeronautical data are contained in the PANS-AIM (Doc 10066), Appendix 1.* *Note 2.— Specifications for the issue of a NOTAM and SNOWTAM are contained in Annex 15, Chapter 6 and the PANS-AIM (Doc 10066), Appendices 3 and 4, respectively.* *Note 3.— AIRAC information is distributed by aeronautical information services at least 42 days in advance of the AIRAC effective dates with the objective of reaching recipients at least 28 days in advance of the effective date.* *Note 4.— The schedule of the predetermined internationally agreed AIRAC common effective dates at intervals of 28 days and guidance for AIRAC use are contained in the* Aeronautical Information Services Manual *(Doc 8126, Chapter 2).*	CARs.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.1.6 **Recommendation**	3.1.6 **Recommendation.—** *The FATO should be located so as to minimize the influence of the surrounding environment, including turbulence, which could have an adverse impact on helicopter operations.* *Note.— Guidance on determining the influence of turbulence is given in the* Heliport Manual *(Doc 9261). If turbulence mitigating design measures are warranted but not practical, operational limitations may need to be considered under certain wind conditions*.	AC139-8, 3.1.26.	Less protective or partially implemented or not implemented	Provides only for jet efflux or aeroplane wake turbulence.	
Chapter 3 Reference 3.1.13 **Standard**	***Protected side slope*** 3.1.13 A heliport shall be provided with at least one protected side slope, rising at 45 degrees from the edge of the safety area and extending to a distance of 10 m (see Figure 3-2).	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.1.17 **Standard**	3.1.17 When a helicopter clearway is provided, it shall be located beyond the end of the FATO.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.1.18 **Recommendation**	3.1.18 **Recommendation.—** *The width of a helicopter clearway should not be less than that of the FATO and associated safety area (see Figure 3-1).*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.1.19 **Recommendation**	3.1.19 **Recommendation.—** *When solid, the ground in a helicopter clearway should not project above a plane having an overall upward slope of 3 per cent, or having a local upward slope exceeding 5 per cent, the lower limit of this plane being a horizontal line which is located on the periphery of the FATO.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.1.20 **Recommendation**	3.1.20 **Recommendation.—** *An object situated in a helicopter clearway, which may endanger helicopters in the air, should be regarded as an obstacle and should be removed.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.1.43 **Recommendation**	3.1.43 **Recommendation.—** *When not collocated with a taxiway, the slopes of the surface of an air taxi-route should not exceed the slope landing limitations of the helicopters the taxi-route is intended to serve. In any event, the transverse slope should not exceed 10 per cent and the longitudinal slope should not exceed 7 per cent.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.1.46 **Recommendation**	3.1.46 **Recommendation.—** *The mean slope of a helicopter stand in any direction should not exceed 2 per cent.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Aprons are not specifically provided for.	

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Chapter 3 Reference 3.1.54 **Standard**	3.1.54 Essential objects located in the protection area shall not: a) if located at a distance of less than 0.75 D from the centre of the helicopter stand, penetrate a surface at a height of 5 cm above the surface of the central zone; and b) if located at a distance of 0.75 D or more from the centre of the helicopter stand, penetrate a surface at a height of 25 cm above the plane of the central zone and sloping upwards and outwards at a gradient of 5 per cent.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.2.1 **Standard**	**3.2 Helidecks** *Note.— The following specifications are for helidecks located on structures engaged in such activities as mineral exploitation, research or construction. See 3.4 for shipboard heliport provisions.* ***FATOs and TLOFs*** *Note 1.— For helidecks that have a 1 D or larger FATO it is presumed that the FATO and the TLOF will always occupy the same space and have the same load bearing characteristics so as to be coincidental. For helidecks that are less than 1 D, the reduction in size is only applied to the TLOF which is a load bearing area. In this case, the FATO remains at 1 D but the portion extending beyond the TLOF perimeter need not be load bearing for helicopters. The TLOF and the FATO may be assumed to be collocated.* *Note 2.— Guidance on the effects of airflow direction and turbulence, prevailing wind velocity and high temperatures from gas turbine exhausts or flare-radiated heat on the location of the FATO is given in the* Heliport Manual *(Doc 9261).* *Note 3.— Guidance on the design and markings for helideck parking areas is given in the* Heliport Manual *(Doc 9261).* 3.2.1 The specifications in paragraphs 3.3.14 and 3.3.15 shall be applicable for helidecks completed on or after 1 January 2012.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 3 Reference 3.2.4 **Standard**	3.2.4 A TLOF may be any shape but shall be of sufficient size to contain: a) for helicopters with an MTOM of more than 3 175 kg, an area within which can be accommodated a circle of diameter not less than 1 D of the largest helicopter the helideck is intended to serve; and b) for helicopters with an MTOM of 3 175 kg or less, an area within which can be accommodated a circle of diameter not less than 0.83 D of the largest helicopter the helideck is intended to serve.	AC139-8, 3.3.2.	Less protective or partially implemented or not implemented	Weight breaks are not specified. 1.0 D applies equally.	
Chapter 3 Reference 3.2.6 **Standard**	3.2.6 A helideck shall be arranged to ensure that a sufficient and unobstructed air-gap is provided which encompasses the full dimensions of the FATO. *Note.— Specific guidance on the characteristics of an air-gap is given in the* Heliport Manual *(Doc 9261). As a general rule, except for shallow superstructures of three stories or less, a sufficient air-gap will be at least 3 m.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.2.7 **Recommendation**	3.2.7 **Recommendation.—** *The FATO should be located so as to avoid, as far as is practicable, the influence of environmental effects, including turbulence, over the FATO, which could have an adverse impact on helicopter operations.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.2.8 **Standard**	3.2.8 The TLOF shall be dynamic load-bearing.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.2.9 **Standard**	3.2.9 The TLOF shall provide ground effect.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.2.11 **Standard**	3.2.11 For any TLOF 1 D or greater and any TLOF designed for use by helicopters having a D-value of greater than 16.0 m, objects installed in the obstacle-free sector whose function requires them to be located on the edge of the TLOF shall not exceed a height of 25 cm.	AC139-8, 3.3.5.	Less protective or partially implemented or not implemented	No provision for diameter less than 1 D.	
Chapter 3 Reference 3.2.12 **Recommendation**	3.2.12 **Recommendation.—** *For any TLOF 1 D or greater and any TLOF designed for use by helicopters having a D-value of greater than 16.0 m, objects installed in the obstacle-free sector whose function requires them to be located on the edge of the TLOF should be as low as possible and in any case not exceed a height of 15 cm.*	AC139-8.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.2.13 **Standard**	3.2.13 For any TLOF designed for use by helicopters having a D-value of 16.0 m or less, and any TLOF having dimensions of less than 1 D, objects installed in the obstacle-free sector whose function requires them to be located on the edge of the TLOF, shall not exceed a height of 5 cm. *Note.— Lighting that is mounted at a height of less than 25 cm is typically assessed for adequacy of visual cues before and after installation.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.2.14 **Standard**	3.2.14 Objects whose function requires them to be located within the TLOF (such as lighting or nets) shall not exceed a height of 2.5 cm. Such objects shall only be present if they do not represent a hazard to helicopters. *Note.— Examples of potential hazards include nets or raised fittings on the deck that might induce dynamic rollover for helicopters equipped with skids.*	AC139-8, 3.3.5.	Less protective or partially implemented or not implemented	The 2.5 cm height is not specified.	
Chapter 3 Reference 3.3.1 **Standard**	**3.3 Shipboard heliports** 3.3.1 The specifications in paragraphs 3.3.16 and 3.3.17 shall be applicable to shipboard heliports completed on or after 1 January 2012 and 1 January 2015, respectively.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.3.4 **Standard**	3.3.4 A FATO may be any shape but shall be of sufficient size to contain an area within which can be accommodated a circle of diameter of not less than 1 D of the largest helicopter the heliport is intended to serve.	AC139-8, 3.4.3.	More Exacting or Exceeds	Circular, rather than any shape.	
