Australian Government
Australian Transport Safety Bureau

ATSB TRANSPORT SAFETY REPORT
Aviation Research and Analysis AR-2009-016(2)
Final

Aviation occurrence statistics: 1 January 1999 to 30 June 2009

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Postal address: PO Box 967. Civic Square ACT 2608
Office location: 62 Northbourne Ave, Canberra City, Australian Capital Territory, 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

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Australian Transport Safety Bureau
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Abstract

Each year, 'responsible persons', as defined in the Transport Safety Investigation Regulations 2003, Part 2.5, provide the Australian Transport Safety Bureau (ATSB) with reports on aviation accidents and incidents, collectively termed occurrences. These reports are used by the ATSB to assist with the independent investigation of occurrences and for identifying safety trends.

This report provides aviation occurrence data for the period 1 January 1999 to 30 June 2009. The data contained herein is dynamic and subject to change pending the provision of new information to the ATSB.

The data will be adjusted biannually to reflect new information received during the reporting period.

THE AUSTRALIAN TRANSPORT SAFETY BUREAU

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory Agency. The Bureau is managed by a Commission and is entirely separate from transport regulators, policy makers and service providers.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

Purpose of safety investigations

The object of a safety investigation is to enhance safety. To reduce safety-related risk, ATSB investigations determine and communicate the safety factors related to the transport safety matter being investigated.

It is not the object of an investigation to apportion blame or determine liability. However, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

Developing safety action

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. The ATSB prefers to encourage the relevant organisation(s) to proactively initiate safety action rather than release formal recommendations. However, depending on the level of risk associated with a safety issue and the extent of corrective action undertaken by the relevant organisation, a recommendation may be issued either during or at the end of an investigation.

The ATSB has decided that when safety recommendations are issued, they will focus on clearly describing the safety issue of concern, rather than providing instructions or opinions on the method of corrective action. As with equivalent overseas organisations, the ATSB has no power to implement its recommendations. It is a matter for the body to which an ATSB recommendation is directed (for example the relevant regulator in consultation with industry) to assess the costs and benefits of any particular means of addressing a safety issue.

About ATSB investigation reports: How investigation reports are organised and definitions of terms used in ATSB reports, such as safety factor, contributing safety factor and safety issue, are provided on the ATSB web site www.atsb.gov.au

ABBREVIATIONS

ATSB	Australian Transport Safety Bureau
BITRE	Bureau of Infrastructure, Transport and Regional Economics
CASA	Civil Aviation Safety Authority
GAAP	General aviation airport procedure aerodromes
IRM	Immediately reportable matter
PIC	Pilot in command
RPT	Regular public transport
RRM	Routine reportable matter
SIIMS	Safety Investigation Information Management System
TSI	Transport Safety Investigation Regulations 2003

1 INTRODUCTION

1.1 Background to the report

Each year, the Australian Transport Safety Bureau (ATSB) receives accident and incident notifications from pilots, airline operators, air traffic control, maintenance personnel, and emergency services authorities. The reporting of these aviation accidents and incidents, collectively termed occurrences, assists the ATSB in monitoring safety through its core function of independent investigation and the analysis of data to identify emerging trends.

The types of occurrences that are required to be reported to the ATSB are detailed in the Transport Safety Investigation Regulations 2003. These occurrences are categorised as either immediately reportable matters (IRMs) or routine reportable matters (RRMs) depending on the seriousness of the event and the category of operation. To see the full list of IRMs and RRMs, visit the ATSB's website at www.atsb.gov.au/about_atsb/legislation.aspx.

This publication has been significantly enhanced and expanded compared with previous editions, and will continue to be refined in coming editions. Any comments on the contents of this report can be included in the on-line survey on the ATSB aviation statistics website at www.atsb.gov.au/aviation/aviation_statistics.aspx.

The *Aviation occurrence statistics* report will hereafter be updated and published biannually.

1.2 Data sources

1.2.1 Occurrence data

The accident and incident data collected by the ATSB is recorded in the Bureau's aviation safety database, the Safety Investigation Information Management System or SIIMS. The occurrence data provided herein was extracted from the SIIMS database for the period 1 January 1999 to 30 June 2009 for Australian civil registered (VH-) aircraft operating both within and outside Australian territory[1] and foreign registered aircraft operating within Australian territory only. Occurrences involving only military aircraft and non-VH registered recreational aircraft, and aircraft without a known registration type have been excluded from the dataset.

[1] Australian territory refers to mainland Australia, and within the Tasmanian and Australian territories 12 nautical mile limit.

1.2.2 Activity data

The Bureau of Infrastructure, Transport and Regional Economics (BITRE) Aviation Statistics section routinely collects activity data for air transport and general aviation operations. This includes hours flown data and departures data collected through:

- The annual *General Aviation Activity Survey*, which is distributed to operators or owners of aircraft listed on the Civil Aviation Safety Authority's civil aircraft register, with the exception of aircraft operated by the major domestic airlines (Qantas – mainline, Virgin Blue, Jetstar and Tiger Airways).
- Monthly performance data provided to the BITRE by airline operators.

The above activity data, available up to and including 2007, was used to calculate accident and fatal accident rates per 100,000 departures and per 100,000 hours flown.

For more aviation activity statistics, please visit the BITRE website at www.bitre.gov.au.

1.3 Disclaimer

Occurrence data used in this report is provided to the ATSB by responsible persons as defined in the Transport Safety Investigation Regulations 2003 Part 2.5. The ATSB accepts no liability for any loss or damage suffered by any person or corporation resulting from the use of this data.

The data contained in SIIMS is dynamic and subject to change pending the provision of new information to the ATSB.

2 ACTIVITY DATA

The analysis of occurrence numbers alone does not represent a complete picture of safety trends within the aviation industry. In order for the data to be properly interpreted and for meaningful comparisons to be made, it is necessary to calculate occurrence rates. This is calculated as the number of occurrences in a given period divided by the number of hours flown or departures in that category of operation.

The below activity data, number of departures and hours flown, were used throughout the report to calculate accident and fatal accident rates.

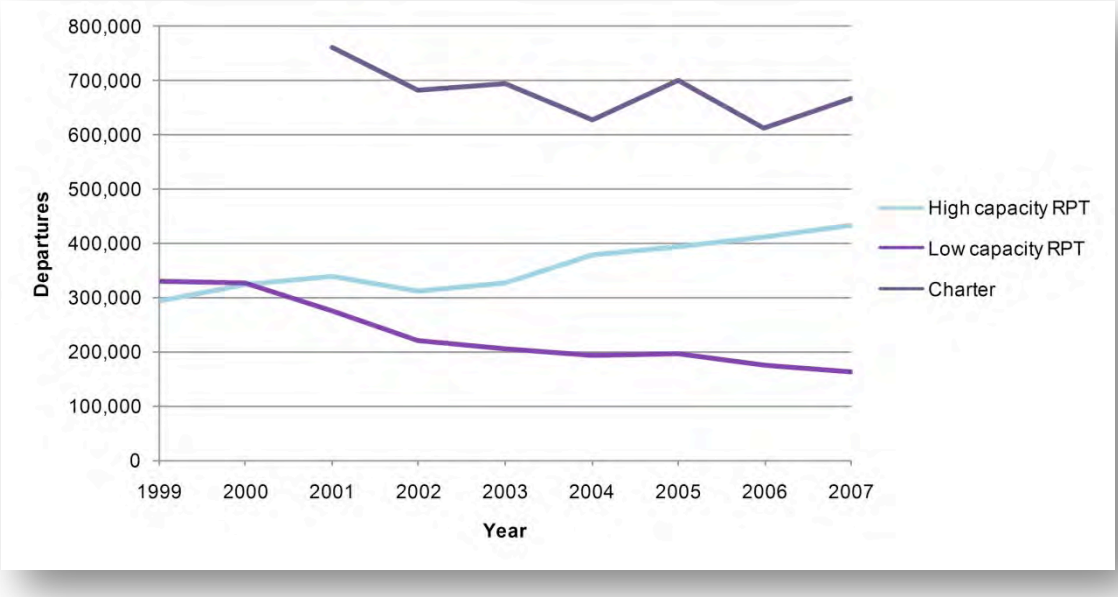
2.1 Departures

The number of departures conducted by commercial air transport aircraft is used widely by industry as a standard measure of activity. Both the number of Australian departures and hours flown will be used to calculate rates for high capacity regular public transport (RPT), low capacity RPT, and charter operations. Departures data for charter is only available from 2001.

Table 1: Departures data, 1999 to 2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Commercial air transport									
High capacity RPT	293,379	323,211	339,864	310,145	326,833	379,317	393,730	410,898	432,369
Low capacity RPT	331,296	326,706	275,364	220,270	204,360	192,023	196,780	174,166	162,597
Charter	-	-	760,111	681,901	693,951	625,965	700,891	611,725	665,808

Figure 1: Number of departures by operation type, 1999 to 2007



2.2 Hours flown

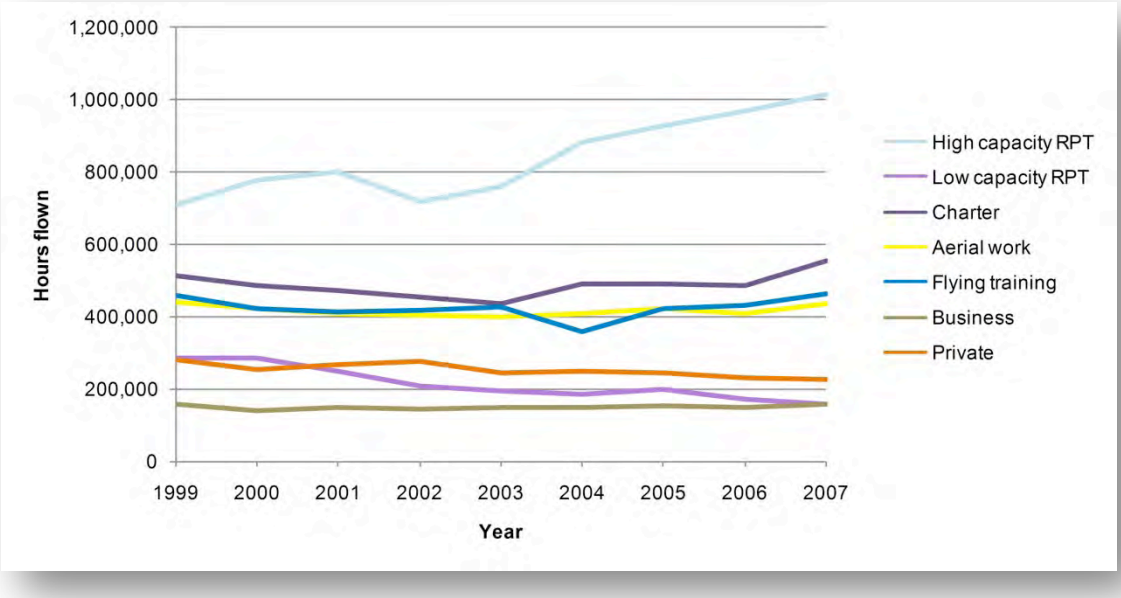
Hours flown data, available up to 2007, is used to calculate accident and fatal accident rates for all operation types: commercial air transport, other commercial, and private/sports aviation. This data includes hours flown for both domestic/regional and international high capacity RPT operations, and hours flown involving balloons.

