



International Civil Aviation Organization

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Twenty-Seventh Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/27)

Video Teleconference, 22 – 25 August 2022

Agenda Item 5: Airspace Safety Monitoring Activities/Requirements in the Asia/Pacific Region

JASMA FURTHER ANALYSIS ON CATEGORY A & B LHD

(Presented by JASMA)

SUMMARY

This paper presents the result of the further analysis regarding Category A and B (Large Height Deviations) LHDs occurred within Fukuoka FIR in 2020 and 2021.

1. INTRODUCTION

1.1 The International Federation of Air Line Pilot's Associations (IFALPA) requested further information about Category A (Flight crew failing to climb/descend the aircraft as cleared) and B (Flight crew climbing/descending without ATC clearance) Large Height Deviations (LHDs) at the 23rd Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/23).

1.2 The protocol and template that RMAs/EMAs ask for supplemental information on LHDs involving pilots/airlines to the International Air Transport Association (IATA) directly, copying IFALPA representatives, were agreed upon at RASMAG/24.

1.3 The Japan Airspace Safety Monitoring Agency (JASMA) presented 5 Category A LHDs occurred within Fukuoka FIR in 2020 at the RASMAG/26 meeting. JASMA highlighted the number of Category A LHD increased compared with the past two years, which were only one occurrence respectively in 2018 and 2019. JASMA also mentioned that the remarkable increase of the Category A LHDs might have been caused by the decreasing opportunities that pilots could operate aircraft under the COVID-19 pandemic.

1.4 IFALPA agreed that decreasing opportunities for pilots to operate aircraft might have contributed and asked whether these events could be categorized by time of day, as fatigue may be a contributing factor due to some operators requiring pilots to fly longer than usual flight hours. JASMA agreed to provide IFALPA with further information.

2. DISCUSSION

2.1 JASMA reviewed 5 Category A LHD events that occurred within the Fukuoka Flight Information Region (FIR) in 2020. **Table 1** presents a summary of the Category A LHD occurrences in 2020, and all events occurred in the daytime of the Japanese Standard Time (JST). There were four events caused by domestic flights, and those flight times until LHD occurrence were within 1 hour. The rest of one event was caused by an international flight, and the flight time until LHD occurrence was approximately 3.5 hours.

	Occurrence Date & Time JST(UTC)	DEP A/P	Estimated Flight Time until LHD	ACFT Type	Occurrence Airspace & ATC Comm	Detail
1	13 JAN 2020 11:09 a.m. (0209z)	RJBB	15 minutes	A333	Continental & VHF	ATC instructed aircraft A to maintain FL290, but aircraft A crossed FL290 and reached FL293.
2	5 APR 2020 09:30 a.m. (0033z)	RJTT	20 minutes	B763	Continental & VHF	ATC instructed aircraft B to climb to FL400 from FL380, but pilots missed the initial operation, and aircraft B descended to FL374.
3	13 APR 2020 02:51 p.m. (0551z)	RJTT	40 minutes	B738	Continental & VHF	ATC instructed aircraft C to climb to FL300 from FL280, but aircraft C crossed FL300 and reached FL307.
4	24 APR 2020 03:37 p.m. (0637z)	RJTT	1 hour	B738	Continental & VHF	ATC instructed aircraft D to descend to FL360 and cross waypoint Z at FL360, but aircraft D did not reach FL360 by waypoint Z and crossed waypoint Z at FL374.
5	31 OCT 2020 04:35 p.m. (0735z)	VTBS	3.5 hours	B748	Continental & VHF	ATC instructed aircraft E to climb to FL350 from FL330, but pilots forgot to climb.

Table 1: Summary of the Category A LHDs within Fukuoka FIR in 2020

2.2 **Figure 1** shows a monthly trend of the number of all altitude flights and RVSM flights within Fukuoka FIR from January to December 2020. The number of flights significantly dropped from February to April 2020, and 3 Category A LHD events occurred in April 2020.

