Minutes of the Meeting of No Objection Certificate (NOC) Appellate Committee held on 06th May 2011 in Ministry of Civil Aviation, Rajiv Gandhi Bhawan, New Delhi.

The meeting of the Appellate Committee set up by the Government to consider appeals made by different applicants with regard to the height allocated to them for their construction vis-à-vis the height sought by them, was held under the Chairmanship of Joint Secretary, Ministry of Civil Aviation, wherein the following were also present:

1.	Shri. V. Somasundaram	-	Member (ANS), AAI
2.	Shri A.K. Misra Former Member (Plg.), AAI	-	Outside Expert
3.	Shri K. Gohain Former DGCA	-	Outside Expert

2. The Committee was assisted by Shri V.K. Dutta, GM (ATM), In-charge NOC Cell of AAI.

3 There were total No. of 10 cases submitted by AAI on which Aeronautical Study was completed in each case & reports thereto prepared has been submitted for consideration of the Committee. Also the Committee considered the Study Reports submitted by AAI (concerning position) regarding the areas overlapping in the IHS of Santa Cruz Airport and IHS of Juhu Airport as desired by the Committee in its earlier meeting held on 9th February 2011.

4. The following decisions are made with respect to each of the individual case as given below after examination of the respective Aeronautical Study Reports pertaining to the cases.

Sl. No. 01

Case No. MUM/10/141

Mr. Kumar Mordani, Bandra (W), Mumbai

CTS No. E/144 of village Bandra (W)

The site lies in the IHS of Santa Cruz Airport at a distance of 2832 mtrs. from Runway 09. The applicant had requested grant of NOC upto height of 84.11 mtrs. AMSL against which AAI, WR had cleared the height of 56.27 mtrs. The applicant has now requested for height of 94.0 mtrs. AMSL. The case was discussed in the Appellate Committee meetings held earlier on 1st November 2010 & 16th December 2010 wherein the Committee had expressed the opinion that Aeronautical Study need to be conducted to determine the maximum permissible height at this location.

AAI team have now conducted the Aeronautical Study and submitted their Report No. 03/MUM/2011 for consideration of the Appellate Committee. On perusal of Aeronautical Study Report, it is observed that:

(i) The proposed construction does not affect the OCA/H of visual maneuvering procedures.

(ii) The proposed construction does not affect the minimum sector altitudes of all the existing procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR procedures of Mumbai.

(v) The proposed construction does not affect the OCA/H of the SRE procedures of Runway 09/27 and Runway 14 of Mumbai Airport.

(vi) The proposed construction is located at outside basic ILS surface of ILS Runway 14, and also the basic ILS surfaces of 09/27 are not penetrated and therefore the OCA/H of G.P. (in-operative) procedures is not affected.

(vii) The proposed construction is located outside the final approach area of RNAV procedure and therefore the proposed RNAV procedures are not affected.

(viii) The maximum permissible elevation at this location is restricted to 89.28 mtrs. AMSL from CNS criteria because of restrictions due ASR.

(ix) The Report indicates that the proposed construction penetrates the IHS by 83.8%. However, the report also concludes that PAN OPS criteria is not adversely affected by the proposed construction.

Considering the above findings and examination of Aeronautical Study Report, the Committee is of the opinion that the maximum permissible height permitted at this location could be 89.28 mtrs. AMSL.

Sl. No. 02

Case No. MUM/09/211

M/s. Neelkamal Realtors Towers Pvt. Ltd., Mumbai, C/o Shri B.S. Joshi (D. B. Realty)

CTS No. 1906 of Byculla Division, Maulana Azad Road, Mumbai

The site lies in the OHS of Santa Cruz Airport at 13,750 mtrs. from the ARP of Mumbai Airport. The applicant had initially applied for grant of NOC for a height of 243.96 mtrs. AMSL against which they were issued NOC for height upto 232.77 mtrs. AMSL. Thereafter the applicant had requested for consideration of height upto 350 mtrs. AMSL against which RED, WR, AAI have cleared height upto 311.27 mtrs. AMSL.

The applicant thereafter requested the Appellate Committee vide their letter dated 09.09.2010, for reconsideration of their case for grant of height upto 350 mtrs. AMSL. The case was discussed in the Appellate Committee Meeting held on 1st November 2010 wherein the Committee was of the opinion that Aeronautical Study needs to be conducted to determine the maximum permissible height at this location, as the project is part of Rehabilitation Scheme of MAHDA and entails mainly rehabilitation of 1332 persons belonging to the weaker section of society.