Table 2: Hours flown, 1999 to 2007

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Commercial air transport									
High capacity RPT	709,486	777,183	798,843	720,303	758,665	883,367	927,779	967,784	1,015,730
Low capacity RPT	285,440	285,667	249,247	208,410	197,172	185,795	199,215	173,358	159,089
Charter	511,987	484,540	472,434	451,237	434,822	488,007	488,947	484,567	552,270
Other commercial									
Aerial work	439,270	418,687	406,411	402,863	397,329	404,407	419,164	404,805	436,222
Flying training	455,423	420,427	411,812	415,954	425,751	356,991	421,222	429,475	461,852
Business	155,499	138,592	146,854	144,015	145,235	144,988	151,090	145,969	155,595
Private/sports aviation									
Private	279,985	252,576	265,356	273,627	242,806	250,581	242,384	230,148	225,903
Sports aviation	-	-	-	-	-	-	-	-	-

1. Complete hours flown data for sports aviation is not available

Figure 2: Hours flown by operation type, 1999 to 2007



3 OCCURRENCE DATA BY OPERATION TYPE

This chapter provides data on occurrence numbers and rates relating to the following operational types:

- **Commercial air transport:** high capacity regular public transport (RPT), low capacity RPT, and charter.
- **Other commercial:** aerial work, flying training, and business.
- **Private/sports aviation:** private and sports aviation.

Inclusions

Specifically, the data includes:

- the number of aircraft involved in incidents, serious incidents, serious injury occurrences, fatal accidents and total accidents
- the number of serious injuries and fatalities
- accident and fatal accident rates per 100,000 departures and 100,000 hours flown.

Explanatory notes

- Data is based on the number of aircraft involved in an occurrence. Occurrences involving more than one aircraft are recorded once for each aircraft involved.
- If an injury or fatality was recorded for one aircraft in a multi-aircraft accident, that injury or fatality was recorded only in the operation type where the injury or fatality occurred.
- Likewise, in a multi-aircraft fatal accident, an accident is recorded as a fatal accident only within the operation type of the aircraft where the fatal injury was contained.
- Incident numbers may be under-reported as the following tables provide data for occurrences where only the aircraft registration type is known. That is, if an aircraft is Australian registered (VH-) or foreign-registered.
- Data excludes occurrences involving Australian non-VH registered recreational aircraft.
- Data for serious injury occurrences and fatal accidents are based on the highest injury level involved with the occurrence.
- Fatalities do not include those resulting from: parachuting operations where aircraft safety was not a factor; suicides; and criminal acts.
- Rates are calculated as accidents and fatal accidents per 100,000 hours flown (all operation types) and per 100,000 departures (commercial air transport only).

3.1 Commercial air transport

Commercial air transport refers to scheduled and non-scheduled commercial operations used for the purposes of transporting passengers and/or cargo for hire or reward. Specifically, this includes:

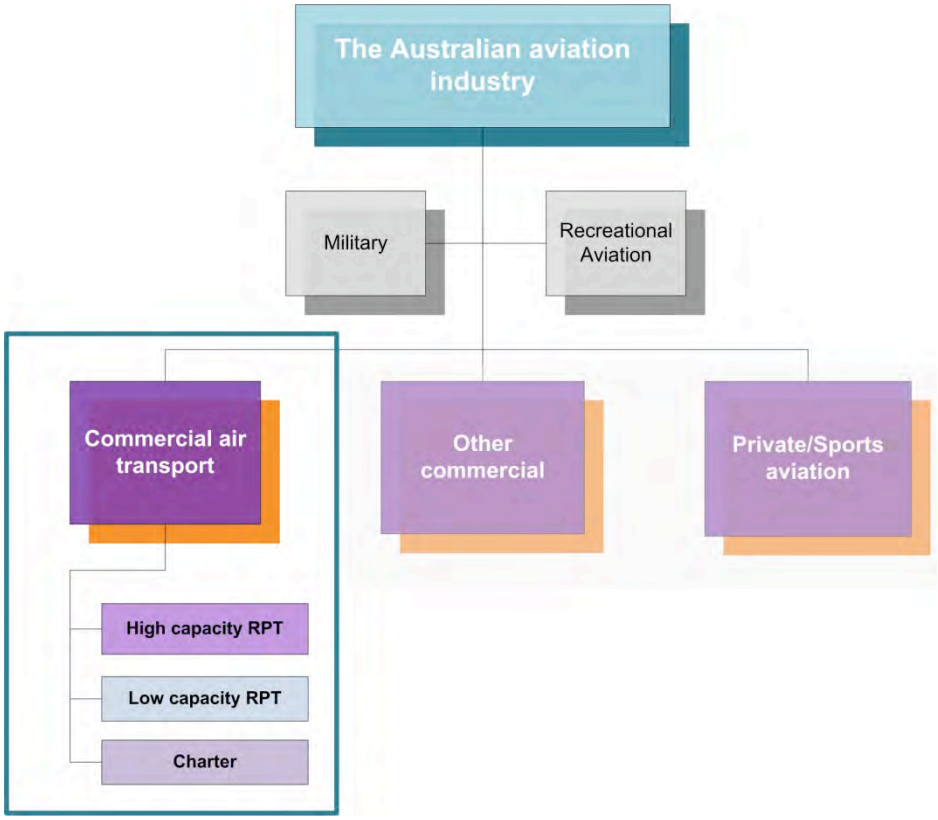
Regular public transport (RPT)

- *High capacity RPT:* Regular public transport operations conducted in high capacity aircraft. A high capacity aircraft refers to an aircraft that is certified as having a maximum capacity exceeding 38 seats or a maximum payload exceeding 4,200 kg.
- *Low capacity RPT:* Regular public transport operations conducted in aircraft other than high capacity aircraft. That is, aircraft with a maximum capacity of 38 seats or less, or a maximum payload of 4,200 kg or below.

Both high capacity and low capacity RPT operations are conducted in accordance with fixed schedules to and from fixed terminals over specific routes.

Charter

Charter operations involve the carriage of passengers and/or cargo on non-scheduled operations by the aircraft operator, or the operator's employees, in trade or commerce, excluding RPT operations.



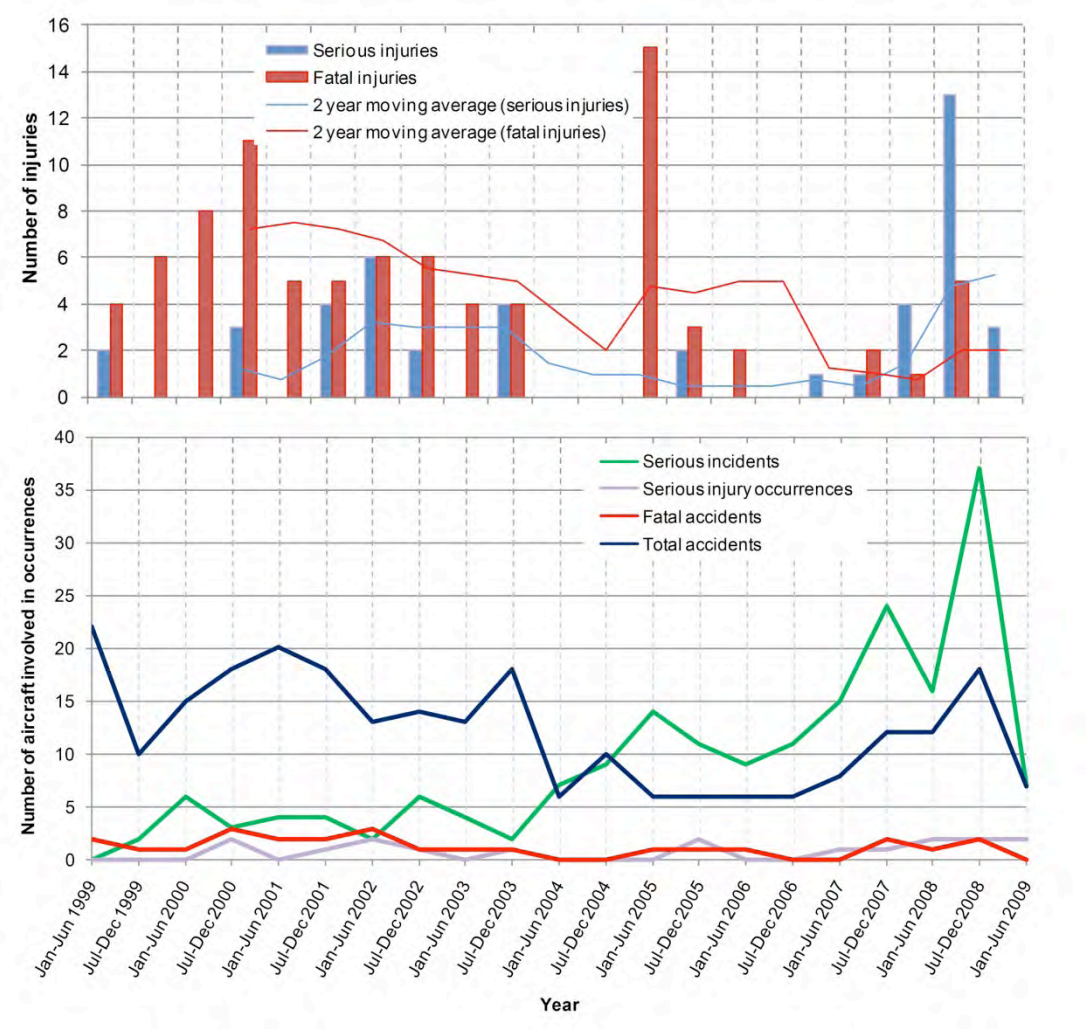
3.1.1 All commercial air transport

Table 3: Commercial air transport occurrence statistics, 1999 to 30 June 2009 (VH- and foreign registered aircraft)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	3,155	3,190	3,072	2,975	2,658	3,385	3,998	3,598	3,864	3,955	1,922
Serious incidents	2	9	8	8	6	16	25	20	39	53	7
Serious injury occurrences	0	2	1	3	1	0	2	0	2	4	2
Fatal accidents	3	4	4	4	2	0	2	1	2	3	0
Total accidents	32	33	38	27	31	16	12	12	20	30	7
Number of injuries											
Serious injuries	2	3	4	8	4	0	2	0	2	17	3
Fatalities	10	19	10	12	8	0	18	2	2	6	0

1. Data includes high capacity RPT, low capacity RPT and charter.
2. Data provided is for VH- registered aircraft operating within and outside Australian territory, and foreign registered aircraft operating within Australian territory only.

