



Recent Developments and Experiences

Background information for ITSA Member States prior to the May 2021 Microsoft Teams tele-conference

State: **Australia**

Presented by: **Greg Hood, Chief Commissioner, Australian Transport Safety Bureau (ATSB)**

Introduction

During 2020, and the first quarter of the 2021 calendar year, ATSB investigators continued to deploy to accident sites throughout Australia, and as of 30 April 2021, we have 91 active investigations underway. There were numerous challenges presented to teams deploying throughout Australia, including a significant reduction in available regular public transport flights, resulting in requests to utilise the assets of out States police forces to transport teams to accident sites. When entering indigenous settlements, we were also required to seek permission, conduct a risk assessment and limit interaction with the local community.

In March 2020, we offered our staff throughout Australia the opportunity to work from home (tele-working). We felt that the decision should be made by our staff, as they are evidence -based decision makers, and everyone had different personal circumstances (i.e. schools closed and children at home etc). Around 80% of our staff commenced working from home, whilst around 20% of us continued to come to the office. In early August, due to the successful control measures in place, we asked the workforce to return to the office. Concurrently, we also offered staff the opportunity to work from home for two days per week, subject to their Manager's approval.

We have secured new offices for our teams in Adelaide, Perth, and Melbourne. We are also in the process of moving ATSB's Canberra Headquarters to another building which has provided us the opportunity to design some modernised work space concepts, such as frosted telephone booths, break-out space, new technical facilities, a new storage area for go-kits, and a large outdoor balcony area complete with barbeque facilities!

We are two weeks away from the implementation of our ATSB Investigation Management System (AIMS). The product was purchased from Hubstream in the USA where it began life as an investigation management system for child abuse investigations. Using agile project management methodology, the product has been adapted to transport safety investigations by Hubstream in collaboration with NTT and the ATSB.

COVID19 Statistics – Australia as at 30 April 2021

Total Cases since 1 January 2020	29,779
Total deaths	910
Estimated active cases in Australia 30 April 2021	276

Major Organisational and/or Staff Changes

In 2020, our long-serving (10 years) Commissioner for Rail, Carolyn Walsh, retired from the ATSB and was replaced by Ms Catherine Scott, who is an accomplished company director with significant rail expertise.

Nat Nagy, Executive Director Transport Safety left the ATSB in July 2020. With Nat's departure, we took the opportunity to flatten the structure to four levels of management: Investigator – Manager – Director – CEO.



Budget Issues and/or Legislative change

We were fortunate to secure additional funding to enable the ATSB to procure and fit-out our new Canberra Headquarters facility (with a move-in date of 1 August 2021), and to procure the new enterprise IT system (AIMS).

Case Studies and Challenges

Aviation – loss of Coulson Aviation EC130Q LAT on 23 January 2020

Last year's bush-fire season was the worst on record for Australia.

On 23 January 2020, the Snowy Mountains region in New South Wales (NSW) had a severe fire danger rating, due to high temperatures, strong winds and forecast thunderstorms. This region included the Adaminaby and Good Good fire-grounds, which were both under the control of the Cooma Fire Control Centre (FCC). At about 1100 Eastern Daylight-saving Time, the Cooma FCC incident commander made a call to the NSW Rural Fire Service (RFS) State Operations Centre, to discuss the escalating fire danger at the Adaminaby fire-ground. During that call, it was noted that the smaller firefighting aircraft were not flying in the area due to strong winds and poor visibility. Consequently, a birddog and two large air tankers (LAT) were tasked by the State Operations Centre to the Adaminaby fire-ground: a Rockwell International 690-B aircraft; a Boeing 737 aircraft, registered N137CG, call sign 'Bomber 137' (B137); and a Lockheed EC130Q aircraft, registered N134CG, call sign 'Bomber 134' (B134). All three aircraft were based at Richmond Royal Australian Air Force (RAAF) Base, NSW, about 316 km north-east of the Adaminaby fire-ground.