AAI team have now submitted the Aeronautical Study Report No. 02/MUM/2011 for consideration of the Committee. On perusal of the Aeronautical Study Report, it is observed that:

(i) The proposed construction is located outside the visual circling area of all aircraft categories and OCA/H of circling approach is not applicable.

(ii) The proposed construction does not affect the minimum sector altitudes for all the procedures for Mumbai.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction is located outside final/missed approach area of SRE Runway 09/27 and Runway 14 and hence OCA/H is not affected.

(v) The proposed construction is located outside the final/missed approach area of ILS Runway 09/27 and Runway 14 and thus OCA/H is not affected.

(vi) Since the site lies outside the final approach areas of GNSS procedure, no calculations were made for OCA/H applicable for RNAV procedures.

(vii) The proposed construction for the requested top elevation of 350 mtrs. AMSL (single building) on the said plot, as shown in the drawing submitted by the applicant, could be permitted provided other buildings in that area/plot are restricted upto 225 mtrs. AMSL to ensure that the Radar performance is not affected.

Considering the above findings of the Aeronautical Study Report, the Committee is of the opinion that proposed construction for requested top

elevation of 350 mtrs. AMSL could be permitted at this location with the condition that no other building in that area/plot be permitted above 225 mtrs. AMSL.

The Committee is also of the opinion that specific reference is to be made to the drawings submitted by the applicant and considered by the study team in the body of the NOC and that duly authenticated drawings should be annexed to the NOC.

Sl. No. 03

Case No. MUM/10/355

Shree Gajraj Housing Nirman Pvt. Ltd.

CTS No. 629 (Pt.) of village Bandar at Kherwadi Bandra (E), Mumbai

The site lies at 2472 mtrs. from nearest Runway 09 end of Mumbai Airport and thus lies in IHS of Mumbai Airport. The applicant had earlier requested for height of 56.27 mtrs. AMSL and the NOC was granted by AAI for the said height. The applicant thereafter had appealed for a height of 73.06 mtrs. AMSL for which AAI had rejected and had referred the case to the Appellate Committee. The Committee considering the justification provided by the applicant had recommended for Aeronautical Study to be conducted to determine the maximum permissible height at this location.

AAI team have now submitted the Aeronautical Study Report No. 04/MUM/2011 for consideration of the Committee.

On perusal of the Aeronautical Study Report, it is observed that:

(i) The proposed construction does not affect the minimum visual maneuvering altitudes.

(ii) The proposed construction does not affect the minimum sector altitudes of all the existing procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR procedures for Mumbai.

(v) The proposed construction does not affect the OCA/H of the SRE procedures of Runway 09/27 and Runway 14 of Mumbai Airport.

(vi) The proposed construction is located outside the basic ILS surface of ILS runway 09/27 and Runway 14 and hence does not affect the OCA/H of ILS procedures for Runway 09/27 and runway 14.

(vii) The site is located outside basic ILS surface of ILS runway 09/27 and Runway 14 and therefore the OCA/H of G.P. (in-operative) procedures is not affected.

(viii) The proposed construction is acceptable from RNAV (GNSS) (RNP 0.3) procedures.

(ix) The maximum permissible height as per CNS criteria is 68.82 mtrs. AMSL at this location due restriction on account of ASR.

Considering the above findings and examination of Aeronautical Study Report, the Committee is of the opinion that the maximum permissible height at this location could be upto 68.82 mtrs. AMSL.

Sl. No. 04

Case No. MUM/10/361

M/s Wadhwa Residency Pvt. Ltd., C/o Bhupendra Patrawala

CTS No. 50 (Pt.), 50/5, 50/6, 50/7 (Pt.), 50/35 to 42, Sector-VI, village Vikhroli, Ghatkopar (W), Mumbai

The site is located in the conical surface of Mumbai Airport at a distance of 5568 mtrs. from the ARP Mumbai as well as lies (40% of the area) under the approach surface of Runway 27 at a distance of 3864 mtrs. from Runway strip. The applicant had requested for height of 131.58 mtrs. AMSL against which AAI had earlier issued NOC for height of 57.27 mtrs. AMSL taking into consideration the distance of site as 3944 mtrs. from Runway strip. The applicant had preferred an appeal and the Committee after considering the justifications provided by the applicant had recommended for conduct of an Aeronautical Study at this location, in their meeting held on 16th December 2010.