Figure 3: Commercial air transport injuries and occurrences (VH- and foreign registered aircraft)



3.1.2 High capacity RPT

From 1999 to 2002, the number of incidents involving high capacity RPT aircraft increased slightly. The year 2003 saw a momentary drop in numbers, which soon rose again and continued to increase in the following years. This increase may be attributed to the introduction of the Transport Safety Investigation Regulations 2003 (TSI Regulations), which provides a prescriptive list of the types of occurrences that are required to be reported to the ATSB and due to improved reporting cultures.

The number of serious incidents noticeably increased from about mid-2007. This, in part, was due to a review of the ATSB's classification of immediately reportable matters (IRMs), which took effect in July 2008. At this stage, the ATSB is unable to identify additional factors that may have influenced this rise over the 18 month period. The numbers declined in 2009.

High capacity RPT operations continue to have an enviable accident history, with zero fatal accidents recorded between 1 January 1999 and 30 June 2009. The number of total accidents also remained low, with an average of about two accidents per year. The accident rate declined from its highest point in the reporting period (1999) to a low of 0.24 accidents per 100,000 departures and 0.10 accidents per 100,000 hours flown in 2006. Both rates increased slightly in 2007, corresponding with the small increase in the number of accidents.

The number of serious injuries generally remained small, with the exception of 2003 and 2008, where the following two accidents resulted in four and 12 injuries respectively:

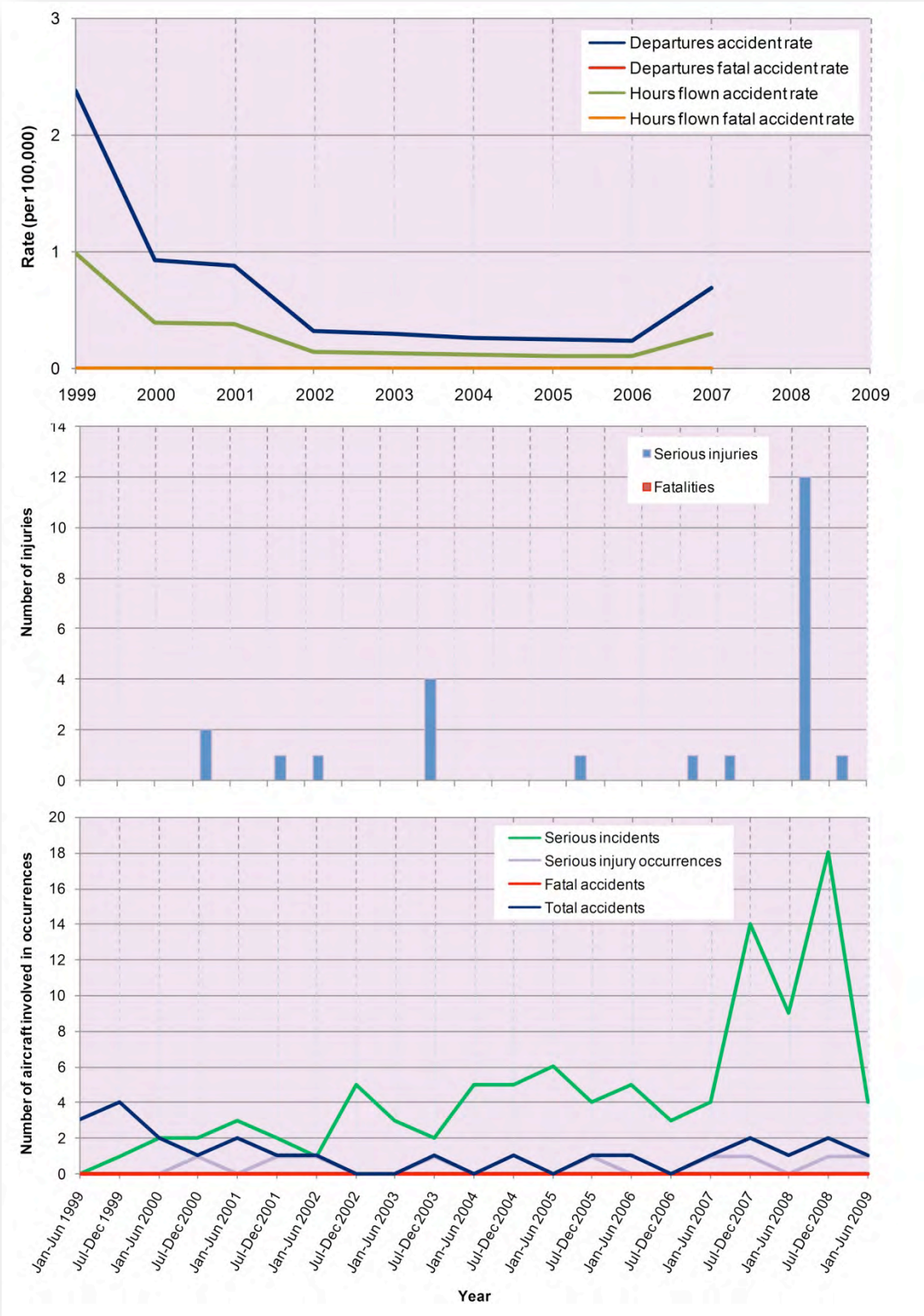
- On 2 July 2003, the Boeing 747-438 aircraft, registered VH-OJU, operating on a scheduled flight from Singapore, arrived at Sydney during the airport's curfew period under a tailwind of around 12 knots. The pilot flying selected auto brake setting three and idle reverse thrust in accordance with the curfew requirement. However, during the landing roll, the reverse thrust was inadvertently de-selected. On arrival at the terminal, the pilot in command (PIC) observed a BRAKE TEMP advisory message and notified the ground engineers. At that point, a fire ignited on a right wing landing gear brake unit. The flight crew were advised and the PIC ordered an evacuation of the aircraft. On receiving the evacuation announcement, the cabin crew commenced the evacuation drill deploying the aircraft's escape slides. As a result of the evacuation, one flight crew member and three passengers were seriously injured (ATSB investigation 200302980).
- On 7 October 2008, an Airbus A330-303 aircraft, registered VH-QPA, departed Singapore on a scheduled passenger transport service to Perth, Australia. While the aircraft was cruising at 37,000 ft, the autopilot disconnected. From about the same time there were various aircraft system failure indications. While the crew was evaluating the situation, the aircraft abruptly pitched nose-down and descended 650 ft during the event. After returning the aircraft to 37,000 ft, the crew commenced actions to deal with multiple failure messages. Shortly after, the aircraft commenced a second uncommanded pitch-down event and descended about 400 ft during this second event. One flight attendant and 11 passengers were seriously injured and many others experienced less serious injuries. Most of the injuries involved passengers who were seated without their seatbelts fastened or were standing. The investigation is continuing (ATSB investigation 200806143).

Table 4: High capacity RPT occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	1,670	1,711	1,733	1,773	1,476	1,955	2,365	2,149	2,221	2,436	1,225
Serious incidents	1	4	5	6	5	10	10	8	18	27	4
Serious injury occurrences	0	1	1	1	1	0	1	0	2	1	1
Fatal accidents	0	0	0	0	0	0	0	0	0	0	0
Total accidents	7	3	3	1	1	1	1	1	3	3	1
Number of injuries											
Serious injuries	0	2	1	1	4	0	1	0	2	12	1
Fatalities	0	0	0	0	0	0	0	0	0	0	0
Rates per 100,000 departures											
Accident rate	2.39	0.93	0.88	0.32	0.31	0.26	0.25	0.24	0.69		
Fatal accident rate	0	0	0	0	0	0	0	0	0		
Rates per 100,000 hours flown											
Accident rate	0.99	0.39	0.38	0.14	0.13	0.11	0.11	0.10	0.30		
Fatal accident rate	0	0	0	0	0	0	0	0	0		

1. Data provided is for VH- registered aircraft operating within, and outside Australian territory.

Figure 4: High capacity RPT rates, injuries and occurrences (VH- only)



3.1.3 Low capacity RPT

Overall, the number of incidents reported to the ATSB involving low capacity RPT aircraft declined from 697 in 1999 to its lowest point during the report period in 2008, with 488 incidents. Similar to that experienced by high capacity RPT, the number of serious incidents for low capacity RPT also experienced a momentary increase in 2008, more than likely attributed to the ATSB's re-classification of IRMs.

