

## **GUIDELINES FOR AERONAUTICAL STUDY**

**(For the purpose of evaluating the Existing or the Proposed Structures, penetrating the Obstacle Limitation Surfaces)**

### **1. INTRODUCTION**

- 1.1 Detailed procedures for assessing and issuing No Objection Certificate for height clearance to proposed structures are given in SO84 E, issued by Govt. of India in Jan. 2010, as revised or amended.
- 1.2 AAI has established five Regional Offices, one each at Delhi, Mumbai, Chennai, Kolkata, Guwahati, and four Station Level offices at Ahmedabad, Nagpur, Hyderabad and Bengaluru for receiving, processing of the applications and issue of NOC for height clearance.
- 1.3 Applicants are required to submit online application through NOCAS to the Designated Officers at Regional/Station Level offices of Airports Authority of India (AAI).
- 1.4 These NOC offices examine the height clearance request as per the Obstacle limitation Surfaces (OLS), CNS and PANS-OPS criteria as specified in SO 84E.
- 1.5 Objective of regulating the build environment around airport is to protect obstacle limitation surfaces of the airport so that Safety, Efficiency and Regularity of flight operations are maintained and also to prevent the aerodrome from becoming unusable by the growth of obstacles.
- 1.6 Applicants, who are not satisfied with the height granted by the NOC office, may appeal to the Chairman, Appellate Committee, Ministry of Civil Aviation, Rajiv Gandhi Bhawan Safadarjung airport, New Delhi – 110003 for seeking redressal.
- 1.7 Appeal Procedure is available in the Guidelines, provided at NOCAS Link at [www.aai.aero](http://www.aai.aero).
- 1.8 Appellate Committee, after considering the request of the applicant for carrying out the Aeronautical Study, may order for an Aeronautical Study.
- 1.9 Aeronautical Study shall be carried out by Airports Authority of India or ICAO or any other agency, duly approved for this purpose, by Ministry of Civil Aviation.

## **GUIDELINES FOR AERONAUTICAL STUDY**

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### **2. PROCEDURE FOR CARRYING OUT AERONAUTICAL STUDY**

- 2.1 Once an aeronautical study is ordered by the Appellate Committee, AGA / NOC section of AAI CHQ, New Delhi will collect all the relevant documents, including WGS-84 coordinates up to 100<sup>th</sup> of seconds (ddmmss.ss format) of the plot and/or buildings, elevation of the site from the applicant. In case of multiple buildings in the plot, co-ordinates of each building needs to be obtained.
- 2.2 AGA/NOC Section of AAI, CHQ, New Delhi to ensure that the applicant has signed all the relevant documents and deposited the applicable fees along with applicable taxes.
- 2.3 Airports Authority of India will constitute a team of three experts, one each from Aerodrome and Ground Aids (AGA) section, Flight Procedure Design section and Communication, Navigation and Surveillance (CNS) section for carrying out the Aeronautical study.
- 2.4 The AGA/NOC Section of AAI, CHQ, New Delhi, will carry out necessary coordination with the experts and the applicant.
- 2.5 The team will visit the site for verifying the details of the proposed structure, and if required additional information may be obtained from the applicant. In addition to above, team shall verify nearby structures and any other structure which has reference to the study.
- 2.6 The Team, if so desired, may ask the concerned Airport Operator to physically verify the site elevation and site co-ordinate data.
- 2.7 The team shall carry aeronautical study maximum of 4 cases in a single visit in order to complete the report within a period of 30 days.
- 2.8 Charting accuracy and MOC criteria specified in FPD manual of AAI shall be considered while examining the structures in respect to PANS-OPS criteria.

### **3. THE PRIME OBJECTIVE OF THE STUDY IS TO ENSURE:-**

- 3.1 The safety of air navigation, efficient utilization of airspace and airport by the aircraft, based on the instrument/visual flight procedures in operation and planned instrument flight procedures during normal aircraft operations and;

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- 3.2. To protect the service volume of CNS facilities and their performance from either electromagnetic interference or due to physical hindrance/restriction.