Chapter 3 Reference 3.3.5 **Standard**	3.3.5 The TLOF of a shipboard heliport shall be dynamic load-bearing.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.3.6 **Standard**	3.3.6 The TLOF of a shipboard heliport shall provide ground effect.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.3.8 **Standard**	3.3.8 For purpose-built shipboard heliports provided in the bow or stern of a ship, the TLOF shall be of sufficient size to: a) contain a circle with a diameter not less than 1 D of the largest helicopter the heliport is intended to serve; or b) for operations with limited touchdown directions, contain an area within which can be accommodated two opposing arcs of a circle with a diameter of not less than 1 D in the helicopter's longitudinal direction. The minimum width of the heliport shall be not less than 0.83 D. (See Figure 3-10.) *Note 1.— The ship will need to be manoeuvred to ensure that the relative wind is appropriate to the direction of the helicopter touchdown heading.* *Note 2.— The touchdown heading of the helicopter is limited to the angular distance subtended by the 1 D arc headings, minus the angular distance which corresponds to 15 degrees at each end of the arc.*	AC139-8, 3.4.3.	Less protective or partially implemented or not implemented	Item b) is not specified.	
Chapter 3 Reference 3.3.10 **Standard**	3.3.10 A shipboard heliport shall be arranged to ensure that a sufficient and unobstructed air-gap is provided which encompasses the full dimensions of the FATO. *Note.— Specific guidance on the characteristics of an air-gap is given in the* Heliport Manual *(Doc 9261). As a general rule, except for shallow superstructures of three stories or less, a sufficient air-gap will be at least 3 m.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 3 Reference 3.3.11 **Recommendation**	3.3.11 **Recommendation.—** *The FATO should be located so as to avoid, as far as is practicable, the influence of environmental effects, including turbulence, over the FATO, which could have an adverse impact on helicopter operations.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.3.14 **Recommendation**	3.3.14 **Recommendation.—** *For any TLOF 1 D or greater and any TLOF designed for use by helicopters having a D-value of greater than 16.0 m, objects installed in the obstacle-free sector whose function requires them to be located on the edge of the TLOF should be as low as possible and in any case not exceed a height of 15 cm.*	AC139=8, 3.3.5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.3.15 **Standard**	3.3.15 For any TLOF designed for use by helicopters having a D-value of 16.0 m or less, and any TLOF having dimensions of less than 1 D, objects in the obstacle-free sector, whose function requires them to be located on the edge of the TLOF, shall not exceed a height of 5 cm. *Note.— Lighting that is mounted at a height of less than 25 cm is typically assessed for adequacy of visual cues before and after installation.*	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 3 Reference 3.3.16 **Standard**	3.3.16 Objects whose function requires them to be located within the TLOF (such as lighting or nets) shall not exceed a height of 2.5 cm. Such objects shall only be present if they do not represent a hazard to helicopters.	AC139-8, 3.3.5.	Less protective or partially implemented or not implemented	The 2.5 cm height is not specified.	

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Chapter 3 Reference 3.3.17 **Standard**	3.3.17 Safety devices such as safety nets or safety shelves shall be located around the edge of a shipboard heliport, except where structural protection exists, but shall not exceed the height of the TLOF.	AC139-8, Ch 3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 4 Reference 4.1.1 **Standard**	**CHAPTER 4. OBSTACLE ENVIRONMENT** *Note.— The objectives of the specifications in this chapter are to describe the airspace around heliports so as to permit intended helicopter operations to be conducted safely and to prevent, where appropriate State controls exist, heliports from becoming unusable by the growth of obstacles around them. This is achieved by establishing a series of obstacle limitation surfaces that define the limits to which objects may project into the airspace.* **4.1 Obstacle limitation surfaces and sectors** ***Approach surface*** 4.1.1 *Description.* An inclined plane or a combination of planes or, when a turn is involved, a complex surface sloping upwards from the end of the safety area and centred on a line passing through the centre of the FATO. *Note.— See Table 4-1 for dimensions and slopes of surfaces. See Figures 4-1, 4-2, 4-3 and 4-4 for depiction of surfaces.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not described in these terms.	

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Chapter 4 Reference 4.1.3 **Standard**	4.1.3 The elevation of the inner edge shall be the elevation of the FATO at the point on the inner edge that is intersected by the centre line of the approach surface. For heliports intended to be used by helicopters operated in performance class 1 and when approved by an appropriate authority, the origin of the inclined plane may be raised directly above the FATO.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.4 **Standard**	4.1.4 The slope(s) of the approach surface shall be measured in the vertical plane containing the centre line of the surface.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.5 **Standard**	4.1.5 In the case of an approach surface involving a turn, the surface shall be a complex surface containing the horizontal normals to its centre line and the slope of the centre line shall be the same as that for a straight approach surface. *Note.— See Figure 4-5.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.6 **Standard**	4.1.6 In the case of an approach surface involving a turn, the surface shall not contain more than one curved portion.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.7 **Standard**	4.1.7 Where a curved portion of an approach surface is provided, the sum of the radius of arc defining the centre line of the approach surface and the length of the straight portion originating at the inner edge shall not be less than 575 m.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 4 Reference 4.1.9 **Standard**	***Transitional surface*** *Note.— For a FATO at a heliport without a PinS approach incorporating a visual segment surface (VSS) there is no requirement to provide transitional surfaces.* 4.1.9 *Description.* A complex surface along the side of the safety area and part of the side of the approach/take-off climb surface, that slopes upwards and outwards to a predetermined height of 45 m (150 ft). *Note.— See Figure 4-3. See Table 4-1 for dimensions and slopes of surfaces.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.10 **Standard**	4.1.10 *Characteristics.* The limits of a transitional surface shall comprise: a) a lower edge beginning at a point on the side of the approach/take-off climb surface at a specified height above the lower edge extending down the side of the approach/take-off climb surface to the inner edge of the approach/take-off climb surface and from there along the length of the side of the safety area parallel to the centre line of the FATO; and b) an upper edge located at a specified height above the lower edge as set out in Table 4-1.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 4 Reference 4.1.11 **Standard**	4.1.11 The elevation of a point on the lower edge shall be: a) along the side of the approach/take-off climb surface — equal to the elevation of the approach/take-off climb surface at that point; and b) along the safety area — equal to the elevation of the inner edge of the approach/take-off climb surface. *Note 1.— If the origin of the inclined plane of the approach/take-off climb surface is raised as approved by an appropriate authority, the elevation of the origin of the transitional surface will be raised accordingly.* *Note 2.— As a result of b), the transitional surface along the safety area will be curved if the profile of the FATO is curved, or a plane if the profile is a straight line.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.12 **Standard**	4.1.12 The slope of the transitional surface shall be measured in a vertical plane at right angles to the centre line of the FATO.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.13 **Standard**	***Take-off climb surface*** 4.1.13 *Description.* An inclined plane, a combination of planes or, when a turn is involved, a complex surface sloping upwards from the end of the safety area and centred on a line passing through the centre of the FATO. *Note.— See Table 4-1 for dimensions and slopes of surfaces. See Figures 4-1, 4-2, 4-3 and 4-4 for depiction of surfaces.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specifically defined.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.1.14 **Standard**	4.1.14 *Characteristics.* The limits of a take-off climb surface shall comprise: a) an inner edge horizontal and equal in length to the minimum specified width/diameter of the FATO plus the safety area, perpendicular to the centre line of the take-off climb surface and located at the outer edge of the safety area; b) two side edges originating at the ends of the inner edge and diverging uniformly at a specified rate from the vertical plane containing the centre line of the FATO; and c) an outer edge horizontal and perpendicular to the centre line of the take-off climb surface and at a specified height of 152 m (500 ft) above the elevation of the FATO.	AC139-8, 4.1.2.	Less protective or partially implemented or not implemented	The centre line perpendicular requirement in a) is not specified.	
Chapter 4 Reference 4.1.15 **Standard**	4.1.15 The elevation of the inner edge shall be the elevation of the FATO at the point on the inner edge that is intersected by the centre line of the take-off climb surface. For heliports intended to be used by helicopters operated in performance class 1 and when approved by an appropriate authority, the origin of the inclined plane may be raised directly above the FATO.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.16 **Standard**	4.1.16 Where a clearway is provided, the elevation of the inner edge of the take-off climb surface shall be located at the outer edge of the clearway at the highest point on the ground based on the centre line of the clearway.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.1.17 **Standard**	4.1.17 In the case of a straight take-off climb surface, the slope shall be measured in the vertical plane containing the centre line of the surface.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.18 **Standard**	4.1.18 In the case of a take-off climb surface involving a turn, the surface shall be a complex surface containing the horizontal normals to its centre line and the slope of the centre line shall be the same as that for a straight take-off climb surface. *Note.— See Figure 4-5.*	AC139-8, 4.1.2.	Less protective or partially implemented or not implemented	Only the 30 m requirement is specified (in feet).	