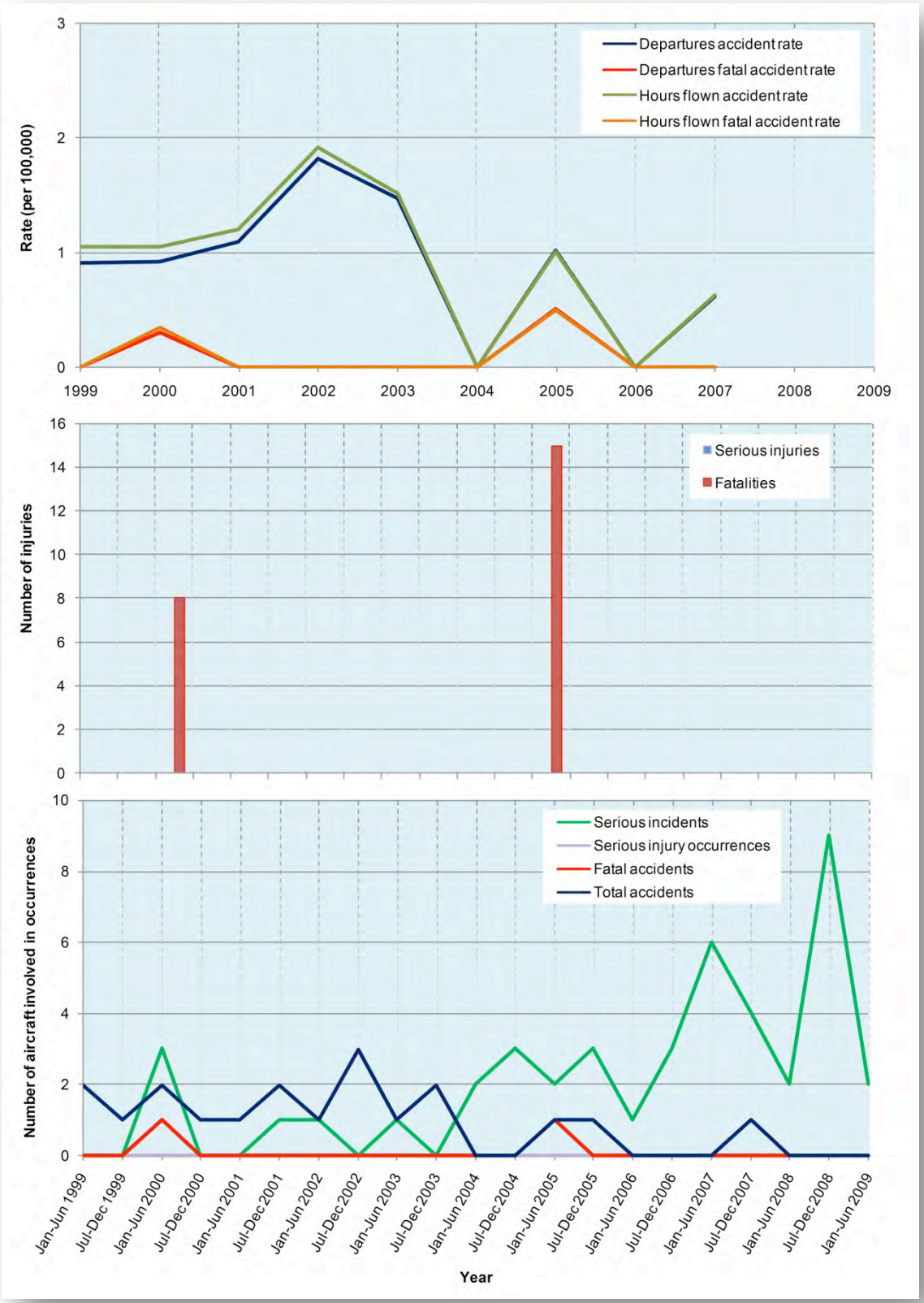
While total accident numbers decreased in the later years, there were two notable fatal accidents, one in 2000 and the other in 2005, resulting in a total of 23 fatalities. These were:

- On the evening of 31 May 2000, a Piper Chieftain, registered VH-MZK, was being operated by Whyalla Airlines as Flight WW904 on a regular public transport service from Adelaide to Whyalla, South Australia. The aircraft reached 6,000 ft and proceeded apparently normally at that altitude on the direct track to Whyalla. Shortly after commencing descent from 6,000 ft, the pilot transmitted a distress call indicating that both engines had failed and that he was going to have to ditch the aircraft. There was no further contact with the aircraft. Early the following morning, a search and rescue operation located two deceased persons and a small amount of wreckage in Spencer Gulf, near the last reported position of the aircraft. The aircraft, together with five deceased occupants, was located several days later on the sea-bed. One passenger remained missing (ATSB investigation 200002157).
- On 7 May 2005, a Fairchild Aircraft Inc. SA227-DC Metro 23 aircraft, registered VH-TFU, with two pilots and 13 passengers, was being operated by Transair on an instrument flight rules regular public transport service from Bamaga to Cairns, with an intermediate stop at Lockhart River, Queensland. At 1143:39 Eastern Standard Time, the aircraft impacted terrain in the Iron Range National Park on the north-western slope of South Pap, a heavily timbered ridge, approximately 11 km north-west of the Lockhart River aerodrome. The aircraft was destroyed by the impact forces and an intense, fuel-fed, post-impact fire. There were no survivors (ATSB investigation 200501977).

Table 5: Low capacity RPT occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	697	808	748	555	576	625	676	523	593	488	254
Serious incidents	0	3	1	1	1	5	5	4	10	11	2
Serious injury occurrences	0	0	0	0	0	0	0	0	0	0	0
Fatal accidents	0	1	0	0	0	0	1	0	0	0	0
Total accidents	3	3	3	4	3	0	2	0	1	0	0
Number of injuries											
Serious injuries	0	0	0	0	0	0	0	0	0	0	0
Fatalities	0	8	0	0	0	0	15	0	0	0	0
Rates per departures											
Accident rate	0.91	0.92	1.09	1.82	1.47	0.00	1.02	0.00	0.62		
Fatal accident rate	0.00	0.31	0.00	0.00	0.00	0.00	0.51	0.00	0.00		
Rates per 100,000 hours											
Accident rate	1.05	1.05	1.20	1.92	1.52	0.00	1.00	0.00	0.63		
Fatal accident rate	0.00	0.35	0.00	0.00	0.00	0.00	0.50	0.00	0.00		

Figure 5: Low capacity RPT rates, injuries and occurrences (VH- only)



3.1.4 Charter

From 1999 to 2003 the number of incidents involving charter aircraft remained relatively constant. However, since that time the number has increased. Similar to that experienced with high capacity RPT, this may be attributed to the introduction of the TSI Regulations and improved reporting cultures. The number of serious incidents also increased from 2003 onwards, and in part, may be attributed to the increased emphasis placed on safety in the air transport sector with the TSI Regulations and re-classification of IRMs in 2008.

The number of total accidents fluctuated over the reporting period, with a maximum of 32 accidents recorded in 2001 and a minimum of nine in 2005. The accident rate per 100,000 hours flown and per 100,000 departures generally declined, with a small increase noted since 2006.

Both the number and rate of fatal accidents remained relatively low, while the corresponding fatality numbers were more pronounced, particularly at the beginning of the reporting period. Some of these include:

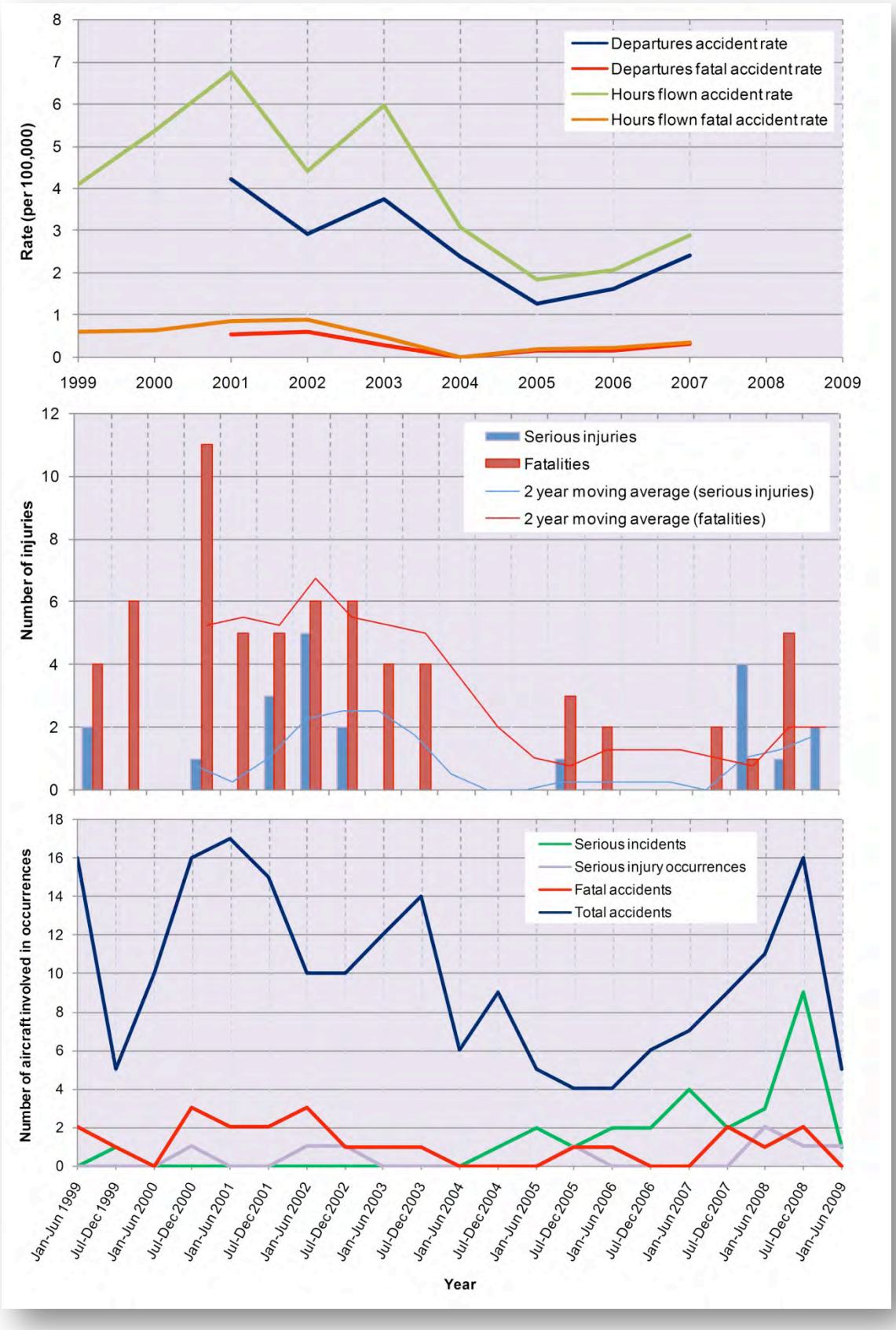
- On 24 November 1999, the pilot of a Cessna Aircraft Company U206A aircraft reported encountering adverse weather and elected to divert to Burketown, Queensland. A subsequent search found numerous small items from the aircraft floating on the water near Sweers Island, Gulf of Carpentaria. The pilot and five passengers were fatally injured (ATSB investigation 199905562).
- On 4 September 2000, a Beech Super King Air 200 aircraft, registered VH-SKC, departed Perth, Western Australia on a charter flight to Leonora with one pilot and seven passengers on board. Shortly after the aircraft had climbed through its assigned altitude, the pilot's speech became significantly impaired and he appeared unable to respond to air traffic service instructions. Five hours after taking off, the aircraft impacted the ground near Burketown, Queensland, and was destroyed. There were no survivors (ATSB investigation 200003771).
- On 10 April 2001, a Shrike Commander 500S aircraft, registered VH-UJB, departed Cairns on a charter flight. Shortly after takeoff, the pilot requested an amended altitude and indicated that he was able to continue flight with visual reference to the ground or water. Air Traffic Services recorded data indicated that approximately 13 minutes after departure, the aircraft disappeared from radar. A search located the wreckage on the north-western side of Thornton Peak. The pilot and three passengers were fatally injured (ATSB investigation 200101537).
- On 27 November 2001, a Raytheon Beech C90 King Air aircraft, registered VH-LQH, took off from runway 29 at Toowoomba aerodrome on a charter flight to Goondiwindi, Queensland. On-board were the pilot and three passengers. At about the time the aircraft became airborne, there was a loss of power on the left engine. Control of the aircraft was lost and it struck high-tension power lines before impacting the ground. All four occupants sustained fatal injuries (ATSB investigation 200105618).
- On 5 June 2002, the pilot of a Bell 206 (Jetranger) helicopter was tasked with conducting a survey operation with five persons on board. The Jetranger departed the Doijnji area for local operations and was later reported overdue at a scheduled refuelling. The wreckage of the helicopter was found the following day. Four of the occupants had not survived (ATSB investigation 200202656).

