

ICAO paragraph reference	GAR paragraph reference	Explanation of the difference			
		Issue addressed	ICAO regulation	GAR regulation	characterisation of the difference
	GAR 1.H001	Objects to be marked and/or lighted		(a) Arrangements shall be made to enable the appropriate authority to be consulted concerning proposed construction within the horizontal limits of the obstacle limitation surfaces, in order to permit an aeronautical study of the effect of such construction on the operation of aeroplanes and take necessary measures.	
	GAR 1.H001	Objects to be marked and/or lighted		(b) All obstacles penetrating the obstacle limitation surfaces of an aerodrome shall be marked and/or lighted unless such marking or lighting can be omitted when an aeronautical study shows that marking and/or lighting is not required from a safety view-point.	In the Subpart G and H there is clearly defined what is an object and when the object is considered to be an obstacle.
6.1.1, 6.1.3	GAR 1.H005	Obstacles that extend above a take-off climb surface, an approach or transitional surface	<i>Recommendation.— A fixed obstacle that extends above a take-off climb surface within 3 000 m of the inner edge of the take-off climb surface should be marked and, if the runway is used at night, lighted, except that:</i>	A fixed object that extends above a take-off climb surface, the approach surface or the transitional surface shall be considered as an obstacle and marked and, if the runway is used at night, lighted, except that:	Standard for take-off climb surface and related to whole length of surfaces and not only inner 3000 m as in Annex 14.
			a) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle;	(a) such marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle;	no difference
			b) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m;	(b) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m;	no difference

			<p>c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and</p> <p>d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.</p>	<p>(c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and</p> <p>(d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.</p>	<p>no difference</p> <p>no difference</p>
6.1.2	—		<p>Recommendation.— A fixed object, other than an obstacle, adjacent to a take-off climb surface should be marked and, if the runway is used at night, lighted if such marking and lighting is considered necessary to ensure its avoidance, except that the marking may be omitted when:</p> <p>a) the object is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m; or</p> <p>b) the object is lighted by high-intensity obstacle lights by day.</p>	Subpart Q	
6.1.4	GAR 1.H010	Obstacles that extend above a horizontal and conical surface	<p><i>Recommendation.— A fixed obstacle above a horizontal surface should be marked and, if the aerodrome is used at night, lighted except that:</i></p> <p><i>a) such marking and lighting may be omitted when:</i></p>	<p>A fixed object above a horizontal and conical surface shall be considered as an obstacle and marked and, if the aerodrome is used at night, lighted except that:</p> <p>(a) such marking and lighting may be omitted:</p>	<p>a recommendation becomes compulsory</p> <p>a recommendation becomes compulsory</p>

			<p>1) the obstacle is shielded by another fixed obstacle; or</p> <p>2) for a circuit extensively obstructed by immovable objects or terrain, procedures have been established to ensure safe vertical clearance below prescribed flight paths; or</p> <p>3) an aeronautical study shows the obstacle not to be of operational significance;</p>	<p>1) when the obstacle is shielded by another fixed obstacle; or</p> <p>2) for a circuit extensively obstructed by immovable objects or terrain, when procedures have been established to ensure safe vertical clearance below prescribed flight paths; or</p> <p>3) when an aeronautical study shows the obstacle not to be of operational significance;</p>	a recommendation becomes compulsory
			<p>b) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m;</p> <p>c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and</p> <p>d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.</p>	<p>(b) the marking may be omitted when the obstacle is lighted by medium-intensity obstacle lights, Type A, by day and its height above the level of the surrounding ground does not exceed 150 m;</p> <p>(c) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day; and</p> <p>(d) the lighting may be omitted where the obstacle is a lighthouse and an aeronautical study indicates the lighthouse light to be sufficient.</p>	a recommendation becomes compulsory
6.1.5	GAR 1.H015	Obstacles that extend above a protection surface	A fixed object that extends above an obstacle protection surface shall be marked and, if the runway is used at night, lighted.	A fixed obstacle that extends above an obstacle protection surface shall be marked and, if the runway is used at night, lighted.	no difference
–	GAR 1.H020	Other objects on or near aerodrome	–	<p>(a) Other objects below the obstacle limitation surfaces limits or protection surfaces limits that could affect aerodrome operation safety, shall be considered as obstacles and marked, and if the aerodrome is used at night, lighted.</p>	new requirement based on operational requirements and based on par. 4.3.2, 4.4.1 and 4.4.2
6.1.10			<p>6.1.10 Recommendation.— Overhead wires, cables, etc., crossing a river, valley or highway should be marked and their supporting towers marked and lighted if an aeronautical study indicates that the wires or cables could constitute a hazard to aircraft, except that the marking of the</p>	<p>(b) Supporting towers of overhead wires and cables considered as obstacles shall, whenever practicable, be marked, except that:</p> <p>(1) such marking may be omitted when the obstacle is shielded by another fixed obstacle,</p>	
6.1.11					