Chapter 4 Reference 4.1.19 **Standard**	4.1.19 In the case of a take-off climb surface involving a turn, the surface shall not contain more than one curved portion.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.20 **Standard**	4.1.20 Where a curved portion of a take-off climb surface, is provided, the sum of the radius of arc defining the centre line of the take-off climb surface and the length of the straight portion originating at the inner edge shall not be less than 575 m.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.1.22 **Standard**	***Obstacle-free sector/surface — helidecks*** 4.1.22 *Description.* A complex surface originating at and extending from a reference point on the edge of the FATO of a helideck. In the case of a TLOF of less than 1 D, the reference point shall be located not less than 0.5 D from the centre of the TLOF.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not defined.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.1.24 **Standard**	4.1.24 A helideck obstacle-free sector shall comprise of two components, one above and one below helideck level: *Note.— See Figure 4-7.* a) *Above helideck level.* The surface shall be a horizontal plane level with the elevation of the helideck surface that subtends an arc of at least 210 degrees with the apex located on the periphery of the D circle extending outwards to a distance that will allow for an unobstructed departure path appropriate to the helicopter the helideck is intended to serve. b) *Below helideck level.* Within the (minimum) 210-degree arc, the surface shall additionally extend downward from the edge of the FATO below the elevation of the helideck to water level for an arc of not less than 180 degrees that passes through the centre of the FATO and outwards to a distance that will allow for safe clearance from the obstacles below the helideck in the event of an engine failure for the type of helicopter the helideck is intended to serve. *Note.— For both the above obstacle-free sectors for helicopters operated in performance class 1 or 2, the horizontal extent of these distances from the helideck will be compatible with the one-engine-inoperative capability of the helicopter type to be used.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.1.25 **Standard**	***Limited obstacle sector/surface — helidecks*** *Note.— Where obstacles are necessarily located on the structure, a helideck may have a limited obstacle sector (LOS).* 4.1.25 *Description.* A complex surface originating at the reference point for the obstacle-free sector and extending over the arc not covered by the obstacle-free sector within which the height of obstacles above the level of the TLOF will be prescribed.	AC139-8, 4.1.6.	Different in character or other means of compliance	The limited obstacle sector should extend outwards from that part of the FATO periphery that is not contained within the approach and take-off climb sector, for a distance of not less than one third the overall helicopter length. Within this sector no obstruction should be permitted above a 1:2 gradient.	
Chapter 4 Reference 4.2.3 **Standard**	4.2.3 The slopes of the obstacle limitation surfaces shall not be greater than, and their other dimensions not less than, those specified in Table 4-1 and shall be located as shown in Figures 4-1, 4-2 and 4-6.	AC139-8, 4.1.1.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.4 **Standard**	4.2.4 For heliports that have an approach/take-off climb surface with a 4.5 per cent slope design, objects shall be permitted to penetrate the obstacle limitation surface if the results of an aeronautical study approved by an appropriate authority have reviewed the associated risks and mitigation measures. *Note 1.— The identified objects may limit the heliport operation.* *Note 2.— Annex 6, Part 3, provides procedures that may be useful in determining the extent of obstacle penetration.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 4 Reference 4.2.5 **Standard**	4.2.5 New objects or extensions of existing objects shall not be permitted above any of the surfaces in 4.2.1 and 4.2.2 except when shielded by an existing immovable object or after an aeronautical study approved by an appropriate authority determines that the object will not adversely affect the safety or significantly affect the regularity of operations of helicopters. *Note.— Circumstances in which the shielding principle may reasonably be applied are described in the* Airport Services Manual *(Doc 9137), Part 6.*	AC139-8, 4.1.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.6 **Recommendation**	4.2.6 **Recommendation.—** *Existing objects above any of the surfaces in 4.2.1 and 4.2.2 should, as far as practicable, be removed except when the object is shielded by an existing immovable object or after an aeronautical study approved by an appropriate authority determines that the object will not adversely affect the safety or significantly affect the regularity of operations of helicopters.* *Note.— The application of curved approach or take-off climb surfaces as specified in 4.1.5 or 4.1.18 may alleviate the problems created by objects infringing these surfaces.*	AC139-8, 4.1.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.7 **Standard**	4.2.7 A surface-level heliport shall have at least one approach and take-off climb surface. 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: a) the area/terrain over which the flight is being conducted; b) the obstacle environment surrounding the heliport and the availability of at least one protected side slope; c) the performance and operating limitations of helicopters intending to use the heliport; and d) the local meteorological conditions including the prevailing winds.	AC139-8, 4.1.1.	Different in character or other means of compliance	Reference specifies sufficient approach and take-off climb surfaces to ensure that a helicopter can conduct a landing or take-off in the existing wind conditions.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.8 **Recommendation**	4.2.8 **Recommendation.—** *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.* *Note.— See the* Heliport Manual *(Doc 9261) for guidance.* **Table 4-1. Dimensions and slopes of obstacle limitation surfaces for all visual FATOs** *Note.— The slope design categories in Table 4-1 may not be restricted to a specific performance class of operation and may be applicable to more than one performance class of operation. The slope design categories depicted in Table 4 -1 represent minimum design slope angles and not operational slopes. Slope category "A" generally corresponds with helicopters operated in performance class 1; slope category "B" generally corresponds with helicopters operated in performance class 3; and slope category "C" generally corresponds with helicopters operated in performance class 2. Consultation with helicopter operators will help to determine the appropriate slope category to apply according to the heliport environment and the most critical helicopter type for which the heliport is intended.*	AC139-8, 4.1.1.	Different in character or other means of compliance	Reference specifies sufficient approach and take-off climb surfaces to ensure that a helicopter can conduct a landing or take-off in the existing wind conditions.	
Chapter 4 Reference 4.2.9 **Standard**	***Elevated heliports*** 4.2.9 The obstacle limitation surfaces for elevated heliports shall conform to the requirements for surface-level heliports specified in 4.2.1 to 4.2.6.	AC139-8, 4.1.2.	Less protective or partially implemented or not implemented	No differentiation is applied for elevated heliports.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.10 **Standard**	4.2.10 An elevated heliport shall have at least one approach and take-off climb surface. 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: a) the area/terrain over which the flight is being conducted; b) the obstacle environment surrounding the heliport and the availability of at least one protected side slope; c) the performance and operating limitations of helicopters intending to use the heliport; and d) the local meteorological conditions including the prevailing winds.	AC139-8, 4.1.1.	Less protective or partially implemented or not implemented	The reference provides for a heliport to have sufficient approach and take-off climb surfaces to ensure that a helicopter can conduct a landing or take-off in the existing wind conditions.	
