DENMARK

AIC A
05/23

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30 NOV 2023

AIC A 05/23. Controller-pilot data link communication (CPDLC) in KØBENHAVN FIR.

(Replaces AIC A 05/22).

1. Introduction

November 30 2023 Naviair will extend the use of CPDLC in COPENHAGEN AREA.

Naviair offers controller-pilot data link communication as part of the en-route service for Aeronautical telecommunication network (ATN) via VHF data link Mode 2 (VDL M2) equipped aircraft. The concept is based on the specification included in COMMISSION REGULATION (EC) No 29/2009.

The CPDLC application provides a means of communication between the air traffic controller and the pilot, using a predefined data link message set. This application includes a set of clearance/information/request message elements which correspond to the phraseologies used in the radiotelephony environment. Aircraft logging on CPDLC will be immediately connected in the system.

CPDLC services are guaranteed for aircraft operating above FL285.

CPDLC services are available for aircraft operating below FL285.

CPDLC services are available for aircraft operating within KØBENHAVN TMA.

CPDLC services are <u>not</u> available for aircraft operating within other TMAs located within KØBENHAVN FIR.

The following CPDLC services are provided in KØBENHAVN FIR:

- Data link initiation capability (DLIC)
- ATC clearances and instructions (ACL)
- ATC communications management (ACM)
- ATC microphone check (AMC)

2. General

In all CPDLC communications, the highest standard of discipline shall be observed at all times.

If uncertainty arises regarding a data link message, voice communication shall be used to clarify the situation.

CPDLC shall only be used for non-time-critical requests, i.e. requests that do not require the immediate reaction of the controller. Nevertheless, as in radiotelephony, the CPDLC messages shall be answered with the least possible delay. If the downlink request is cut off because the time limit was exceeded, the pilot shall repeat the request via radiotelephony.

Pilots should be aware that the total turn-around time for an airborne initiated CPDLC dialogue may be up to more than four (4) minutes and for a ground initiated dialogue up to two (2) minutes; hence, voice communication will be used for any communication requiring an immediate response and/or action.

Voice read-back is not required for any CPDLC instruction.

3. Flight Plan

In order to use the CPDLC services, pilots shall file the following in the respective items of their flight plan:

- Item 10a - J1 for the CPDLC ATN VDL Mode 2 capable aircraft;
- Item 18 - the indicator CODE/ followed by the aircraft 24-bit address expressed in the form of alphanumerical code of six hexadecimal characters.

4. CPDLC use

In KØBENHAVN FIR voice communication and/or radiotelephony instructions have priority over CPDLC instructions at all times. However, a clearance requested via CPDLC should subsequently be issued via CPDLC and a clearance requested via radiotelephony should also be issued via radiotelephony.

Clearances shall not be executed until the *WILCO* message has been sent.

5. DLIC log-on

The data link address for ACC København is **EKDK**.

CPDLC shall be established in due time to ensure that the aircraft is communicating with the appropriate ATC unit. Log-on shall be initiated by the pilot. Pilots shall log-on using their ICAO call sign as filed in the flight plan. Pilots shall not use a two-letter IATA flight ID, neither insert a leading zero (0) into the call sign, as these actions will result in a failed log-on.

Log-on should be initiated 10 to 15 minutes prior to entry into KØBENHAVN FIR airspace.

Aircraft departing from an aerodrome in close proximity to KØBENHAVN FIR can log-on when still on the ground, if ACC København is the first CPDLC-capable unit.

6. CPDLC services

The controller or pilot shall construct CPDLC messages using the pre-defined message set. The following tables list the standard CPDLC messages available for exchange in KØBENHAVN FIR, with appropriate operational responses.

6.1 ATC communications management (ACM)

When an aircraft is transferred by data link to an adjacent sector/ATC unit, the pilot shall acknowledge the instruction using data link by WILCO and shall then contact the next sector/ATC unit by voice communication on the instructed channel.

ACM Messages

ATC message element	Pilot Response
CONTACT [unit name] [frequency]	WILCO, or UNABLE [+ DUE TO WEATHER], or UNABLE [+ DUE TO AIRCRAFT PERFORMANCE], or STAND BY

6.2 ATC clearances and instructions (ACL)

Aircraft, which have logged on, may receive an ATC instruction via data uplink messages. Pilots may request changes to flight levels (ascend or descend) or clearance direct to a point on their route via data downlink messages.