			<p><i>supporting towers may be omitted when they are lighted by high-intensity obstacle lights by day.</i></p> <p><i>6.1.11 Recommendation.— When it has been determined that an overhead wire, cable, etc., needs to be marked but it is not practicable to install markers on the wire, cable, etc., then high-intensity obstacle lights, Type B, should be provided on their supporting towers.</i></p>	<p>(2) obstacles that are sufficiently conspicuous by their shape, size or colour need not be otherwise marked,</p> <p>(3) the marking may be omitted when the obstacle is lighted by high-intensity obstacle lights by day, or</p> <p>(4) the marking may be omitted when there is an obstacle collision avoidance system installed.</p> <p>(c) Overhead wires and cables considered as obstacles shall, whenever practicable, be marked, except that:</p> <p>(1) such marking may be omitted when the obstacle is shielded by another fixed obstacle,</p> <p>(2) marking may be omitted when the obstacle is shielded by adjacent wire or cable, or</p> <p>(3) high-intensity obstacle lights, are provided on their supporting towers, or</p> <p>(4) the marking may be omitted when there is an obstacle collision avoidance system installed.</p>	<p>More specific requirement. In fact no difference from Annex 14</p>
6.2.1	GAR 1.H025	Marking of obstacles	<p>All fixed objects to be marked shall, whenever practicable, be coloured, but if this is not practicable, markers or flags shall be displayed on or above them, except that objects that are sufficiently conspicuous by their shape, size or colour need not be otherwise marked.</p>	<p>(a) All fixed obstacles shall, whenever practicable, be coloured; if this is not practicable, markers or flags shall be displayed on or above them, except that objects that are sufficiently conspicuous by their shape, size or colour need not be otherwise marked.</p>	<p>no difference</p>
6.2.2	GAR 1.H025	Marking of obstacles	<p>All mobile objects to be marked shall be coloured or display flags.</p>	<p>(b) All mobile objects to be marked shall be coloured or display flags.</p>	<p>no difference</p>

APP 1-2, par. 3-2	GAR 1.H030	Use of colours	<i>Recommendation.— The chromaticity and luminance factors of ordinary colours for markings and externally illuminated signs and panels should be within the following boundaries when determined under standard conditions.</i>	(a) The chromaticity factors of ordinary colours used for marking obstacles shall be within specifications given in Figure GAR 1.H030 (b) and the following boundaries determined under standard conditions:	a recommendation becomes compulsory
	GAR 1.H030	Use of colours	<i>a) Red Purple boundary <math>y = 0.345 - 0.051x</math> White boundary <math>y = 0.910 - x</math> Orange boundary <math>y = 0.314 + 0.047x</math> Luminance factor <math>\beta = 0.07</math> (mnm)</i>	Red Purple boundary $y = 0.345 - 0.051x$ White boundary $y = 0.910 - x$ Orange boundary $y = 0.314 + 0.047x$ Luminance factor $\beta = 0.07$ (mnm)	a recommendation becomes compulsory
	GAR 1.H030	Use of colours	<i>b) Orange Red boundary <math>y = 0.285 + 0.100x</math> White boundary <math>y = 0.940 - x</math> Yellow boundary <math>y = 0.250 + 0.220x</math> Luminance factor <math>\beta = 0.20</math> (mnm)</i>	Orange Red boundary $y = 0.285 + 0.100x$ White boundary $y = 0.940 - x$ Yellow boundary $y = 0.250 + 0.220x$ Luminance factor $\beta = 0.20$ (mnm)	a recommendation becomes compulsory
	GAR 1.H030	Use of colours	<i>d) White Purple boundary <math>y = 0.010 + x</math> Blue boundary <math>y = 0.610 - x</math> Green boundary <math>y = 0.030 + x</math> Yellow boundary <math>y = 0.710 - x</math> Luminance factor <math>\beta = 0.75</math> (mnm)</i>	White Purple boundary $y = 0.010 + x$ Blue boundary $y = 0.610 - x$ Green boundary $y = 0.030 + x$ Yellow boundary $y = 0.710 - x$ Luminance factor $\beta = 0.75$ (mnm)	a recommendation becomes compulsory
	GAR 1.H030	Use of colours	<i>e) Black Purple boundary <math>y = x - 0.030</math> Blue boundary <math>y = 0.570 - x</math> Green boundary <math>y = 0.050 + x</math> Yellow boundary <math>y = 0.740 - x</math> Luminance factor <math>\beta = 0.03</math> (max)</i>	Black Purple boundary $y = x - 0.030$ Blue boundary $y = 0.570 - x$ Green boundary $y = 0.050 + x$ Yellow boundary $y = 0.740 - x$ Luminance factor $\beta = 0.03$ (max)	a recommendation becomes compulsory