Chapter 4 Reference 4.2.11 **Recommendation**	4.2.11 **Recommendation.—** *An elevated 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.* *Note.— See the* Heliport Manual *(Doc 9261) for guidance.*	AC139-8, 4.1.1.	Different in character or other means of compliance	Reference specifies sufficient approach and take-off climb surfaces to ensure that a helicopter can conduct a landing or take-off in the existing wind conditions.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.14 **Standard**	4.2.14 In the immediate vicinity of the helideck, obstacle protection for helicopters shall be provided below the helideck level. This protection shall extend over an arc of at least 180 degrees with the origin at the centre of the FATO, with a descending gradient having a ratio of one unit horizontally to five units vertically from the edges of the FATO within the 180-degree sector. This descending gradient may be reduced to a ratio of one unit horizontally to three units vertically within the 180-degree sector for multi-engine helicopters operated in performance class 1 or 2. (See Figure 4 -7.) *Note.— Where there is a requirement to position, at sea surface level, one or more offshore support vessel(s) (e.g. a Standby Vessel) essential to the operation of a fixed or floating offshore facility, but located within the proximity of the fixed or floating offshore facility, any offshore support vessel(s) would need to be positioned so as not to compromise the safety of helicopter operations during take-off departure and/or approach to landing.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.16 **Standard**	4.2.16 For a TLOF less than 1 D within the 150-degree limited obstacle surface/sector out to a distance of 0.62 D and commencing from a distance 0.5 D, both measured from the centre of the TLOF, objects shall not exceed a height of 5 cm above the TLOF. Beyond that arc, out to an overall distance of 0.83 D from the centre of the TLOF, the limited obstacle surface rises at a rate of one unit vertically for each two units horizontally originating at a height 0.05 D above the level of the TLOF. (See Figure 4-9.) *Note.— Where the area enclosed by the TLOF perimeter marking is a shape other than circular, the extent of the LOS segments are represented as lines parallel to the perimeter of the TLOF rather than arcs. Figure 4-9 has been constructed on the assumption that an octagonal helideck arrangement is provided. Further guidance for square (quadrilateral) and circular FATO and TLOF arrangements is given in the* Heliport Manual *(Doc 9261).*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.17 **Standard**	***Shipboard heliports*** 4.2.17 The specifications in 4.2.20 and 4.2.22 shall be applicable for shipboard heliports completed on or after 1 January 2012.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.18 **Standard**	***Purpose-built heliports located forward or aft*** 4.2.18 When helicopter operating areas are provided in the bow or stern of a ship they shall apply the obstacle criteria for helidecks.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.20 **Standard**	4.2.20 Objects whose function requires them to be located within the TLOF (such as lighting or nets) shall not exceed a height of 2.5 cm. Such objects shall only be present if they do not represent a hazard to helicopters. *Note.— Examples of potential hazards include nets or raised fittings on the deck that might induce dynamic rollover for helicopters equipped with skids.*	AC139-8, 3.3.5.	Less protective or partially implemented or not implemented	The 2.5 cm height is not specified.	
Chapter 4 Reference 4.2.21 **Standard**	4.2.21 To provide further protection from obstacles fore and aft of the TLOF, rising surfaces with gradients of one unit vertically to five units horizontally shall extend from the entire length of the edges of the two 150-degree sectors. These surfaces shall extend for a horizontal distance equal to at least 1 D of the largest helicopter the TLOF is intended to serve and shall not be penetrated by any obstacle. (See Figure 4-10.)	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.22 **Standard**	***Non-purpose-built heliports — Ship's side location*** 4.2.22 No objects shall be located within the TLOF except those aids essential for the safe operation of a helicopter (such as nets or lighting) and then only up to a maximum height of 2.5 cm. Such objects shall only be present if they do not represent a hazard to helicopters.	AC139-8, 3.3.5	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.23 **Standard**	4.2.23 From the fore and aft mid-points of the D circle in two segments outside the circle, limited obstacle areas shall extend to the ship's rail to a fore and aft distance of 1.5 times the fore-to-aft-dimension of the TLOF, located symmetrically about the athwartships bisector of the D circle. Within these areas there shall be no objects rising above a maximum height of 25 cm above the level of the TLOF. (See Figure 4-11.) Such objects shall only be present if they do not represent a hazard to helicopters.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 4 Reference 4.2.24 **Standard**	4.2.24 A LOS horizontal surface shall be provided, at least 0.25 D beyond the diameter of the D circle, which shall surround the inboard sides of the TLOF to the fore and aft mid-points of the D circle. The LOS shall continue to the ship's rail to a fore and aft distance of 2.0 times the fore-to-aft dimension of the TLOF, located symmetrically about the athwartships bisector of the D circle. Within this sector there shall be no objects rising above a maximum height of 25 cm above the level of the TLOF. *Note.— Any objects located within the areas described in 4.2.23 and 4.2.24 that exceed the height of the TLOF are notified to the helicopter operator using a ship's helicopter landing area plan. For notification purposes, it may be necessary to consider immoveable objects beyond the limit of the surface prescribed in 4.2.24, particularly if objects are significantly higher than 25 cm and in close proximity to the boundary of the LOS. See the* Heliport Manual *(Doc 9261) for guidance.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.25 **Standard**	***Winching areas*** 4.2.25 An area designated for winching on-board ships shall be comprised of a circular clear zone of diameter 5 m and, extending from the perimeter of the clear zone, a concentric manoeuvring zone of diameter 2 D. (See Figure 4-12.)	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 4 Reference 4.2.26 **Standard**	4.2.26 The manoeuvring zone shall be comprised of two areas: a) the inner manoeuvring zone extending from the perimeter of the clear zone and of a circle of diameter not less than 1.5 D; and b) the outer manoeuvring zone extending from the perimeter of the inner manoeuvring zone and of a circle of diameter not less than 2 D.S	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.27 **Standard**	4.2.27 Within the clear zone of a designated winching area, no objects shall be located above the level of its surface.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.28 **Standard**	4.2.28 Objects located within the inner manoeuvring zone of a designated winching area shall not exceed a height of 3 m.	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 4 Reference 4.2.29 **Standard**	4.2.29 Objects located within the outer manoeuvring zone of a designated winching area shall not exceed a height of 6 m. *Note.— See the* Heliport Manual *(Doc 9261) for guidance.*	AC139-8, Ch 4.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.1.1.2 **Standard**	***Location*** 5.1.1.2 A 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.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.1.1.3 **Recommendation**	5.1.1.3 **Recommendation.—** *Where a TLOF and/or FATO may be subject to a disturbed airflow, additional wind direction indicators located close to the area should be provided to indicate the surface wind on the area.* *Note.— Guidance on the location of wind direction indicators is given in the* Heliport Manual *(Doc 9261).*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.1.1.4 **Standard**	***Characteristics*** 5.1.1.4 A wind direction indicator shall be constructed so that it gives a clear indication of the direction of the wind and a general indication of the wind speed.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.1.1.5 **Recommendation**	5.1.1.5 **Recommendation.—** *A wind direction indicator should be a truncated cone made of lightweight fabric and should have the following minimum dimensions:*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.1.1.6 **Recommendation**	5.1.1.6 **Recommendation.—** *The colour of the wind direction indicator should be so selected as to make it clearly visible and understandable from a height of at least 200 m (650 ft) above the heliport, having regard to background. Where practicable, a single colour, preferably white or orange, should be used. Where a combination of two colours is required to give adequate conspicuity against changing backgrounds, they should preferably be orange and white, red and white, or black and white, and should be arranged in five alternate bands the first and last band being the darker colour.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.1.1 **Standard**	**5.2 Markings and markers** *Note.— See Annex 14, Volume I, 5.2.1.4, Note 1, concerning improving conspicuity of markings.* 5.2.1 Winching area marking *Note.— The objective of winching area markings is to provide to the pilot visual cues to assist a helicopter to be positioned over, and retained within, an area from which a passenger or equipment can be lowered or raised.* ***Application*** 5.2.1.1 Winching area markings shall be provided at a designated winching area. (See Figure 4-12.)	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.2.1.2 **Standard**	***Location*** 5.2.1.2 Winching area markings shall be located so that their centre(s) coincides with the centre of the clear zone of the winching area. (See Figure 4-12.)	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.1.3 **Standard**	***Characteristics*** 5.2.1.3 Winching area markings shall comprise a winching area clear zone marking and a winching area manoeuvring zone marking.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.1.4 **Standard**	5.2.1.4 A winching area clear zone marking shall consist of a solid circle of diameter not less than 5 m and of a conspicuous colour.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.1.5 **Standard**	5.2.1.5 A winching area manoeuvring zone marking shall consist of a broken circle line of 30 cm in width and of a diameter not less than 2 D and be marked in a conspicuous colour. Within it “WINCH ONLY” shall be marked to be easily visible to the pilot.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.2.2.2 **Standard**	***Location — All FATOs except runway-type FATOs*** 5.2.2.2 A heliport identification marking shall be located at or near the centre of the FATO. *Note 1.— The objective of heliport identification marking is to provide to the pilot an indication of the presence of a heliport and, by its form, the likely usage; the preferred direction(s) of approach; or the FATO orientation within the helideck obstacle environment.* *Note 2.— For other than helidecks, the preferred direction(s) of approach corresponds to the median of the departure/arrival surface(s).* *Note 3.— For helidecks, the bar of the "H" points to the centre of the limited obstacle sector (LOS).* *Note 4.— If the touchdown/positioning marking (TDPM) is offset, the heliport identification marking is established in the centre of the TDPM.* *Note 5.— On a FATO which does not contain a TLOF and which is marked with an aiming point marking (see 5.2.7), the heliport identification marking is established in the centre of the aiming point marking as shown in Figures 5 -1 and 5-2.*	AC139-8, 5.2.2.	Different in character or other means of compliance	A heliport identification marking should be located within the aiming point marking, or within the TALO if no aiming point marking is provided.	