- On 26 September 2002, a Piper PA-32-300 aircraft, registered VH-MAR, departed Hamilton Island, Queensland. Shortly after the aircraft became airborne, the engine was heard 'coughing' and 'misfiring' before 'cutting out' and then 'starting again'. The aircraft was seen to commence a right turn, and the engine was again heard 'spluttering' and 'misfiring'. A number of witnesses reported that, when part way around the turn, the engine again 'cut out', and the aircraft descended and impacted the ground. The six occupants of the aircraft were fatally injured (ATSB investigation 200204328).
- On 14 March 2003, a Cessna 172G aircraft, registered VH-RPI, was undertaking consecutive charter flights to the Trefoil Island Aircraft Landing Area from Smithton, Tasmania. After takeoff, witnesses reported that the aircraft turned to the left on a southerly heading while climbing, followed by a turn to the east. They reported that following the turn to the east, the nose of the aircraft pitch abruptly upward. Following the nose up pitching, the aircraft rolled abruptly to the left and it lost altitude and fell from line of sight. All four occupants received fatal injuries (ATSB investigation 200300929).
- On 8 November 2003, a Bell helicopter Company 206 (B206), registered VH-FHY, and a Robinson Helicopter Company R44, registered VH-YKL, were travelling in company returning to Kununurra from a fishing charter. Approximately 17 minutes into the journey, the pilot of the B206 received a broadcast from the pilot of the R44 stating that 'I'm going in hard'. All four occupants of the R44 received fatal injuries (ATSB investigation 200304546).

Table 6: Charter occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	422	433	356	412	371	448	519	566	696	712	335
Serious incidents	1	0	0	0	0	1	3	4	6	12	1
Serious injury occurrences	0	1	0	2	0	0	1	0	0	3	1
Fatal accidents	3	3	4	4	2	0	1	1	2	3	0
Total accidents	21	26	32	20	26	15	9	10	16	27	5
Number of injuries											
Serious injuries	2	1	3	7	0	0	1	0	0	5	2
Fatalities	10	11	10	12	8	0	3	2	2	6	0
Rates per departures											
Accident rate			4.21	2.93	3.75	2.40	1.28	1.63	2.40		
Fatal accident rate			0.53	0.59	0.29	0	0.14	0.16	0.30		
Rates per 100,000 hours											
Accident rate	4.10	5.37	6.77	4.43	5.98	3.07	1.84	2.06	2.90		
Fatal accident rate	0.59	0.62	0.85	0.89	0.46	0	0.20	0.21	0.36		

Figure 6: Charter rates, injuries and occurrences (VH- only)



3.1.5 Foreign-registered aircraft

Table 7: Commercial air transport foreign-registered aircraft occurrence statistics, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	366	238	235	235	235	357	438	360	354	319	108
Serious incidents	0	2	2	1	0	0	7	4	5	3	0
Serious injury occurrences	0	0	0	0	0	0	0	0	0	0	0
Fatal accidents	0	0	0	0	0	0	0	0	0	0	0
Total accidents	1	1	0	2	1	0	0	1	0	0	1
Number of injuries											
Serious injuries	0	0	0	0	0	0	0	0	0	0	0
Fatalities	0	0	0	0	0	0	0	0	0	0	0

1. Data provided is for foreign registered aircraft operating within Australian territory only.
2. Data includes high capacity RPT, low capacity RPT and charter operations.

3.2 Other commercial

Other commercial operations are defined in this report as:

Aerial work:

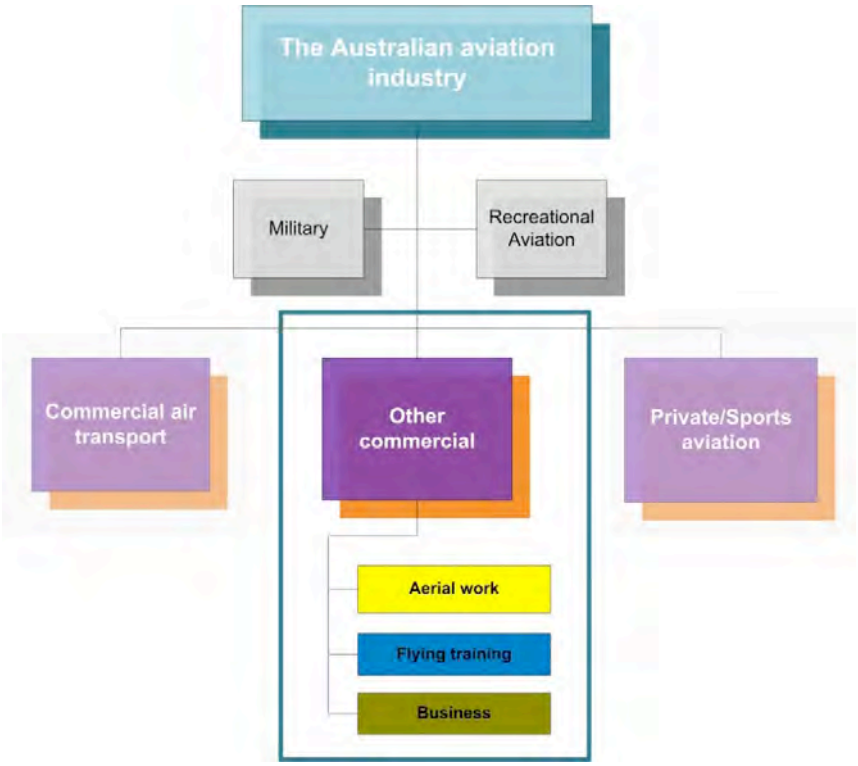
- Aerial agricultural operations involving the carriage and/or spreading of chemicals, seed, fertilizer or other substances for agricultural purposes. This includes operations for the purpose of pest and disease control.
- Aerial operations involving surveying and photography, spotting, ambulance, stock mustering, search and rescue, towing (including glider, target and banner towing), advertising, cloud seeding, fire fighting, and coastal surveillance.

Flying training

Flying under instruction for the issue or renewal of a licence, rating, aircraft type endorsement or conversion training, including solo navigation exercises conducted as part of a course of applied flying training. Flying training is a component of aerial work, but is usually separated for analysis purposes.

Business[2]

Operations where an aircraft is used in the support of a business or profession, but the aircraft is not operated directly for hire or reward.



[2] Arguably, occurrences relating to business operations could be grouped with private operations. The grouping of business operations will be reviewed for later editions of this report.