6.2.3	GAR 1.H030	Use of colours	<p><i>Recommendation.— An object should be coloured to show a chequered pattern if it has essentially unbroken surfaces and its projection on any vertical plane equals or exceeds 4.5 m in both dimensions. The pattern should consist of rectangles of not less than 1.5 m and not more than 3 m on a side, the corners being of the darker colour. The colours of the pattern should contrast each with the other and with the background against which they will be seen. Orange and white or alternatively red and white should be used, except where such colours merge with the background.</i></p>	<p>(b) An obstacle shall be coloured to show a chequered pattern if it has essentially unbroken surfaces and its projection on any vertical plane equals or exceeds 4.5 m in both dimensions. The pattern shall consist of rectangles of not less than 1.5 m and not more than 3 m on a side, the corners being of the darker colour. The colours of the pattern shall contrast each with the other and with the background against which they will be seen. Orange and white or alternatively red and white shall be used, except where such colours merge with the background.</p>	<p>a recommendation becomes compulsory</p>
6.2.4	GAR 1.H030	Use of colours	<p><i>Recommendation.— An object should be coloured to show alternating contrasting bands if:</i></p>	<p>(c) An obstacle shall be coloured to show alternating contrasting bands if:</p>	<p>a recommendation becomes compulsory</p>
	GAR 1.H030	Use of colours	<p><i>a) it has essentially unbroken surfaces and has one dimension, horizontal or vertical, greater than 1.5 m, and the other dimension, horizontal or vertical, less than 4.5 m; or</i></p>	<p>(1) it has essentially unbroken surfaces and has one dimension, horizontal or vertical, greater than 1.5 m, and the other dimension, horizontal or vertical, greater than 4.5 m; or</p>	<p>a recommendation becomes compulsory</p>
	GAR 1.H030	Use of colours	<p><i>b) it is of skeletal type with either a vertical or a horizontal dimension greater than 1.5 m.</i></p>	<p>(2) it is of skeletal type with either a vertical or a horizontal dimension greater than 1.5 m.</p>	<p>a recommendation becomes compulsory</p>

	GAR 1.H030	Use of colours	<i>The bands should be perpendicular to the longest dimension and have a width approximately 1/7 of the longest dimension or 30 m, whichever is less. The colours of the bands should contrast with the background against which they will be seen. Orange and white should be used, except where such colours are not conspicuous when viewed against the background. The bands on the extremities of the object should be of the darker colour. (See Figures 6-1 and 6-2.)</i>	The bands shall be perpendicular to the longest dimension and have a width approximately 1/7 of the longest dimension or 30 m, whichever is less. The colours of the bands shall contrast with the background against which they will be seen. Orange and white or alternatively red and white shall be used, except where such colours are not conspicuous when viewed against the background. The bands on the extremities of the object shall be of the darker colour.	a recommendation becomes compulsory
	GAR 1.H030	Use of colours		(d) Wind turbines, which are considered as obstacles, shall be marked. The pattern and/or colours of the pattern shall contrast with the background against which they will be seen.	new OB regulation
6.2.5	GAR 1.H030	Use of colours	<i>Recommendation.— An object should be coloured in a single conspicuous colour if its projection on any vertical plane has both dimensions less than 1.5 m. Orange or red should be used, except where such colours merge with the background.</i>	(e) An obstacle shall be coloured in a single conspicuous colour if its projection on any vertical plane has both dimensions less than 1.5 m. Orange or red shall be used, except where such colours merge with the background.	a recommendation becomes compulsory
	GAR 1.H035	Use of markers	6.2.7 Markers displayed on or adjacent to objects shall be located in conspicuous positions so as to retain the general definition of the object and shall be recognizable in clear weather from a distance of at least 1 000 m for an object to be viewed from the air and 300 m for an object to be viewed from the ground in all directions in which an aircraft is likely to approach the object. The shape of markers shall be distinctive to the extent necessary to ensure that they are not mistaken for markers employed to convey other information, and they shall be such that the	(a) Markers displayed on, or adjacent to, an obstacle shall be:	no difference
	GAR 1.H035	Use of markers		(1) located in conspicuous positions so as to retain the general definition of the object;	no difference
	GAR 1.H035	Use of markers		(2) and recognizable in clear weather from a distance of at least : (i) 1 000 m for an object to be viewed from the air (ii) and 300 m for an object to be viewed from the ground in all directions in which an aircraft is likely to approach the object.	no difference

