PRE FLIGHT

- Flight Number & Tail Number (a/c registration) in the ATC LOGON/STATUS page must match the flight plan.

- HF serviceability check, has to be carried out on ground.

AFN LOG ON

- The AFN addresses applicable in the NAT region are:
  - Reykjavik OAC BIRD
  - Shanwick OAC EGGX
  - Gander OAC CZQX
  - New York OAC KZWY
  - Santra Maria OAC LPPO
  - Bodo OAC ENOB

- LOG ON to the appropriate FIR 15 to 45 min prior to the boundary. 15 to 25 min in case of Reykjavik.

- Shanwick system will be configured to reject AFN logons from flights that have not been issued oceanic clearances and from westbound flights that will proceed into or transit the Madrid FIR.

- Uplink message for LOG ON will normally be established while entering OCA. If during this time LOG ON is rejected, try to LOG ON again, if unsuccessful, proceed as per voice communication.

- CPDLC transfer to adjacent ATSUs offering CPDLC services should be automatic. Normally, the transfer will occur at or shortly before crossing the OCA/FIR boundary.

- When the ATSU intends the transfer to take place after OCA/FIR boundary, preformatted free text message EXPECT CPDLC TRANSFER AT (time) is displayed.

- When a flight does not receive preformatted free text message (006) as above and crosses an OCA/FIR boundary without the active center changing, to reflect the transfer, flight crews should manually disconnect and logon to the appropriate ATSU.

- When exiting a CPDLC OCA/FIR into a non CPDLC OCA/FIR flight crews should expect the Active Centre to terminate the CPDLC connection, leaving the aircraft with no CPDLC connectivity.
INITIAL CONTACT WITH CTA

If flight will Exit CTA into Oceanic and Remote Airspace:

- On initial contact through VHF/HF Flight crew should use data link term CPDLC and request SELCAL check. See the following examples:

- West bound flight about to enter Shanwick CTA with CPDLC (*CPDLC includes CPDLC and ADS*):
  - Shanwick Radio, Pakistan 123, C-P-D-L-C, Gander Next, Request SELCAL Check CLBJ

- East bound flight about to enter Gander CTA with ADS-C only:
  - Gander Radio, Pakistan 123, A-D-S, Shanwick Next, Request SELCAL Check CLBJ

- ATC will acknowledge with:
  - SELCAL check.
  - Frequency assignment for CDA (Current Data Authority).
  - Frequency and changeover point for NDA (Next Data Authority).
  - No voice communication required in his FIR.

- No position sending is required from CPDLC, as it is automatically done through ADS WPR, until or unless ATC has requested.

If flight will Exit CTA into Continental (Domestic) Airspace:

- On automatic changeover e.g. from Shanwick (CDA) to Gander (NDA), contact the appropriate centre on acknowledged **HF frequency**.

- Use the appropriate data link term (**CPDLC**) after the aircraft call sign.

- State the **track letter if** operating on the Organized Track System (**OTS**).

- State the **last two Oceanic exit fixes** on random route, (operating outside the **OTS**) e.g. SCROD, VALIE.

- Request the **SELCAL check**.

- Do not include a position report.

- E.g. West bound flight about to enter Gander CTA with CPDLC operating on OTS:
  - Gander Radio, Pakistan 123, C-P-D-L-C, Track D, Request SELCAL Check CLBJ

- E.g. West bound flight about to enter Gander CTA with CPDLC on Random Route:
  - Gander Radio, Pakistan 123, C-P-D-L-C, SCROD VALIE, Request SELCAL Check CLBJ
ONBOARD SYSTEM FAILURE

In the event of an onboard systems failure which prevents CPDLC, ADS WPR:

- For a failure/termination prior to initial contact, do not use the phrase "ADS", "CPDLC" after the aircraft call sign.

- Resume normal voice communications, including providing all subsequent position reports via voice.

- Do not inform aeradio that the service has been terminated.