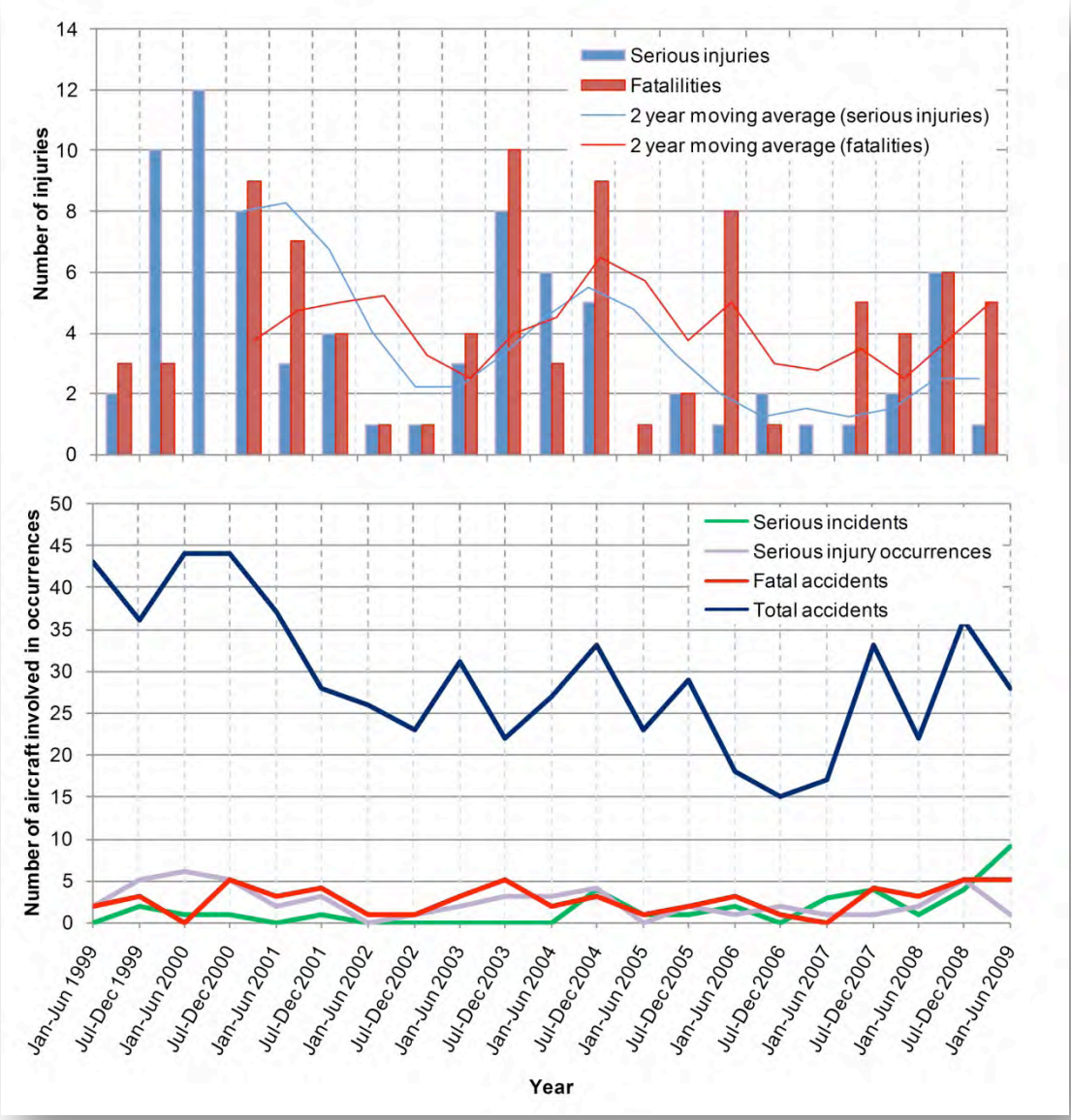
3.2.1 All other commercial

Table 8: Other commercial occurrence statistics, 1999 to 30 June 2009 (VH- and foreign registered aircraft)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	616	574	503	511	521	544	666	663	638	562	265
Serious incidents	2	2	1	0	0	4	2	2	7	5	9
Serious injury occurrences	7	11	5	1	5	7	2	3	2	7	1
Fatal accidents	5	5	7	2	8	5	3	4	4	8	5
Total accidents	79	88	65	49	53	60	52	33	50	58	28
Number of injuries											
Serious injuries	12	20	7	2	11	11	2	3	2	8	1
Fatalities	6	9	11	2	14	12	3	9	5	10	5

1. Data includes aerial work, flying training, and business operations.
2. Data provided is for VH- registered aircraft operating within and outside Australian territory, and foreign registered aircraft operating within Australian territory only.

Figure 7: **All other commercial injuries and occurrences (VH- and foreign registered aircraft)**



3.2.2 Aerial work

The number of incidents involving aircraft conducting aerial work activities, including aerial agriculture, mustering, surveying and photography, emergency services, search and rescue, and fire control, increased from 185 incidents in 1999 to 284 in 2008.

Total accident numbers were largely variable, with a minimum of 22 accidents in 2006 (and 23 accidents in 2002) and a maximum of 48 accidents in 2000. This was also reflected in the total accident rate. These extremes may in part reflect the seasonal nature of some aerial work activities and the environmental factors affecting the growing cycles of crops, such as the long periods of drought in Australia. When analysing aerial work occurrence data it also important to take into consideration that some of these activities operate within the low-level environment, which is inherently more hazardous than higher-level flying.

During the reporting period, there were a number of accidents that resulted in multiple fatalities. Some of these included:

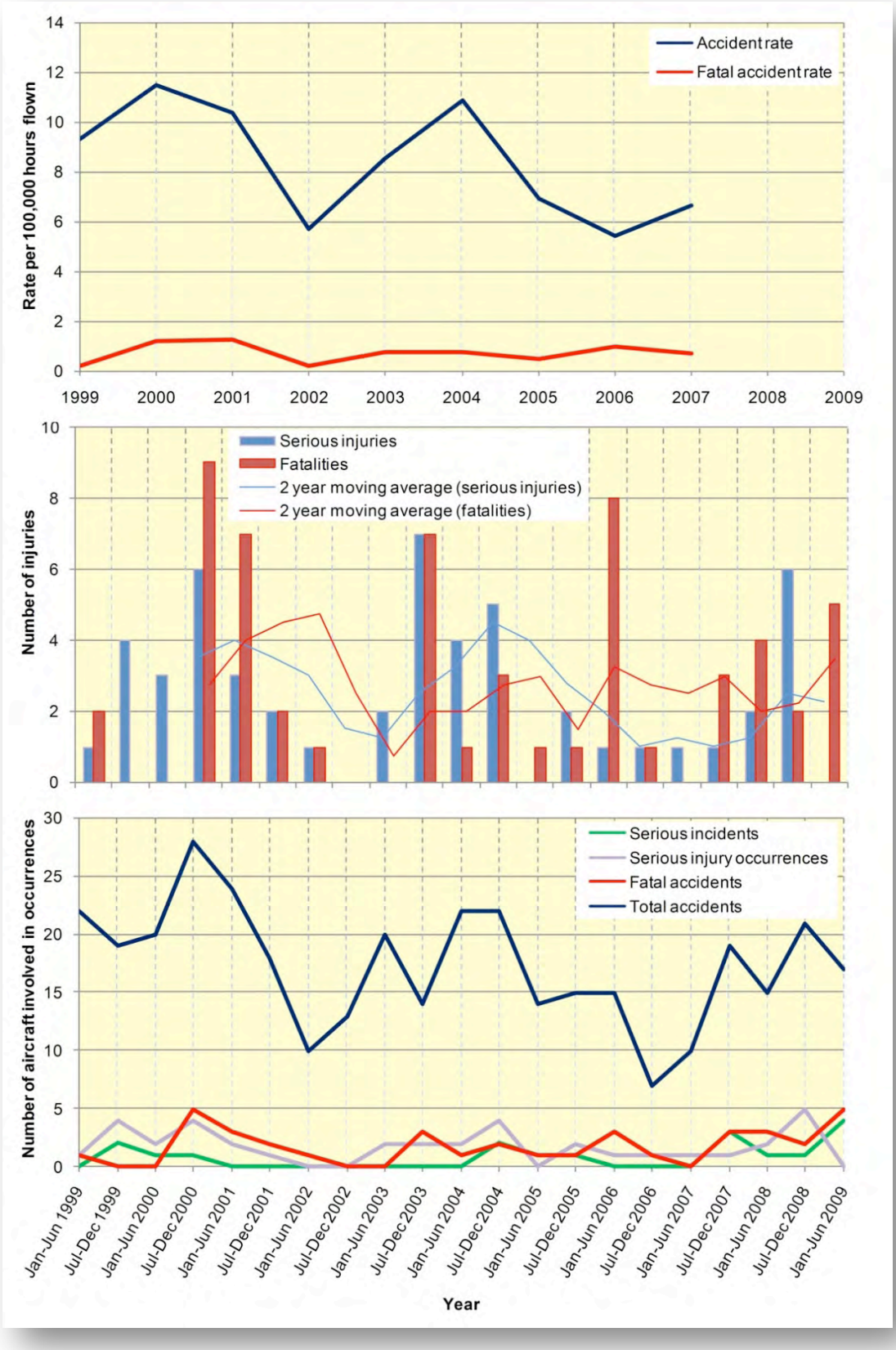
- On 24 July 2000, a Bell Helicopter Co 206L-3, registered VH-FFI, was operating a medical evacuation flight to Rockhampton Hospital. Shortly after departure, the pilot became aware that the helicopter's fuel state was insufficient to enable a return direct to Rockhampton, so he decided to divert to Marlborough. While manoeuvring in preparation for an approach, the helicopter lost power and impacted the ground. All five occupants received fatal injuries (ATSB investigation 200003130).
- On 26 January 2001, a Cessna 310R aircraft, registered VH-HCP, departed Kiwirrkurra, Western Australia (WA), for Newman. The aircraft was operated by the Air Support Unit (ASU) of the WA Police Service and had been used to transport police officers from Newman to Kiwirrkurra earlier that day. Witnesses at Newman aerodrome heard the engines start to ‘cough and splutter’. Soon after, the aircraft collided with the ground. The four occupants sustained fatal injuries (ATSB investigation 200100348).
- On 11 August 2003, a Cessna 404 Titan aircraft, registered VH-ANV, impacted terrain within the Jandakot aerodrome perimeter shortly after takeoff from runway 24 right during an attempt by the pilot to return for an emergency landing. The aircraft was destroyed by the post-impact fire and one of the five passengers was fatally injured. The pilot and the other four passengers all received serious, life-threatening thermal injuries and one of those passengers died 85 days after the accident (ATSB investigation 200303579).
- On 21 February 2006, a Robinson Helicopter Company R44 'Astro' helicopter, registered VH-HBS, was being operated on a series of aerial survey flights approximately 100 km to the north of Mt Isa Airport. The pilot refuelled the helicopter and departed for a survey flight with three passengers on board. When the helicopter did not arrive at a pre-arranged rendezvous point, a search was initiated. Searchers found the burnt wreckage of the helicopter the next day. The four occupants were fatally injured (ATSB investigation 200600979).

Table 9: Aerial work occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	185	222	189	219	216	214	279	281	264	284	135
Serious incidents	2	2	0	0	0	2	2	0	3	2	4
Serious injury occurrences	5	6	3	0	4	6	2	2	2	7	0
Fatal accidents	1	5	5	1	3	3	2	4	3	5	5
Total accidents	41	48	42	23	34	44	29	22	29	36	17
Number of injuries											
Serious injuries	5	9	5	1	9	9	2	2	2	8	0
Fatalities	2	9	9	1	7	4	2	9	3	6	5
Rates											
Accident rate	9.33	11.46	10.33	5.71	8.56	10.88	6.92	5.43	6.65		
Fatal accident rate	0.23	1.19	1.23	0.25	0.76	0.74	0.48	0.99	0.69		

1. Aerial work occurrences include those involving aerial agriculture, mustering, surveying and photography, emergency services, search and rescue, fire control, and test and ferry operations.

Figure 8: Aerial work rates, injuries and occurrences (VH- only)



3.2.3 Flying training

Incidents involving flying training aircraft declined between 1999 and 2002. After this, the numbers gradually increased until 2006, from which point in time they have declined.