The Aeronautical Study team which visited the site on 4th February 2011, considering the location of the site vis-à-vis approach surface and its distance from the displaced threshold, carried out the study for the area falling outside the

designated approach surface. The specific area has been attached as Annexure to the Report.

On perusal of Aeronautical Study Report No. 10/MUM/2011, it is observed that:

(i) The proposed construction within the area lying outside the approach surface, does not affect the OCA/H of visual circling procedures.

(ii) The proposed construction does not affect the minimum sector altitudes of all the procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR of Runway 09/27 and Runway 14/32.

(v) The proposed construction does not affect the OCA/H of the SRE procedures for Runway 09/14/27.

(vi) For ILS procedures the top elevation needs to be restricted, due safeguarding basic ILS surface, upto 100.3 mtrs. AMSL for Runway 27.

(vii) The site being located outside the basic ILS surface of Runway 14, the missed approach area of Runway 09, the OCA for Runway 09 & 14 are not affected and the permissible elevation due to G.P. (in-operative) procedures works out to 87.5 mtrs. AMSL.

(viii) For CNS criteria, the maximum permissible elevation works out 109.5 mtrs. AMSL due restrictions from localizer 27.

(ix) For RNAV procedures consisting of RNP 0.3 approaches which have been planned for Runway 09/27/14 for Mumbai Airport, the permissible elevation due to proposed RNAV procedures will be 83.5 mtrs. AMSL for Runway 09 and 70.5 mtrs. AMSL for Runway 27 and there would be no restrictions for Runway 14.

The applicant has claimed shielding benefit with respect to hills top elevation 74 mtrs. and 221 mtrs. AMSL located South and North respectively of the proposed construction. The above claim is, however, not admissible as per the conditions for shielding benefit laid down in the S.O. 84 (E). The only shielding benefit available is with respect to the contours of maximum 64.9 mtrs. AMSL which has, however, been considered during the calculation for maximum permissible height in RNAV procedures.

Since the proposed RNAV procedures and the detailed reasoning applied for processing of the cases were not available for study by the Committee, the Committee is of the view that the plotting of the proposed RNAV (RNP 0.3 routes guides) and the heights along such routes be plotted on the zoning map of Mumbai Airport and made available for study. Also, in future, such drawings need to be annexed to Aeronautical Study Reports wherever the heights have been restricted due to RNAV (RNP 0.3) procedure.

Sl. No. 05

Case No. MUM/10/362

M/s Wadhwa Residency Pvt. Ltd., C/o Bhupendra Patrawala

CTS No. 50 (Pt.), 50/2 (Pt.), 50/3, 50/4, 50/5 (Pt.), 50/7 (Pt.), Sector-IV, village Vikhroli, Ghatkopar (W), Mumbai

The site lies at 4048 mtrs. from Runway 27 end, and 5568 mtrs. from ARP (Mumbai), & therefore is located in the conical surface. The applicant had asked for 132.97 mtrs. AMSL against which AAI, WR issued NOC for 58.67 mtrs. AMSL. The case was discussed in the Appellate Committee meeting held on 1st November 2010 and 16th December 2010 wherein the Applicant had requested for Aeronautical Study to be conducted to determine the maximum permissible height at this location. The Committee recommended conduct of Aeronautical Study in view of the justifications with documentary evidences provided by the applicant in the above meetings.

AAI team visited the site on 4th February 2011 for verifying the location and have conducted the Aeronautical Study. The Aeronautical Study Report No. 11/MUM/2011 has been placed for consideration of the Committee in this meeting.

The Committee on perusal of the Aeronautical Study Report has observed that:

(i) The proposed construction does not affect the minimum visual maneuvering altitudes for all categories A, B, C & D aircraft.

(ii) The proposed construction does not affect the minimum sector altitudes of all the existing procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes for Mumbai.

(iv) The proposed construction does not affect the OCA/H of the VOR of Runway 09/27 and Runway 14/32.

(v) The proposed construction does not affect the OCA/H of the SRE procedures of Runways 09/14/27.

(vi) The basic ILS surfaces of Runway 14 & 09 are not affected.

(vii) The proposed construction penetrates the basic ILS surface of Runway 27 and therefore the permissible elevation could be upto 292.16 mtrs. AMSL.

