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Sicherheit Infrastruktur

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Title	Difference(s)
14 Aerodromes Volume I: Aerodrome Design and Operations (*9th Edition, July 2022, Amendment 17*)	**CHAPTER 1** 1.1 On a Non-Instrument Runway, which is intended for the operation of aircraft using visual approach procedures or an instrument approach procedure to a point beyond which the approach may continue in visual meteorological conditions, the lowest minimum applied in Switzerland is at a DH (Decision Height) of 500ft. 1.2.1 Deviation from any standard is possible, if the result of an aeronautical study demonstrates that appropriate measures cause no degrading of safety and do not significantly affect uniformity. 1.4.1 Not all aerodromes used for international operations are certified. Aerodromes holding a concession are certified according to ICAO requirements, except LSGG, LSZA, LSZB, LSZH and LSZR, which are certified according to EASA requirements. 1.6.3 The code number for element 1 is determined from Table 1-1 selecting the code number for the highest available runway length (TORA) by applying corrector factors according to Chapter 3.5 of ICAO Doc 9157, Part 1.
	CHAPTER 2 2.9.3 to 2.9.10 At certified aerodromes or at aerodromes serving aeroplanes with an MTOM more than 5’700 kg, assessment and reporting of runway surface condition according to ICAO provided. For non-certified aerodromes only serving aeroplanes with an MTOM less than 5’700 kg national regulations apply. 2.9.5 The runway surface condition descriptor SLIPPERY WET is used in Switzerland in addition to the runway surface condition descriptors listed: SLIPPERY WET – a wet runway whose surface friction characteristics for a significant portion of it have been determined to be degraded.
	CHAPTER 3 3.4.2 In case of a displaced threshold, the runway strip will extend before the beginning of the runway for the corresponding distance of at least: • 60 m where the code number is 2, 3 or 4; • 60 m where the code number is 1 and the runway is an instrument one; and • 30 m where the code number is 1 and the runway is a non-instrument one.

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	3.5.2 Implemented in case of a new runway or runway extension and to be considered when a change impacts the runway operation. 3.5.5 The width of a runway end safety area (RESA) shall be at least twice that of the associated runway or that of the runway strip, whichever is smaller. 3.9.4 The taxiway width may be designed for a specific aircraft type, while applying the required distance between the respective outer main gear and the edge of the taxiway. 3.9.7 The separation distance between the centre line of a taxiway and a runway, the centre line of a parallel taxiway or an object may be linearly interpolated considering the wingspan and according to the code letter of a specific aircraft. For computing the separation distances in Table 3-1, the following differences are applied: • On taxiways where the code letter is A or B, the increment Z is 5.0 m. • On aircraft stand taxilanes where the code letter is A or B, the increment Z is 2.0 m. • On aircraft stand taxilanes where the code letter is A or B, the gear deviation is 1.0 m. Affected articles and figures: 3.11.2, 3.15.9, 3.15.10, Figure 3-4, 5.2.11.4, Figure 5-28, 6.1.1.3, 9.9.1, 9.9.2
	CHAPTER 5 5.1.1.4 Circular band marking does not have to be provided. 5.2.8.9 When a mandatory instruction marking is provided on taxiways of code letters A, B, C or D, the enhanced taxiway marking will shortened accordingly. In case of a taxiway crossing or junction, the distance between the taxiway centre line, which does not enter or cross a runway, and the enhanced taxiway centre line marking shall be at least 5 m but not more than 10 m. 5.2.16.3 Mandatory instruction markings at the beginning resp. end of the runway will consist of a single runway designation number in accordance with the design of the signs placed across the runway holding position. 5.3.14.1 Only applicable to paved, lighted runways. Only implemented in case of a new runway or modification to the runway lighting system and to be considered when a change impacts the runway or flight operation.