Chapter 5 Reference 5.2.2.3 **Standard**	5.2.2.3 On a FATO which contains a TLOF, a heliport identification marking shall be located in the FATO so the position of it coincides with the centre of the TLOF.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.2.4 **Standard**	***Location — Runway-type FATOs*** 5.2.2.4 A heliport identification marking shall be located in the FATO and when used in conjunction with FATO designation markings, shall be displayed at each end of the FATO as shown in Figure 5-3.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.2.7 **Standard**	5.2.2.7 A heliport identification marking shall be oriented with the cross arm of the H at right angles to the preferred final approach direction. For a helideck, the cross arm shall be on or parallel to the bisector of the obstacle-free sector. For a non-purpose-built shipboard heliport located on a ship's side, the cross arm shall be parallel with the side of the ship.	AC139-8, 5.2.5.	Less protective or partially implemented or not implemented	The helideck provision is not specified.	
Chapter 5 Reference 5.2.3.2 **Recommendation**	5.2.3.2 **Recommendation.—** *A maximum allowable mass marking should be displayed at a surface-level heliport.*	AC139-8, 5.2.6.	Less protective or partially implemented or not implemented	Specified only for elevated heliports and helidecks.	
Chapter 5 Reference 5.2.3.6 **Recommendation**	5.2.3.6 **Recommendation.—** *The maximum allowable mass should be expressed to the nearest 100 kg. The marking should be presented to one decimal place and rounded to the nearest 100 kg followed by the letter "t". Where States use mass in pounds, the maximum allowable mass marking should indicate the allowable helicopter mass in hundreds of pounds rounded to the nearest 100 lb.*	AC139-8, 5.2.8.	Less protective or partially implemented or not implemented	Not specified to this level of detail.	
Chapter 5 Reference 5.2.3.7 **Recommendation**	5.2.3.7 **Recommendation.—** *When the maximum allowable mass is expressed to 100 kg, the decimal place should be preceded with a decimal point marked with a 30 cm square.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.2.3.9 **Recommendation**	***Runway-type FATOs*** 5.2.3.9 **Recommendation.—** *The numbers and the letter of the marking should have a colour contrasting with the background and should be in the form and proportion shown in Figure 5-5.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.4.1 **Standard**	5.2.4 D-value marking *Note.— The objective of D-value marking is to provide to the pilot the "D" of the largest helicopter that can be accommodated on the heliport. This value may differ in size from the FATO and the TLOF provided in compliance with Chapter 3.* ***Application — All FATOs except runway-type FATOs*** 5.2.4.1 A D-value marking shall be displayed at a helideck and at a shipboard heliport.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.4.2 **Standard**	***Application — Runway-type FATOs*** *Note.—The D-value is not required to be marked on a heliport with a runway-type FATO.* 5.2.4.2 A D-value marking shall be displayed at surface-level and elevated heliports.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.4.3 **Standard**	***Location*** 5.2.4.3 A D-value marking shall be located within the TLOF or FATO and so arranged as to be readable from the preferred final approach direction.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.4.4 **Recommendation**	5.2.4.4 **Recommendation.—** *Where there is more than one approach direction, additional D-value markings should be provided such that at least one D-value marking is readable from the final approach direction. For a non-purpose-built heliport located on a ship's side, D-value markings should be provided on the perimeter of the D circle at the 2 o'clock, 10 o'clock and 12 o'clock positions when viewed from the side of the ship facing towards the centre line.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.4.5 **Standard**	***Characteristics*** 5.2.4.5 The D-value marking shall be white. The D-value marking shall be rounded to the nearest whole metre or foot with 0.5 rounded down.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.4.6 **Recommendation**	5.2.4.6 **Recommendation.—** *The numbers of the marking should have a colour contrasting with the background and should be in the form and proportion shown in Figure 5-5 for a D-value of more than 30 m. For a D-value between 15 m and 30 m, the height of the numbers of the marking should be a minimum of 90 cm, and for a D-value of less than 15 m, the height of the numbers of the marking should be a minimum of 60 cm, each with a proportional reduction in width and thickness.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.5.3 **Standard**	***Characteristics — Runway-type FATOs*** 5.2.5.3 The perimeter of the FATO shall be defined with markings or markers spaced at equal intervals of not more than 50 m with at least three markings or markers on each side including a marking or marker at each corner.	AC139-8, 5.2.12.	Less protective or partially implemented or not implemented	The spacing is not specified.	
Chapter 5 Reference 5.2.5.4 **Standard**	5.2.5.4 A FATO perimeter marking shall be a rectangular stripe with a length of 9 m or one-fifth of the side of the FATO which it defines and a width of 1 m.	AC139-8, 5.2.12.	Less protective or partially implemented or not implemented	A continuous white line 600 mm wide is specified.	
Chapter 5 Reference 5.2.5.5 **Standard**	5.2.5.5 FATO perimeter markings shall be white.	AC139-8, 5.2.12.	Different in character or other means of compliance	The reference also provides for mowing, bare earth, or marker boards where the FATO is on grass.	
Chapter 5 Reference 5.2.5.6 **Standard**	5.2.5.6 A FATO perimeter marker shall have dimensional characteristics as shown in Figure 5-6.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.5.7 **Standard**	5.2.5.7 FATO perimeter markers shall be of colour(s) that contrast effectively against the operating background.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.5.8 **Recommendation**	5.2.5.8 **Recommendation.—** *FATO perimeter markers should be a single colour, orange or red, or two contrasting colours, orange and white or, alternatively, red and white should be used except where such colours would merge with the background.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.5.9 **Standard**	***Characteristics — All FATOs except runway-type FATOs*** 5.2.5.9 For an unpaved FATO the perimeter shall be defined with flush in-ground markers. The FATO perimeter markers shall be 30 cm in width, 1.5 m in length, and with end-to-end spacing of not less than 1.5 m and not more than 2 m. The corners of a square or rectangular FATO shall be defined.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.5.10 **Standard**	5.2.5.10 For a paved FATO the perimeter shall be defined with a dashed line. The FATO perimeter marking segments shall be 30 cm in width, 1.5 m in length, and with end-to-end spacing of not less than 1.5 m and not more than 2 m. The corners of the square or rectangular FATO shall be defined.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.5.11 **Standard**	5.2.5.11 FATO perimeter markings and flush in-ground markers shall be white. **Figure 5-6. Runway-type FATO edge marker**	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.6.1 **Recommendation**	5.2.6 FATO designation markings for runway-type FATOs *Note.— The objective of final FATO designation markings for runway-type FATOs is to provide to the pilot an indication of the magnetic heading of the runway.* ***Application*** 5.2.6.1 **Recommendation.—** *A FATO designation marking should be provided at a heliport where it is necessary to designate the FATO to the pilot.*	AC139-8, 5.2.12.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.6.2 **Standard**	***Location*** 5.2.6.2 A FATO designation marking shall be located at the beginning of the FATO as shown in Figure 5-3.	AC139-8, 5.2.12.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.6.3 **Standard**	***Characteristics*** 5.2.6.3 A FATO designation marking shall consist of a two-digit number. The two-digit number shall be the whole number nearest to one-tenth of the magnetic North when viewed from the direction of approach. When this rule would give a single digit number, it shall be preceded by a zero. The marking, as shown in Figure 5-3, shall be supplemented by the heliport identification marking.	AC139-8, 5.2.12.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.7.3 **Standard**	***Location — All FATOs except runway-type FATOs*** 5.2.7.3 The aiming point marking shall be located at the centre of the FATO as shown in Figure 5-1.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	Note: 5.2.14 specifies "within the FATO".