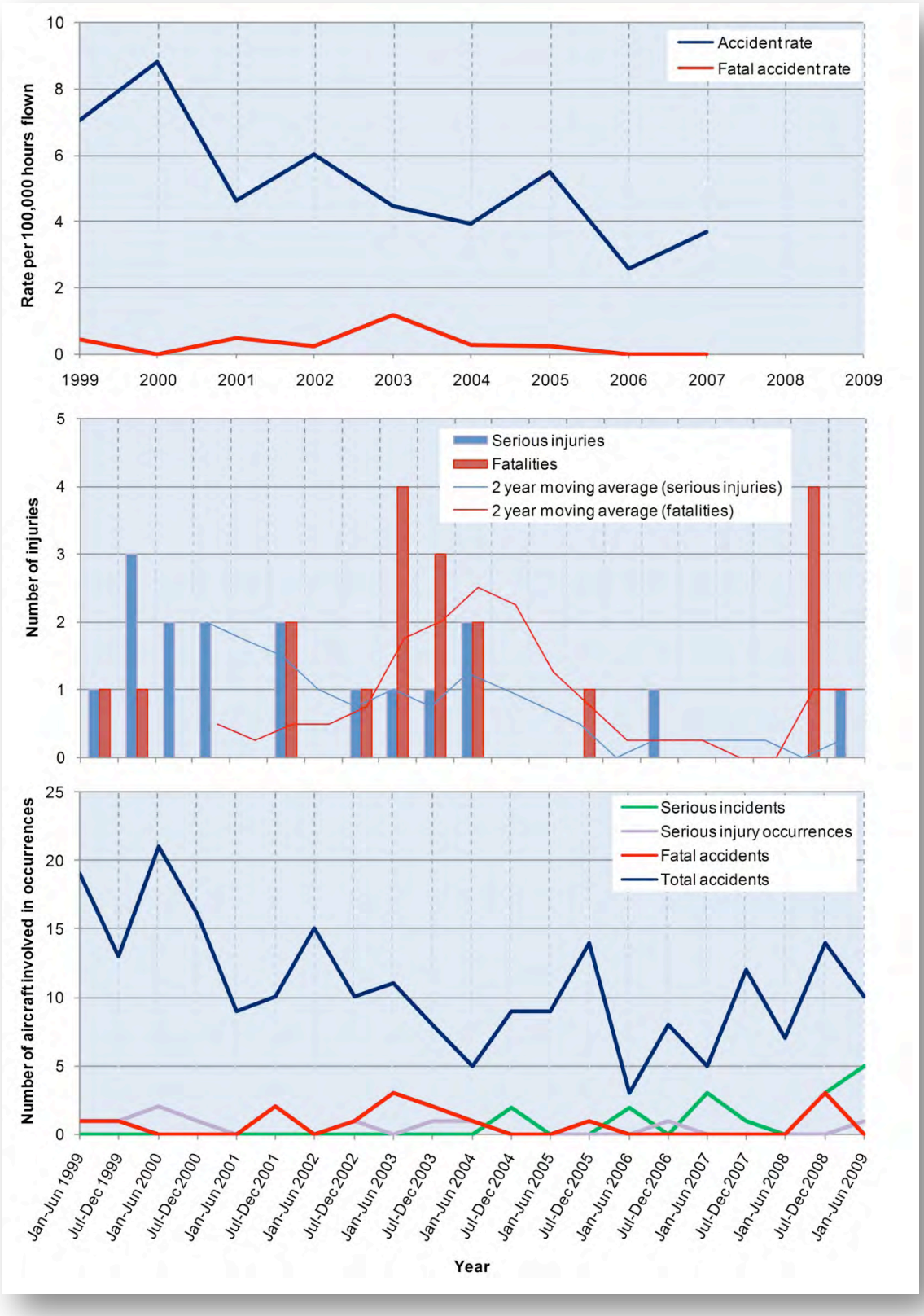
There has been a general downward trend in both the number and rate of total accidents. Fatal accidents have remained low, with the exception of 2003, where five fatal accidents were recorded, resulting in seven fatalities. Some of these flying training fatal accidents include:

- On Monday 29 July 2002, two Cessna Aircraft Company 172R aircraft, registered VH-CNW and VH-EUH, collided while on short final approach to runway 17 left at Moorabbin airport, Victoria. The two aeroplanes were entangled when they impacted the runway. The student pilot and instructor of EUH were able to exit their aircraft before fire engulfed both aeroplanes. The solo pilot of CNW sustained fatal injuries (ATSB investigation 200203449).
- On 20 June 2003, a Robinson Helicopter Company Model R22 helicopter, registered VH-OHA, was being used to conduct flying training in the Bankstown training area, with an experienced flight instructor and student pilot on board. The helicopter was observed and heard flying in a normal manner. Witnesses reported subsequently hearing a number of loud bangs and one witness observed what appeared to be a main rotor blade separating from the helicopter. The helicopter descended to the ground in an inverted attitude and both occupants were fatally injured (ATSB investigation 200302820).
- On 11 November 2003, a qualified pilot, with a flight instructor, was undertaking multi-engine aircraft training in a Piper Aircraft Corp PA-34-200 Seneca aircraft, registered VH-CTT. The aircraft departed Bankstown Airport and turned right to operate in the southern training circuit. They completed three circuits and were on final approach for a fourth touch and go. Witnesses reported that when the aircraft was almost over the threshold it started to diverge right, while maintaining a low height. They reported that when the aircraft was abeam the mid length of the runway, its nose lifted and the aircraft banked steeply to the right before impacting the ground in a near vertical nose-down attitude. The pilot was fatally injured. The instructor received severe burns and was treated in hospital for three and a half weeks before succumbing to those injuries (ATSB investigation 200304589).
- On 27 January 2004, a TedSmith Aerostar 601 aircraft, registered VH-WRF, departed Coolangatta on a dual training flight in the Byron Bay area with a flight instructor and a commercial pilot on board. At approximately 1445, the operator advised Australian Search and Rescue that the aircraft had not returned to Coolangatta, and that it was overdue. A small amount of debris from the aircraft was recovered from the surface of the ocean (ATSB occurrence 200400242).
- On 18 December 2008, a Cessna 152 aircraft and a Liberty XL2 aircraft collided in midair over Casula, NSW, in the proximity of the 2RN reporting point, south-west of Bankstown Airport. The Liberty remained flyable and landed at Bankstown approximately 6 minutes later, while the Cessna descended to the ground and was destroyed. Both occupants of the Cessna were fatally injured. The investigation is continuing (ATSB investigation AO-2008-081).

Table 10: Flying training occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	384	315	286	281	291	304	376	372	351	264	125
Serious incidents	0	0	0	0	0	2	0	2	4	3	5
Serious injury occurrences	2	3	2	1	1	1	0	1	0	0	1
Fatal accidents	2	0	2	1	5	1	1	0	0	3	0
Total accidents	32	37	19	25	19	14	23	11	17	21	10
Number of injuries											
Serious injuries	4	4	2	1	2	2	0	1	0	0	1
Fatalities	2	0	2	1	7	2	1	0	0	4	0
Rates											
Accident rate	7.03	8.80	4.61	6.01	4.46	3.92	5.46	2.56	3.68		
Fatal accident rate	0.44	0	0.49	0.24	1.17	0.28	0.24	0	0		

Figure 9: Flying training rates, injuries and occurrences (VH- only)



3.2.4 Business

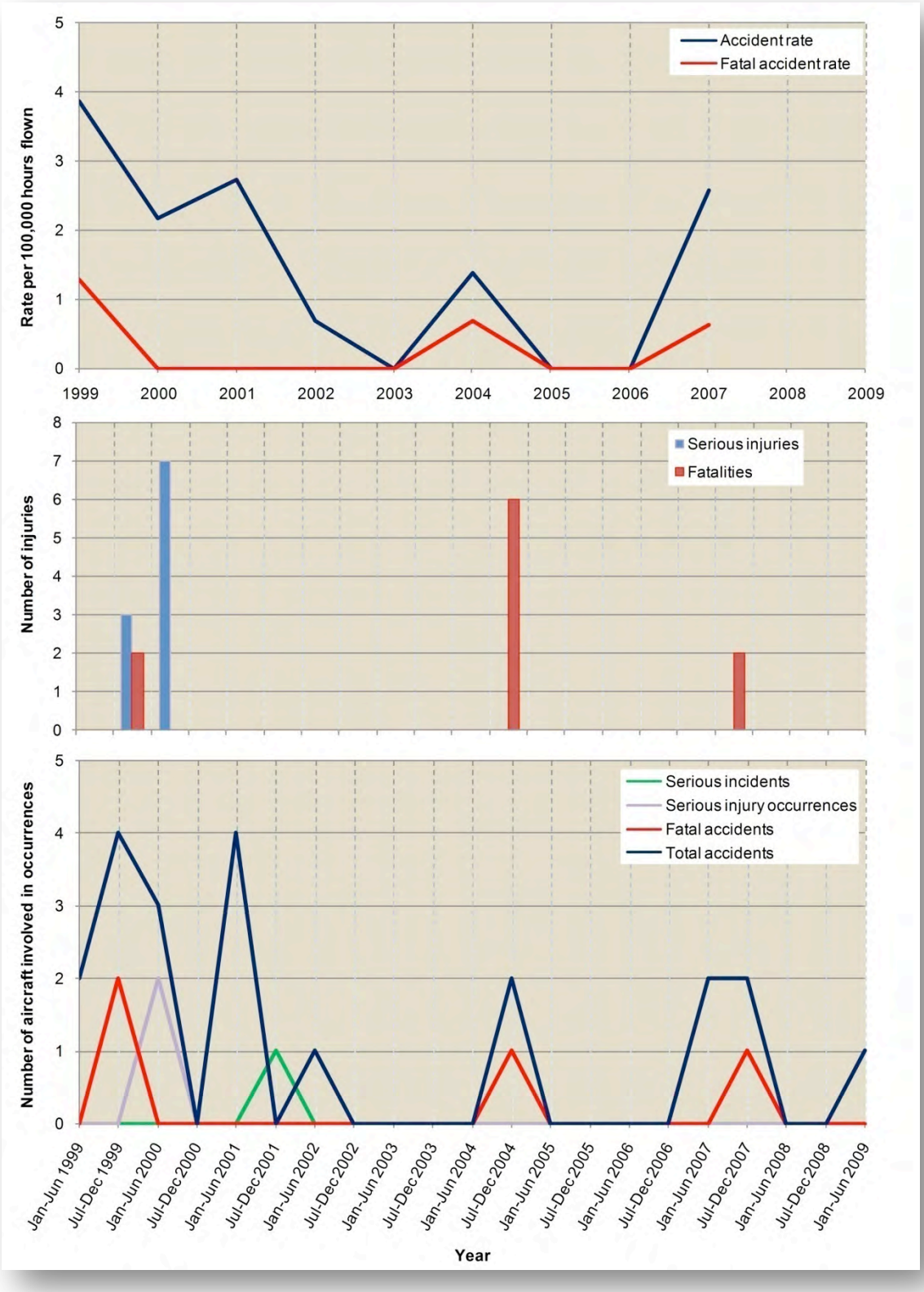
Incident numbers involving business aircraft declined from 44 in 1999 to 11 in 2008. The number of total accidents and fatal accidents remained relatively low over the reporting period. There were two notable accidents involving business aircraft between 1 January 1999 and 30 June 2009 that resulted in six serious injuries and six fatalities. These were:

- On 24 June 2000, a Beech Aircraft Corp 70 aircraft, registered VH-MWJ, collided with terrain short after takeoff from Leonora aerodrome, Western Australia. The pilot and five passengers received serious injuries (ATSB investigation 200002648).
- On 28 July 2004, a Piper PA-31T Cheyenne, registered VH-TNP, with one pilot and five passengers on an instrument flight rules flight from Bankstown to Benalla collided with terrain 34 km south-east of Benalla. All occupants were fatally injured (ATSB investigation 200402797).

