



International Civil Aviation Organization

ICAO

**Thirtieth Meeting of the Regional Airspace Safety Monitoring
Advisory Group (RASMAG/30)**

Bangkok, Thailand, 14 – 17 July 2025

Agenda Item 4: Airspace Safety Monitoring Documentation and Regional Guidance Material

RASMAG SAFETY BULLETIN ISSUE 03

(Presented by JASMA)

SUMMARY

This paper presents the meeting of the publication of RASMAG safety Bulletin Issue 03. The third issue of RASMAG Safety Bulletin was designed to focus on Operational Large Height Deviations (LHDs) caused by human error in ATC operation. The Safety Bulletin will be published every two years cycle. The third issue is scheduled to be agreed at RASMAG/30 and be released in 2025.

1. INTRODUCTION

1.1 At the Twenty-Second Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG), the International Civil Aviation Organization (ICAO) encouraged States to conduct regular scrutiny meetings with adjacent Area Control Centers (ACCs) to discuss Large Height Deviation s(LHDs), Large Lateral Deviations (LLDs) and Large Longitudinal Errors (LLEs).

1.2 It was agreed at the meeting that the Asia/Pacific Region could develop a safety bulletin from the collaborative scrutiny, in conjunction with the International Air Transport Association (IATA) and International Federation of Air Line Pilots' Associations (IFALPA). The RASMAG Chair also asked that this activity be progressed by the RASMAG Monitoring Agencies Working Group (MAWG).

1.3 The final draft of the first issue of the RASMAG Safety Bulletin presented by the Monitoring Agency for Asia Region (MAAR) was endorsed at the RASMAG/24 meeting in 2019.

1.4 At the RASMAG/26 meeting in 2021, RASMAG Safety Bulletin Issue 02, which was designed to capture some guidance and recommendations provided in the second edition of the ICAO Doc 10037 Global Operational Data Link (GOLD) Manual, was presented and officially published after consultation with RASMAG member States, monitoring agencies, International Organizations and ICAO.

1.5 The original content of the Safety Bulletin Issue 02 was presented to RASMAG/25 by the Pacific Approvals Registry and Monitoring Organization (PARMO).

1.6 The topic of RASMAG Safety Bulletin Issue 03 was not discussed at the RASMAG MAWG/10 meeting in 2023. JASMA expressed internally to MAAR that JASMA considered the Crew/Team Resource Management would be appropriated as the topic of next Safety Bulletin, because COVID-19 had been forced to keep social distance and caused division of human relationships. Crew/Team Resource Management is recognized to be an importance and necessity for strengthen human relationships.

1.7 At MAWG/11 in 2024, JASMA proposed the framework of RASMAG Safety Bulletin to ensure the publication every two years cycle. JASMA also proposed the topic of the Safety Bulletin Issue 3 was the Team Resource Management (TRM). The both proposals were approved at the meeting.

1.8 The framework of the RASMAG Safety Bulletin proposed by JASMA and approved at MAWG/11 was as follows;

- a) Next Safety Bulletin's topics and creator is discussed at MAWG in Even year
- b) Next Safety Bulletin's topics and creator is announced at RASMAG in Even year
- c) Safety Bulletin's draft is presented and discussed at MAWG in Odd year
- d) Safety Bulletin's draft is agreed to publish at RASMAG in Odd year

2. DISCUSSION

2.1 Based on the framework, the topic for the Safety Bulletin 03 and the creator were announced at RASMAG/29 in 2024. JASMA presented the draft of Safety bulletin 03 at MAWG/12 in 2025.

2.2 The draft of the Safety Bulletin 03 is in **Attachment A** for RASMAG's review and endorsement.

2.3 After the revision process was concluded, all RASMAG members were notified via email of its publication on the ICAO APAC website:

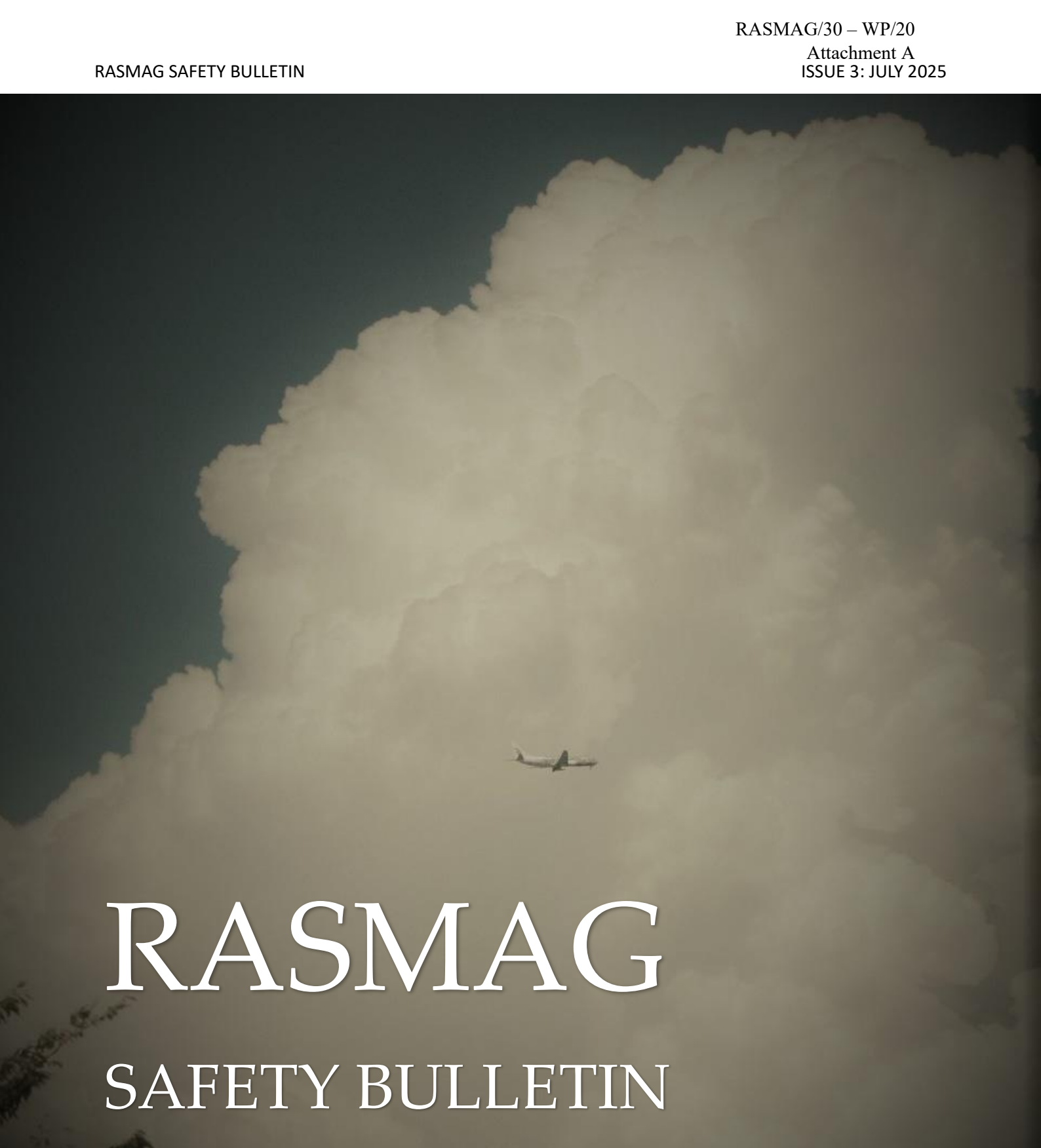
<https://www.icao.int/apac/pages/edocs.aspx> (ATM > Safety Monitoring > RASMAG Safety Bulletin)

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) provide comment or feedback regarding the potential topics for the next bulletin;
- b) discuss any relevant matters as appropriate.

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RASMAG

SAFETY BULLETIN

Regional Airspace Safety Monitoring Advisory Group (RASMAG)

RASMAG was formed by ICAO Asia Pacific Regional Office to centralize the assistance to States and advice on regional airspace safety and monitoring activities involving flight operations and the air traffic services. The primary task of the group is to review the monitoring and safety assessment activities carried out by the regional monitoring agencies established by APANPIRG for implementation and operation of reduced separation minima.

INTRODUCTION

Regional Monitoring Agencies (RMAs) conduct the safety assessment in a designated RVSM airspace by monitoring of aircraft height-keeping performance and analyzing the reporting of the Large Height Deviation (LHD).

The LHDs are a vertical deviation of 300ft or more from an ATC assigned flight level, which categorized into two risks; Operational risk and Technical risk. Mainly Operational LHDs have a negative impact on safety of RVSM.

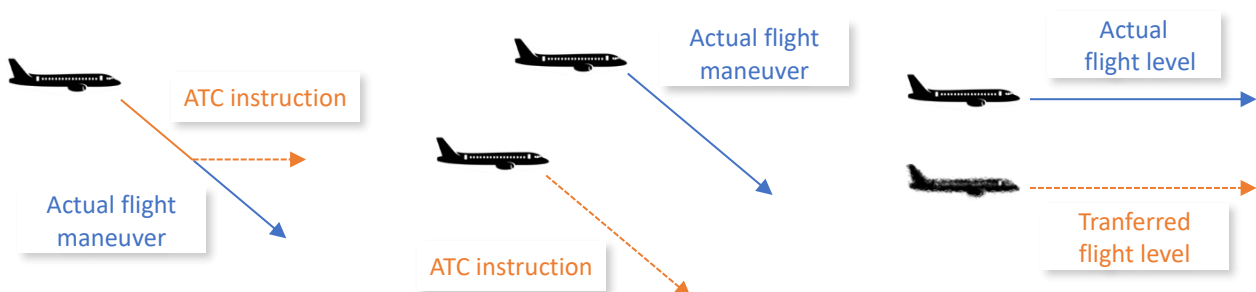
PURPOSE

This bulleting is focusing on the operational LHDs to share their causes and mitigation of the operational LHDs.

