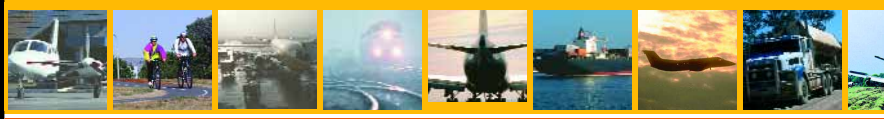

The ATSB makes a significant contribution to the safety of the Australian aviation industry and travelling public through investigation, analysis and open reporting of civil aviation accidents, incidents and safety deficiencies.

It performs air safety functions in accordance with the provisions of Annex 13 to the Convention on International Civil Aviation (Chicago Convention 1944) as incorporated in the *Transport Safety Investigation Act 2003*. The Act contains the ATSB's authority to investigate air safety occurrences and safety deficiencies.

Investigations commenced on or before 30 June 2003, are conducted in accordance with Part 2A of the *Air Navigation Act 1920*.

Investigations commenced on or after 1 July 2003, are conducted in accordance with the Transport Safety Investigation Act 2003 (TSI Act).

The ATSB is an operationally independent bureau within the Federal Department of Transport and Regional Services. ATSB investigations are independent of bodies, including regulators that may need to be investigated in determining causal factors leading to an accident or incident. ATSB is a multi-modal bureau with safety responsibilities in road, rail and sea transport in addition to aviation.

The Australian Air Safety Investigator is a regular four-page feature in *Flight Safety Australia* produced with editorial independence by the ATSB. It aims to keep the industry informed of the latest findings and issues in air safety from the bureau's perspective.

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A Confidential Aviation Incident Reporting (CAIR) form can be obtained from the ATSB website or by telephoning 1800 020 505.

Exercise Popflot

THE Australian Transport Safety Bureau needed to test itself to see how it could respond in the event of a major aircraft accident. It did this by devising a full-scale operational exercise, and making it as realistic as possible.

Exercise Popflot was designed to have as many organisations involved as possible. The final count showed that 31 different organisations responded to the 'crash', including emergency response organisations, airlines, aircraft manufacturers, news stations, and the local airport. Local volunteers provided great support, acting as passengers, families and friends, and witnesses.

The scene was set over the previous few days with an old aircraft, old water tanks to make up the fuselage, seats out of a metropolitan bus, luggage, propellers, engine bits, and all the other bits that make an accident. The tailplane was even stuck up a tree, and the fire brigade provided 15 heavy and realistic dummies to simulate deceased passengers.

People started to arrive at half past four on the morning of the exercise. The army provided breakfast, and along with the Red Cross, made up the genuinely gruesome injuries on the volunteers. The Cockpit Voice Recorder was thrown far out into a dam for recovery, and at half past six, everyone went down to the 'accident site'. As it was frosty, the man with 'severe burns' got cold, as everyone climbed into the wreckage and tangled into the seats and equipment.

At 0700 exactly, the aircraft 'flew through a flock of birds' leading to catastrophic engine damage, and crashed shortly after. Albury tower reported the accident, and the emergency services started to respond. The town fire brigade attacked the fire from the front with foam, and the rural fire brigade put out the real fire at the rear, (which was a good thing, because the wax used for the fake injuries on the passengers was starting to melt.) Four ambulances and a hospital team responded, and helped the fire brigade with triage on the injured, their recovery to an area clear of the accident, and then their evacuation to the hospital, (i.e. the make-up building 3 km away). Dangerous goods were neutralised by the Brigade Hazmat team, the EPA managed fuel that had got into the watercourse, and prepared to shut down the water supply for the entire Albury/Wodonga area. Real airline staff helped to run the mythical airline for the exercise, and people from real airframe and engine manufacturers arrived to help the ATSB to establish and start its investigation. The investigation went late into the night, using a command centre that had been set up in a ballroom in the Commercial Club in Albury town centre. The investigation was wrapped up late the following morning, after all the evidence gathering and recording systems had been used and tested.

A detailed review of the whole exercise will enable the participating organisations to examine their performance, and for the whole exercise to be examined to see how the organisations worked together. ■

Recently completed investigations

As reports into aviation safety occurrences are finalised they are made publicly available through the ATSB website.

