Republika e Kosovës
Republika Kosovo – Republic of Kosovo

Autoriteti i Aviacionit Civil
Autoritet Civilnog Vazduhoplovstva
Civil Aviation Authority

The Director General of Civil Aviation Authority of the Republic of Kosovo,

Pursuant to Article 21.3 and Article 64 of Law No. 03/L-051 on Civil Aviation,

For the purpose of establishing rules and procedures for marking of objects considered to be obstacles to Civil Aviation operations by visual signs and lights in the Republic of Kosovo;

Hereby issues the following:

REGULATION No. 2/2010
ON MARKING OF OBSTACLES

Article 1
Scope of Application

1.1 This Regulation applies to all legal or physical persons (person, organization or enterprise) owning an existing high construction or planning to erect a high construction in the territory of the Republic of Kosovo.

1.2 This shall define the procedures for marking of obstacles by visual signs and lights in the territory of the Republic of Kosovo for the purpose of making them conspicuous to aircraft.

1.3 Any reference to standards is a reference to Standards for Denoting Obstacles as contained in Annex 14 and this Regulation.

Article 2
Definitions and Interpretations

In this Regulation:

"Aerodrome" means a defined area on land (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

"Aerodrome protective zone" means the entire aerodrome and an area of land or water surface outside its boundaries where height of the constructions is limited.

"*Aerodrome facilities and equipment*" means facilities and equipment inside or outside the boundaries of an aerodrome that are constructed or installed and maintained for the arrival, departure and surface movement of aircraft.

"*Annex 14*" means Annex "Aerodromes", Volume1, to the Chicago Convention.

"*CAA*" means the Civil Aviation Authority of the Republic of Kosovo.

"*Certified aerodrome*" means an aerodrome whose operator has been granted an aerodrome certificate.

"*Chicago Convention*" means the international basis for civil aviation agreements, formally known as the Convention on International Civil Aviation.

"*Manoeuvring area*" means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

"*Movement area*" means that part of the aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).

"*Obstacle*" in relation to an aerodrome, means all fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight, and also the objects which height above the surface of land is 100 m or more, irrespective of their location

"*Obstacle limitation surfaces (OLS)*" means a series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles in order to permit the intended aeroplane operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome.

"*Runway*" means a defined aerodrome area rectangle in shape installed for take-off and landing of the aircraft

"*Work area*" means a part of an aerodrome in which maintenance or construction works are in progress.

"*Tie Line*" means a connection between electrical power systems with all the installations needed (constructions, wires etc).

Article 3
General Provisions

3.1 All obstacles in the Republic of Kosovo shall be marked according to the requirements of this Regulation.

3.2 Marking and lighting may be omitted when the obstacle is shielded by another fixed obstacle.

3.3 Marking may be omitted when the obstacle is lighted by high intensity obstacle lights by day.

3.4 The obstacles can be permanent, temporal and mobile. Permanent obstacles shall be considered the constructions permanently present in the location. Temporal obstacles shall be considered all temporal high constructions (cranes and construction woods, boring towers, supports of temporal power supply lines, etc.). Mobile obstacles shall be considered all unfixed constructions and are capable of moving or changing quickly from one state or condition to another.

3.5 Height of each obstacle shall be measured from the Above Sea Level-ASL of the location where it is placed.

3.6 The purpose of obstacle marking is to inform the crews of the aircraft on the obstacles.

3.7 Marking and maintenance of the obstacle markings and lights shall be performed by the owners and/or operators of the obstacle.

Article 4
Aerodrome Obstacles

All objects, fixed or mobile, located within a 15km radius of an aerodrome that are considered to be obstacles to aircraft in flight or maneuvering on the ground shall be lighted at night and, where the obstacle is insufficiently conspicuous by day, marked in contrasting colors. Surface obstructions and areas of bad ground on aerodrome movement shall be marked by the use of colored markers or flags. The methods of marking and lighting of aerodrome obstacles are illustrated in Part 2 to the Annex of the Regulation.

Article 5
En-Route Obstacles

Objects located beyond a 15km radius of an aerodrome are considered to be obstacles to aircraft in flight only if they exceed 100m in height. However, prominent objects of lesser height may also be regarded as obstacles where, for example, they are located on or adjacent to routes regularly used by helicopters.

Article 6
Other obstacles

6.1 All fixed objects as aerial masts (radio, TV antenna, etc) which are detached and dominant in the vicinity within a radius of 100 m, and are higher than 6 m are to be considered as obstacle.

