

**58<sup>th</sup> CONFERENCE OF  
DIRECTORS GENERAL OF CIVIL AVIATION  
ASIA AND PACIFIC REGIONS**

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**AGENDA ITEM 4: AIR NAVIGATION**

**OBSTACLE LIMITATION SURFACES OF AN AERODROME  
VERSUS ECONOMIC GROWTH IN URBAN AREAS**

(Presented by Bangladesh)

**SUMMARY**

Man-made construction inside and outside the boundary of an aerodrome always influences the effective operation of aerodrome. This paper highlights possibility of reviewing the Obstacle Limitation Surfaces due to the prevailing growth of man-made structures in the urban area of country like Bangladesh. Through the discussion, Bangladesh seeks the attention of ICAO and Member States to cope with the challenges posed by such huge growth by reviewing the standards of specific Obstacle Limitation Surfaces. Bangladesh wishes to give an overview to be discussed about the Obstacle Limitation Surfaces with regard to development of high-rise commercial building, which impacts the economic growth.

## **OBSTACLE LIMITATION SURFACES OF AN AERODROME VERSUS ECONOMIC GROWTH IN URBAN AREAS**

### **1. INTRODUCTION**

1.1 Obstacle limitation surfaces (OLS), being part of aerodrome standards, are the main safeguard against objects that can pose a hazard to aircraft operations at and around airports. They are a set of imaginary surfaces defined at and around airports to protect airborne aircraft operations from obstacles that can pose a hazard to their movements. Furthermore, OLS are identified as an important design standard affecting the orientation of the runway system layout. Although most of those national standards are based on Annex 14, some countries may develop and adopt their own standards.

### **2. DISCUSSION**

2.1 It is essential to ensure that aircraft are not at risk of collision as a result of the presence of buildings, antennas, lamp posts, cranes and other elements that do not comply with height restrictions and are located within the airport safety surfaces. Even then, sometimes OLS around an aerodrome is not possible to be maintained free from obstacles. There are examples of developments that penetrate OLS, which should not be taken as reference to use in a uniform manner. However, understanding any potential penetration and subsequent engagement with the relevant aerodromes is advisable to maximize a project's chance of success.

2.2 To ensure the safety of aircraft operations, the Obstacle Limitation Surfaces (OLS) have been established in ICAO Annex 14 VOL-I since long back. It has been experienced by many countries that some OLS of their aerodromes become penetrated by new obstacles, resulting in more difficulty in protecting the surfaces against new obstructions. Sometimes, there is not enough adequacy between the obstacle requirements of the surfaces and the complex impact of obstacles on the operations. Although ICAO has addressed this issue by introducing the concept of Obstacle Free Surfaces (OFS) and Obstacle Evaluation Surfaces (OES), countries like Bangladesh, having limited free available land around the airports, face problems with tremendous pressure from the business community. The location of most of the airports of Bangladesh is in the urban areas, which affects the economic growth in some cases. To address this issue, Bangladesh has experienced the possibility or the scope of increasing the slope of only Conical surface by keeping other characteristics of this surface unchanged till the implementation of proposed amendment to Annex 14 VOL I, in which the Conical surface will not exist. Without compromising the safety of aircraft, Bangladesh wishes to review the characteristic of existing Conical surface, especially the slope of this surface. The high demand for developing structures around the airport within urban areas may be addressed by increasing the 5% slope to an acceptable label for all classes of Runway. Still, there are 5(five) more years in hand for the proposed amendment to come into force; for the interim period, Bangladesh may be benefitted from the discussion of best practices by other States.

2.3 It is expected that air transportation will increase triples than what has been observed during the last decade. With this expected traffic growth, many airport authorities have been planning to expand their facilities to increase aircraft operation capacity. Obstacle Limitation Surface (OLS) are described, which ideally shall not be penetrated by an object. OLS infringements may be acceptable, though, if an obstacle assessment or aeronautical study shows that there is no adverse impact on safety of flight operations. In such situations, it may be impractical or impossible to meet the requirements of existing OLS standards due to space limitations in urban areas or due to the existing high structures at and around airports which have already penetrated. As a result, airports may have to use new dimensions for the OLS and check the level of safety of the modified surfaces.

2.4 Due to evolving navigation technology, modern aircraft performances and growing air traffic as well as environmental demands, the ICAO PANS-OPS (Document 8168) – Aircraft Operations, specifies the detailed criteria and requirements of instrument flight procedures, which usually protect the Approach surface and Take-off surface. On the other hand, States can file the difference to ICAO if their regulations are different from ICAO Annex standards. To keep the uniform

OLS standards, ICAO and Member States are requested to explore the possibility to review the characteristics of some parts of the OLS, especially the Conical surface, without jeopardizing the safety. Although State can exempt certain obstruction from compliance with the existing requirements through aeronautical study, in a case by case basis, and in order to address such issue in general and in a uniform manner by all States, the slope of the existing Conical surfaces may be reconsidered.

**3. ACTION BY THE CONFERENCE**

3.1 The Conference is invited to:

- a) Note the information contained in this discussion paper;
- b) Share the experiences and the best practices of other Member States;
- c) Request ICAO and Member States to review in this regard.

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