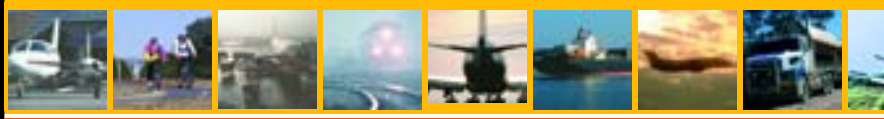
The Australian Air Safe



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.

The ATSB gets a new Act

THE *Transport Safety Investigation Act 2003* (TSI Act) and accompanying Regulations commenced on 1 July 2003. The TSI Act provides the Australian Transport Safety Bureau (ATSB), through its Executive Director, with powers of investigation into transport safety matters in the aviation, marine and rail modes of transport. For rail the TSI Act gives the ATSB investigation powers for the first time. In aviation and marine the TSI Act is a consolidation and update of existing powers in a multi modal format. In the aviation sector the TSI Act replaces Part 2A of the *Air Navigation Act 1920* (AN Act).

Under the TSI Act, ATSB investigations will continue to be no-blame and independent. An independent investigation conducted into the occurrence with the objective of improving safety, through a wide dissemination of findings and without assigning blame, is a proven means of making transport safer. Changes that have been made in the new legislation have been made to strengthen the capacity of the ATSB to deliver on those 'best practice' principles of transport safety investigations.

The no-blame investigation aspect of the legislation is exemplified by the fact that neither the draft report nor the final report can be used as evidence in any civil or criminal proceeding. However, the final report may be used in a coronial inquiry as coronial court has similar safety objectives to the ATSB. The ATSB's existing independence has been reinforced by a new section (s15) that applies to the portfolio Minister and departmental Secretary.

The legislation reinforces and in some respects enhances the capacity of the ATSB to obtain critical safety information while at the same time ensuring the confidentiality of sensitive safety information that has been provided primarily for the purposes of transport safety. Protections exist in the TSI Act and the *Civil Aviation Act 1988* for Cockpit Voice Recorders (CVRs). In particular the legislation prevents CVRs being used against crew members in criminal proceedings except for serious offences falling outside their duties such as drug running and terrorism.

The TSI Act also provides confidentiality for various types of information collected by an ATSB investigator during the course of an investigation. The information which is defined as 'restricted information' in the TSI Act. There are strong provisions preventing copying or disclosure for objectives other than transport safety. An example is that the restricted information cannot be disclosed to a court for criminal proceedings except for an offence against the TSI Act.

Members of the aviation industry are encouraged to familiarise themselves with the new Transport Safety Investigation legislation. In particular they should do this to make themselves aware of their responsibilities for reporting accidents, serious incidents (immediately reportable matters) and incidents (routine reportable matters) under the legislation. Copies of the Act can be obtained from the ATSB's website at http://www.atsb.gov.au/atsb/tsi_act/index.cfm. The Regulations and explanatory material can also be downloaded from the site.

Recently completed investigations

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

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Occ. no.	Occ. date	Released	Location	Aircraft	Issues
200301185	25 Mar 03	11 Aug 03	Groote Eylandt Airport., NT	Cessna 310R	Nose landing gear malfunction
200200651	1 Mar 02	8 Aug 03	Williamtown Airport, NSW	Aerospatiale AS.350B2	Failure of starflex rotor arms
200203094	8 Jul 03	4 Aug 03	324 km NNE Melb. VOR, Vic	Boeing 737 & Cessna 500	Use of non-standard flight level
200205223	7 Nov 02	22 Jul 03	4 km S Cradle Mountain, Tas	Cessna 207	Engine flame-out
200300685	6 Mar 03	22 Jul 03	Sydney Aero., NSW	Hawker Siddeley 748	Incorrect loading
200204663	13 Oct 03	18 Jul 03	2 km W Bungendore, NSW	Cessna 182B	Loss of control
200204444	4 Oct 02	30 Jul 03	11 km N Launceston, Tas	Boeing 717	Uncommanded engine shutdown
200204836	18 oct 02	23 Jun 03	Melbourne Aero., Vic	Boeing 727	Landing gear wheel separated on take-off
200105697	3 Dec 01	18 Jun 03	93 km S Sydney VOR, NSW	Boeing 737 & Boeing 767	Penetration of restricted area without clearance
200201556	22 Mar 02	18 Jul 03	Flake, WA	Boeing 747	Unusual meterological conditions
200105769	10 Dec 01	17 Jun 03	5 km N Mount Gambier, NSW	Beech B200C	Controlled flight into the ground
200300909	14 Mar 03	10 Jul 03	65 km SW Moree, NSW	Cessna T188C	Collision with ground during spraying
200300971	15 Mar 03	20 May 03	Buymarr, NT	Cessna 206	Engine shutdown
200203171	16 Jul 02	20 May 03	Darwin Airport, NT	Cessna 182Q	Hand start leads to runaway aircraft
200205901	17 Dec 02	20 May 03	Killiecrankie, Tas	Cessna 210K	Collision with trees after late go around
200104399	27 Aug 01	14 May 03	Melbourne Airport, Vic	Airbus A330	Loss of normal aircraft handling characteristics
200203940	30 Aug 02	13 May 03	204 km SE Townsville VOR, Qld	Boeing 737 & Boeing 737	Loss of separation standards
200202707	9 Jun 02	12 May 03	185 km NW Melb. VOR, Vic	Airbus A330 & Boeing 737	Cleared tracks; no lateral separation
200203243	22 Jul 02	8 May 03	Brisbane Airport, Qld	British Aerospace Plc BAe146	Hydraulic mist in passenger cabin