6.2 All Power Transmission Tie Lines with the Voltage higher than 100kV, and crossing highways, main roads and regional roads are to be considered as obstacles.

Article 7
Marking of Obstacles

7.1 The obstacles marked by visual signs shall be clearly distinguishable in the surrounding area, visible from all directions and shall consist of two contrasting colors: red (orange) and white.

7.2 The obstacles shall be marked as per requirements of ICAO Annex 14. Samples of obstacle marking are shown in Part 2 and Part 3 to the Annex of this Regulation.

7.3 All mobile obstacles to be marked shall be colored or display flags.

7.4 When the mobile obstacles are marked by a color, a clearly distinguishable color shall be used:

a) red or yellowish green for the emergency vehicles;

b) yellow for the servicing vehicles.

7.5 Stretched wire, cable, etc considered to be marked under this Regulation shall display a marker that is spherical in form in a diameter not less than 60 cm. The marker shall be of one color, red, orange or white, and shall contrast with the background against which it will be seen.

Article 8
Lighting of Obstacles

8.1 In order to make flights safe at night or in the conditions of poor visibility (fog, mist, snow, rain, etc.) all objects considered as obstacles shall be lighted.

8.2 Fixed obstacles of 45 m or less in height, width and length shall be lighted by a fixed red, low intensity obstacle lights, Type A, placed at the highest practicable point.

8.3 Surface obstructions and unserviceable parts of the movement area at an aerodrome shall be delineated by portable red lights.

8.4 If marking with low intensity obstacle lights Type A is not sufficient or an early warning about the obstacle is required, then medium or high intensity obstacle lights shall be used.

8.5. Low intensity obstacle lights, Type C, on aerodromes shall be displayed on vehicles and other mobile objects, except aircraft. Obstacle lights displayed on vehicles associated with emergency or security shall be flashing/rotating-blue and those displayed on other vehicles shall be flashing/rotating yellow.

8.6 Low intensity obstacle lights, Type D, flashing/rotating yellow, shall be displayed on follow-me vehicles at an aerodrome.

8.7 Medium-intensity obstacle lights, Type C, fixed red, shall be used where the object is an extensive one or its height above the level of the surrounding ground is greater than 45 m. A group of trees or buildings shall be regarded as an extensive object

8.8 High-intensity obstacle lights Type A, flashing white, shall be used to indicate the presence of an object if its height above the level of the surrounding ground exceeds 100 m and an aeronautical study indicates such lights to be essential for the recognition of the object by day

8.9 Location of the obstacle lights shall be as per ICAO Annex 14. Samples of obstacle lightening are shown in Part 2 to the Annex of this Regulation.

Article 9
Wind turbines

9.1 A wind turbine shall be marked and/or lighted if it is determined to be an obstacle.

9.2 The rotor blades, nacelle and upper 2/3 of the supporting mast of wind turbines shall be painted white, unless otherwise indicated by an aeronautical study.

9.3 When lighting is deemed necessary, medium-intensity obstacle lights, Type C, fixed red, shall be used. In the case of a wind farm, i.e. a group of two or more wind turbines, it should be regarded as an extensive object and the lights shall be installed:

a) to identify the perimeter of the wind farm;

b) respecting the maximum spacing, not exceeding 900 m between the lights along the perimeter, unless a dedicated assessment shows that a greater spacing can be used; and

c) so that, within a wind farm, any wind turbines of significantly higher elevation are also identified wherever they are located.

9.4 The obstacle lights shall be installed on the nacelle in such a manner as to provide an unobstructed view for aircraft approaching from any direction.

Article 10
Control and maintenance of the lights operation

10.1 The lights shall be automatically switched-on in the dark period (from sunset to sunrise) and in the bright period of the day in the conditions of poor visibility. In case of troubleshot of the automatic switching, there shall be means provided to switch them on manually.

10.2 The lights shall be reliably fixed to a construction, approach for maintenance shall be safe, and the lights shall have means to be returned to the initial position after maintenance.

10.3 Malfunctions of the lights shall be immediately removed.

10.4 The owner and/or operator shall bear responsibility for switching-on, switching-off and maintenance of the lights.

Article 11
Exemptions

CAA may grant exemptions from the requirements of the present Regulation if he finds that such an action would be in the urgent public interest and would not jeopardize the safety of civil aviation.