At about 1121, B137 had commenced taxiing at Richmond for a task when the crew were re-tasked to the Adaminaby fire-ground. The aircraft subsequently departed at 1127, with the crew having been notified by the Richmond airbase manager that there was no birddog in the area, and that it 'is very windy down there'.

The birddog pilot had experienced moderate to severe turbulence in the Snowy Mountains region about 2 weeks prior to the day of the accident. On receipt of the tasking to Adaminaby, the birddog pilot reviewed the weather and concluded that the conditions were forecast to be worse than previously experienced, and therefore declined the task. In addition, as B137 was already en route to Adaminaby, the crew of that aircraft would be able to provide a report to the birddog pilot and other crews of the actual conditions.

At about 1155, B137 arrived overhead the Adaminaby fire-ground. At interview, the pilot in command (PIC) of B137 reported the wind speed at the Adaminaby fire-ground was 50 kt at 800 ft above ground level (AGL), and about 37 kt at the retardant drop height of 200 ft AGL. While assessing the conditions in the Adaminaby area, the crew reported experiencing uncommanded aircraft rolls up to 45° angle of bank (due to wind) and a windshear warning from the aircraft on-board systems. The PIC of B137 elected to operate on the upwind side of the hills to avoid lee-side mechanical turbulence. At about 1225, B137 departed the Adaminaby fire-ground, having successfully deployed a retardant load.

After completing the retardant drop, the B137 crew sent a text message to the birddog pilot assigned to the Adaminaby fire-ground indicating that the conditions were 'horrible down there. Don't send anybody and we're not going back'. They also reported to the Cooma FCC that the conditions were unsuitable for firebombing operations. During B137's return flight to Richmond, the Richmond air base manager requested that they reload the aircraft in Canberra and return to Adaminaby. The PIC replied that they would not be returning to Adaminaby due to the weather conditions.

While B137 was still at the fire-ground, at about 1205, B134 departed Richmond with the PIC, co-pilot and flight engineer on board.

At about 1235, the PIC of B137 had a conversation with the PIC of B134 on their designated operating frequency, to inform them of the actual conditions, and that they would not be returning to Adaminaby. At that time, B134 was about 112 km north-east of Adaminaby, en route to the Adaminaby fire-ground.

At about 1242, the crew of B134 contacted air traffic control (ATC), advising them of the co-ordinates they would be working at, provided an 'ops normal' call time, and confirmed there was no reported instrument flight rules traffic in the area. About 5 minutes later, the Richmond air base manager also attempted to contact B134 to confirm 'ops normal', firstly by radio, and then by text to the PIC's mobile phone, but did not receive a response.

The automatic dependent surveillance broadcast (ADS-B) data showed that after arriving at the Adaminaby fire-ground (Figure 1), the crew of B134 completed several circuits at about 2,000 ft AGL. At about 1255, the crew contacted the air operations officer at the Cooma FCC by radio and advised them that it was too smoky and windy to complete a retardant drop at that location. The Cooma air operations officer then provided the crew with the location details (co-ordinates) of the Good Good fire, about 58 km to the east of Adaminaby, with the objective of conducting structure and property protection near Peak View.

Figure 1: Flight path overview (in white), including the times and locations of where the crew of B134 was in communication with others

