

**Twenty Sixth Meeting of the  
Informal South Pacific ATS Co-ordinating Group (ISPACG/26)**

**Nadi, Fiji, 1-2 March 2012**

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**Agenda Item 4: AI 26-1 Weather Deviations**

**Responding to CPDLC Weather Deviation Requests**

**Presented by Airservices Australia**

**SUMMARY**

This working paper provides an analysis of responses to weather deviation requests received by Brisbane Centre

**1. INTRODUCTION**

- 1.1 The ISPACG working paper “Weather Deviation Requests” presented by IATA (United Airlines) presents airline concerns regarding timely responses by ATC to weather deviation requests.
- 1.2 This WP provides a summary of responses to weather deviation requests received by Brisbane ATC during December 2011, as well as listing various factors that may contribute to the delay in receipt of a weather deviation clearance by the flight crew.

**2. DISCUSSION**

- 2.1 During December 2011, 1954 weather deviation requests were received by Brisbane Centre. The following table summarizes the various responses:

| Downlink weather deviation requests | STANDBY responses | REQUEST DEFERRED responses | UNABLE responses | Error responses (Duplicate message identifier) | No response uplinked | Response other than wx deviation | Wx deviation clearances issued |
|-------------------------------------|-------------------|----------------------------|------------------|--|----------------------|----------------------------------|--------------------------------|
| 1954                                | 179               | 6                          | 15               | 2  | 11                   | 11                               | 1917                           |

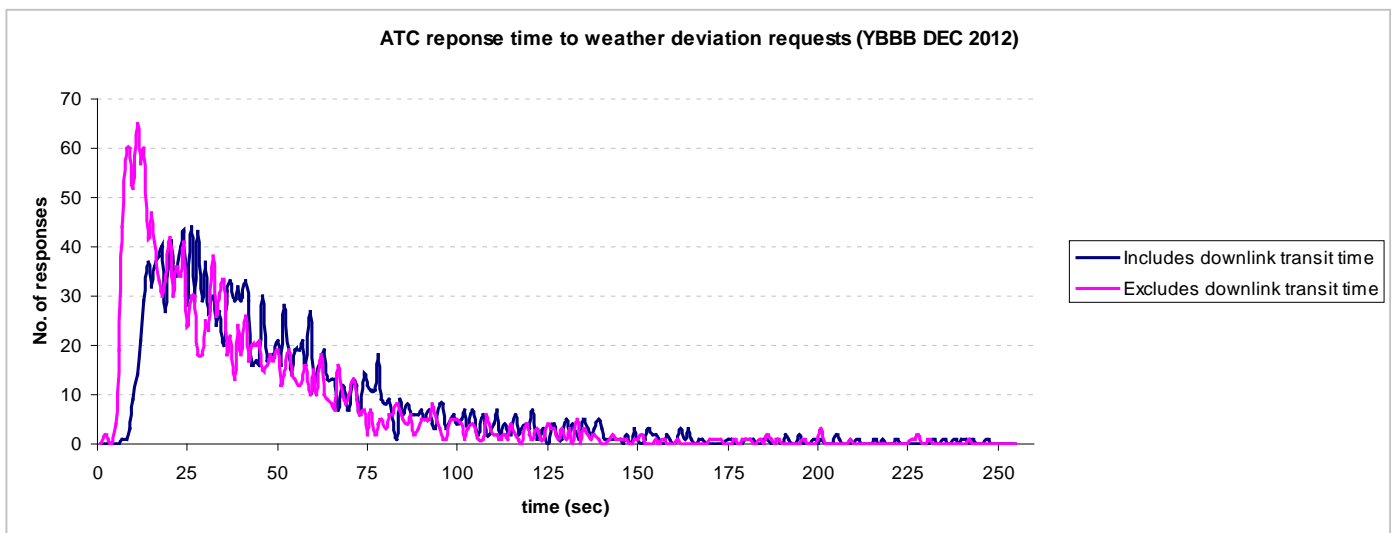
**Table1. Summary of responses to weather deviation requests**

|                       | Including downlink transit time (sec) | Excluding downlink transit time (sec) |
|-----------------------|---------------------------------------|---------------------------------------|
| Average response time | 53                                    | 41                                    |
| Minimum response time | 7                                     | 2                                     |
| Maximum response time | 491                                   | 486                                   |