	GAR 1.H035	Use of markers	hazard presented by the object they mark is not increased.	(b) The shape of markers shall be distinctive to the extent necessary to ensure that they are not mistaken for markers employed to convey other information.	no difference
	GAR 1.H035	Use of markers		(c) Markers shall be such that the hazard presented by the object they mark is not increased.	no difference
6.2.8	GAR 1.H035	Use of markers	<i>Recommendation.— A marker displayed on an overhead wire, cable, etc., should be spherical and have a diameter of not less than 60 cm.</i>	(d) A marker displayed on an overhead wire and/or cable shall be spherical and have a diameter of not less than 60 cm.	a recommendation becomes compulsory
6.2.9	GAR 1.H035	Use of markers	<i>Recommendation.— The spacing between two consecutive markers or between a marker and a supporting tower should be appropriate to the diameter of the marker, but in no case should the spacing exceed:</i>	(e) The spacing between two consecutive markers or between a marker and a supporting tower shall be appropriate to the diameter of the marker, but in no case shall the spacing exceed:	
	GAR 1.H035	Use of markers	<i>a) 30 m where the marker diameter is 60 cm progressively increasing with the diameter of the marker to</i>	(1) 30 m where the marker diameter is 60 cm progressively increasing with the diameter of the marker to	a recommendation becomes compulsory
	GAR 1.H035	Use of markers	<i>b) 35 m where the marker diameter is 80 cm and further progressively increasing to a maximum of</i>	(2) 35 m where the marker diameter is 80 cm and further progressively increasing to a maximum of	
	GAR 1.H035	Use of markers	<i>c) 40 m where the marker diameter is of at least 130 cm</i>	(3) 40 m where the marker diameter is of at least 130 cm.	
	GAR 1.H035	Use of markers	<i>Where multiple wires, cables, etc. are involved, a marker should be located not lower than the level of the highest wire at the point marked.</i>	(f) Where multiple overhead wires and/or cables are involved, a marker shall be located not lower than the level of the highest wire at the point marked.	
6.2.10	GAR 1.H035	Use of markers	<i>Recommendation.— A marker should be of one colour. When installed, white and red, or white and orange markers should be displayed alternately. The colour selected should contrast with the background against which it will be seen.</i>	(g) A marker shall be of one colour. When installed, single white and red, or single white and orange markers shall be displayed alternately. The colour selected shall contrast with the background against which it will be seen.	a recommendation becomes compulsory

6.2.11	GAR 1.H040	Use of flags	Flags used to mark objects shall be displayed around, on top of, or around the highest edge of, the object. When flags are used to mark extensive objects or groups of closely spaced objects, they shall be displayed at least every 15 m. Flags shall not increase the hazard presented by the object they mark.	(a) Flags used to mark obstacle shall be displayed around, on top of, or around the highest edge of the object. When flags are used to mark extensive obstacle or groups of closely spaced obstacles, they shall be displayed at least every 15 m. Flags shall not increase the hazard presented by the object they mark.	no difference
6.2.12	GAR 1.H040	Use of flags	Flags used to mark fixed objects shall not be less than 0.6 m square and flags used to mark mobile objects, not less than 0.9 m square.	(b) Flags used to mark fixed obstacles shall not be less than 0.6 m square and flags used to mark mobile objects, not less than 0.9 m square.	no difference
6.2.13	GAR 1.H040	Use of flags	<i>Recommendation.</i> — <i>Flags used to mark fixed objects should be orange in colour or a combination of two triangular sections, one orange and the other white, or one red and the other white, except that where such colours merge with the background, other conspicuous colours should be used.</i>	(c) Flags used to mark fixed obstacles shall be orange in colour or a combination of two triangular sections, one orange and the other white, or one red and the other white, except that where such colours merge with the background, other conspicuous colours shall be used.	a recommendation becomes compulsory
6.2.14	GAR 1.H040	Use of flags	Flags used to mark mobile objects shall consist of a chequered pattern, each square having sides of not less than 0.3 m. The colours of the pattern shall contrast each with the other and with the background against which they will be seen. Orange and white or alternatively red and white shall be used, except where such colours merge with the background.	(d) Flags used to mark mobile objects shall consist of a chequered pattern, each square having sides of not less than 0.3 m. The colours of the pattern shall contrast each with the other and with the background against which they will be seen. Orange and white or alternatively red and white shall be used, except where such colours merge with the background.	no difference
6.3.1	GAR 1.H045	Lighting of obstacles	The presence of objects which must be lighted, as specified in 6.1, shall be indicated by low-, medium- or high-intensity obstacle lights, or a combination of such lights.	(a) The presence of obstacles, which must be lighted, shall be indicated by low-, medium- or high-intensity obstacle lights, or a combination of such lights.	no difference
APP 1-2, par. 2.1.1	GAR 1.H045	Lighting of obstacles	2.1.1 The chromaticities of aeronautical ground lights shall be within the following boundaries:	(b) The chromaticity of aeronautical ground lights shall be within specifications given in Figure GAR 1.H045 and the following boundaries:	no difference

