

# Clarification of CPDLC clearances

## Background

Among the discussions at the 45th meeting of ICAO's North Atlantic Systems Planning Group (NAT SPG) were those dealing with a number of safety concerns arising from a mis-interpretation of some elements used in Controller Pilot Data Link Communications (CPDLC). The use of CPDLC is intended to improve safety by reducing the need for messages to be passed via HF voice communications. Set out below are a series of clearances that typically have caused confusion.

## CPDLC instructions to climb or descend at or by

*There have been a number of cases where flight crews have not properly executed CPDLC clearances which contain the words "AT" or "BY". These errors present safety concerns since the clearances containing these words are essential for maintaining separation in Oceanic airspace and there is an obvious potential for loss of separation events as a result*

Message	Message intent
<b>AT (time) CLIMB TO AND MAINTAIN (flight level)</b>	Instruction that at or after the specified time, a climb to the specified FL is to commence and once reached the specified FL should be maintained
<b>AT (position) CLIMB TO AND MAINTAIN (flight level)</b>	Instruction that after passing the position specified, a climb to the specified FL is to commence and once reached the specified FL should be maintained
<b>AT (time) DESCEND TO AND MAINTAIN (flight level)</b>	Instruction that at or after the specified time, a descent to the specified FL is to commence and once reached the specified FL should be maintained
<b>AT (position) DESCEND TO AND MAINTAIN (flight level)</b>	Instruction that after passing the position specified, a descent to the specified FL is to commence and once reached the specified FL should be maintained
<b>CLIMB TO REACH (flight level) BY (position)</b>	Instruction that a climb to the specified flight level is to commence at a rate that the specified FL is reached before the position specified
<b>CLIMB TO REACH (flight level) BY (time)</b>	Instruction that a climb to the specified flight level is to commence at a rate that the specified FL is reached at or before the time specified

**Message****Message intent****DESCEND TO REACH (flight level) BY (position)**

Instruction that a descent to the specified flight level is to commence at a rate that the specified FL is reached before the position specified

**DESCEND TO REACH (flight level) BY (time)**

Instruction that a descent to the specified flight level is to commence at a rate that the specified FL is reached at or before the time specified

**CPDLC requests for confirmation of the next or ensuing waypoint**

*From time to time ATC receives information that a flight is about to commit a gross navigation error especially those at oceanic entry. In this case you may receive one of the two following CPDLC messages. Experience has shown that there is some ambiguity in the word "ENSUING" which has led to some confusion and accordingly crews should review the meanings of the messages to ensure the correct response is made.*

**Message****Message intent****CONFIRM NEXT WAYPOINT**

Instruction to confirm the identity of the next waypoint

**CONFIRM ENSUING WAYPOINT**

Instruction to confirm the identity of the waypoint that follows the next waypoint

**CPDLC requests for offsets or deviations**

*Each of these messages will require ATC to protect different amounts of airspace. The parallel offset requests and parallel weather deviation all make reference to specified, defined routes. In contrast the final example is not a defined route request but a request for a defined amount of airspace. Accordingly, when ATC responds with the clearance (CLEARED TO DEVIATE UP TO (direction) (distance offset) OF ROUTE) the full potential airspace required for the deviation will be protected.*

**Message****Message intent****REQUEST OFFSET (direction) (distance) OF ROUTE**

Request that a parallel track, offset from the cleared track by the specified distance in the specified direction, be approved.

**AT (position) REQUEST OFFSET (direction) (distance) OF ROUTE**

Request that a parallel track, offset from the cleared track by the specified distance in the specified direction, be approved from the specified position.

**AT (time) REQUEST OFFSET (direction) (distance) OF ROUTE**

Request that a parallel track, offset from the cleared track by the specified distance in the specified direction, be approved from the specified time.

**REQUEST WEATHER DEVIATION UP TO (direction) (distance offset) OF ROUTE**

Request for a weather deviation up to the specified distance off track in the specified direction

**REQUEST WEATHER DEVIATION TO (position) VIA (route clearance)**

Request for a weather deviation to the specified position via the specified route

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