



### Agenda Item 3: Reports from Asia/Pacific RMAs and EMAs

#### IDENTIFIED AIRSPACE RISK OCCURRENCES IN INDIAN FIRs

(Presented by Airports Authority of India)

##### SUMMARY

This paper presents the identified airspace risk occurrences in the four Indian FIRs as reported by ATC during the period 1st January to 31st December 2021. The paper also presents the various mitigation measures taken by India.

#### 1. INTRODUCTION

1.1 BOBASMA in addition to its role as an EMA is also the RMA Point of Contact (POC) in India for filing of Large Height Deviation (LHD) reports submitted by the Indian ACCs/OCCs. During the period 1<sup>st</sup> January to 31<sup>st</sup> December 2021 there was report of **1 LLD and NIL LLE** in the BOBASIO airspace. However, there were **100 LHDs** filed by Indian ACCs/OCCs and another **43 LHDs** filed by the accepting ACCs/OCCs adjacent to the four Indian FIRs.

#### 2. DISCUSSION

2.1 **Table 1** is a summary of the Large Lateral Deviations (LLDs) reported by the ACCs/OCCs in the four Indian FIRs during the twelve-month period, January to December 2021.

S. No	Area Control Centre	Number of LLD Reports	LLD Categories
			E
1	Kolkata	1	1
<b>Total</b>		1	1

**Table1:** Summary of LLD Reports.

2.2 **Table 2** gives the categorization of the LLD reports received by BOBASMA during the period, January to December 2021.

Code	Deviation Description	No.
E	Coordination Errors in the ATC-unit-to-ATC-unit transfer of control responsibility.	1
<b>Total</b>		<b>1</b>

**Table 2:** Category of LLD Reports.

2.3 **Table 3** is a summary of the Large Height Deviations (LHDs) reported by the ACCs/OCCs in the four Indian FIRs and those adjacent to and having common FIR boundary with the Indian FIRs, during the period, January to December 2021.

S.No	Area Control Centre	LHD reports Filed	LHD Categories		
			B	D	E
1	Chennai	42		1	41
2	Delhi	1	1		-
2	Kolkata	2			2
3	Kuala Lumpur	15			15
4	Lahore	3			3
5	Male	5			5
6	Mumbai	61	1	3	57
7	Muscat	15			15
8	Sanaa	4			4
9	Yangon	1			1
	<b>Total</b>	<b>149</b>	<b>2</b>	<b>4</b>	<b>143</b>

**Table 3:** Summary of LHD Reports for the period January to December 2021

2.4 **Table 4** gives the explanation of the different Category of LHDs that occurred in the airspace of the four Indian FIRs along with the number of reports in the respective Category.

LHD Category	Definition	Number of Reports	Duration at Incorrect Flight Level in Minutes
B	Flight crew climbing/descending without ATC Clearance	2	0
D	ATC system loop error; (e.g. ATC issues incorrect flight level clearance or flight crew misunderstands flight level clearance message.)	4	0
E	Coordination errors in the ATC to ATC transfer or control responsibility as a result of human factors issues (e.g. Late or non-existent coordination, incorrect time estimate/actual, flight level, ATS route etc., not in accordance with agreed parameters).	143	148
	<b>Total</b>	<b>149</b>	<b>148</b>

**Table 4:** Details of different LHD Categories.

2.5 Of the 2 CAT-B LHDs one (1) occurred in Delhi FIR when flight crew descended aircraft without ATC clearance and crossed through the level of the reciprocal traffic. The other CAT-B LHD occurred in Mumbai FIR, when aircraft initiated emergency descent and crossed through the levels of two other traffic.

2.6 Of the 4 CAT-D LHDs three (3) occurred in Mumbai FIR and one (1) occurred in Chennai FIR when ATC wrongly cleared aircraft to climb/descend overlooking the conflicting traffic.

2.7 Both the CAT-B and CAT-D LHD occurrences were investigated by the Directorate General of Civil Aviation, India (DGCA, India) and remedial action taken.