ACL Messages

ATC message element	Pilot Response
MAINTAIN [level]	WILCO, or UNABLE [+ DUE TO WEATHER], or UNABLE [+ DUE TO AIRCRAFT PERFORMANCE], or STAND BY
CLIMB TO [level]	
DESCEND TO [level]	
PROCEED DIRECT TO [position]	
FLY HEADING [degrees]	
SQUAWK [code]	
SQUAWK IDENT	
CLEARED TO [position] VIA [routeClearance]	

Pilot's Message Element		ATC Response
REQUEST [level]	[+ DUE TO WEATHER], or [+ DUE TO AIRCRAFT PERFORMANCE]	[corresponding approving instruction], or UNABLE, or STAND BY or REQUEST AGAIN WITH NEXT UNIT
REQUEST CLIMB TO [level]		
REQUEST DESCEND TO [level]		
REQUEST DIRECT TO [position]		

6.3 Free Text message

Free Text message from Aircraft to ATC:

The system supports the reception via data link of a CPDLC Free Text message from the pilot. No operational answer is required from ATC.

Free Text message from ATC to Aircraft:

The system provides the controller with the possibility to send a CPDLC Free Text message. This text is pre-formatted and offline defined.

No response from Aircraft is required.

ATC to Aircraft	Aircraft to ATC
Pre-defined messages, set offline	Pilot will compose own text

6.4 ATC microphone check (AMC)

A "check stuck microphone" instruction may be sent by ATC in circumstances where an aircraft is inadvertently blocking a voice communication channel.

If the "check stuck microphone" instruction relates to the RTF channel currently being used, the pilot shall check that their radio equipment is not causing the blockage. If the "check stuck microphone" instruction does not relate to the RTF channel being used, no further action by the pilot is required

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AMC Messages

ATC Message Element	Pilot´s Response
CHECK STUCK MICROPHONE	NIL

Emergency and Distress Messages

Pilot's Message Element	ATC Response
PAN PAN PAN	ROGER
MAYDAY MAYDAY MAYDAY	
CANCEL EMERGENCY	
SQUAWKING 7500	ROGER 7500

6.5 Message Restrictions and Error Management

If the ground system receives a message that is not supported, or constitutes an error to the technical rules for CPDLC communication, flight crew will receive an automatic reply indicating the nature of the error and, if applicable, required actions.

CPDLC implementation in KØBENHAVN FIR contains only messages as listed in section 6.1 - 6.4. All other messages will be replied to with an error message.

6.6 Voice interruption of CPDLC dialogue

When using voice communication to correct an unanswered CPDLC message, the controller shall initiate voice communication using the phrase:

DISREGARD CPDLC (message type) MESSAGE, BREAK, REPLY WITH UNABLE

and deliver the correct clearance within the same transmission. The pilot shall reply to the CPDLC message with an "UNABLE" message and respond by voice communication to the clearance received by voice.

6.7 CPDLC Imposed Silence

In order to contain the sector workload, controllers may require all stations or a specific flight to avoid sending CPDLC requests for a limited period of time. For imposing or revoking CPDLC silence the following phrases, either as a voice or a CPDLC message shall be used:

ALL STATIONS (or [call sign] as applicable), STOP SENDING CPDLC REQUESTS [UNTIL ADVISED] [(reason)].

ALL STATIONS (or [call sign] as applicable), RESUME NORMAL CPDLC OPERATIONS.

6.8 CPDLC Failure

When alerted that CPDLC has failed, the controller will inform all stations under sector jurisdiction, using the following phrase:

ALL STATIONS, CPDLC FAILURE, [identification of the calling station].

Some failures may result in termination of the existing data link connections with aircraft that are under control of a sector. In this case, it will not be possible for ATC to re-initiate dialogues via CPDLC unless the pilot re-initiates the data link logon process in order to re-establish data link connection. Controller will inform aircraft under his jurisdiction when the CPDLC service is restored, using the following phrase:

ALL STATIONS, RESUME NORMAL CPDLC OPERATIONS.

In case of a CPDLC failure, CPDLC clearances that have not yet been confirmed shall be repeated over voice communication and/or confirmed. If either the pilot or ATC consider that CPDLC should not be used in the prevailing circumstances, CPDLC shall be suspended or terminated and the other party shall be informed by voice communication.

In case of a scheduled shutdown or an unexpected failure of the CPDLC system, ATC will instruct all aircraft equipped with data link to return to voice communication. In case of an on board failure of CPDLC, the pilot shall return to voice communication and inform ATC.

7. Log-off

Log-off is automatic on leaving KØBENHAVN FIR airspace, no pilot action is required. Between KØBENHAVN FIR and adjacent CPDLC equipped ATC units the ACM service will be used.

(NAVIAIR)