Published August – October 2003

Occ. no.	Occ. date	Released	Location	Aircraft	Issues
200200548	22 Feb 02	15 Oct 03	Jandakot Airport., WA	Cessna 172 P/Ultralight TL	Collision at low altitude
200301990	3 May 03	15 Oct 03	Melbourne Airport., Vic	Boeing 737	Missed approach
200204471	25 Sept 02	15 Oct 03	Bankstown Airport., NSW	Aero Commander 690-A	Traffic confliction report
200300674	6 Mar 03	24 Sept 03	Whitehaven Beach, QLD	de Havilland DHC-2	Loss of directional control
200105338	6 Nov 01	24 Sept 03	19 km SE Nyngan Aero., NSW	Boeing 747	Uncommanded increase in cabin altitude
200200646	1 Mar 02	24 Sept 03	159 km NW Parkes, NSW	Boeing 747	Failure of No. 3 engine
200205216	6 Nov 02	26 Aug 03	Parafield Airport., SA	Cessna 441	Smoke in cabin
200204857	19 Oct 02	21 Aug 03	Chance Bay, Whitsunday, Qld	de Havilland DHC-2 MK 1	Collision with Ketch
200203030	29 Jul 02	21 Aug 03	37 km S Brisbane Airport., Qld	British Aerospace Plc BAe	Smoke on flight deck
200205865	2 Dec 02	21 Aug 03	Perth Airport., WA	British Aerospace Plc BAe	Fumes in cabin
200205307	11 Jan 02	20 Aug 03	Perth Airport., WA	British Aerospace Plc BAe	Fumes in cabin
200204912	20 Oct 02	20 Aug 03	6 km E Karratha Aero., WA	British Aerospace Plc BAe	Fumes on flight deck
200301185	25 Mar 04	11 Aug 03	Groote Eylandt Aero., NT	Cessna 310R	Nose landing gear malfunction

What is the Australian Transport Safety Bureau?

The Australian Transport Safety Bureau (ATSB) is an operationally independent multi-modal body that investigates, analyses and reports on transport safety. The ATSB is not part of the Civil Aviation Safety Authority (CASA). The ATSB is Australia's prime agency for the independent investigation of civil aviation accidents, incidents and safety deficiences. To report an Aviation, Marine or Rail accident telephone ATSB (toll-free, 24 hours): **1800 011 034.**

Safety briefs

Collision with ground

Occurrence 200105769

The Raytheon Beech 200C Super King Air departed Adelaide at 2240 hours Central Summer Time under the Instrument Flight Rules for Mount Gambier, South Australia, on an air ambulance mission. On board were the pilot and one medical crewmember. The medical crewmember was seated in a rear-facing seat behind the pilot.

At approximately 2326, the pilot made a radio transmission on the Mount Gambier Mandatory Broadcast Zone (MBZ) frequency advising that the aircraft was 26 nautical miles north, inbound, passing through 5,000 ft on descent and estimating the Mount Gambier circuit at 2335. About 1 minute later, the pilot made a series of radio transmissions to activate the Mount Gambier aerodrome pilot activated lighting (PAL). At approximately 2329, the pilot made a radio transmission on the MBZ frequency advising that the aircraft was 19 nautical miles north and maintaining 4,000 ft. About 3 minutes later, he made another series of transmissions to activate the Mount Gambier PAL. At approximately 2333, the pilot reported to ATS that he was in the circuit at Mount Gambier and would report after landing.

At approximately 2336 (56 minutes after departure), the aircraft impacted the ground at a position 3.1 nautical miles from the threshold of runway 18.

Loss of control/collision with ground

Occurrence 200204663

The Cessna 182B Skylane departed Leongatha, Victoria at about 1530 Eastern Standard Time (EST) on a private VFR flight via the coast to Moruya and then the Araluen Valley to `Turalla', a private property located approximately 3 km northwest of Bungendore, NSW. The aircraft carried sufficient fuel for the flight.

At 1755, the aircraft overflew a property southeast of Bungendore at about 500 ft AGL to cancel the nominated SARTIME of 1820. The aircraft was then observed to track west towards the Kings Highway, at a low level, and make a right turn to join a wide left base for the grass airstrip located at `Turalla'. The aircraft was observed to turn left onto final approach at about 50–80 ft AGL. All turns were made using about 45 degrees angle of bank. Witnesses observed the aircraft to be buffeted by gusting winds.

The weather at the time was clear conditions with some upper level cloud. Winds were strong and blustery, from the west and northwest. The general wind structure lent itself to at least moderate turbulence and the strong possibility of lee waves and strong downslope winds.

While on short final, the aircraft was observed to make a steep climb towards a downwind position, turning to the right using 60-80 degrees angle of bank. It was then observed to lose altitude rapidly. It turned through about 295 degrees before impacting the ground approximately 300 m east-northeast of the airstrip threshold. The aircraft struck the ground at a 60-80 degree nose down, left wing low, attitude on a heading of about 240 degrees M. The passenger was fatally injured. The pilot was seriously injured and survived the accident for 68 days before succumbing to the effects of his injuries.

Loss of engine power

Occurrence 2003009713

Shortly after levelling off at 7500 ft, the engine of the Cessna 206 lost power. After establishing the aircraft in a glide, the pilot broadcast a MAYDAY and went through the emergency checks. As he pulled on the mixture control, it came out of the instrument panel. The pilot pushed it back into the panel and continued with the checks. As the aircraft descended, the pilot noticed an airstrip in a field to his left. After identifying the strip he notified Flight Watch of his intention to land there.

On final approach, the aircraft undershot and contacted trees at the end of the field. The aircraft touched down on all three wheels in the cleared area just short of the strip, before the left wheel hit a log resulting in the aircraft flipping upside down. The pilot was uninjured and climbed clear of the aircraft through the left door.

An inspection of the aircraft by maintenance engineers found that the mixture cable had failed at its crimped fitting, allowing the mixture control to move to a lean setting. This resulted in the engine shutting down. A major defect report was submitted to the Civil Aviation Safety Authority.