(viii) The permissible elevation due to G.P. (in-operative) procedure is 87.5 mtrs. AMSL for Runway 27.

(ix) The maximum permissible height at this location from CNS criteria works out to be 108.68 mtrs. AMSL as for restriction due to ILS.

(x) The permissible elevation due to proposed RNAV (GNSS) (RNP 0.3) approach procedure is as follows:

Runway 09	83.5 mtrs. AMSL
Runway 27	73.5 mtrs. AMSL
Runway 14	outside missed approach of Runway 14 and therefore not considered for OCA/H calculation for RNAV procedure.

The applicant had claimed shielding benefit w.r.t. hills having TE 74 mtrs. and 209 mtrs. AMSL located South & North respectively of the proposed construction. The shielding benefit available w.r.t. contour of 64.9 mtrs. AMSL which is admissible has been considered while calculating the permissible height on RNAV criteria.

Since the proposed RNAV procedures and the detailed reasoning applied for processing of the cases were not available for study by the Committee, the Committee is of the view that the plotting of the proposed RNAV (RNP 0.3 routes guides) and the heights along such routes be plotted on the zoning map of Mumbai Airport and made available for study. Also, in future, such drawings need to be annexed to Aeronautical Study Reports wherever the heights have been restricted due to RNAV (RNP 0.3) procedure.

Sl. No. 06

Case No. MUM/10/365

M/s Wadhwa Residency Pvt. Ltd., C/o Bhupendra Patrawala

CTS No. 50 (Pt.), 50/1, 50/2 (Pt.) Sector-II, village Vikhroli, Ghatkopar (W), Mumbai

The site lies at 4040 mtrs. from Runway 27 end and is in the conical surface of Mumbai Airport. The applicant had requested for NOC for a height of 134.81 mtrs. AMSL against which AAI, WR had granted NOC for 58.27 mtrs. AMSL. The applicant had initially appealed for grant of shielding benefit due to

hills within IHS. The case was discussed in the Appellate Committee meetings held on 1st November 2010 and 16th December 2010 wherein the applicant had withdrawn his claim for shielding benefit and instead had requested for Aeronautical Study to be conducted to determine the maximum permissible height at this location. The Committee based on the justification provided by the applicant in the Committee meeting held on 16th December 2010 had opined that Aeronautical Study need to be conducted to determine the maximum permissible height at this location.

AAI have now conducted the Aeronautical Study and submitted the Aeronautical Study Report No. 09/MUM/2011 to the Appellate Committee for consideration in this meeting.

The Committee on perusal of the Aeronautical Study Report has observed that:

(i) The proposed construction does not affect the minimum visual maneuvering altitudes.

(ii) The proposed construction does not affect the minimum sector altitudes of all the procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR of Runway 09/27 and Runway 14/32.

(v) The proposed construction does not affect the OCA/H of the SRE procedures of Runway 09/14/27.

(vi) The permissible elevation due to G.P. (in-operative) is 87.5 mtrs. AMSL.

(vii) The proposed construction upto the height of 108 mtrs. AMSL is cleared from CNS criteria.

(viii) The permissible elevation due to proposed RNAV (GNSS) (RNP 0.3 approach) is as follows:

Runway 09	83.5 mtrs. AMSL
Runway 27	79.5 mtrs. AMSL
Runway 14	The construction is located outside the missed approach area of Runway 14 and therefore not considered for calculation of OCA/H for RNAV procedures.

Since the proposed RNAV procedures and the detailed reasoning applied for processing of the cases were not available for study by the Committee, the Committee is of the view that the plotting of the proposed RNAV (RNP 0.3 routes guides) and the heights along such routes be plotted on the zoning map of Mumbai Airport and made available for study. Also, in future, such drawings need to be annexed to Aeronautical Study Reports wherever the heights have been restricted due to RNAV (RNP 0.3) procedure.

Asmita

Sl. No. 07

Case No. MUM/10/385

M/s Nimesh Global Syndicate

CTS No. 1084-A (Pt.), village Bandra (W) at Khar (W), Mumbai

The site lies at 4880 mtrs. from ARP of Juhu Airport and 3040 mtrs. from Runway 09 of Santa Cruz Airport. The applicant has initially applied for height of 105.54 mtrs. AMSL against which AAI, WR issued NOC for 56.27 mtrs. AMSL. Thereafter, the applicant had appealed for reconsideration of their proposal for raised height of 88.40 mtrs. AMSL and the case was discussed in the Appellate Committee meeting held on 16th December 2010. The Committee after considering the justification provided by the applicant had opined that Aeronautical Study needs to be conducted to determine the maximum permissible height at that location.