	GAR 1.H045	Lighting of obstacles	a) Red Purple boundary $y = 0.980 - x$ Yellow boundary $y = 0.335$	Red Purple boundary $y = 0.980 - x$ Yellow boundary $y = 0.335$	no difference
	GAR 1.H045	Lighting of obstacles	b) Yellow Red boundary $y = 0.382$ White boundary $y = 0.790 - 0.667x$ Green boundary $y = x - 0.120$	Yellow Red boundary $y = 0.382$ White boundary $y = 0.790 - 0.667x$ Green boundary $y = x - 0.120$	no difference
	GAR 1.H045	Lighting of obstacles	e) White Yellow boundary $x = 0.500$ Blue boundary $x = 0.285$ Green boundary $y = 0.440$ and $y = 0.150 + 0.640x$ Purple boundary $y = 0.050 + 0.750x$ and $y = 0.382$	White Yellow boundary $x = 0.500$ Blue boundary $x = 0.285$ Green boundary $y = 0.440$ and $y = 0.150 + 0.640x$ Purple boundary $y = 0.050 + 0.750x$ and $y = 0.382$	no difference
	GAR 1.H045	Lighting of obstacles	d) Blue Green boundary $y = 0.805x + 0.065$ White boundary $y = 0.400 - x$ Purple boundary $x = 0.600y + 0.133$	Blue Green boundary $y = 0.805x + 0.065$ White boundary $y = 0.400 - x$ Purple boundary $x = 0.600y + 0.133$	no difference
6.3.2	GAR 1.H050	Use of obstacle lights	<i>Recommendation.— Low-intensity obstacle lights, Type A or B, should be used where the object is a less extensive one and its height above the surrounding ground is less than 45 m.</i>	(a) Low-intensity obstacle lights, Type A or B, shall be used where the obstacle is a less extensive one and its height above the surrounding ground is less than 45 m.	a recommendation becomes compulsory
6.3.3	GAR 1.H050	Use of obstacle lights	<i>Recommendation.— Where the use of low-intensity obstacle lights, Type A or B, would be inadequate or an early special warning is required, then medium- or high-intensity obstacle lights should be used.</i>	(b) When an early special warning is required and the use of low-intensity obstacle lights, Type A or B, is inadequate, then medium or high-intensity obstacle lights shall be used.	a recommendation becomes compulsory
6.3.4	GAR 1.H050	Use of obstacle lights	Low-intensity obstacle lights, Type C, shall be displayed on vehicles and other mobile objects excluding aircraft.	(c) Low-intensity obstacle lights, Type C, shall be displayed on vehicles and other mobile objects excluding aircraft.	no difference
6.3.5	GAR 1.H050	Use of obstacle lights	Low-intensity obstacle lights, Type D, shall be displayed on follow-me vehicles.	(d) Low-intensity obstacle lights, Type D, shall be displayed on follow-me vehicles.	no difference

6.3.6	GAR 1.H050	Use of obstacle lights	<i>Recommendation.— Low-intensity obstacle lights, Type B, should be used either alone or in combination with medium-intensity obstacle lights, Type B, in accordance with 6.3.7.</i>	(e) Low-intensity obstacle lights, Type B, shall be used either alone or when the obstacle height above the level of the surrounding ground is greater than 45, the lights shall be in combination with medium-intensity obstacle lights, Type B in accordance with (f).	a recommendation becomes compulsory
6.3.7	GAR 1.H050	Use of obstacle lights	<i>Recommendation.— Medium-intensity obstacle lights, Type A, B or C, should be used where the object is an extensive one or its height above the level of the surrounding ground is greater than 45 m. Medium-intensity obstacle lights, Types A and C, should be used alone, whereas medium-intensity obstacle lights, Type B, should be used either alone or in combination with low-intensity obstacle lights, Type B.</i>	(f) Medium-intensity obstacle lights, Type A, B or C, shall be used when the obstacle is an extensive one or its height above the level of the surrounding ground is greater than 45 m. Medium-intensity obstacle lights, Types A and C, shall be used alone, whereas medium intensity obstacle lights, Type B, shall be used either alone or in combination with low-intensity obstacle lights, Type B.	a recommendation becomes compulsory
6.3.8	GAR 1.H050	Use of obstacle lights	<i>Recommendation.— High-intensity obstacle lights, Type A, should be used to indicate the presence of an object if its height above the level of the surrounding ground exceeds 150 m and an aeronautical study indicates such lights to be essential for the recognition of the object by day.</i>	(g) High-intensity obstacle lights, Type A, shall be used to indicate the presence of an obstacle if its height above the level of the surrounding ground exceeds 150 m and an aeronautical study indicates such lights to be essential for the recognition of the obstacle by day.	a recommendation becomes compulsory
6.3.9	GAR 1.H050	Use of obstacle lights	<i>Recommendation.— High-intensity obstacle lights, Type B, should be used to indicate the presence of a tower supporting overhead wires, cables, etc., where:</i>	(h) High-intensity obstacle lights, Type B, shall be used to indicate the presence of a tower supporting overhead wires and/or cables when:	
	GAR 1.H050	Use of obstacle lights	<i>a) an aeronautical study indicates such lights to be essential for the recognition of the presence of wires, cables, etc.; or</i>	(1) an aeronautical study indicates such lights to be essential for the recognition of the presence of wires and/or cables or	a recommendation becomes compulsory
	GAR 1.H050	Use of obstacle lights	<i>b) it has not been found practicable to install markers on the wires, cables, etc.</i>	(2) it has not been found practicable to install markers on the wires and/or cables.	