Chapter 5 Reference 5.2.10.4 **Recommendation**	5.2.10.4 **Recommendation.—** *A heliport name marking intended for use at night or during conditions of poor visibility should be illuminated, either internally or externally.*	AC139-8, 5.2.24.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.10.6 **Recommendation**	***All FATOs except runway-type FATOs.*** 5.2.10.6 **Recommendation.—** *The characters of the marking should be not less than 1.5 m in height at surface-level heliports and not less than 1.2 m on elevated heliports, helidecks and shipboard heliports. The colour of the marking should contrast with the background and preferably be white.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.11.1 **Standard**	5.2.11 Helideck obstacle-free sector (chevron) marking *Note.— The objective of helideck obstacle-free sector (chevron) marking is to indicate the direction and limits of a sector that is free of obstacles above the level of the helideck for the preferred approach and departure directions.* ***Application*** 5.2.11.1 A helideck with adjacent obstacles that penetrate above the level of the helideck shall have an obstacle-free sector marking.	AC139-8, 5.2.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.11.2 **Standard**	***Location*** 5.2.11.2 A helideck obstacle-free sector marking shall be located, where practicable, at a distance from the centre of the TLOF equal to the radius of the largest circle that can be drawn in the TLOF or 0.5 D, whichever is greater. *Note.— Where the point of origin is outside the TLOF, and it is not practicable to physically paint the chevron, the chevron is relocated to the TLOF perimeter on the bisector of the obstacle-free sector. In this case, the distance and direction of displacement, along with the attention-getting "WARNING DISPLACED CHEVRON", is marked in a box beneath the chevron in black characters not less than 10 cm high. (An example figure is given in the* Heliport Manual *(Doc 9261).)*	AC139-8, 5.2.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.11.3 **Standard**	***Characteristics*** 5.2.11.3 The helideck obstacle-free sector marking shall indicate the location of the obstacle-free sector and the directions of the limits of the sector. *Note.— Example figures are given in the* Heliport Manual *(Doc 9261)*.	AC139-8, 5.2.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.11.4 **Standard**	5.2.11.4 The height of the chevron shall not be less than 30 cm.	AC139-8, 5.2.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.11.5 **Standard**	5.2.11.5 The chevron shall be marked in a conspicuous colour.	AC139-8, 5.2.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.11.6 **Recommendation**	5.2.11.6 **Recommendation.—** *The colour of the chevron should be black.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.12.1 **Recommendation**	5.2.12 Helideck and shipboard heliport surface marking *Note.— The objective of helideck and shipboard heliport surface marking is to provide to the pilot, by colour and conspicuity, the location of the TLOF on a helideck or shipboard heliport.* ***Application*** 5.2.12.1 **Recommendation.—** *A surface marking should be provided to assist the pilot to identify the location of the helideck or shipboard heliport during an approach by day.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.12.2 **Recommendation**	***Location*** 5.2.12.2 **Recommendation.—** *A surface marking should be applied to the dynamic load-bearing area bounded by the TLOF perimeter marking.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.12.3 **Recommendation**	***Characteristics*** 5.2.12.3 **Recommendation.—** *The helideck or shipboard heliport surface bounded by the TLOF perimeter marking should be of dark green using a high friction coating.* *Note.— Where the application of a surface coating may have a degrading effect on friction qualities, the surface might not be painted. In such cases, the best operating practice to enhance the conspicuity of markings is to outline deck markings with a contrasting colour.*	AC139-8, 5.2.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.14.3 **Standard**	***Characteristics*** 5.2.14.3 A helicopter air taxi-route centre line, when on a paved surface, shall be marked with a continuous yellow line 15 cm in width.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.14.4 **Standard**	5.2.14.4 A helicopter air taxi-route centre line, when on an unpaved surface that will not accommodate painted markings, shall be marked with flush in-ground 15-cm-wide and approximately 1.5 m in length yellow markers, spaced at intervals of not more than 30 m on straight sections and not more than 15 m on curves, with a minimum of four equally spaced markers per section.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.14.5 **Standard**	5.2.14.5 If the helicopter air taxi-route is to be used at night, markers shall be either internally illuminated or retro-reflective.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.1 **Standard**	5.2.15 Helicopter stand markings *Note.— The objective of helicopter stand markings is to provide to the pilot a visual indication of: an area that is free of obstacles and in which permitted manoeuvring, and all necessary ground functions, may take place; identification, mass and D-value limitations, when required; and guidance for manoeuvring and positioning of the helicopter within the stand.* ***Application*** 5.2.15.1 A helicopter stand perimeter marking shall be provided.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.15.2 **Standard**	5.2.15.2 A helicopter stand shall be provided with the appropriate TDPM. See Figure 5-8.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.3 **Recommendation**	5.2.15.3 **Recommendation.—** *Alignment lines and lead-in/lead-out lines should be provided on a helicopter stand.* *Note 1.— See Chapter 3, Figures 3.5 to 3.9.* *Note 2.— Helicopter stand identification markings may be provided where there is a need to identify individual stands.* *Note 3.— Additional markings relating to stand size may be provided. See the* Heliport Manual *(Doc 9261).*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.4 **Standard**	***Location*** 5.2.15.4 The TDPM, alignment lines and lead-in/lead-out lines shall be located such that every part of the helicopter can be contained within the helicopter stand during positioning and permitted manoeuvring.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.5 **Standard**	5.2.15.5 Alignment lines and lead-in/lead-out lines shall be located as shown in Figure 5-9.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.15.6 **Standard**	***Characteristics*** 5.2.15.6 A helicopter stand perimeter marking shall consist of a continuous yellow line and have a line width of 15 cm.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.7 **Standard**	5.2.15.7 The TDPM shall have the characteristics described in Section 5.2.9 above.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.8 **Standard**	5.2.15.8 Alignment lines and lead-in/lead-out lines shall be continuous yellow lines and have a width of 15 cm.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.9 **Standard**	5.2.15.9 Curved portions of alignment lines and lead-in/lead-out lines shall have radii appropriate to the most demanding helicopter type the helicopter stand is intended to serve.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.15.10 **Standard**	5.2.15.10 Stand identification markings shall be marked in a contrasting colour so as to be easily readable.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.16.1 **Recommendation**	5.2.16 Flight path alignment guidance marking *Note.— The objective of flight path alignment guidance marking is to provide the pilot with a visual indication of the available approach and/or departure path direction(s).* ***Application*** 5.2.16.1 **Recommendation.—** *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).* *Note.— The flight path alignment guidance marking can be combined with a flight path alignment guidance lighting system described in 5.3.4.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.16.2 **Standard**	***Location*** 5.2.16.2 The flight path alignment guidance marking shall be located in a straight line along the direction of approach and/or departure path on one or more of the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO or safety area.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.2.16.3 **Standard**	***Characteristics*** 5.2.16.3 A flight path alignment guidance marking shall consist of one or more arrows marked on the TLOF, FATO and/or safety area surface as shown in Figure 5-10. The stroke of the arrow(s) shall be 50 cm in width and at least 3 m in length. When combined with a flight path alignment guidance lighting system it shall take the form shown in Figure 5-10 which includes the scheme for marking "heads of the arrows" which are constant regardless of stroke length. *Note.— In the case of a flight path limited to a single approach direction or single departure direction, the arrow marking may be unidirectional. In the case of a heliport with only a single approach/departure path available, one bidirectional arrow is marked.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.2.16.4 **Recommendation**	5.2.16.4 **Recommendation.—** *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.* **Figure 5-10. Flight path alignment guidance markings and lights**	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.2.1 **Recommendation**	5.3.2 Heliport beacon ***Application*** 5.3.2.1 **Recommendation.—** *A heliport beacon should be provided at a heliport where:* *a) long-range visual guidance is considered necessary and is not provided by other visual means; or* *b) identification of the heliport is difficult due to surrounding lights.*	AC139-8, 5.3.2.	Less protective or partially implemented or not implemented	Item a) is not specified.	