AAI team have now conducted the Aeronautical Study and submitted the Aeronautical Study Report No. 05/MUM/2011 for consideration of the Committee in this meeting.

The Committee on perusal of the Aeronautical Study Report has observed that:

(i) The proposed construction does not affect the minimum visual maneuvering altitudes.

(ii) The proposed construction does not affect the minimum sector altitudes of all the procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR of Runway 09/27/14 and Runway 32.

(v) The proposed construction does not affect the OCA/H of the SRE procedures of Runway 14.

(vi) The proposed construction is located outside the basic ILS surfaces of Runway 14 and it does not penetrate the basic ILS surface of Runway 09/27.

(vii) The OCA/H of G.P. (in-operative) procedure is not affected.

(viii) The proposed construction is located outside the final approach area of RNAV (GNSS) procedure.

(ix) The proposed construction upto height of 88.40 mtrs. AMSL is permissible from CNS criteria.

Considering the above observations and on perusal of Aeronautical Study Report, the Committee is of the opinion that height of 88.40 mtrs. AMSL as requested by the applicant could be permitted at this location.

Sl. No. 08

Case No. MUM/07/459

M/s. Omega Investment and Properties Ltd.

CTS No. 80 (Pt.), 80/11 to 14, 80/19 to 22, 80/23 to 29, 80/30 (Pt.), 80/31 to 34, 80/35 (pt.) Sub plot (C) of village Chatkopar, Ghatkopar, Mumbai

The site lies at a distance of 4280 mtrs. from ARP of Santa Cruz Airport. The applicant had requested for consideration of grant of height to top elevation of 129.54 mtrs. AMSL at this location. Initially, the applicant had requested for a maximum permissible height of 75 mtrs. AMSL at this location but NOC was not granted by AAI RHQ Mumbai as the site elevation is higher than the permissible elevation. The case subsequently came up for appeal and was earlier discussed in the Appellate Committee Meetings held on 15th January 2010, 22nd June 2010 and 22nd September 2010 wherein the applicant had provided the authenticated documents pertaining to contours of natural terrain in that area as the applicant was requesting in its appeal for shielding benefit from the natural terrain. In the meeting held on 22nd September 2010 after due examination of documents, the Committee concluded that no shielding benefit is applicable to the proposed construction. Thereafter, the applicant requested for Aeronautical Study to be conducted to determine the maximum permissible height at this location since they claimed that the projection of their proposed buildings is only few metres above the contours of the hills falling between the site of the proposed building and the Runway.

AAI team visited the site on 4th February 2011 to verify the location and also to collect correct data for conduct of Aeronautical Study. AAI have now submitted the Aeronautical Study Report No. 07/MUM/2011 for consideration of the Appellate Committee.

On perusal of the Aeronautical Study Report, it is observed that

(i) The proposed construction does not affect the minimum sector altitudes of all the existing procedures.

(ii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iii) The proposed construction does not affect the OCA/H of the VOR Runway 09/27 and Runway 14/32.

(iv) The proposed construction does not affect the OCA/H of SRE Runway 09/14/27.

(v) The proposed construction does not penetrate the OAS for Runway 27 **but the basic ILS surfaces of Runway is penetrated by a margin on 50.15 mtrs.**

(vi) The site is located outside the basic ILS surface of Runway 14 and falls in the missed approach area of Runway 09.

(vii) The Report establishes that even though the proposed height at the location penetrates the basic ILS surface of Runway 27, however, OCA of Runway 09 & Runway 14 are unaffected. Thus the maximum permissible height due G.P. (In-operative) procedure could be upto 85 mtrs. AMSL at this location.

(viii) The maximum permissible top elevation due CNS criteria is however 89.46 mtrs. AMSL because of restriction due to localizer 27.

ix) The maximum permissible top elevation due implementation of proposed RNAV (GNSS) procedures (RNP 0.3) works out to be 70.5 mtrs. AMSL.

Since the proposed RNAV procedures and the detailed reasoning applied for processing of the cases were not available for study by the Committee, the Committee is of the view that the plotting of the proposed RNAV (RNP 0.3 routes guides) and the heights along such routes be plotted on the zoning map of Mumbai Airport and made available for study. Also, in future, such drawings need to be annexed to Aeronautical Study Reports wherever the heights have been restricted due to RNAV (RNP 0.3) procedure.