Loss of separation standards

Occurrence 200203940

A Boeing 737-400 (737) registered VH-TJL was en route from Brisbane to Townsville at FL340. Another 737 registered VH-TJF was en route from Cairns to Brisbane at FL330. Both aircraft were in the area of responsibility of the Brisbane Air Traffic Centre. TJL was operating on the Tabletop Sector radio frequency (120.55 Mhz) and TJF was operating on the Swampy Sector radio frequency (133.2 Mhz). The two sectors are adjacent to each other with the Swampy Sector located south of the Tabletop Sector.

The Tabletop Sector controller issued instructions to the crew of TJL to descend `when ready' and shortly afterward, that crew reported receiving a traffic alert and collision avoidance system (TCAS) resolution advisory (RA), instructing them to climb. The crew of TJF then advised the Swampy controller that they had received a TCAS RA instructing them to descend.

The horizontal distance between the aircraft reduced to 0.4 NM while the vertical distance was 400 ft. The required radar or vertical separation standard was respectively 5 NM or 1,000 ft. There was an infringement of separation standards.

With regard to the use of direct tracking, the Airservices investigation noted that the route structure was designed to segregate traffic where conflicts may occur and that to some extent direct tracking could reduce the separation assurance provided by the route structure. Had the two aircraft operated on their respective planned routes it was estimated that they would have crossed about 50 NM south of Townsville and that their descent profiles would have resulted in a vertical distance of 16,000 ft between them. The investigation also estimated that the difference in track length between the planned and actual routes was 1 NM. Thus, the efficiencies achieved by the provision of direct tracking were minimal compared with the increased risk to aircraft associated with the reduction in separation assurance.

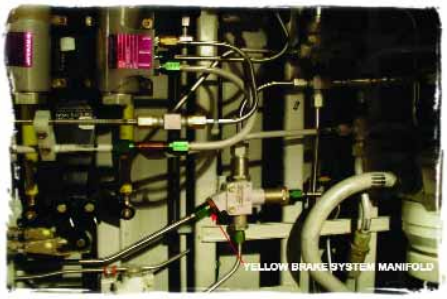
As a result of this and other occurrences, Brisbane Centre implemented a trial of Aisle Supervisors that commenced 9 September 2002. ■

Hydraulic mist in passenger cabin

Occurrence 200203243

During taxi for take-off the crew of the BAe 146-100 aircraft received a low hydraulic fluid quantity warning light for the 'yellow' hydraulic system.

At approximately the same time, the rear-seated cabin crewmember went forward to the flight deck and told the flight crew that there was mist, or vapour, in the cabin that was affecting passengers' breathing.



Two off-duty cabin crewmembers and some passengers reported a haze, or mist that was acrid and transparent, like light smoke, in the vicinity of Row 6. They also reported a burning sensation in the throat, difficulty swallowing and breathing and that many people were coughing.

One off-duty cabin crewmember also went to the flight deck. She reported that the situation in the cabin had worsened, that there was smoke in the cabin on the right side and that passengers were having difficulty breathing.

The pilot stopped the aircraft and ordered an evacuation.

Subsequent investigation by the operator determined that a leak in a hydraulic coupling connected to the yellow system brake manifold had allowed pressurised hydraulic fluid to escape as mist that entered the passenger cabin via gaps in the internal lining of the hydraulic bay.

The 'o' ring seal for the coupling was replaced and the leak stopped. After a number of subsequent flights the coupling leak re-occurred. On closer inspection it was found that the coupling had a crack along its threads. The coupling was replaced. ■

Traffic confliction in GAAP

Occurrence 200204471

The pilot of a Turbo Commander reported that when on short final approach to runway 29 centre at Bankstown Airport, NSW he saw another aircraft, above and slightly to the left of his aircraft, in close proximity. The pilot of the Turbo Commander conducted a go around. The other aircraft was subsequently found to be a Cessna 152 (C152) flown by a pilot conducting circuit training as part of commercial pilot licence training.

The occurrence happened about 1 minute after evening civil twilight of 1819 Eastern Standard Time. Due to the onset of twilight, the aerodrome controller (ADC) was transitioning from multiple runway to single runway operation. Traffic disposition at the time was three single-engine aircraft conducting circuit training, two arriving aircraft and one aircraft ready for departure.

The pilot of the C152 reported downwind and was instructed by the ADC to sight and follow the Turbo Commander on a `late wide downwind'. The pilot saw that aircraft and also noted another aircraft on final approach to the runway. Subsequently, the pilot of the C152 lost sight of the Turbo Commander and on late base requested an update of the position of that aircraft from the ADC. As the ADC was responding, the pilot of the C152 saw the Turbo Commander to his right at an altitude slightly below that of the C152. At that stage, the pilot of the Turbo Commander commenced the go around and advised the ADC. Recorded radar data showed that just prior to the go around, the Turbo Commander was 200 m west of the C152 and on a converging track.

The occurrence reinforces the need for vigilance by both pilots and controllers during General Aviation Aerodrome Procedures. ■