- Inform company Operations Department in accordance with established problem reporting procedures (technical log plus debriefing report).

- Flight crews should not ask aeradio questions regarding the status of the ADS or CPDLC connections.

- Should ATC fail to receive an expected ADS WPR, they will request a voice report.

LEAVING NAT AIRSPACE

- When leaving NAT airspace, flight crews should comply with all communication requirements applicable to the airspace being entered.

- If no domestic frequency assignment has been received by 10 minutes prior to the entry into domestic airspace, contact aeradio through voice and request the frequency, stating the oceanic exit fix.

CPDLC MESSAGES

- Where possible, use defined message elements rather than free text messages. These messages are specified in the booklet provided to the crew (Guidance Material for ATS Data Link Services in North Atlantic Airspace).

- The flight crew should initiate voice contact to clarify the meaning or intent if an unexpected or illogical response is received to a CPDLC downlink message. In the event of receiving a CPDLC clearance which is not clearly understood, the message should be rejected and an UNABLE response sent. The intent of the message should then be confirmed by voice.

1) OPEN & CLOSED MESSAGES

- A message that does not contain a message element that requires a response is a closed message.

- An open message contains at least one message element that requires a response. Once the response is received, the message becomes closed. Although an acceptable response for some message elements, “STANDBY”, will not close a message.

- If any downlink or uplink messages remain open when the aircraft receives an END SERVICE message, the avionics will abort these messages and terminate the CPDLC connection with the CDA. This will not affect the sequence of events reference the CPDLC connection with NDA.
2) DELAYED UPLINK MESSAGES

- Boeing 777 aircrafts have a default maximum delay value of 360 seconds.
- It is advisable not to change default Maximum Delay Value, until or unless requested by ATSU.
- With the delay function ON, uplink messages received after the maximum delay time will be displayed to the flight crew, beneath the text “UPLINK DELAY EXCEEDED”. Flight crew should follow the following procedure:
  - Reject the message.
  - Advise (via voice) "DELAYED CPDLC MESSAGE RECEIVED".
  - Request verification of ATC intent.
  - If no voice contact with ATC, REJECT THE MESSAGE and send the following free text message:
    - DELAYED CPDLC MESSAGE RECEIVED; or
    - Send reject reason: NOT CONSISTENT, PLEASE RE-SEND.
- The delay uplink may be re-sent or the flight contacted via voice, at the ATC Controller discretion.

3) ACCEPT/REJECT UPLINKS

- Arriving ATC uplink messages are annunciated by ATC COMMUNICATION MESSAGE, an aural chime, and the display of the EICAS ATC message block.
- ATC messages requiring an "ACCEPT" or "REJECT" response display those options on the EICAS display.
- The MFD message page displays ACCEPT, STANDBY, REJECT REASONS and REJECT keys at the bottom.
- Select ACCEPT or REJECT to respond to the uplink message in coordination with other pilot.
- After making a selection, the status changes to “ACCEPTING / REJECTING” while the response is transmitting.
- When the communications network sends a response indicating that the message was received, the message status changes to “ACCEPTED / REJECTED”.
- After a message has been accepted or rejected, a CANCEL key is displayed at the bottom of the page.
- Selecting CANCEL will clear the message from the display.
- The ACCEPT, CANCEL and REJECT buttons on the glare shield perform the same functions.

FANS 1/A DATA LINK FAILURE MESSAGES:

- DATA LINK LOST: Data link is temporarily lost. If this message remains for 16 minutes, the ATC connection will automatically be lost and the EICAS alert message, “ATC DATA LINK LOST” is displayed.
- ATC DATA LINK LOST: Continue on Voice.
- DATA LINK SYSTEM: Data link system has failed.
- For altitude, route and emergency messages, refer to FCOM VOL-II (Communication Chapter).

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Disclaimer: "CPDLC Operation in NAT Region" are personal notes of the undersigned that do not sanction any pilot to violate his/her company's standard operating procedures or ignore the original documents. These notes may or may not be updated in future.