Safety briefs

Hand start leads to runaway aircraft

Occurrence 200203171

The pilot of a Cessna Skylane (C182) was preparing to conduct a private flight with three passengers. The planned flight was to be the first, following a periodic maintenance inspection. When the pilot attempted to start the engine, battery power was depleted and the electric starter would not turn the propeller.

The pilot reported that he then applied the parking brake and set the engine controls. After instructing the passengers not to touch the aircraft controls, the pilot alighted and attempted to start the engine by swinging the propeller. When the engine started it accelerated to nearly full power and the aircraft moved forward and accelerated rapidly across the apron. The aircraft struck several parked aircraft before colliding with a Cessna 206. The pilot chased after the aircraft and although able to board the aircraft, he was unable to stop it before it collided with the C206 and a Metroliner, which were extensively damaged.

Maintenance personnel who had witnessed the collision came to the assistance of the C182 occupants. During the evacuation sequence, spilled fuel from the ruptured wing tanks soaked the aircraft occupants and rescuers. One passenger received minor injury and all the occupants and some of the rescuers received minor skin burns from contact with aviation fuel. ■

Loss of normal aircraft handling characteristics

Occurrence 200104399

The crew of the Airbus A330-341 encountered difficulties during the landing sequence to runway 16 at Melbourne airport. After passing 2,000 ft on descent, the radio altimeter indications disappeared from both pilots' electronic flight instrument displays. Both autopilots then disengaged. About 20 seconds later, both flight directors disengaged from the localiser and glideslope modes bit re-engaged in the basic modes of current vertical speed and heading.

The pilot in command elected to continue the approach and to manually fly the aircraft, because he considered he would be able to control the aircraft without auto flight system approach commands or radio altimeter information. The autothrust was unaffected by the disengagement of the autopilots, and remained engaged.

As the pilot in command flared the aircraft for touchdown, both thrust levers were retarded; which disengaged the auto throttle system. The aircraft bounced twice and then the right main landing gear lifted off the runway. The pilot in command then elected to commence a go-around.

On the second approach, the pilot in command again experienced control difficulties during the landing roll. However, the landing was completed without further incident. There were no injuries to any persons on board.

The aircraft was a fly-by-wire type. Three flight control primary computers and two flight control secondary computers controlled the flight control system.

The investigation found that water ingestion into the aircraft radio altimeter antenna coaxial cables led to the loss of normal aircraft handling characteristics. ■

Engine flame-out

Occurrence 200205223

The Cessna 207 aircraft (C207) was engaged on a sight-seeing flight from Cradle Mountain, Tas. to Lake St. Clair and return. On board were the pilot and 4 passengers.

At approximately 1404, as the aircraft was approaching the airfield, the pilot configured the aircraft for a straight in approach to runway 02. The pilot reported that the engine stopped without any warning. After completing trouble checks, the pilot became aware that the aircraft would not reach the airfield. The pilot then completed additional trouble checks and changed fuel tank selection, but the engine failed to respond. The aircraft touched down heavily and slid for approximatley 40 metres.

After the aircraft had stopped the pilot checked the passengers and discovered that two of them had suffered serious injuries. As fuel was leaking from the damaged right wing, the pilot and able passengers assisted the injured from the aircraft.

The pilot estimated that there was approximately 185 litres of fuel on board the aircraft, 90 litres in the right tank and 95 litres in the left tank. The aircraft had completed two flights since refuelling with no problems being reported.

Post flight analysis of the flight revealed that the aircraft would have required 57 litres of fuel to complete the flight, which included allowances for taxi and climb.