Sl. No. 09

Case No. MUM/07/478

M/s. Omega Investment and Properties Ltd.

CTS No. 80 (Pt.), 80/30 (Pt.), 80/35, 80/36 to 42, 80/44 (Pt.), 80/45, 80/46, Sub plot (D) of village Chatkopar, Ghatkopar, Mumbai

The site lies in the IHS of Mumbai Airport at a distance of 3104 mtrs. from ARP of Santa Cruz Airport. The applicant has requested for grant of height to top elevation of 131.98 mtrs. AMSL at this location. Initially, the applicant had requested for a maximum permissible height of 75 mtrs. AMSL at this location

but NOC was not granted by AAI RHQ Mumbai as the site elevation is higher than the permissible elevation. The case then came up for appeal and was earlier discussed in the Appellate Committee Meetings held on 15th January 2010, 22nd June 2010 and 22nd September 2010 wherein the applicant had provided the authenticated documents pertaining to contours of natural terrain in that area as the applicant was requesting for shielding benefit from the natural terrain. In the meeting held on 22nd September 2010 after due examination of documents, the Committee had concluded that no shielding benefit is applicable at that site. Thereafter, the applicant requested for Aeronautical Study to be conducted to determine the maximum permissible height at this location since they claimed that the projection of proposed buildings is only few metres above the contours of the hills between the site of the proposed building and the Runway.

AAI team visited the site on 4th February 2011 to verify the location and also to collect correct data for conduct of Aeronautical Study. AAI have now submitted the Aeronautical Study Report No. 06/MUM/2011 for consideration of the Appellate Committee in this meeting.

On perusal of the Aeronautical Study Report, it is observed that

(i) The proposed construction does not affect the minimum visual maneuvering OCA/H of Mumbai.

(ii) The proposed construction does not affect the minimum sector altitudes of all the existing procedures for Mumbai.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR Runway 09/27 and Runway 14/32.

(v) The proposed construction does not affect the OCA/H of SRE Runway 09/14/27.

(vi) The proposed construction does not penetrate the OAS for Runway 27 but the basic ILS surfaces of the Runway 27 is penetrated by a margin on 83.9 mtrs. AMSL.

(vii) The site is located outside the basic ILS surface of Runway 14 and is in the missed approach area of Runway 09.

(viii) Even though the proposed flight penetrates the basic ILS surface of Runway 27, however, OCA of Runway 09 & Runway 14 are unaffected. Thus the maximum permissible height due G.P. (in-operative) procedure at this location would be 87.5 mtrs. AMSL.

(ix) The maximum permissible top elevation due CNS criteria is 89.03 mtrs. AMSL because of restrictions due to localizer Runway 27.

(x) The maximum permissible top elevation due implementation of proposed RNAV (GNSS) procedures (RNP 0.3) works out 70.5 mtrs. AMSL.

Since the proposed RNAV procedures and the detailed reasoning applied for processing of the cases were not available for study by the Committee, the Committee is of the view that the plotting of the proposed

RNAV (RNP 0.3 routes guides) and the heights along such routes be plotted on the zoning map of Mumbai Airport and made available for study. Also, in future, such drawings need to be annexed to Aeronautical Study Reports wherever the heights have been restricted due to RNAV (RNP 0.3) procedure.

Sl. No. 10

Case No. MUM/07/479

M/s. Omega Investment and Properties Ltd.

CTS No. 80 (Pt.), 80/7 to 10, 80/13 to 18, 80/43 (Pt.), 80/44 (Pt.), 80/45 Sub plot (B) of village Chatkopar, Ghatkopar, Mumbai

The site lies in the IHS of Mumbai Airport at a distance of 4240 mtrs. from ARP of Santa Cruz Airport. The applicant has requested for consideration of grant of height to top elevation of 120.12 mtrs. AMSL at this location. AAI (RHQ) Mumbai had issued NOC for top elevation of 48.80 mtrs. AMSL vide their letter No. BT-1/NOCC/CS/MUM/07/479 dated 22.04.2008. The case then came up for appeal and was earlier discussed in the Appellate Committee Meetings on 22nd June 2010 and 22nd September 2010 wherein the applicant had provided the authenticated documents pertaining to contours of natural terrain in that area since the applicant was requesting for shielding benefit from the terrain. In the meeting held on 22nd September 2010, the Committee after examination concluded that no shielding benefit is applicable as contended by the applicant. Thereafter, the applicant requested for Aeronautical Study to be conducted to

determine the maximum permissible height at this location since the projection of proposed buildings is only few metres above the contours of the hills between the site of the proposed construction and the Runway.

