

**Twenty Second Meeting of the
Informal South Pacific ATS Co-ordinating Group (ISPACG/22)
FANS Interoperability Team Meeting (FIT/15)**

Papeete, Tahiti, 11-12 March 2008

Agenda Item 9: Other business

Importance of Establishing CPDLC Data Authority

Presented by Airservices Australia

SUMMARY

This working paper describes an incident involving a clearance being inadvertently issued via CPDLC to an aircraft under the control of another unit, and highlights the importance of ensuring CPDLC data authority status.

1. Introduction

- 1.1 The importance of ensuring CPDLC data authority status has been raised previously in FIT meetings and other fora. This working paper describes an incident involving a CPDLC clearance being transmitted to an aircraft under the control of another unit.

2. Description of incident

- 2.1 Acft1 (ABC123) did not initially respond (WILCO) to the CPDLC transfer (MONITOR) instruction. This resulted in an open CPDLC dialogue when the ATC transfer of control occurred, which prevented the automatic termination of the CPDLC connection. Due to workload at the time, the YBBB controller was not aware of this and did not manually terminate the CPDLC connection. As a result the aircraft remained CPDLC-connected to YBBB.
- 2.2 Acft2 (XYZ123) experienced an emergency requiring a diversion back to Sydney and descent to a lower level. At the time, a restriction for this descent was following traffic – Acft3 (ABC456) operating at the requested level. Acft1 and Acft3 were operated by the same airline and had similar callsigns.
- 2.3 At the same time, a request for a change of level was received from Acft1 (ABC123). Because the controller was focused on the emergency situation, they mistakenly assessed the request as having been sent by Acft3 (ABC456). This level change would have solved the Acft2/Acft3 problem, and so the YBBB controller issued a clearance to the requested level. This clearance was actually sent to Acft1 who at the time was approximately 20 minutes inside the airspace under the control of the next unit.

2.4 The error was identified when the WILCO response was received, and coordination was effected with the next unit. The sequence of events is described diagrammatically below.



Figure 1. Acft1 does not WILCO the CPDLC transfer instruction approaching the FIR boundary. This resulted in the auto End Service being inhibited.



Figure 2. Acft2 requests a diversion back to Sydney and descent to the same level as following traffic (Acft3).



Figure3. As Acft2 was turning back a level request was received from Acft1. This request was misinterpreted as having been made by Acft3. A climb clearance was issued by YBBB to Acft1

3. Summary

3.1 The actions of the YBBB controller were clearly the cause of the incident. Whilst software has now been introduced to minimise the possibility of similar incidents occurring, there are procedures (safety nets) available that would minimise the possibility of this type of event occurring.

3.2 These procedures include:

- **Failure of Flight crew to downlink a position report at the FIR boundary (FOM 5.8.4)**
 - If Acft1 had downlinked a CPDLC position report at the FIR boundary, this may have alerted the YBBB controller to the fact that a CPDLC connection still existed with the aircraft, and prompted them to terminate the CPDLC connection;
- **Failure of Flight crew to manually terminate the CPDLC connection (FOM 4.7.2.2)**
 - If Acft1 had been aware that the CPDLC transfer to the next unit had not occurred and had followed the procedures described in the FOM, the CPDLC connection with YBBB would have been terminated by the flight crew;
- **Next ATSU had not confirmed their data authority status**
 - The controller in the next unit had not confirmed that they were data authority, and was not aware that they did not have an active CPDLC Connection with an aircraft that was well within their airspace. If required, they would not have been able to communicate with that aircraft.

Just because you can “see” an aircraft reporting by ADS-C, it does not necessarily mean that you can communicate with them! And more importantly, it means that someone else might be able to communicate with them!

3.3 The confirmation of data authority by the controlling unit is a safeguard that should be viewed as being synonymous with establishing VHF contact with an aircraft under the control of an air traffic controller using radar or ADS-B. A controller would not let an aircraft fly through their airspace without a single communication exchange just on the basis that they can “see” the aircraft on radar. Why should a CPDLC/ADS-C aircraft be treated any differently?

4. Action by the Meeting

4.1 The meeting is invited to consider the following recommendations:

- a) An amendment be made to the FOM to provide procedures for ensuring (current) data authority status;
- b) States review their internal procedures concerning the confirmation of data authority status for all CPDLC-connected flights in their airspace