6.3.10	GAR 1.H050	Use of obstacle lights	<p><i>Recommendation.— Where, in the opinion of the appropriate authority, the use of high-intensity obstacle lights, Type A or B, or medium-intensity obstacle lights, Type A, at night may dazzle pilots in the vicinity of an aerodrome (within approximately 10 000 m radius) or cause significant environmental concerns, a dual obstacle lighting system should be provided. This system should be composed of high-intensity obstacle lights, Type A or B, or medium-intensity obstacle lights, Type A, as appropriate, for daytime and twilight use and medium-intensity obstacle lights, Type B or C, for night-time use.</i></p>	<p>(i) Where aeronautical study indicates that the use of high-intensity obstacle lights, Type A or B, or medium-intensity obstacle lights, Type A, at night may dazzle pilots in the vicinity of an aerodrome (within approximately 10 000 m radius) or cause significant environmental concerns, a dual obstacle lighting system shall be provided. The system shall be composed of high-intensity obstacle lights, Type A or B, or medium intensity obstacle lights, Type A, as appropriate, for daytime and twilight use and medium-intensity obstacle lights, Type B or C, for night-time use.</p>	<p>a recommendation becomes compulsory</p>
6.3.11	GAR 1.H055	Location of obstacle lights	<p>One or more low-, medium- or high-intensity obstacle lights shall be located as close as practicable to the top of the object. The top lights shall be so arranged as to at least indicate the points or edges of the object highest in relation to the obstacle limitation surface.</p>	<p>(a) One or more low-, medium- or high-intensity obstacle lights shall be located as close as practicable to the fixed top of the obstacle. The top lights shall be so arranged as to at least indicate the highest points or edges of the obstacle in relation to the obstacle limitation surface.</p>	
6.3.12	GAR 1.H055	Location of obstacle lights	<p>Recommendation.— In the case of chimney or other structure of like function, the top lights should be placed sufficiently below the top so as to minimize contamination by smoke etc. (see Figures 6-2 and 6-3).</p>	<p>(b) In the case of chimney or other structure of like function, the top lights shall be placed sufficiently below the top so as to minimize contamination by dust, smoke or condensation.</p>	<p>a recommendation becomes compulsory, more specific requirement</p>

6.3.13	GAR 1.H055	Location of obstacle lights	<p>In the case of a tower or antenna structure indicated by high-intensity obstacle lights by day with an appurtenance, such as a rod or an antenna, greater than 12 m where it is not practicable to locate a high-intensity obstacle light on the top of the appurtenance, such a light shall be located at the highest practicable point and, if practicable, a medium-intensity obstacle light, Type A, mounted on the top.</p>	<p>(c) In the case of a tower or antenna structure indicated by high-intensity obstacle lights by day with an appurtenance, such as a rod or an antenna, greater than 12 m where it is not practicable to locate a high-intensity obstacle light on the top of the appurtenance, such a light shall be located at the highest practicable point and, if practicable, a medium-intensity obstacle light, Type A, mounted on the top.</p>	no difference
6.3.14	GAR 1.H055	Location of obstacle lights	<p>In the case of an extensive object or of a group of closely spaced objects, top lights shall be displayed at least on the points or edges of the objects highest in relation to the obstacle limitation surface, so as to indicate the general definition and the extent of the objects. If two or more edges are of the same height, the edge nearest the landing area shall be marked. Where low-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 45 m. Where medium-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 900 m.</p>	<p>(d) In the case of an extensive obstacle or of a group of closely spaced obstacles, top lights shall be displayed at least on the points or edges of the obstacles highest in relation to the obstacle limitation surface, so as to indicate the general definition and the extent of the obstacles. If two or more edges are of the same height, the edge nearest the landing area shall be marked. Where low-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 45 m. Where medium-intensity lights are used, they shall be spaced at longitudinal intervals not exceeding 900 m.</p>	no difference
6.3.15	GAR 1.H055	Location of obstacle lights	<p><i>Recommendation.— When the obstacle limitation surface concerned is sloping and the highest point above the obstacle limitation surface is not the highest point of the object, additional obstacle lights should be placed on the highest point of the object.</i></p>	<p>(e) When the obstacle limitation surface concerned is sloping and the highest point above the obstacle limitation surface is not the highest point of the obstacle, additional obstacle lights shall be placed on the highest point of the obstacle.</p>	no difference