AAI team visited the site on 4th February 2011 to verify the location and also to collect correct data for conduct of Aeronautical Study. AAI have now submitted the Aeronautical Study Report No. 07/MUM/2011 for consideration of the Appellate Committee.

On perusal of the Aeronautical Study Report, it is observed that:

(i) The proposed construction does not affect the minimum visual maneuvering altitudes.

(ii) The proposed construction does not affect the minimum sector altitudes of all the existing procedures.

(iii) The proposed construction does not affect the minimum Radar vectoring altitudes.

(iv) The proposed construction does not affect the OCA/H of the VOR Runway 09/27 and Runway 14/32.

(v) The proposed construction does not affect the OCA/H of SRE Runway 09/14/27.

(vi) It is seen that proposed construction does not penetrate the OAS for Runway 27 but the basic ILS surfaces of Runway 27 is penetrated by a margin on 76.54 mtrs.

(vii) The site is located outside the basic ILS surface of Runway 14 and in the missed approach area of Runway 09.

(viii) Even though it penetrates the basic ILS surface of Runway 27, however, OCA of Runway 09 & Runway 14 are unaffected. Thus the maximum permissible height due G.P. (In-operative) procedure at this location would be 85 mtrs. AMSL.

(ix) The maximum permissible top elevation due CNS criteria is 90.34 mtrs. AMSL because of restrictions due to localizer Runway 27.

(x) The maximum permissible top elevation due implementation of proposed RNAV (GNSS) procedures (RNP 0.3) works out to be 70.5 mtrs. AMSL.

Since the proposed RNAV procedures and the detailed reasoning applied for processing of the cases were not available for study by the Committee, the Committee is of the view that the plotting of the proposed RNAV (RNP 0.3 routes guides) and the heights along such routes be plotted on the zoning map of Mumbai Airport and made available for study. Also, in future, such drawings need to be annexed to Aeronautical Study Reports wherever the heights have been restricted due to RNAV (RNP 0.3) procedure.

Sl. No. 11

Study of Inner Horizontal Surface (IHS) – Juhu Airport (Mumbai)

As advised by the Committee in the Appellate Committee meeting on 9th February 2011, AAI conducted the study to determine the feasibility of raising the

height within IHS of Juhu Airport to be same as that of IHS of Mumbai Airport i.e. 56.27 mtrs AMSL as against the present IHS of Juhu Airport at 48 mtrs. AMSL.

The Study Report has been put up to the Committee in this meeting and the detailed discussions were carried out among the Committee members on this Report. The following has emerged:

1) **Status of Juhu Airport**

The study is based on the data on the physical characteristics of the Runway(s) at Juhu Airport as available in the Airport Directory published by AAI. At present the Aerodrome is being used mainly for helicopter operations.

Runway 08/26 is the main runway of Juhu Airport with dimensions as 1143 mtrs. x 30 mtrs. and therefore is categorized as Code-2 Runway.

2) **Status of Runway 16/34 Juhu**

The other Runway at Juhu Airport numbered as 16/34 is aligned at an angle of 340 degree to the approach and take-off path of Runway 09 & 27 respectively of Mumbai and therefore it is not feasible to be used for operational purposes. The Runway is therefore, not in use at present. This Runway in view of the above has not been taken into consideration for this study.

3) **IHS of Runway 08/26 of Juhu**

For Code-2 Runway (non instrument), the radius of IHS circle is based on a radius of 2500 mtrs. centred at the ARP. The same has been drawn on the zoning map of Mumbai Airport placed at Annexure I of the Report

which is attached with these minutes. It is seen that the entire circle, except a very small portion over the water areas, is contained within the IHS of Mumbai Airport.

4) The study has divided the entire IHS of Runway 08/26 of Juhu Airport into two specific areas, namely:

A. **Area 1**

This area is located South of the centerline and extended centerline of Runway 08/26. A major portion of this area falls in the approach surface of Runway 09 and take-off surface of Runway 27 of Mumbai where the restrictions in IHS for Mumbai Airport as contained in provision of S.O. 84 (E) are applicable. Also a portion of this area falls within the approach/transitional surface of Runway 14 and take-off/climb-up surface of Runway 32 of Mumbai Airport where the restrictions as contained in Notification S.O. 84 (E) are applicable for Mumbai Airport.