The engine was forwarded by the owner to an engine overhaul facility for testing. The engine was fitted to the test cell in the condition as removed from the aircraft. The engine was started and run in accordance with the engine manufacturer's overhaul manual. ■

Controlled flight into water at night

Occurrence 200102083

The crew of the Bell 407 rescue helicopter was tasked to drop a liferaft to the occupants of a sinking yacht at the southern end of the Great Barrier Reef. The pilot made a number of approaches to determine the best direction to approach the yacht and drop the liferaft. The weather conditions at the time were dark night with little or no celestial illumination. On the drop run the pilot intended overflying the yacht at about 20 kt and 50 ft, using the radar altimeter. As the helicopter approached the yacht at about 40 kts, and shortly after the crewman called 50 ft, the helicopter struck the water. Both occupants escaped from the upturned fuselage safely.

The pilot and crewman reported that the helicopter functioned normally until it impacted the water.

The circumstances of the accident were consistent with controlled flight into the water at night. The operator's documentation and associated lack of appropriate training, risk assessment tools, and published guidance inappropriately placed a large responsibility on the pilot to balance the safety of the aircraft and its crew with achieving life-saving missions that were the unit's function.

The decision to descend to 50 ft in black night conditions without the assistance of stabilisation, height hold, automatic pilot or coupled systems was questionable. The operator appeared to have an inadequate understanding of the risks associated with the flight as it was planned especially considering the limited equipment, procedures, training and experience that was available. The absence of clear organisational protocols for task acceptance or rejection may have influenced the crew in accepting a task that involved a high risk. ■

Close encounter in GAAP circuit

Occurrence 200203573

As the Piper PA-28-161 (Cherokee) tracked from the 2RN inbound reporting point, which was 5.5 NM southwest of Bankstown Airport, via crosswind at 1,500 ft to runway 29, the instructor pilot saw a Beech Aircraft Corporation 76 (Duchess) pass close in front as it tracked from right to left and on climb. The instructor pilot in the Cherokee turned the aircraft to the right to avoid the Duchess. Later analysis of the recorded radar information indicated that the aircraft had passed about 150 m apart while at the same altitude.

The Cherokee was on a VFR training flight with a flying instructor and student pilot. The student pilot was flying the aircraft as it tracked inbound to Bankstown Airport while the instructor briefed the student on geographical points. The instructor later reported that they did not see the Duchess as it was obscured by the engine cowl of the Cherokee.

The Duchess was flown by a pilot who was on an instrument rating flight test monitored by a flying instructor. The pilot of the Duchess was conducting a Bankstown One departure on climb to 3,000 ft. The pilot departed from runway 29 Centre on a heading of 290 degrees M and had been instructed to report to the aerodrome controller (ADC) when the Duchess had passed 2,000 ft, the upper limit of the CTR.

The investigation found that the instructor in th e Duchess was probably distracted by the coaching and assessing role such that he did not appreciate the potential for conflict or did not adequately look out for other aircraft. Also, that the inbound track adopted by the pilot of the Cherokee made it more likely that it would conflict with IFR aircraft departing the CTR on climb to an altitude above 2,000 ft.

The recorded radar information indicated that some pilots of inbound aircraft enter the circuit via early downwind instead of crosswind. Pilots operating in GAAP CTRs need to understand that the practice, of entering the CTR via wide or oblique crosswind, reduces the safety benefit of GAAP entry procedures. ■

Collision with trees after late go around

Occurrence 200205901

The commercial pilot hired a privately owned Cessna 210 for a flight to Killiecrankie on Flinders Island. After arriving overhead, the aircraft was positioned on downwind for a downhill landing on strip 27 at Killiecrankie. The pilot commented that there appeared to be no wind. A pilot on the ground who witnessed the accident reported that the wind was easterly at about 15 knots at tree top height, although probably less on the ground. The pilot reported that on late downwind he configured the aircraft for landing with the first stage of flap and landing gear extended and turned the aircraft onto the final approach at approximately 800 ft above ground level. Although this was higher than normal for a turn onto final, he considered it to be okay. Full flap was lowered and the power reduced for landing.

As the aircraft neared touchdown well down the strip, the pilot considered it to be a late landing, but still with sufficient length remaining for braking. The aircraft touched down and bounced twice into the air before the pilot applied power for the go-around.

The pilot reported that although he applied full power, the aircraft did not accelerate to take off speed and did not gain sufficient height to clear the trees beyond the end of the strip.

While the evacuation was taking place, the aircraft began to burn and was subsequently destroyed by the post-impact fire. The pilot reported that prior to the flight, he had thoroughly briefed the passengers on the emergency exits and the evacuation procedure. ■