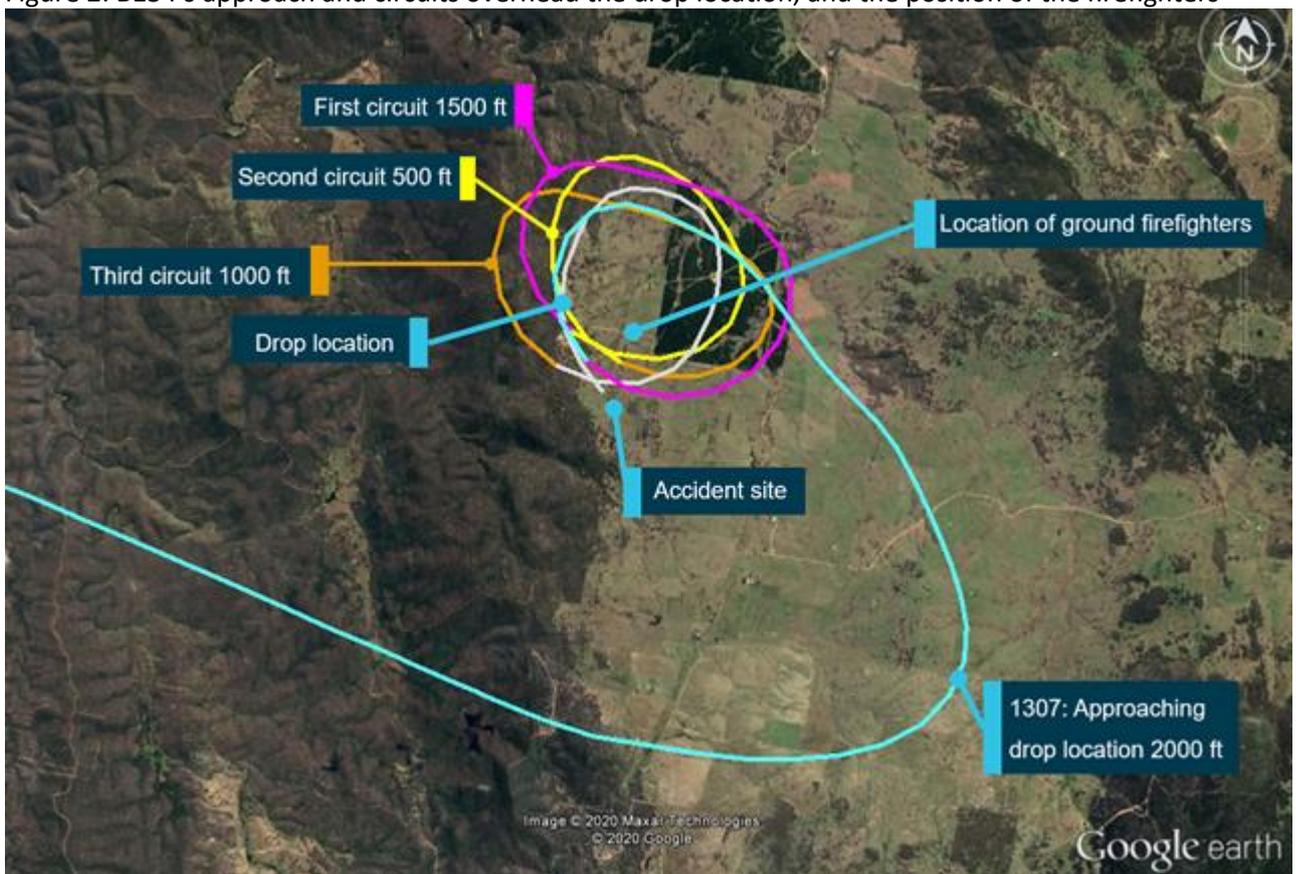


At 1259, the crew of B134 contacted ATC, to advise them that they had been re-tasked to the Good Good fire-ground for a retardant drop, and provided the updated co-ordinates. At about the same time, the RFS ground firefighters at the Good Good fire-ground, near Feeney’s Road in Peak View, contacted the Cooma FCC and requested additional assets for property protection. They were advised that a LAT would be passing overhead in about 10 minutes. The firefighters acknowledged the intention of a LAT drop, and advised the Cooma FCC they would wait in open country on Feeney’s Road, clear of the properties targeted for protection.