Chapter 5 Reference 5.3.3.1 **Recommendation**	5.3.3 Approach lighting system ***Application*** 5.3.3.1 **Recommendation.—** *An approach lighting system should be provided at a heliport where it is desirable and practicable to indicate a preferred approach direction.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.3.2 **Standard**	***Location*** 5.3.3.2 The approach lighting system shall be located in a straight line along the preferred direction of approach.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.3.3 **Recommendation**	***Characteristics*** 5.3.3.3 **Recommendation.—** *An approach lighting system should consist of a row of three 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 as shown in Figure 5-13. The lights forming the crossbar should be as nearly as practicable in a horizontal straight line at right angles to, and bisected by, the line of the centre line 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.* *Note.— Sequenced flashing lights may be useful where identification of the approach lighting system is difficult due to surrounding lights.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.3.4 **Standard**	5.3.3.4 The steady lights shall be omnidirectional white lights.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.3.5 **Standard**	5.3.3.5 Sequenced flashing lights shall be omnidirectional white lights.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.3.6 **Recommendation**	5.3.3.6 **Recommendation.—** *The flashing lights should have a flash frequency of one per second and their light distribution should be as shown in Figure 5-12, Illustration 3. The flash sequence should commence from the outermost light and progress towards the crossbar.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.3.7 **Recommendation**	5.3.3.7 **Recommendation.—** *A suitable brilliancy control should be incorporated to allow for adjustment of light intensity to meet the prevailing conditions.* *Note.— The following intensity settings have been found suitable:* *a) steady lights — 100 per cent, 30 per cent and 10 per cent; and* *b) flashing lights — 100 per cent, 10 per cent and 3 per cent.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.4.1 **Recommendation**	5.3.4 Flight path alignment guidance lighting system ***Application*** 5.3.4.1 **Recommendation.—** *Flight path alignment guidance lighting system(s) should be provided at a heliport where it is desirable and practicable to indicate available approach and/or departure path direction(s).* *Note.— The flight path alignment guidance lighting can be combined with the flight path alignment guidance marking described in 5.2.16.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.4.2 **Standard**	***Location*** 5.3.4.2 The flight path alignment guidance lighting system shall be in a straight line along the direction(s) of approach and/or departure path on one or more of the TLOF, FATO, safety area or any suitable surface in the immediate vicinity of the FATO, TLOF or safety area.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.4.3 **Recommendation**	5.3.4.3 **Recommendation.—** *If combined with a flight path alignment guidance marking, as far as is practicable the lights should be located inside the "arrow" markings.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.4.4 **Recommendation**	***Characteristics*** 5.3.4.4 **Recommendation.—** *A flight path alignment guidance lighting system should consist of a row of three or more lights spaced uniformly with 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. (See Figure 5-10.)* *Note.— The number of lights and spacing between these lights may be adjusted to reflect the space available. If more than one flight path alignment system is used to indicate available approach and/or departure path direction(s), the characteristics for each system are typically kept the same. (See Figure 5-10.)*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.4.5 **Standard**	5.3.4.5 The lights shall be steady omnidirectional inset white lights.	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.4.6 **Recommendation**	5.3.4.6 **Recommendation.—** *The distribution of the lights should be as indicated in Figure 5-12, Illustration5.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.4.7 **Recommendation**	5.3.4.7 **Recommendation.—** *A suitable control should be incorporated to allow for adjustment of light intensity to meet the prevailing conditions and to balance the flight path alignment guidance lighting system with other heliport lights and general lighting that may be present around the heliport.*	AC139-8, Ch 5.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.5.1 **Recommendation**	5.3.5 Visual alignment guidance system *Note.— The objective of a visual alignment guidance system is to provide conspicuous and discrete cues to assist the pilot to attain and maintain a specified approach track to a heliport. Guidance on suitable visual alignment guidance systems is given in the* Heliport Manual *(Doc 9261).* ***Application*** **Recommendation.—** *A visual alignment guidance system should be provided to serve the approach to a heliport where one or more of the following conditions exist, especially at night:* *a) obstacle clearance, noise abatement or traffic control procedures require a particular direction to be flown;* *b) the environment of the heliport provides few visual surface cues; and* *c) it is physically impracticable to install an approach lighting system.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

Annex Reference	AERODROMES Standard or Recommended Practice	State Legislation, Regulation or Document Reference	Level of implementation of SARP's	Text of the difference to be notified to ICAO	Comments including the reason for the difference
Chapter 5 Reference 5.3.6.1 **Recommendation**	5.3.6 Visual approach slope indicator *Note.— The objective of a visual approach slope indicator is to provide conspicuous and discrete colour cues, within a specified elevation and azimuth, to assist the pilot to attain and maintain the approach slope to a desired position within a FATO. Guidance on suitable visual approach slope indicators is given in the* Heliport Manual *(Doc 9261).* ***Application*** **Recommendation.—** *A visual approach slope indicator should be provided to serve the approach to a heliport, whether or not the heliport is served by other visual approach aids or by non-visual aids, where one or more of the following conditions exist, especially at night:* *a) obstacle clearance, noise abatement or traffic control procedures require a particular slope to be flown;* *b) the environment of the heliport provides few visual surface cues; and* *c) the characteristics of the helicopter require a stabilized approach.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.7.3 **Standard**	***Characteristics*** 5.3.7.3 FATO lights shall be fixed omnidirectional lights showing white. Where the intensity of the lights is to be varied, the lights shall show variable white.	AC139-8, 5.3.7.	Different in character or other means of compliance	The AC specifies alternate yelow and blue lights, with the corner lights yellow, for positive identification.	

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Chapter 5 Reference 5.3.7.5 **Recommendation**	5.3.7.5 **Recommendation.—** *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. Where a FATO is not meant for lift-off or touchdown, the lights should not exceed a height of 25 cm above ground or snow level.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.2 **Standard**	5.3.9.2 For a surface-level heliport, lighting for the TLOF in a FATO shall consist of one or more of the following: a) perimeter lights; b) floodlighting; c) arrays of segmented point source lighting (ASPSL) or luminescent panel (LP) lighting to identify the TLOF when a) and b) are not practicable and FATO lights are available.	AC139-8, 5.3.10.	Less protective or partially implemented or not implemented	Item c) is not specified.	

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Chapter 5 Reference 5.3.9.3 **Standard**	5.3.9.3 For an elevated heliport, shipboard heliport or helideck, lighting for the TLOF in a FATO shall consist of: a) perimeter lights; and b) ASPSL and/or LPs to identify the TDPM and/or floodlighting to illuminate the TLOF. *Note.— At elevated heliports, shipboard heliports and helidecks, surface texture cues within the TLOF are essential for helicopter positioning during the final approach and landing. Such cues can be provided using various forms of lighting (ASPSL, LP, floodlights or a combination of these lights, etc.) in addition to perimeter lights. Best results have been demonstrated by the combination of perimeter lights and ASPSL in the form of encapsulated strips of light emitting diodes n (LEDs) and inset lights to identify the TDPM and heliport identification markings.*	AC139-8, 5.3.12.	Different in character or other means of compliance	Perimeter lights and floodlighting are specified; no provision for ASPL or LPs.	
Chapter 5 Reference 5.3.9.4 **Recommendation**	5.3.9.4 **Recommendation.—** *TLOF ASPSL and/or LPs to identify the TDPM and/or floodlighting should be provided at a surface-level heliport intended for use at night when enhanced surface texture cues are required.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.3.9.5 **Standard**	***Location*** 5.3.9.5 TLOF perimeter lights shall be placed along the edge of the area designated for use as the TLOF or within a distance of 1.5 m from the edge. Where the TLOF is a circle, the lights shall be: a) located on straight lines in a pattern which will provide information to pilots on drift displacement; and b) where a) is not practicable, evenly spaced around the perimeter of the TLOF at the appropriate interval, except that over a sector of 45 degrees the lights shall be spaced at half spacing.	AC139-8, 5.3.13.	Different in character or other means of compliance	TALO perimeter lights should either be placed: a) along the edge of the TALO or within 1500 mm from the edge; or b) along the edge of the usable area of an elevated heliport. (This may be at a dimension less than the FATO but should be at least at a distance of 1500 mm surrounding the TALO); and c) where the TALO is a circle, the lights should be located on straight lines in a pattern that will provide information to pilots on drift displacement.	
