



ICAO

International Civil Aviation Organization
**Twenty-Fifth Meeting of the Regional Airspace Safety
Monitoring Advisory Group (RASMAG/25)**

Video Teleconference, 27 – 30 October 2020

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

CHANGES TO GLOBAL GUIDANCE RELATED TO REPORTED LHDS

(Presented by the United States/PARMO)

SUMMARY

This paper presents a summary of changes made to ICAO Doc 10037, Global Operational Data Link (GOLD) Manual. These changes were highlighted during the RASMAG/24 in reference to reported Large Height Deviation (LHD) reports.

1. INTRODUCTION

1.1 The Pacific Approvals Registry and Monitoring Organization (PARMO) presented the 2018 vertical safety monitoring report for Pacific airspace to RASMAG/24 (RASMAG/24 WP/10). This report contained summaries of reported LHDS in which phraseology was an issue. The report mentioned that these LHDS served as examples to support upcoming changes in recommended phraseology in global guidance material (Doc 10037). This information summarizes the relevant changes.

2. DISCUSSION

2.1 There are significant changes to the Controller – Flight Crew (CPDLC) Communications paragraph (paragraph 3.3) in the upcoming second edition of Doc 10037. The guidance document emphasizes the importance for both flight crews and controllers to use only standard message elements:

Note.— The use of standard message elements is intended to minimize the risk of input errors, misunderstandings, and confusion, and facilitate use by a non-native English speaking flight crew. The use of standard message elements allows the aircraft and ground systems to automatically process the information in the messages that are exchanged. For example, the ground system can automatically update flight plan data for route conformance monitoring, and both aircraft and ground systems can associate responses to messages.

2.2 Specific guidance to pilots has been added on reading the CPDLC messages received from controllers:

3.3.1.3 Both pilots should individually and silently read each CPDLC uplink message from the flight deck displays (including the uplink time stamp) and discuss prior to responding to and/or executing any clearance. Reading the message aloud would bias the other flight crew member and could lead to the error of ‘reading’ what was read aloud as opposed to what was actually displayed. The procedure of reading a message individually and then conferring is critical to preventing errors due to pilot expectations, particularly with complex or conditional clearances.

Note.— Ensuring the correctness of the uplink time stamp is especially important when receiving an unsolicited uplink clearance.

3.3.1.4 Each pilot should individually review a CPDLC downlink message before the message is sent. Having one pilot input the message and the other pilot review the message before it is sent provides an adequate level of situational awareness comparable to or better than voice communication.

3.3.1.5 The flight crew should coordinate uplink and downlink messages using the appropriate flight deck display, not the information from the flight deck printers. The printers may not produce an exact copy of the displayed CPDLC messages with required reliability.

2.3 Section 3.3.5 provides clarifications for controllers and pilots concerning the use of CPDLC uplink elements containing “EXPECT”.

3.3.5.1 The controller should use the EXPECT message elements:

- a) when responding to a flight crew request using the appropriate message element provided in Table 3-2; or
- b) when procedurally required to advise the flight crew using the appropriate message element provided in Table 3-3.

Note 1.— While EXPECT message elements can be useful for planning purposes, they can lead to operational errors when pilots mistakenly interpret them as a clearance.

Note 2.— The FANS 1/A CPDLC message set contains EXPECT uplink message elements that the controller should NOT use because of potential misinterpretation in the event of a total communication failure. See Appendix A, A.6 for specific uplink message elements that should not be used.

3.3.5.2 The flight crew should NOT comply with an EXPECT message as if it was a clearance. An exception is when the EXPECT message element is received as part of an ATC departure clearance where compliance may constitute part of the radio communication failure procedure (RCF).

2.4 The vertical clearances paragraph has been revised to provide guidance for both the pilot and controller in their use.

3.3.6.1 A conditional clearance is an ATC clearance given to an aircraft with certain conditions or restrictions such as changing a flight level before or after a time or place. While conditional clearances add to the operational efficiency of the airspace, they have been associated with a large number of operational errors. Conditional clearances require special attention by the data link user, particularly for a non-native English speaking data link data link user.

3.3.6.2 The controller should only use conditional clearances after determining that the operational efficiency outweighs the risk of a missed condition on the clearance.

3.3.6.3 To aid in reducing errors when receiving conditional clearances, the flight crew should emphasize:

- a) each flight crew member individually reading the uplinked clearances; and
- b) briefings with augmented crews (see 3.3.1.8).

3.3.6.4 When a vertical clearance contains a constraint for starting the climb or descent, the controller should precede the conditional vertical clearance with LVLU-5 MAINTAIN (*level*)

2.5 Another paragraph new to the 2nd edition and related to reported LHDs is paragraph 3.3.10, Clearance Negotiation.

3.3.10 Clearance negotiation

3.3.10.1 If a clearance request contained in a CPDLC message cannot be issued, the controller should send RSPU-1 UNABLE to deny the request and include any reason for the rejection when relevant. Additionally, the controller should investigate whether an alternative clearance can be sent as follows:

3.3.10.1.1 If the controller deems that the flight crew is likely to accept an alternative clearance (intermediate level or deferred climb), the controller may uplink the clearance in the same message or in a separate CPDLC message.

3.3.10.1.2 If the controller deems that the flight crew might not be able to accept any alternative clearance (higher level or route modification), the controller should negotiate the clearance with the flight crew prior to issuing it.

3.3.10.2 When negotiating a higher or lower altitude, the data link user should use the appropriate standard message (e.g., LVLU-30 WHEN CAN YOU ACCEPT (*level single*), LVLD-15 WE CAN ACCEPT (*level single*) AT TIME (*time*)).

3.3.10.3 The flight crew should recognize that the negotiation referenced in 3.3.11.4.2 and 3.3.11.2 does not constitute a clearance (even when the option under negotiation could be accepted immediately).

2.6 There are several example dialogues in this paragraph, a few of the 2018 reported LHDs to RASMAG/24 were similar situations:

Example 1

The aircraft is maintaining FL330. The controller is unable to issue the requested clearance and issues an alternative clearance to a flight level that is lower than requested.

Flight crew	LVLD-2 REQUEST CLIMB TO FL370
Controller	RSPU-1 UNABLE SUPU-2 DUE TO TRAFFIC LVLU-6 CLIMB TO FL360
Flight crew	RSPD-1 WILCO or RSPD-2 UNABLE

Flight crew	LVLD-2 REQUEST CLIMB TO FL370
Controller	RSPU-1 UNABLE SUPU-2 DUE TO OPPOSITE DIRECTION TRAFFIC
Controller	LVLU-6 CLIMB TO FL350. LVLU-24 REPORT MAINTAINING FL350
Flight crew	RSPD-1 WILCO or RSPD-2 UNABLE

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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