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	5.3.19.2 Not to be provided on a runway turn pad intended for use at night where the traffic density is light and taxiway edge lights and centre line marking provide adequate guidance. 5.3.5.46 As a supplementary measure where an aeronautical study indicates that an existing object extending above an obstacle protection surface (OPS) could adversely affect the safety of operations of aeroplanes, the threshold may suitably be displaced from the beginning of the runway. 5.5.6 Taxiway centre line markers do not have to be provided.
	CHAPTER 6 6.1.1.1 Vehicles and other mobile objects are not consequently marked according to Art. 6.2.2.2 6.2.1.1 Obstacle night lighting has to combine emissions in red and infrared spectra 6.2.1.2 Instead of medium-intensity lights Type B, red 100 to 300 cd flashing lights were used. 6.2.3.3 Normally only the top 30 to 50% of an air navigation obstacle will be marked with a red-white pattern. 6.2.3.19 Obstacles exceeding the obstacle limitation surface (OLS) should be lit at night, except in the following situations: • if it does not present a danger for air navigation; • if it is shielded by another existing irremovable obstacle; • the concerned airfield has no night operations. 6.2.3.23 • **60 m to less than 100 m:** A red low-intensity 10 to 50 cd fixed light or a red medium-intensity 100 to 300 cd flashing light placed on the top of the object (between 1.5 m and 3.0 m below the top or a chimney). Depending on the risk, additional red low-intensity fixed lights may be imposed at a lower level (maximum 45 m distance from the top). • **100 m to less than 150 m:** A red medium-intensity 100 to 300 cd flashing light placed on the top of the object (between 1.5 m and 3.0 m below the top for a chimney), plus additional levels of red low-intensity 10 to 50 cd fixed lights, with maximum spacing of 45 m between the levels. • Obstacles like cable-cranes, construction posts and highlines may be lighted with special low-intensity 8 cd or more flashing lights.

Title	Difference(s)
	• In case of LED technology, special low-intensity lights have to flash and emit with min. 50 mW/sr in the infrared spectrum. • In case of LED technology, low-intensity lights have to flash and emit between 150 and 1200 mW/sr in the infrared spectrum. • In case of LED technology, medium-intensity lights have to flash and emit between 600 and 1200 mW/sr in the infrared spectrum. • In case of LED technology, low, special low and medium-intensity lights have to emit in the infrared spectrum with a wave length of 850 nm. 6.2.3.28 A high-intensity obstacle light and red medium-intensity 100 to 300 cd flashing lights placed on top of the object (between 1.5 m and 3 m below the top for a chimney), plus additional levels of red low-intensity 10 to 50 cd fixed lights, with maximum spacing of 45 m between the levels. 6.2.4.2 The rotor blades extremities of wind turbines will be additionally marked with a red stripe (5 to 7 m long, depending on rotor length). 6.2.4.3 • **60 m to less than 100 m:** Instead of medium-intensity lights Type B, red medium-intensity 100 to 300 cd flashing lights have to be placed on the nacelle. • **100 m to less than 150 m:** Instead of medium-intensity lights Type B, red medium-intensity 100 to 300 cd flashing lights have to be placed on the nacelle, plus additional levels of red low-intensity 10 to 50 cd fixed lights, with maximum spacing of 45 m between the levels. • **150 m or higher:** A high-intensity obstacle light and red medium-intensity 100 to 300 cd flashing lights have to be placed on the nacelle, plus additional levels of red low-intensity 10 to 50 cd fixed lights, with maximum spacing of 45 m between the levels. • In case of LED technology, low-intensity lights have to flash and to emit between 150 and 1200 mW/sr in the infrared spectrum. • In case of LED technology, medium-intensity lights have to flash and emit between 600 and 1200 mW/sr in the infrared spectrum. • In case of LED technology, low and medium-intensity lights have to emit in the infrared spectrum with a wave length of 850 nm. 6.2.5.1 Normally supporting towers will not be colored. 6.2.5.4 Vertical double spherical caps may replace spherical markings. 6.2.5.5 The space between two markers may be increased up to maximum 50 m if the diameter of the marker is 60 cm.

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	CHAPTER 9 9.1.13 At certified aerodromes, the aerodrome emergency plan shall be tested by conducting a full-scale aerodrome emergency exercise at intervals not exceeding three years and partial emergency exercises in the intervening year. Non-certified aerodromes are not required to perform emergency exercises. 9.2.1 Rescue and firefighting equipment and services shall be provided at an aerodrome when serving commercial air transport operations except at a non-certified aerodrome when serving aeroplanes with an MTOM less than 2’250 kg. National regulations apply at an aerodrome when serving non commercial air transport operations. 9.6.1 Fire extinguishing equipment needs not to be available during the ground servicing of an aircraft if there are means of quickly summoning the rescue and firefighting service in the event of a fire or major fuel spill.

