
Subject: Controller Pilot Data Link Communications - Departure Clearance (CPDLC-DCL)

Introduction

On Jun 23, 2016, the 747 fleet will begin using CPDLC to receive departure clearances at DTW. This system increases flexibility by allowing the FAA/ATC to uplink FMC-loadable route revisions during changing weather and airspace conditions.

CPDLC-DCL will replace domestic ACARS PDC Clearances at 50+ US airports throughout 2016 on CPDLC equipped aircraft. Delta 777s and 767-400s (and various other airlines fleets) have been using CPDLC-DCL at other stations, including JFK and LAX. DTW will be the 30th airport to get DCL capability. Once a station converts to CPDLC, participating aircraft will no longer have access to PDC clearances at that station. The backup for CPDLC-DCL is to revert to voice.

Flight crews will log on to CPDLC using the station code, i.e., KDTW, versus requesting a PDC. Note that CPDLC-DCL is not the "ACARS DCL" DEPARTURE CLX utilized at many Asian and European airports. Basic clearance information such as transponder, departure frequency, and runway/SID/transition changes will be displayed as text. Infrequently, if a route change beyond the SID/transition is provided, a LOAD prompt will be displayed.

All CPDLC-DCLs will have an ACCEPT prompt on the last page of the clearance. Only clearances that contain a LOADable route (less than 10%) will display a LOAD prompt just above the ACCEPT prompt. Once the clearance is accepted, the ACCEPT prompt will disappear. The LOAD prompt is always available to load or reload the route as desired.

The following expanded procedures will be incorporated into a future VOL 1 change.

Establishing a CPDLC Connection

The flight crew must establish a CPDLC connection with the station, i.e., KDTW. Logon should be completed no later than 30 minutes prior to departure.

ATC keySelect

LOGON/STATUS Displayed

DATA LINK status (6R)READY

LOGON TO (1L) Enter airport code (i.e., KDTW)

FLT NO (i.e., DAL275) (2L)Verify

Use format DALxxxx where xxxx is the flight number. Do not enter any leading zeros or spaces.

TAIL NO (i.e., N663US) (3L)Verify (automatically loads)

LOGON SEND (1R)Select

The ATC COMM ESTABLISHED scratchpad message will display.

No further action is required; the clearance will uplink automatically when available. If the ATC COMM

ESTABLISHED scratchpad message is not displayed by 20 minutes prior to scheduled departure time, revert to voice and contact Clearance Delivery.

When the DCL is Received

Receipt of an uplinked CPDLC message is indicated by ATC MESSAGE on the Upper EICAS and a chime.

Unlike a PDC or ACARS DEPARTURE CLX, which can only be sent once, ATC can send revised DCLs during taxi out to help expedite departures. Additionally, LOADable routes reduce key strokes to eliminate typing errors.

During testing, an occasional anomaly with FMC message printing of a DCL was identified. In rare cases, the printed message was illegible. Since this clearance is uplinked directly to the FMC by ATC, paper copies are not required if this anomaly is encountered. If the printed message is illegible, the uplinked ATC clearance may still be accepted by the operating crew. Ensure all pages are thoroughly reviewed. If the clearance or routing is in doubt, contact ATC to resolve the discrepancy.

CAUTION: The CPDLC terminology is different from AIM terminology. Some of the new terminology is not intuitive; therefore, the crew must be attentive to these changes.

AIM Terminology	CPDLC Terminology
Cleared As Filed	Then As Filed
Revised Initial Route Clearance	Via Route Clearance
Full Route Clearance	Cleared Route Clearance

Operational Procedures

PF/PM should be present to accept the clearance.

- ATC keySelect
- Uplink messagePrint
- Uplink message Review independently and silently
- STANDBY (4L) (as needed)Select
- LOAD prompt (4R) (if displayed)Select
- Compare the FMC contents
with the clearance Accomplish
- DEP ARR keySelect
- Runway, SID, transition Verify/Select

CAUTION: SID/transitions are not part of a loadable DCL clearance. Reinsert the cleared SID/transition every time a route is loaded.

- FMC route discontinuities Close

Note: Prior to selecting the EXEC key, crews can view the route modification on the ND, RTE, and LEGS pages.

- ACCEPT prompt (5R)Select

Note: Use the REJECT prompt only when a scratchpad message UNABLE TO LOAD or PARTIAL CLEARANCE displays, an unresolvable route discontinuity exists, or the ATC clearance is not acceptable. Revert to voice if clearance is rejected.

- MCDU EXEC key (if a new SID/route loaded)Select

Note: ATC reroutes of SID/transitions, or other close in fixes, are not uncommon and should be accepted. For significant route changes, contact the dispatcher for route/fuel legality and to obtain a new wind package.

PF/PM verify ATC clearance. Refer to Volume 1, NP.12, Clearance Verification Procedures.

If the ATC clearance and/or route is not acceptable:

REJECT prompt (5L) Select

Note: DUE TO prompts (1L and 1R) are not supported. An automatic SERVICE UNAVAILABLE message will be uplinked if these keys are selected.

Note: Do not enter free text on lines 2 - 4. Entry will result in the ground system sending the auto reply MESSAGE NOT SUPPORTED BY THIS ATS UNIT.

VERIFY prompt (6R) Select

RESPOND SEND (5R) Select

ROUTE key Select

ERASE prompt (6L) Select

Note: Removes revised ATC clearance from the FMC.

Clearance Delivery Contact via voice

CPDLC Termination

Domestic enroute CPDLC is not supported at this time. Ten minutes after takeoff, expect the MCDU scratchpad message ATC COMM TERMINATED indicating termination of the CPDLC connection.

Summary

CPDLC-DCL clearances will replace PDCs at domestic airports.

- Review the clearance (Select, Print, Review, Load, Decide, Execute).
- LOAD prompt, if displayed, always remains available and can be selected to reload a route.
- Verify/load the SID/transition.
- Close route discontinuities.
- Verify departure instructions (heading, altitude, airspeed, frequencies, squawk).
- Any clearance **MAY** include a revised SID/transition.
- A LOADable DCL **WILL** always require selection of a SID/transition.
- When a clearance is loaded but not executed, the revised route can be viewed on the ND.

- Once a LOAded clearance is executed, new winds may be required.
- Dispatcher approval and wind updates for fixes prior to the Top of Climb are generally not required.
- Winds for new fixes will be available after the dispatcher uplinks a revised flight plan.
- All pilots should view and confirm DCL clearances on the MCDU.
- FMC printing of a DCL does not always produce an exact copy of the clearance.
- A paper copy of the DCL is not required (similar to receiving a PDC with the printer inop).
- Check FMC mileage and destination fuel against the flight plan for reasonableness. Contact the dispatcher if fuel or routing is a concern.

747-400 Website Reference Material

Pilots are strongly encouraged to review the Departure Clearance via CPDLC presentation located on Deltanet on the 747-400 fleet page under TRAINING, Reference Material, Operations.

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