#### 4. SCOPE OF AERONAUTICAL STUDY

- 4.1 An existing or proposed structure, penetrating or expected to penetrate the obstacle limitation surfaces as detailed in ICAO Annex 14, resulting in deviation from the Standards, is presumed to be a hazard to air navigation unless the Aeronautical Study determines that safety and regularity of aircraft operations is not adversely affected during the normal aircraft operations.
- 4.2 An Aeronautical study must identify the effects of the proposed structure:
- 4.2.1 On the existing and the proposed instrument flight procedures, PBN procedures, departure & arrival procedures, and the minimum flight altitudes of the air- routes, OCA, MSA and Radar Vectoring Altitudes, during normal aircraft operations.
- 4.2.2 Regarding physical, electromagnetic, or line-of-sight interference on the existing and the proposed, Communications, Navigation and Surveillance (CNS) facilities.
- 4.2.3 Whether marking and/or lighting of the structure is necessary.
- 4.3 However, safety impact on the aircraft operations in degraded operational performance mode is not analysed.

#### 5. RESPONSIBILITY

- 5.1 **Appellate Committee**, if deemed fit, will order for conducting the Aeronautical Study to examine the feasibility of desired height for the existing or the proposed structure.
- 5.2 **Airports Authority of India** will conduct Aeronautical study through the designated experts.
- 5.2.1 Designated AAI experts are responsible for examining the proposed deviation from the Standards, considering SO84E, DGCA CAR on Aerodrome Design and Operations, ICAO Annex 14, PANS-OPS DOC 8168 Vol. II and Annex 10 and any other guidelines issued from

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time to time by appropriate authority, to the extent and as per the frame work, defined in these guidelines.

- 5.2.2 Flight Procedure Design expert will examine the effect of proposed structure on existing and proposed Instrument and PBN procedures as per the criteria given in ICAO DOC 8168 Vol. II to identify the effect on Obstacle Clearance Altitudes (OCA); minimum vectoring altitudes (MVA); minimum holding altitudes (MHA); Minimum Sector Altitude (MSA); STARs/SIDs procedures altitudes; turning areas & termination areas.
- 5.2.3 CNS expert will examine the effect of proposed structure on the existing and the proposed CNS facilities as per Annex 10 to determine the electromagnetic interference, if any, with any of air navigation facilities.
- 5.2.4 CNS expert will also examine the effect on the performance of ground-based surveillance equipment such as primary and secondary radars; ASMCs, SMR and ADS etc
- 5.2.5 CNS expert will also examine the effect on the performance of other CNS facilities.

## **6. SAFEGUARDING PLANNED DEVELOPMENT AND FUTURE UPGRADATION OF AERODROMES**

- 6.1 All planned developments at the existing airports and approved proposed Greenfield airports shall be considered as per the guidelines.
- 6.2 Future Development of Existing Airports like extension of runway, proposed installation & relocation of CNS facility shall be taken into account.
- 6.3 Proposed procedures for Air Navigation Service Operations (PANS-OPS) shall also be considered.
- 6.4 New Airport Development. – Obstacle limitation surfaces (OLS), Procedure Design areas and area for proposed CNS facility shall be considered.

## **7. FORMAT OF AERONAUTICAL STUDY REPORT**

Aeronautical Study report will comprise of three sections,

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- 7.1 First section will be compiled by AGA / NOC section which will contain details of the proposed project, e.g. Address, WGS-84 coordinates up to 100<sup>th</sup> of seconds, site elevation and location of the proposed site with reference to OLS, height requested by applicant, CHQ as well as regional or station level NOC office references, etc. The Appellate Committee directions for the conduct of Aeronautical Study will also be mentioned.
- 7.2 Second section will be compiled by PANS-OPS expert containing examination of the existing and the proposed Instrument Approach/PBN Procedures etc.
- 7.3 Third section will be compiled by CNS expert containing examination and effect of the proposed structure on existing and proposed CNS facilities.
- 7.4 At the end of the report a Summary of the Study report will be provided, enumerating the adverse impact of the structure w.r.t. AGA surfaces, PANS-OPS criteria and CNS facilities.

## **8. SUBMISSION OF AERONAUTICAL STUDY REPORT**

- 8.1 Aeronautical study team shall submit the report within 30 days from the date of site visit or from the date of receipt of additional information / documents from the applicant as requested by the AAI team during their site visit, whichever is later.
- 8.2 Appellate committee will consider the observations made in Aeronautical study report and take appropriate decision.
- 8.3 Appellate committee may direct AAI Corporate Office to issue Authorization letter to the concerned regional /station level designated officer for issuance of NOC.