Title	Difference(s)
14 Aerodromes Volume II: Heliports (*5th Edition, July 2020, Amendment 9*)	**CHAPTER 1** 1.2 Deviation from any standard is possible, if the result of an aeronautical study demonstrates that appropriate measures cause no degrading of safety and do not significantly affect uniformity. For hospital landing sites and landing sites used for rescue and support purposes, national regulations apply.
	CHAPTER 3 3.1.1 and 3.1.2 A FATO needs to provide a solid surface and ground effect. On elevated heliports, it is presumed that the FATO and one TLOF will be coincidental and that the FATO will be dynamic load bearing. 3.1.3 For FATO intended to be used by helicopters operated in performance class 1, in case of the absence of specifications in the HFM, a 1.5 Design D value will be used. For FATO intended to be used by helicopters operated in performance classes 2 or 3 and when there is a limitation on the direction of approach and touchdown, an area not less than a circle with a diameter of 1.0 Design D will be used. For all FATO, it will be ensured that the distance between the edge of the FATO and the edge of the safety area is sufficient and will not lead to a helicopter positioned within the FATO but with parts of its main rotor located outside the safety area. 3.1.9 The external side or outer diameter as appropriate of the safety area shall be at least 2 Design D. 3.1.15 The protected side slope(s) will cover the whole areas between the obstacle limitation surfaces. Only on one of the areas, obstacles may be tolerated. 3.1.34 In any case, the width of a helicopter taxiway will ensure a minimum distance of 1.5 m between the outer edge of any wheel of the undercarriage and the edge of the taxiway. 3.1.52 Helicopter stand clearance reduction to a minimum of 0.4 D or 0.5 RD (whichever is higher) is possible, but only permitted for qualified, home-based operators and if helicopters are parked in same direction.

	CHAPTER 4 4.1.6 and 4.1.19 More than one turn possible, if an appropriate straight section is provided between two turns. 4.1.7 and 4.1.20 Alternative, a first straight section of minimum 150 m followed by a turn with minimum radius of 270 m may be tolerated if an aeronautical study, approved by the competent authority, has reviewed the associated risks. 4.2.7 and 4.2.10 When only a single approach and take-off climb surface is provided, an aeronautical study has to be provided by the heliport operator and approved by the competent authority. 4.2.8 and 4.2.11 The two approach and take-off surfaces should be separated by not less than 135 degrees.
	CHAPTER 5 5.2.3.8 The height of the numbers and the letter of the maximum allowable mass marking are linked to the size of the FATO not to the D-value, as the markings are not specifically large. 5.2.4 D-value markings do not have to be provided. 5.2.7.3 The base of the triangle is increased to 10 m to allow the proper positioning of the heliport identification marking “H” 5.2.8 A TLOF perimeter marking should be provided on a TLOF collocated with a helicopter stand. 5.2.15.1 Helicopter stand perimeter markings do not have to be provided.
	CHAPTER 6 6.1.8 Heliports are not required to perform emergency exercises. 6.2.1.3 A safety risk assessment should be performed to determine the need for RFF equipment and services at surface-level heliports and elevated heliports located above unoccupied structures only when serving more than 10 movements per year of helicopters with an MTOM more than 3’175 kg. At aerodromes and heliports only serving helicopters with an MTOM less than 3’175 kg national regulations apply.

Title	Difference(s)
Doc 9981 Procedure for Air Navigation Services (PANS) Aerodromes (*3rd Edition, May 2020, Amendment 3*)	**PART I** **CHAPTER 2** 2.1 Doc 9981 applicable for certified aerodromes and considered as guidance material for non-certified aerodromes.
	PART II **CHAPTER 5** 5.3 At certified aerodromes only serving traffic with a MTOM less than 5,700 kg, no FOD control program established. FOD detection measures according requirements in ICAO Annex 14, Vol. I, Chapter 2.9.3 applies.
	PART II **CHAPTER 6** 6.3 Wildlife Safety Risk Assessment is integrated in the Aerodrome Safety Hazard Library, if hazards identified.