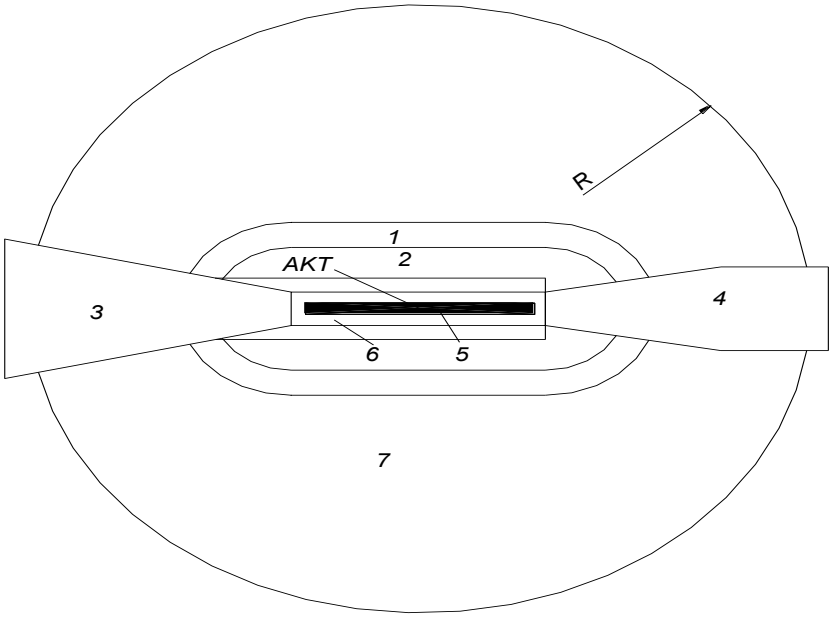
Article 12
Entry into force

This Regulation shall enter into force on 15 May 2010

Dritan Gjonbalaj
Director General

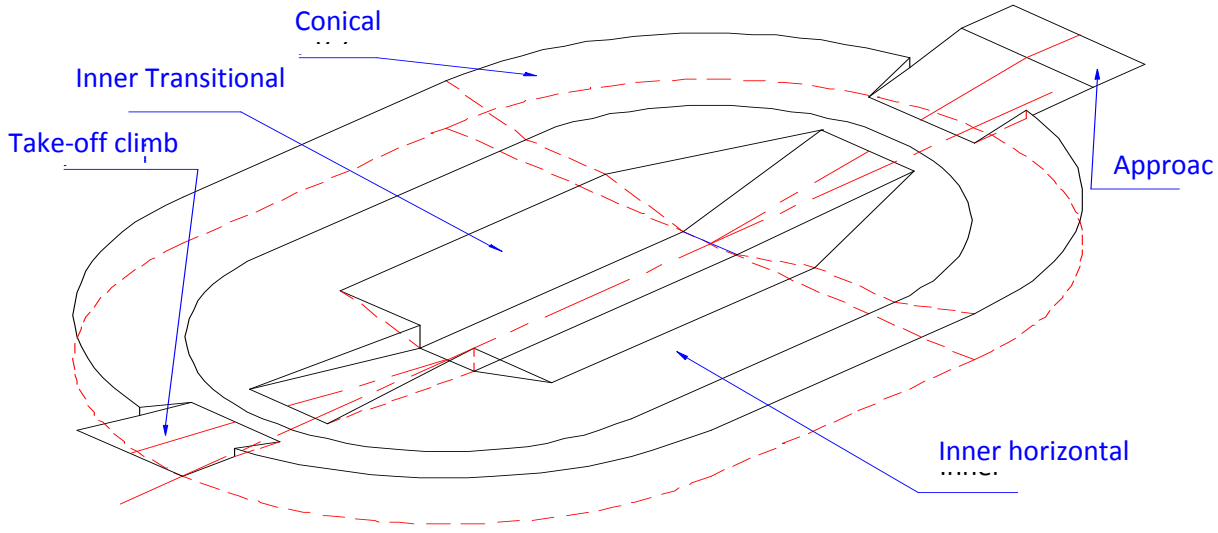
Annex
Regulation on marking of obstacles