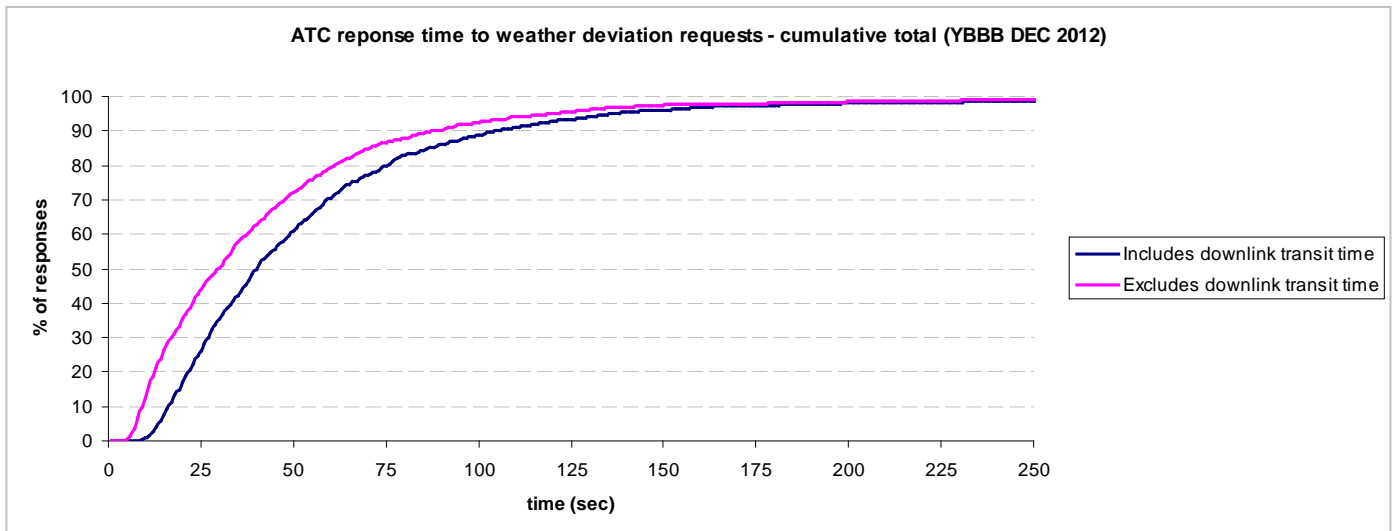
**Table2. ATC response times to weather deviation requests**

**Note1.** The analysis only included correctly formatted weather deviation requests. Offset requests and free text “requests” for weather deviations were not included in the analysis.

**Note2.** Response times of greater than 1000 seconds were filtered out of this analysis. These are included in Table 1 as ‘no response uplinked’.



**Figure1. Graph showing the weather deviations response times**



**Figure2. Graph showing cumulative weather deviations response times**

- 2.2 The analysis indicates that when the downlink transit time is excluded, 95% of downlink weather deviation requests were responded to within 120 seconds
- 2.3 While it may be desirable for flight crews to receive a weather deviation clearance with minimal delay, it must be recognized that there are delays inherent in the system. The following factors can contribute to the delay in an ATC response time to a weather deviation request:
- Downlink transit time
    - ⇒ While the downlink transit time depends on the media used, it can substantially add to the delay in a clearance response being received by the aircraft. Table 2 shows that on average 23% of the ‘delay’ was attributable to the downlink transit time. A similar delay would be expected to occur for the uplink response;
  - Formatting of the weather deviation request
    - ⇒ Incorrectly formatted weather deviation requests can add to the processing time for ATC to respond the request. Incorrectly formatted requests include free text, OFFSET requests etc. The receipt of an incorrectly formatted weather deviation request negates any automation that the ATS unit may have set in place for processing correctly formatted requests;

- Interpreting an incorrectly formatted weather deviation request
  - ⇒ Some non-standard requests can result in delays in ATC responding to the request due to their ambiguity. Consider the following two CPDLC requests received during December 2011:

DM27 REQUEST WEATHER DEVIATION UP TO 10NM LEFT OF ROUTE  
DM51 WHEN CAN WE EXPECT BACK ON ROUTE  
DM67 BACK ON TRK

DM27 REQUEST WEATHER DEVIATION UP TO 20NM **EITHER SIDE OF**  
ROUTE  
DM65 DUE TO WEATHER  
DM67 **LEFT OF TRACK PLS**

- Proximity to the FIR boundary;
    - ⇒ After coordination has been effected with the next ATS unit, generally ‘prior coordination’ is required before a change to the clearance (e.g. weather deviation) can be issued to the aircraft. This can result in delays in responding to a weather deviation request;
  - Other traffic;
    - ⇒ Other traffic may have to be moved (e.g. change of level) before a clearance to a requested weather deviation can be issued
    - ⇒ On occasions a weather deviation may not be immediately available due to a weather deviation that has been previously issued to another aircraft
  - ATC workload
    - ⇒ ATC does have other traffic and other duties! While the processing of weather deviations are generally assigned a higher priority than routine clearance requests, they still have to fit into the overall workload of the controller. A small number of flight crews have unreasonable expectations – CPDLC weather deviation requests are sometimes received at the same time that ADS-C reports indicate that the aircraft is already commencing a deviation.
- 2.4 ATC has limited ability to influence the majority of the factors listed above. While controllers can be reminded of the priority that should be allocated to weather deviation requests, analysis indicates that the nett effect of this would be minimal (~seconds).
- 2.5 One factor that could be reviewed however, is our current ATC coordination procedures, and the requirement to ‘prior coordinate weather deviation clearances’. This was raised as an issue for consideration at ISPACG/25, and may be worth further discussion between ATS Units.

2.6 The IATA WP includes the following suggestion: “*Controllers, if unable to approve, should provide instructions as to what is acceptable and await pilot response.*” There are several points to consider with this suggestion:

- what format would such an ‘instruction’ take? Free text? Experience has shown that if a free text ‘advisory’ is used, there is the potential for error (the same problem experienced with certain EXPECT message elements);
- how significant is the problem? The Brisbane data for December 2011 indicates that only 0.7% of weather deviation requests are denied.

### **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) Note the statistical data and other information presented in this working paper;
- b) Determine the need, if any, for additional procedures specifying actions if a requested weather deviation is not available;
- c) ANSPs are invited to discuss the benefits by relaxing the current requirement to ‘prior coordinate’ weather deviation clearances.