6.3.16	GAR 1.H055	Location of obstacle lights	<p>Where an object is indicated by medium-intensity obstacle lights, Type A, and the top of the object is more than 105 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 105 m (see 6.3.7).</p>	<p>(f) When an obstacle is indicated by medium-intensity obstacle lights, Type A, and the top of the obstacle is more than 105 m above the level of the surrounding ground or the elevation of tops of nearby buildings, additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 105 m.</p>	no difference
6.3.17	GAR 1.H055	Location of obstacle lights	<p>Where an object is indicated by medium-intensity obstacle lights, Type B, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be alternately low-intensity obstacle lights, Type B, and medium-intensity obstacle lights, Type B, and shall be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.</p>	<p>(g) When an obstacle is indicated by medium-intensity obstacle lights, Type B, and the top of the obstacle is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the obstacle to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be alternately low-intensity obstacle lights, Type B, and medium-intensity obstacle lights, Type B, and shall be spaced as equally as practicable between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.</p>	no difference

6.3.18	GAR 1.H055	Location of obstacle lights	Where an object is indicated by medium-intensity obstacle lights, Type C, and the top of the object is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the object to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.	(h) When an obstacle is indicated by medium-intensity obstacle lights, Type C, and the top of the obstacle is more than 45 m above the level of the surrounding ground or the elevation of tops of nearby buildings (when the obstacle to be marked is surrounded by buildings), additional lights shall be provided at intermediate levels. These additional intermediate lights shall be spaced as equally as practicable, between the top lights and ground level or the level of tops of nearby buildings, as appropriate, with the spacing not exceeding 52 m.	no difference
6.3.19	GAR 1.H055	Location of obstacle lights	Where high-intensity obstacle lights, Type A, are used, they shall be spaced at uniform intervals not exceeding 105 m between the ground level and the top light(s) specified in 6.3.11 except that where an object to be marked is surrounded by buildings, the elevation of the tops of the buildings may be used as the equivalent of the ground level when determining the number of light levels.	(i) When high-intensity obstacle lights, Type A, are used, they shall be spaced at uniform intervals not exceeding 105 m between the ground level and the top light(s) specified in GAR 1.H055 (a), except where an obstacle to be marked is surrounded by buildings, the elevation of the tops of the buildings may be used as the equivalent of the ground level when determining the number of light levels.	no difference
6.3.20	GAR 1.H055	Location of obstacle lights	Where high-intensity obstacle lights, Type B, are used, they shall be located at three levels:	(j) Where high-intensity obstacle lights, Type B, are used, they shall be located at three levels:	no difference
	GAR 1.H055	Location of obstacle lights	— at the top of the tower; — at the lowest level of the catenary of the wires or cables; and — at approximately midway between these two levels.	(1) at the top of the tower; (2) at the lowest level of the catenary of the wires or cables; and (3) at approximately midway between these two levels.	
6.3.21	GAR 1.H055	Location of obstacle lights	<i>Recommendation.— The installation setting angles for high-intensity obstacle lights, Types A and B, should be in accordance with Table 6-2.</i>	(k) The installation setting angles for high-intensity obstacle lights, Types A and B, shall be in accordance with Table GAR 1.H055.	a recommendation becomes compulsory

6.3.22	GAR 1.H055	Location of obstacle lights	The number and arrangement of low-, medium- or high-intensity obstacle lights at each level to be marked shall be such that the object is indicated from every angle in azimuth. Where a light is shielded in any direction by another part of the object, or by an adjacent object, additional lights shall be provided on that object in such a way as to retain the general definition of the object to be lighted. If the shielded light does not contribute to the definition of the object to be lighted, it may be omitted.	(l) The number and arrangement of low-, medium- or high-intensity obstacle lights at each level to be marked shall be such that the obstacle is indicated from every angle in azimuth. Where a light is shielded in any direction by another part of the obstacle, or by an adjacent object, additional lights shall be provided on that object in such a way as to retain the general definition of the object to be lighted. If the shielded light does not contribute to the definition of the obstacle, it may be omitted.	no difference
6.3.23	GAR 1.H060	Characteristics of low-intensity obstacle lights	Low-intensity obstacle lights on fixed objects, Types A and B, shall be fixed-red lights.	(a) Low-intensity obstacle lights on fixed obstacles, Types A and B, shall be fixed-red lights.	no difference
6.3.24	GAR 1.H060	Characteristics of low-intensity obstacle lights	Types A and B, shall be in accordance with the specifications in Table 6-3.	(b) Low-intensity obstacle lights, Types A and B, shall be in accordance with the specifications in Table GAR 1.H060.	no difference
6.3.25	GAR 1.H060	Characteristics of low-intensity obstacle lights	Low-intensity obstacle lights, Type C, displayed on vehicles associated with emergency or security shall be flashing-blue and those displayed on other vehicles shall be flashing-yellow.	(c) Low-intensity obstacle lights, Type C, displayed on vehicles associated with emergency or security shall be flashing-blue and those displayed on other vehicles shall be flashing-yellow.	no difference
6.3.26	GAR 1.H060	Characteristics of low-intensity obstacle lights	Low-intensity obstacle lights, Type D, displayed on follow-me vehicles shall be flashing-yellow.	(d) Low-intensity obstacle lights, Type D, displayed on follow-me vehicles shall be flashing-yellow.	no difference
6.3.27	GAR 1.H060	Characteristics of low-intensity obstacle lights	Low-intensity obstacle lights, Types C and D, shall be in accordance with the specifications in Table 6-3.	(e) Low-intensity obstacle lights, Types C and D, shall be in accordance with the specifications in Table GAR 1.H060.	no difference
6.3.28	GAR 1.H060	Characteristics of low-intensity obstacle lights	Low-intensity obstacle lights on objects with limited mobility such as aerobridges shall be fixed-red. The intensity of the lights shall be sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general levels of illumination against which they would normally be viewed.	(f) Low-intensity obstacle lights on objects with limited mobility such as aerobridges shall be fixed-red. The intensity of the lights shall be sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general levels of illumination against which they would normally be viewed.	no difference