At about 1307, B134 arrived overhead the drop area (Figure 2). From the aircraft’s recorded tracking data, the crew conducted three left circuits, at about 1,500 ft, 500 ft and 1,000 ft AGL respectively, prior to commencing the drop circuit.

At 1315:15, the retardant drop was conducted on a heading of about 190° and at about 190 ft AGL (3,595 above mean sea level (AMSL)) with a drop time of about 2 seconds. During the drop, about 1,200 US gallons (4,500 L) of fire retardant was released. Witness video footage and images showed that at the commencement of the drop, the aircraft was at an approximate bank angle of 10°, with the flaps set at 100 per cent. A ground speed of 144 kt was recorded at the time of the drop.

Figure 2: B134’s approach and circuits overhead the drop location, and the position of the firefighters



Source: Google earth and Skytrac data, annotated by the ATSB

The ATSB’s analysis of the witness videos found that, at the completion of the drop at 1315:17, the aircraft was observed to be banked about 17° to the left. About 4 seconds after the drop at 1315:21, the aircraft had a pitch-up attitude of about 12°, with an increase to about 30° angle of bank. Over the next 1.5 seconds, the



aircraft's angle of bank and pitch attitude reduced to about 22° and 10° respectively. The aircraft then became obscured by smoke.

While being intermittently obscured by smoke, a positive rate of climb was achieved for about 10 seconds, with the aircraft climbing to about 330 ft AGL (3,770 ft AMSL) at 1315:27. Just prior to this, from about 1315:25, a right roll was observed on the video. The video captured the aircraft at about an 18° left angle of bank at 13:15:25, and then at about a 6° right angle of bank at 13:15:27. At the same time, the aircraft pitch attitude had decreased to about 6°. Following this, the aircraft was then observed descending. A further 7 seconds after this, at 1315:34, the aircraft was seen at a very low height above the ground, in a left bank. Throughout this period, the recorded groundspeed increased slightly to a maximum of 151 kt.

Shortly after, at about 1315:37, the aircraft collided with terrain and a post-impact fuel-fed fire ensued. The three crew were fatally injured and the aircraft destroyed.

This is the largest aircraft involved in a fatal accident that the ATSB has deployed to, the longest accident site (280m) and the longest time spent at an accident site (1 month). The team were evacuated on three separate occasions from the side of the mountain at the direction of the rural fire service due to the bush fire threat. ATSB has published an interim report and the final is due in Q3 2021.

Recommendations/Issues of Global Concern

On the afternoon of 31 December 2017, the pilot and five passengers of a de Havilland Canada DHC-2 Beaver floatplane, registered VH-NOO, boarded the aircraft for a return charter flight from Cottage Point to Rose Bay, New South Wales. Shortly after take-off, the aircraft conducted a 270° right turn in Cowan Water and then entered Jerusalem Bay, below the height of the terrain. The aircraft stopped climbing, continued along the bay and then made a very steep right turn. The aircraft's nose then dropped and the aircraft collided with the water. All on board were fatally injured and the aircraft destroyed. The final report was issued in 2020 with a recommendation relating to the fitment of recording devices in light aircraft was made to the International Civil Aviation Organization.

Annex 6 to the Convention of International Civil Aviation did not mandate the fitment of flight recorders for passenger-carrying aircraft under 5,700 kg. Consequently, the determination of factors that influenced this accident, and numerous other accidents have been hampered by a lack of recorded data pertaining to the flight. This has likely resulted in important safety issues not being identified, which may remain a hazard to current and future passenger carrying operations. The Australian Transport Safety Bureau recognises that the International Civil Aviation Organization has developed technical standards for lightweight recorders and airborne image recorders. However, despite the known benefits for the identification of safety issues, the fitment of such devices for passenger-carrying aircraft with a maximum take-off weight less than 5,700 kg is not mandated. The Australian Transport Safety Bureau recommends that the International Civil Aviation Organization takes safety action to consider the safety enhancement of these devices to passenger-carrying operations.