2.8 A total of **143** CAT-E LHDs were filed of which **100** were filed by the ACCs/OCCs in the four Indian FIRs (**1** Being filed as internal LHD by Mumbai against Ahmedabad ACCs) and the rest **43** were filed by external ACCs/OCCs having common FIR boundary with any of the four Indian FIRs.

2.9 **Table 5** gives the details of the Category – E LHDs reported by the four Indian FIRs and four external ACCs/OCCs having common FIR boundary with an Indian FIR. The FIR boundary between Mumbai/Muscat, Chennai/Kuala Lumpur, Chennai /Yangon were the major LHD hot spots in the year 2021.

Flight Information Region	Number of CAT-E LHD Occurrence	Time Duration (Minutes)	Transferring Unit	Number of Occurrence	Time Duration (Minutes)
Chennai	41	6	Kuala Lumpur	8	0
			Yangon	33	6
Kolkata	2	0	Yangon	2	0
Mumbai	57	88	Ahmedabad	1	0
			Karachi	2	0
			Male	2	0
			Muscat	45	77
			Mogadishu	5	7
Sanaa	2	4			
Kuala Lumpur	15	8	Chennai	15	8
Lahore	3	0	Delhi	3	0
Male	5	11	Mumbai	5	11
Muscat	15	0	Mumbai	15	
Sanaa	4	35	Mumbai	4	35
Yangon	1	0	Kolkata	1	0

**Table 5:** CAT-E LHD Occurrence within Indian FIRs.

2.10 A total of 3 CAT-E LHDs with duration  $\geq 10$  minutes occurred in the oceanic airspace of Mumbai due to coordination errors committed by ACCs/OCCs adjacent to Mumbai FIR.

2.11 A total of 12 CAT-E LHDs with duration  $\geq 5$  minutes are recorded in which 2 happens to be in Chennai Oceanic Airspace and the rest in Mumbai Airspace.

2.12 India as part of its efforts to reduce the risks due to coordination errors and other near boundary ATS incidents had planned to implement AIDC with all the neighboring FIRs. AIDC Test/Trials were conducted during the past one year with many of the neighboring ATSUs. **Table 6** below gives the current status of implementation of AIDC with neighboring FIRs.

S. No	Involved ATS Units		Test/Trial	Date/Month	Remarks
1.	Chennai	Kuala Lumpur	Implemented		LoA signed. ABI, EST, TOC/AOC implemented. CDN with voice confirmation.
2.	Chennai	Male	Implemented		LoA signed in Nov'21 and AIDC Implemented
3.	Chennai	Colombo	Test	November 2015	Trials to commence once issue addressed by Colombo
4.	Chennai	Yangon	Trial	January 2018	Yangon to address issues of incorrect reference number.

S. No	Involved ATS Units		Test/Trial	Date/Month	Remarks
5.	Delhi	Lahore	Trial	March 2021	Identified issues in both the automation systems.
6.	Kolkata	Yangon	Trial	Stopped	Most message exchanges were successful during the trial before it was stopped. LoA also to be signed.
7.	Mumbai	Muscat	Test	March 2021	Identified problems in Indra automation system at Muscat. Muscat informed they would resolve the issue with vendor and revert back for further testing.
8.	Mumbai	Mogadishu	Test	June 2021	Identified minor issues with Mogadishu automation system. Resolution by Mogadishu awaited.
9.	Mumbai	Mauritius	Test	August 2021	Two rounds of testing conducted and identified issues being addressed
10.	Mumbai	Male	Implemented		LoA signed in Nov'21 and AIDC Implemented

**Table 6:** Status of Implementation of AIDC with neighboring FIRs.

2.13 India is ready to conduct AIDC Test/Trials between Chennai-Jakarta, Mumbai-Karachi, Kolkata-Dhaka, Ahmedabad-Karachi and Varanasi-Kathmandu whenever the other adjoining ATSU is ready.

2.14 Pakistan informed that they will take up AIDC testing between Karachi – Mumbai after testing between Lahore-Delhi. Seychelles is the other external FIR still not ready to test AIDC with Mumbai. Once AIDC is successfully implemented between the above mentioned ATSUs in the Arabian sea the number of CAT E LHDs is expected to greatly reduce.

### 3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.

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