Chapter 5 Reference 5.3.9.6 **Standard**	5.3.9.6 TLOF perimeter lights shall be uniformly spaced at intervals of not more than 3 m for elevated heliports and helidecks and not more than 5 m for surface-level heliports. There shall be a minimum number of four lights on each side including a light at each corner. For a circular TLOF where lights are installed in accordance with 5.3.9.5 b), there shall be a minimum of fourteen lights. *Note.— Guidance on this issue is contained in the* Heliport Manual *(Doc 9261)*.	AC139-8, 5.3.14.	Less protective or partially implemented or not implemented	TALO perimeter lights should be uniformly spaced at intervals of not more than 3000 mm for elevated heliports and helidecks and not more than 5000 mm for surface level heliports. There should be a minimum number of eight lights with three lights on each side (including the lights at each corner).	

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Chapter 5 Reference 5.3.9.9 **Standard**	5.3.9.9 On surface-level heliports, ASPSL or LPs, if provided to identify the TLOF, shall be placed along the marking designating the edge of the TLOF. Where the TLOF is a circle, they shall be located on straight lines circumscribing the area.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.10 **Standard**	5.3.9.10 On surface-level heliports, the minimum number of LPs on a TLOF shall be nine. The total length of LPs in a pattern shall not be less than 50 per cent of the length of the pattern. There shall be an odd number with a minimum number of three panels on each side of the TLOF including a panel at each corner. LPs shall be uniformly spaced with a distance between adjacent panel ends of not more than 5 m on each side of the TLOF.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.11 **Recommendation**	5.3.9.11 **Recommendation.—** *When LPs are used on an elevated heliport or helideck to enhance surface texture cues, the panels should not be placed adjacent to the perimeter lights. They should be placed around a TDPM or coincident with heliport identification marking.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.13 **Standard**	***Characteristics*** 5.3.9.13 The TLOF perimeter lights shall be fixed omnidirectional lights showing green.	AC139-8, 5.3.18.	Different in character or other means of compliance	Yellow, rather than green.	

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Chapter 5 Reference 5.3.9.14 **Standard**	5.3.9.14 At a surface-level heliport, ASPSL or LPs shall emit green light when used to define the perimeter of the TLOF.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.15 **Recommendation**	5.3.9.15 **Recommendation.—** *The chromaticity and luminance of colours of LPs should conform to Annex 14, Volume I, Appendix 1, 3.4.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.16 **Standard**	5.3.9.16 An LP shall have a minimum width of 6 cm. The panel housing shall be the same colour as the marking it defines.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.19 **Recommendation**	5.3.9.19 **Recommendation.—** *When located within the safety area of a surface-level or elevated heliport, the TLOF floodlights should not exceed a height of 25 cm.*	AC139-8, 5.3.20.	Different in character or other means of compliance	TALO floodlighting, if mounted on the perimeter, should not exceed a height of 250 mm.	
Chapter 5 Reference 5.3.9.21 **Standard**	5.3.9.21 The LPs shall not extend above the surface by more than 2.5 cm.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.3.9.22 **Recommendation**	5.3.9.22 **Recommendation.—** *The light distribution of the perimeter lights should be as shown in Figure 5-12, Illustration 5.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.23 **Recommendation**	5.3.9.23 **Recommendation.—** *The light distribution of the LPs should be as shown in Figure 5-12, Illustration 6.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.25 **Recommendation**	5.3.9.25 **Recommendation.—** *The average horizontal illuminance of the floodlighting should be at least 10 lux, with a uniformity ratio (average to minimum) of not more than 8:1 measured on the surface of the TLOF.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.26 **Recommendation**	5.3.9.26 **Recommendation.—** *Lighting used to identify the TDPC should comprise a segmented circle of omnidirectional ASPSL strips showing yellow. The segments should consist of ASPSL strips, and the total length of the ASPSL strips should not be less than 50 per cent of the circumference of the circle.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.9.27 **Recommendation**	5.3.9.27 **Recommendation.—** *If utilized, the heliport identification marking lighting should be omnidirectional showing green.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 5 Reference 5.3.11.1 **Standard**	5.3.11 Winching area floodlighting *Note.— The objective of winching area floodlighting is to provide illumination of the surface and obstacles, and visual cues to assist a helicopter to be positioned over, and retained within, an area from which a passenger or equipment can be lowered or raised.* ***Application*** 5.3.11.1 Winching area floodlighting shall be provided at a winching area intended for use at night.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.11.2 **Standard**	***Location*** 5.3.11.2 Winching area floodlights shall be located so as to avoid glare to pilots in flight or to personnel working on the area. The arrangement and aiming of floodlights shall be such that shadows are kept to a minimum.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.11.3 **Standard**	***Characteristics*** 5.3.11.3 The spectral distribution of winching area floodlights shall be such that the surface and obstacle markings can be correctly identified.	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	
Chapter 5 Reference 5.3.11.4 **Recommendation**	5.3.11.4 **Recommendation.—** *The average horizontal illuminance should be at least 10 lux, measured on the surface of the winching area.*	AC139-8, 5.3.	Less protective or partially implemented or not implemented	Not specified.	

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Chapter 6 Reference 6.1.1 **Standard**	**CHAPTER 6. HELIPORT EMERGENCY RESPONSE** **6.1 Heliport emergency planning** *Introductory Note.— Heliport emergency planning is the process of preparing a heliport to cope with an emergency that takes place at the heliport or in its vicinity. Examples of emergencies include crashes on or off the heliport, medical emergencies, dangerous goods occurrences, fires and natural disasters. The purpose of heliport emergency planning is to minimize the impact of an emergency by saving lives and maintaining helicopter operations. The heliport emergency plan sets out the procedures for coordinating the response of heliport agencies or services (air traffic services unit, firefighting services, heliport administration, medical and ambulance services, aircraft operators, security services and police) and the response of agencies in the surrounding community (fire departments, police, medical and ambulance services, hospitals, military, and harbour patrol or coast guard) that could be of assistance in responding to the emergency.* 6.1.1 A heliport emergency plan shall be established commensurate with the helicopter operations and other activities conducted at the heliport.	CAR 139.57, Aerodrome emergency plan; AC139-4, Aerodrome Rescue and Firefighting.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	
Chapter 6 Reference 6.1.2 **Standard**	6.1.2 The plan shall identify agencies which could be of assistance in responding to an emergency at the heliport or in its vicinity.	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	

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Chapter 6 Reference 6.1.3 **Recommendation**	6.1.3 **Recommendation.—** *The heliport emergency plan should provide for the coordination of the actions to be taken in the event of an emergency occurring at a heliport or in its vicinity.*	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	
Chapter 6 Reference 6.1.4 **Recommendation**	6.1.4 **Recommendation.—** *Where an approach/departure path at a heliport is located over water, the plan should identify which agency is responsible for coordinating rescue in the event of a helicopter ditching and indicate how to contact that agency.*	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	

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Chapter 6 Reference 6.1.5 **Recommendation**	6.1.5 **Recommendation.—** *The plan should include, as a minimum, the following information:* *a) the types of emergencies planned for;* *b) how to initiate the plan for each emergency specified;* *c) the name of agencies on and off the heliport to contact for each type of emergency with telephone numbers or other contact information;* *d) the role of each agency for each type of emergency;* *e) a list of pertinent on-heliport services available with telephone numbers or other contact information;* *f) copies of any written agreements with other agencies for mutual aid and the provision of emergency services; and* *g) a grid map of the heliport and its immediate vicinity.*	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	
Chapter 6 Reference 6.1.6 **Recommendation**	6.1.6 **Recommendation.—** *All agencies identified in the plan should be consulted about their role in the plan*.	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	

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Chapter 6 Reference 6.1.7 **Recommendation**	6.1.7 **Recommendation.—** *The plan should be reviewed and the information in it updated at least yearly or, if deemed necessary, after an actual emergency, so as to correct any deficiency found during an actual emergency.*	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	
Chapter 6 Reference 6.1.8 **Recommendation**	6.1.8 **Recommendation.—** *A test of the emergency plan should be carried out at least once every three years.*	CAR 139.57; AC139-4.	Less protective or partially implemented or not implemented	The rule would apply only to heliports located on a licensed aerodrome (for which an emergency plan is required).	

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