TYEP OF OPERATIONAL LHDs

Operational LHDs are caused by human errors, which mainly occur in communication loop between flight crew / controller or in conducting transfer of control between ACCs.

- **The pilot climb/descend to the different altitude of ATC assigned.**
Flight crew misunderstand ATC assigned altitude.
Flight crew did not comply altitude restriction.
- **The pilot climbed/descended without ATC clearance.**
Flight crew of similar callsign mistakenly response the clearance to another aircraft.
Flight crew misunderstood they already received descend clearance.
- **On the transfer of control from ACC to ACC, the altitude of transferred flight was different of informed, or no information.**
Controller forgot to send the transfer information / revision of altitude.



VOICE COMMUNICATION LOOP

ATC communications play a crucial role in ensuring the safety and efficiency in the airspace.

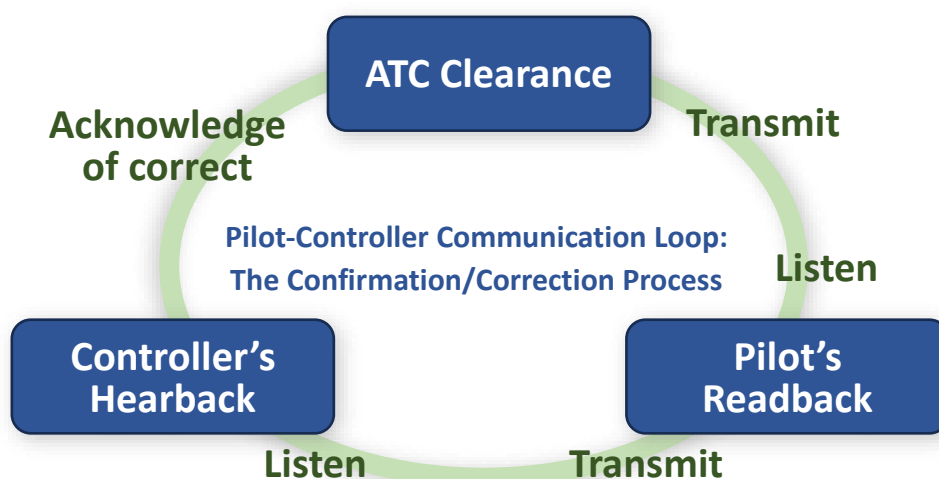
Incorrect or incomplete communications between flight crew / controller become a circumstantial factor in 80% of incidents/accidents. Verbal verification by flight crew in the cockpit and appropriate hearback in ATC operation room can prevent the occurrence of operational LHDs.

Example of Operational LHDs caused by communication loop between Flight crew / Controller

Controller	ABC123, descend and maintain FL310	
Flight Crew	Roger, descend and maintain FL210 , ABC123	
Controller	--- (Hearback error) ---	Negative, descend and maintain FL310
Result	Operational LHD	Prevent occurrence Operational LHD

Controller	ABC123 , descend and maintain FL310	
Flight crew (ABD123)	Roger, descend and maintain FL310, ABD123	
Controller	--- (Hearback error) ---	Negative, we call ABC123
Flight crew (ABC123)	--- (No confirmation) ---	(Confirm call sign ABC123 or ABD123?)
Result	Operational LHD	Prevent occurrence operational LHD

Strict adherence to the pilot / controller communication loop to prevent the occurrence of operational LHD.



HUMAN ERROR

Human error is failures in human performance by slips, lapse and mistakes. Average person is said to makes about one mistake for every 1,000 routine tasks, there are several factors to cause human error. It is impossible to eliminate human error 100%. The key point is to break the chain of errors to prevent occurrence operational LHDs.

Human errors at operational LHDs	Factors cause human errors
In communication loop - Cognitive errors of call sign / altitude - Readback / Hearback error	Similar callsign on same frequency, Workload in voice communication, Wishful thinking and no confirmation, Unclear pronunciation, Distraction due to multi-task, fatigue, etc.
In ACC / ACC coordination - lapses of sending transfer information	High workload, Multi-task, No reminder, No adherence transfer procedure

TRM (Team Resource management)

TRM was introduced into ATC world following the CRM (Crew Resource management) in the airline community. TRM generates better in-depth discussions and strengthen teamwork.

- **To share and study the cases of operational LHDs among ANSP**
 Controller can take the Operational LHDs as a lesson learned.
 Controller are encouraged to make effective assertions spontaneously at hearback error and to conduct double-checks as a team.
 Controller pay more attention on communication loop and improve voice communication skills.
- **To hold meetings to exchange operational procedure and flight operation between Flight crew / Controller**
 Flight crew / Controller have an opportunity to review potential threat / risk in the voice communication loop by sharing operational LHDs cases.
 Flight crew / Controller can deepen mutual understanding about the aircraft performance and ATC procedure, which support to mitigate the occurrence of operational LHDs.
- **To hold a bilateral meeting between ACCs to exchange opinion about operational issues.**
 Controller can recognize operational issues between two ACCs to explore counter measure for reducing the human errors and the operational LHDs on transfer of aircraft.