According to an Australian Transport Safety Bureau (ATSB) report issued on 14\textsuperscript{th} November, at 0801 Eastern Standard Time on 28\textsuperscript{th} September 2012, an Airservices air traffic controller operating from the Brisbane, Queensland, air traffic control (ATC) complex assumed responsibility for airspace sectors extending from 45nm (83 km) north of Sydney to about Coffs Harbour, New South Wales (NSW).

This airspace included a number of one-way air routes and had previously been vertically separated between two control positions at flight level (FL)\textsuperscript{1} 125. On accepting responsibility for the now-combined airspace, the oncoming controller did not amend the in-place altitude filter affecting the airspace above FL125.

At 0802, on the incorrect assumption that the aircraft was landing at Williamtown, the controller inhibited the flight data record for a Boeing Company 737-00 (737), registered VH-VUM that was en route from Sydney to Brisbane. At the time the 737 was 22nm (41 km) south-south-west of Williamtown, NSW and was passing FL239 on climb to FL390. The action of inhibiting the flight data record for aircraft landing at Williamtown, after the aircraft has been formally handed off to Williamtown ATC, is a regular and authorised action.

The inhibition function in the Australian Advanced Air Traffic System (TAAATS) used by Airservices controllers is designed to indicate when aircraft no longer require the direct attention of controllers. The inhibition of the 737’s flight data record altered the aircraft’s normally green graphical representation on the controller’s display, which would have indicated that the aircraft was in the controller’s jurisdiction, to being black in colour. This change of colour applied to the aircraft’s track symbol, label and history dots, and (incorrectly) indicated that the aircraft was not under the controller’s jurisdiction. With the 737’s flight data record inhibited, and the altitude filter in place at FL145, all label information associated with the 737 was removed from the controller’s display, leaving only the track symbol, history dots and the velocity vector indication.

At 0813 the controller amended the altitude filter to the correct upper level for the airspace. This action displayed a reduced track label for the 737 that now included the aircraft’s callsign, current flight level and
speed. The aircraft’s track remained inhibited and black in colour, continuing to indicate the aircraft was not under the controller’s jurisdiction.

At 0829 the crew of the 737 contacted the controller to query the need for a frequency transfer to that of the adjoining sector of airspace. At this time, the aircraft was 54nm (100 km) into the adjoining sector. Two controllers in the adjoining sector had, until now, also viewed the black aircraft track symbol as being outside their jurisdiction. The 737 was identified and the inhibition removed from its flight data record. This action re-established a full, green aircraft label for the 737 on the controller’s display and the aircraft continued to Brisbane.

The 737’s flight data record had been inhibited on the controllers’ displays for a total of 27 minutes, which was equivalent to a flight distance of about 222nm (411 km). During this period, none of the controllers involved were aware of the aircraft’s presence in their respective airspace. There was a loss of separation assurance. The ATSB has examined the recorded radar data and found no separation conflicts in the affected airspace during that time.

The Australian Advanced Air Traffic System – relevant systems information
The inhibition of the 737’s track meant that the following air traffic control surveillance alert capabilities were unavailable to the controllers:

- Cleared Level Adherence Monitoring (CLAM). The CLAM alert function monitors an aircraft’s conformance with the cleared flight level and alerts the controller of any deviation from that clearance.

- Danger Area Infringement Warning (DAIW). The DAIW function informs the responsible controller if an aircraft will infringe a predefined or nominated danger area during a particular period.

- Route Adherence Monitoring (RAM). The RAM alert monitors an aircraft’s adherence with their planned route by comparing the aircraft’s position with known points on the planned route.

The Short Term Conflict Alert (STCA) function remained available. The STCA determines all of the possible surveillance track pairs for which, in a predefined period, the minimum separation between each track pair will be less than the minimum safety requirements. As the 737’s track was inhibited, any STCA alert for that track would have been displayed on the
controllers’ displays but without the normal border box surrounding the track label information.

**Ongoing investigation**

The investigation is continuing and is expected to be completed by June 2013. Its focus will include understanding the:

- operational aspects of the occurrence
- air traffic control system functions and the implications of their unavailability
- human factors influences on the occurrence.

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1 At altitudes above 10,000ft in Australia, an aircraft’s height above mean sea level is referred to as a flight level (FL). 125 equates to 12,500 ft.