Part 1
OBSTACLE LIMITING PLANES AND SURFACES



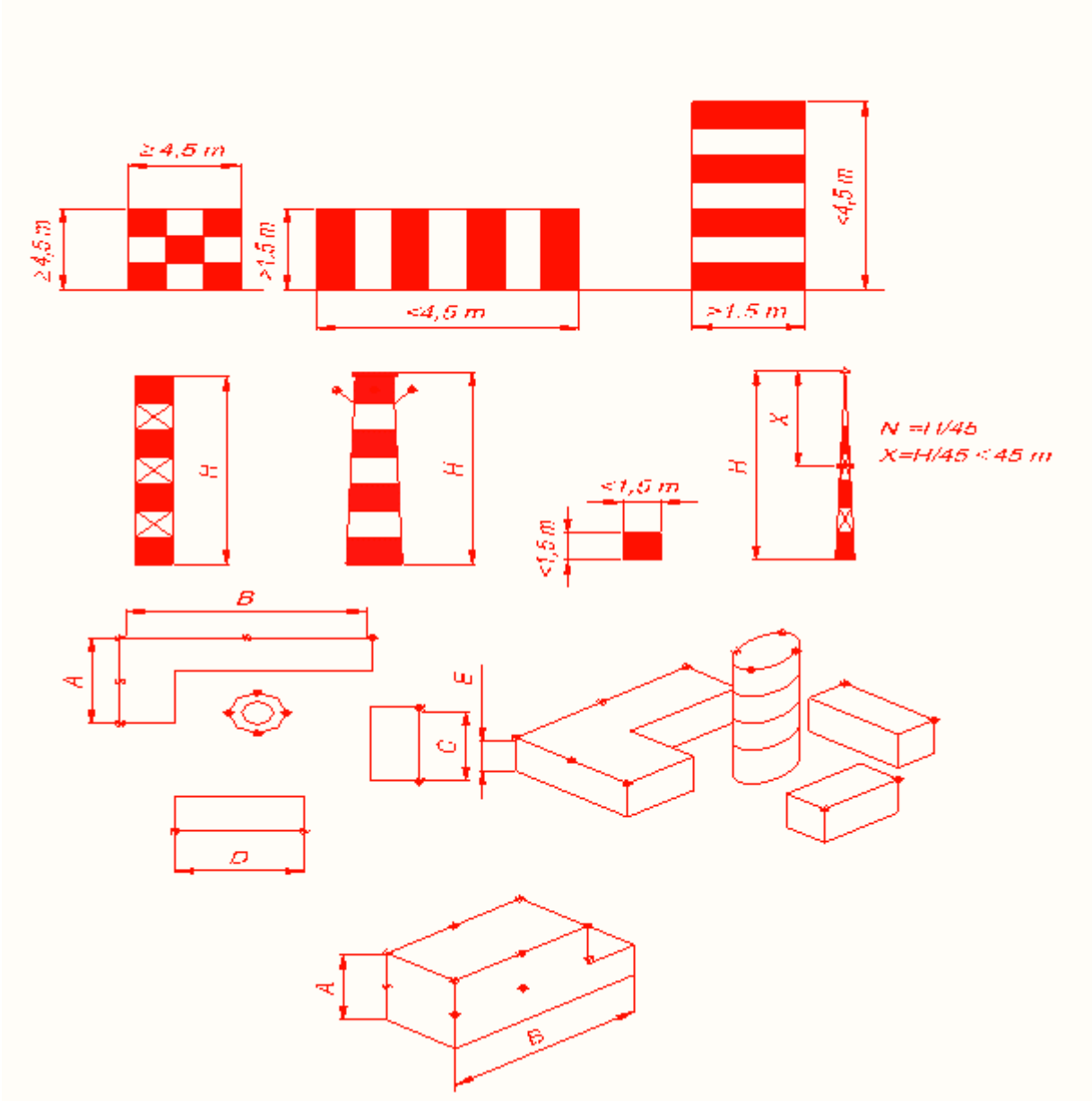
1. Conical surface, 2. Inner horizontal surface, 3. Approach surface, 4. Take-off/Approach surface,