6.3.29	GAR 1.H060	Characteristics of low-intensity obstacle lights	Low-intensity obstacle lights on objects with limited mobility shall as a minimum be in accordance with the specifications for low-intensity obstacle lights, Type A, in Table 6-3.	(g) Low-intensity obstacle lights on obstacles with limited mobility shall as a minimum be in accordance with the specifications for low-intensity obstacle lights, Type A, in Table GAR 1.H060.	no difference
6.3.30	GAR 1.H065	Characteristics of medium- intensity obstacle lights	Medium-intensity obstacle lights, Type A, shall be flashing-white lights, Type B shall be flashing-red lights and Type C shall be fixed-red lights.	(a) Medium-intensity obstacle lights, Type A, shall be flashing-white lights, Type B shall be flashing-red lights and Type C shall be fixed-red lights.	no difference
6.3.31	GAR 1.H065	Characteristics of medium- intensity obstacle lights	Medium-intensity obstacle lights, Types A, B and C, shall be in accordance with the specifications in Table 6-3.	(b) Medium-intensity obstacle lights, Types A, B and C, shall be in accordance with the specifications in Table GAR 1.H060.	no difference
6.3.32	GAR 1.H065	Characteristics of medium- intensity obstacle lights	Medium-intensity obstacle lights, Types A and B, located on an object shall flash simultaneously.	(c) Medium-intensity obstacle lights, Types A and B, located on an object shall flash simultaneously.	no difference
6.3.33	GAR 1.H070	Characteristics of high- intensity obstacle lights	High-intensity obstacle lights, Types A and B, shall be flashing-white lights.	(a) High-intensity obstacle lights, Types A and B, shall be flashing-white lights.	no difference
6.3.34	GAR 1.H070	Characteristics of high- intensity obstacle lights	High-intensity obstacle lights, Types A and B, shall be in accordance with the specifications in Table 6-3.	(b) High-intensity obstacle lights, Types A and B, shall be in accordance with the specifications in Table GAR 1.H060.	no difference
6.3.35	GAR 1.H070	Characteristics of high- intensity obstacle lights	High-intensity obstacle lights, Type A, located on an object shall flash simultaneously.	(c) High-intensity obstacle lights, Type A, located on an object shall flash simultaneously.	no difference
6.3.36	GAR 1.H070	Characteristics of high- intensity obstacle lights	<i>Recommendation.— High-intensity obstacle lights, Type B, indicating the presence of a tower supporting overhead wires, cables, etc., should flash sequentially; first the middle light, second the top light and last, the bottom light. The intervals between flashes of the lights should approximate the following ratios:</i>	(d) High-intensity obstacle lights, Type B, indicating the presence of a tower supporting overhead wires and/or cables shall flash sequentially; first the middle light, second the top light and last, the bottom light. The intervals between flashes of the lights shall be in the following ratios:	a recommendation becomes compulsory
	GAR 1.H070	Characteristics of high- intensity obstacle lights	<i>Flash interval between middle and top light – 1/13 top and bottom light – 2/13 bottom and middle light – 10/13.</i>	Flash interval between – Ratio of cycle time middle and top light – 1/13 top and bottom light – 2/13 bottom and middle light – 10/13	

Figure 6-1.	Figure GAR 1.H030 (a)	Basic marking patterns	no difference
Table 6-1.	Table GAR 1.H030	Marking band widths	no difference
Figure A1-2.	Figure GAR 1.H030 (b)	Ordinary colours for marking	no difference
Table 6-2.	Table GAR 1.H055	Installation setting angles for high-intensity obstacle lights	no difference
Table 6-3.	Table GAR 1.H060	Characteristics of obstacle lights	no difference
Figure A1-1.	Figure GAR 1.H045	Colours for aeronautical ground lights	no difference