Due to proximity of Mumbai Airport, circling and traffic circuit at Juhu is restricted to North of Aerodrome only and consequently traffic circuit to South of Juhu is not permitted. Therefore, the criteria of IHS of Juhu is not applicable in the area South of Runway 08/26 as per the provision of para 1.2.3.2 of ICAO Document 9137. The portion of IHS area of Juhu Aiport located South of centerline and extended centerline of Runway 26/08 and North of approach and transitional surface of Runway 09 Mumbai and transitional

surface of Runway 14 shall be applicable as contained in S.O. 84 (E) for IHS/approach surfaces of Mumbai Airport.

B. Area – 2

Portions of the area are located between North of centerline and extended centerline of Runway 26/08, approach surface of Runway 26 and approach & transitional surface of Runway 14. By assuming the aerodrome elevation as 3 mtrs., at the ARP, Juhu, the permissible elevation in IHS is upto 48 mtrs. This area is also located within the IHS of Mumbai Airport where the applicable height of IHS is 56.27 mtrs. AMSL.

Since the minimum circuit altitude of Juhu Airport is 700 ft. AMSL, raising the height in this area of IHS of Juhu Airport upto 56.27 mtrs. AMSL would not impose any penalty on the aircraft operations as the minimum obstacle clearance criteria of 300 ft. for visual circling would be satisfied. Also, a small portion of the area located to the North-East of approach and transitional surface of Runway 14 Mumbai and IHS of Juhu Airport is located within the IHS of Mumbai Airport where the height upto 56.27 mtrs. is applicable, the same height may also be applicable for the IHS of Juhu Airport in this area as well as it does not impose any penalty on the aircraft operations as the circuit height is 700 ft. AMSL.

5) The Report has also taken into consideration the futuristic plans for development of Juhu Airport where the Runway 08/26 is being proposed

to be extended towards the 08 end of the Runway into the sea. In such an eventuality, the present areas in the approach funnel of transitional surface of Runway 26 would remain as it is, and there is no feasibility of implementation of instrument procedures for landing of Runway 26. Also, the proposed expansion of Runway into the sea may change the Code value of the Runway itself and in that case the IHS of Juhu Airport may also get modified. Also keeping in view that IHS is being dispersed into the sea, where no construction would be possible, would in any case as 56.27 mtrs. AMSL would not affect both from safety and regularity aspects for the operations on Runway 08, conducted as IFR flight.

Based on the above, the Report has made the following recommendations:

(i) The criteria of IHS for Juhu shall be applicable only to the North of extended centerline of Runway 08/26. The height of IHS may be raised upto 56.27 mtrs. AMSL. There is no operational penalty and safety and regularity of aircraft operations is fully maintained.

(ii) The approach surface of Runway 16/34 need not be considered for the purpose of NOC as the Runway cannot be used for operation in any combination with respect of Mumbai Airport. For this purpose, a special Committee may be constituted to examine the issue and take final decision.

(iii) To the South of extended centerline of Runway 08/26, the criteria of IHS applicable to Mumbai airport shall be applicable 56.27 mtrs.

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AMSL as visual circling and traffic circuit for Juhu is not permitted in this area.

(iv) No Aeronautical Study shall be conducted within the IHS of Juhu Airport located to the North of approach/transitional surface of Runway 09 Mumbai.

Considering the above recommendations and the findings of the Study Report as well as the findings of the Study Report, the Committee is of the opinion that recommendations made by AAI in the Juhu IHS Study Report may be accepted.

The Committee is also of the view that all NOC cases pertaining to Juhu IHS needs to be examined/assessed based on the recommendations of the AAI Juhu IHS Report and NOC issued by AAI CHQ provided there is no adverse impact for both Juhu and Mumbai Airports and that the requisite fee of Rs. 2 lakhs for each of these cases is deposited to AAI by the concerned applicants. Any other case in Juhu IHS not covered by the above will however, be seen by the Appellate Committee.

(V. Somasundram)
Member(ANS), AAI

(K. Gohain)
Outside Expert

(A.K. Misra)
Outside Expert

(Alok Sinha)
Chairman

New Delhi
Dated : 09.05.2011