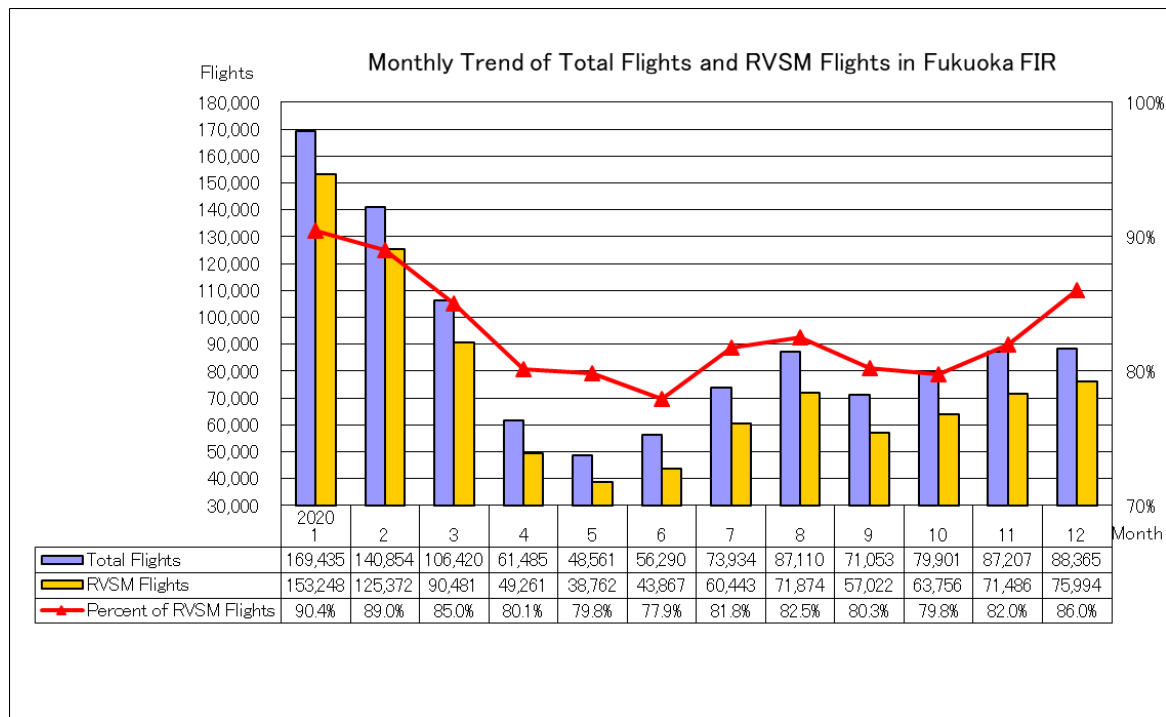


Figure 1: Monthly trend of all altitude flights and RVSM flights within Fukuoka FIR in 2020

2.3 Based on the above analysis, JASMA supposes 4 Category A LHD events caused by domestic flights might be due to the decreasing opportunities for pilots to operate aircraft. On the other hand, the rest of one Category A LHD event caused by international flight might be considered fatigue as one of the contributing factors.

2.4 **Table 2** presents a summary of the Category A and B LHD events that occurred within Fukuoka FIR in 2021. Three events occurred in the daytime of JST and were caused by domestic flights whose flight times until LHD occurrence were within 1 hour. The rest of one event, case 2, was the Category B LHD and occurred in the Pacific Ocean airspace by an international flight whose flight time until LHD occurrence was about 5.5 hours.

	Occurrence Date & Time JST(UTC)	DEP A/P	Estimated Flight Time until LHD	ACFT Type	Occurrence Airspace & ATC Comm	Detail
1	12 FEB 2021 05:38 p.m. (0838z)	ROAH	15 minutes	B738	Continental & VHF	ATC instructed aircraft F to maintain FL350 until waypoint Y, then descend to FL330. But aircraft F left FL350 around 10NM before waypoint Y and crossed waypoint Y at FL330.
2	17 MAR 2021 07:45 a.m. (2245z)	ZGSZ	5.5 hours	A332	Oceanic & CPDLC	Aircraft G climbed to FL370 from FL350 without ATC clearance around the FIR boundary between Fukuoka FIR and Oakland Oceanic FIR.

	Occurrence Date & Time JST(UTC)	DEP A/P	Estimated Flight Time until LHD	ACFT Type	Occurrence Airspace & ATC Comm	Detail
3	21 SEP 2021 07:45 a.m. (2245z)	RJTT	1 hour	B738	Continental & VHF	ATC instructed aircraft H to descend to reach FL340 by waypoint X, but aircraft H crossed waypoint X at FL356.
4	28 DEC 2021 1:08 p.m. (0408z)	RJFO	40 minutes	A320	Continental & VHF	ATC instructed aircraft I to climb to reach FL390 by waypoint W, but aircraft I crossed waypoint W at FL380.

Table 2: Summary of the Category A LHDs within Fukuoka FIR in 2021

2.5 JASMA would not determine 3 Category A LHD occurrences in 2021 were due to the decreasing opportunities for pilots to operate aircraft as the number of domestic flights in Japan has shown a recovery trend since the 3rd quarter of 2020.

2.6 It might be thought as one of the factors of Category A and B LHDs in 2021 that less-experienced pilots who had obtained their license during the less traffic situation were on duty in the current situation that they have never experienced.

2.7 One of the reasons is that 3 Category A LHDs were caused by pilots' failure that they were not able to comply with the altitude restrictions instructed by Air Traffic Controllers. In any case, continued and detailed analysis would be needed.

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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