5. Runway, 6. Transitional surface, 7. Outer horizontal surface.



Part 2

MARKING AND LIGHTENING OF OBSTACLES



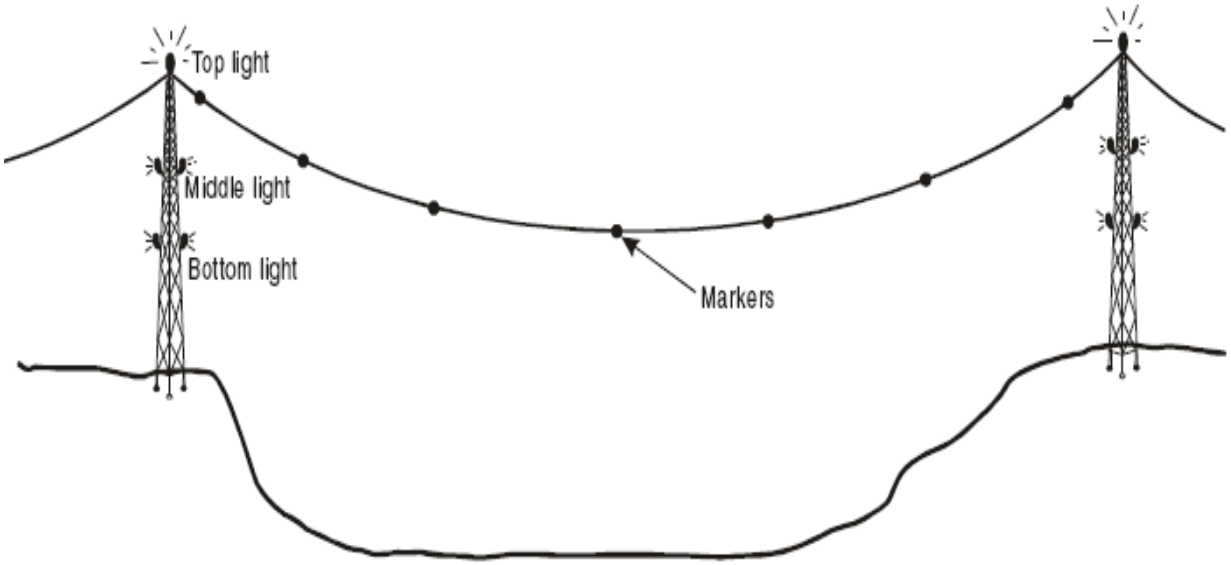
Note:

A, B shall be 45-90 m; C, D, E shall be 45 m or less;

N means a number of light levels obtained from height of the obstacle divided by 45. The obtained value shall be rounded towards a higher full value;

X means a distance between the light levels.

MARKING AND LIGHTENING OF OBSTACLES



Location of Obstacle lights on towers supporting electrical wires

Part3

WIDTH OF THE MARKING STRIPS

Height of obstacle, m		Width of strip, m
More than	Not more than	
1,5	210	1/7 of obstacle height
210	270	1/9 of obstacle height
270	330	1/11 of obstacle height
330	390	1/13 of obstacle height
390	450	1/15 of obstacle height
450	510	1/17 of obstacle height
510	570	1/19 of obstacle height
570	630	1/21 of obstacle height

Note: Width of the strips shall be uniform.

Part 4

CHARACTERISTICS OF THE LIGHTS

Type of light	Color	Type of signal, frequency of flashes	Top intensity (cd) according to the defined background intensity		
			More than 500 cd/m²	50-500 cd/m²	Less than 50 cd/m²
A type low intensity (fixed obstacle)	Red	Constant flashing	N/A	10 min	10 min
B type low intensity (fixed obstacle)	Red	Constant flashing	N/A	32 min	32 min
C type low intensity (mobile obstacle)	Yellow/ Blue[a]	Flashing[c] (60-90 fpm)	N/A	40 min[b] 400 max	40 min[b] 400 max
D type low intensity (road indicating vehicle)	Yellow	Flashing[c] (60-90 fpm)	N/A	200 min[b] 400 max	200 min[b] 400 max
A type medium intensity	White	Flashing (20-60 fpm)	20000[b] ±25%	20000[b] ±25%	2000[b] ±25%
B type medium intensity	Red	Flashing (20-60 fpm)	N/A	N/A	2000[b] ±25%
C type medium intensity	Red	Constant flashing	N/A	N/A	2000[b] ±25%
A type high intensity	White	Flashing (40-60 fpm)	200000[b] ±25%	20000[b] ±25%	2000[b] ±25%
B type high intensity	White	Flashing (40-60 fpm)	100000[b] ±25%	20000[b] ±25%	2000[b] ±25%

a) see paragraph 8.5 and 8.6;

b) effective intensity defined according to ICAO documents;

fpm means frequency per minute

c)vehicles used at aerodromes can also use rotating lights