Table 11: Business occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	44	36	27	9	13	25	9	9	21	11	2
Serious incidents	0	0	1	0	0	0	0	0	0	0	0
Serious injury occurrences	0	2	0	0	0	0	0	0	0	0	0
Fatal accidents	2	0	0	0	0	1	0	0	1	0	0
Total accidents	6	3	4	1	0	2	0	0	4	0	1
Number of injuries											
Serious injuries	3	7	0	0	0	0	0	0	0	0	0
Fatalities	2	0	0	0	0	6	0	0	2	0	0
Rates											
Accident rate	3.86	2.16	2.72	0.69	0	1.38	0	0	2.57		
Fatal accident rate	1.29	0	0	0	0	0.69	0	0	0.64		

Figure 10: Business rates, injuries and occurrences (VH- only)



3.2.5 Foreign-registered aircraft

Table 12: Other commercial foreign-registered aircraft occurrence statistics, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	3	1	1	2	1	1	2	1	2	3	3
Serious incidents	0	0	0	0	0	0	0	0	0	0	0
Serious injury occurrences	0	0	0	0	0	0	0	0	0	0	0
Fatal accidents	0	0	0	0	0	0	0	0	0	0	0
Total accidents	0	0	0	0	0	0	0	0	0	1	0
Number of injuries											
Serious injuries	0	0	0	0	0	0	0	0	0	0	0
Fatalities	0	0	0	0	0	0	0	0	0	0	0

1. Data provided is for foreign registered aircraft operating within Australian territory only.
2. Data includes aerial work, flying training, and business operations.

3.3 Private/sports aviation

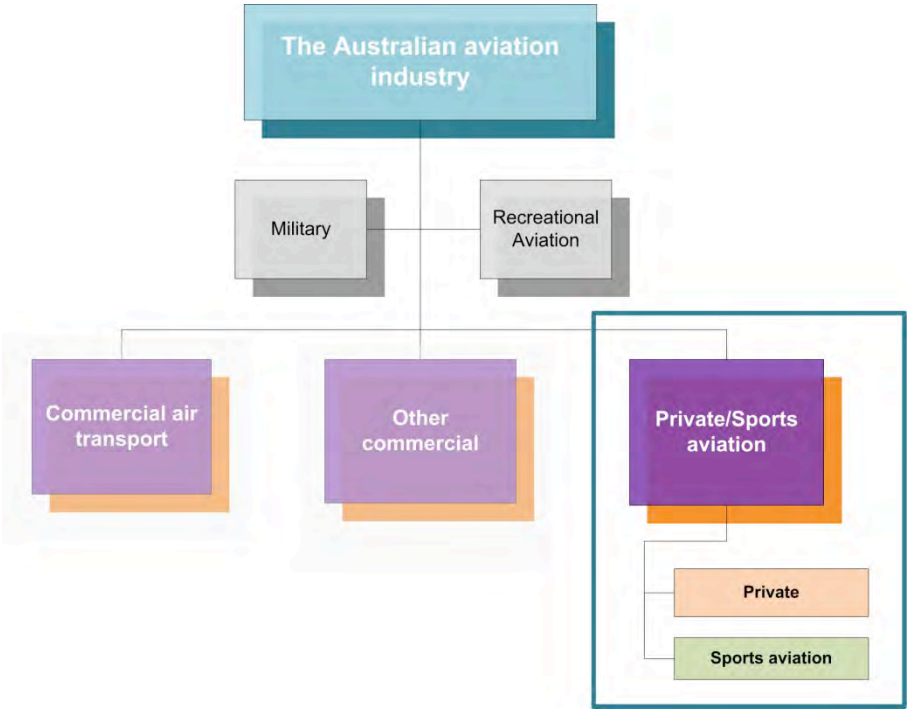
Private/sports aviation operations are defined in this report as:

Private

Refers to flying conducted for non-commercial purposes for recreation or personal transport.

Sports aviation

Refers to operations by hang gliders, balloons, autogyros, gliders/sailplanes, ultralights and airships.



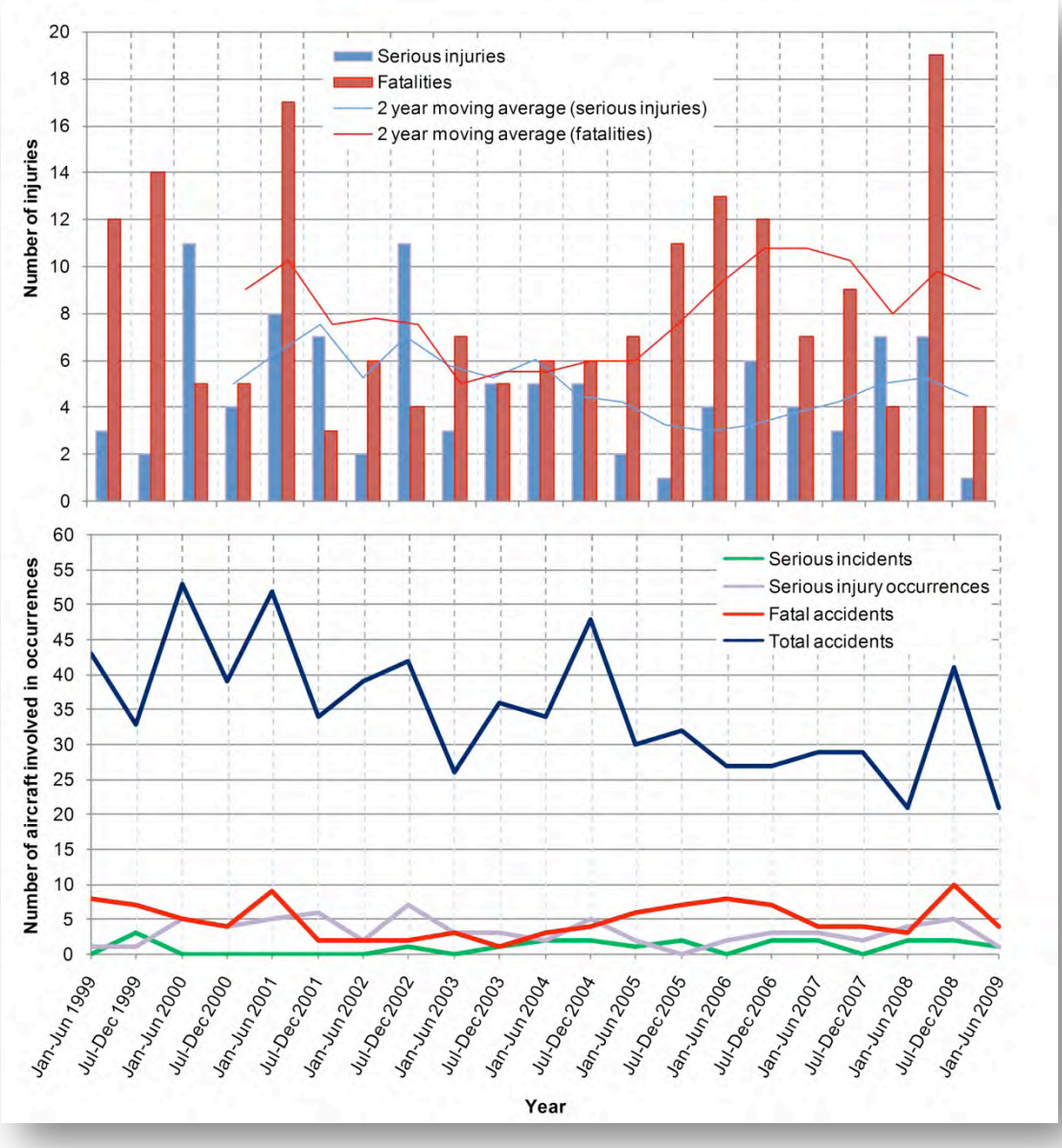
3.3.1 All private/sports aviation

Table 13: Private/sports aviation occurrence statistics, 1999 to 30 June 2009 (VH- and foreign registered aircraft)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	336	258	199	202	187	191	210	226	245	237	109
Serious incidents	3	0	0	1	1	4	3	2	2	4	1
Serious injury occurrences	2	9	11	9	6	7	2	5	5	9	1
Fatal accidents	15	9	11	4	4	7	13	15	8	13	4
Total accidents	76	92	86	81	62	82	62	54	58	62	21
Number of injuries											
Serious injuries	5	15	15	13	8	10	3	10	7	14	1
Fatalities	26	10	20	10	12	12	18	25	16	23	4

1. Data includes private and sports aviation.
2. Data provided is for VH- registered aircraft operating within, and outside Australian territory; and foreign registered aircraft operating within Australian territory only.

Figure 11: Private/sports aviation injuries and occurrences (VH- and foreign registered aircraft)



3.3.2 Private

Private incident numbers experienced a substantial decline from 283 in 1999 to 142 in 2004. These numbers briefly increased up until 2007, however, have since declined. A small number of serious incidents were recorded over the reporting period, with an average of about two per year.

While the accident rate shows some variability, it generally declined between 1999 and 2007. The total number of accidents also experienced a similar pattern.

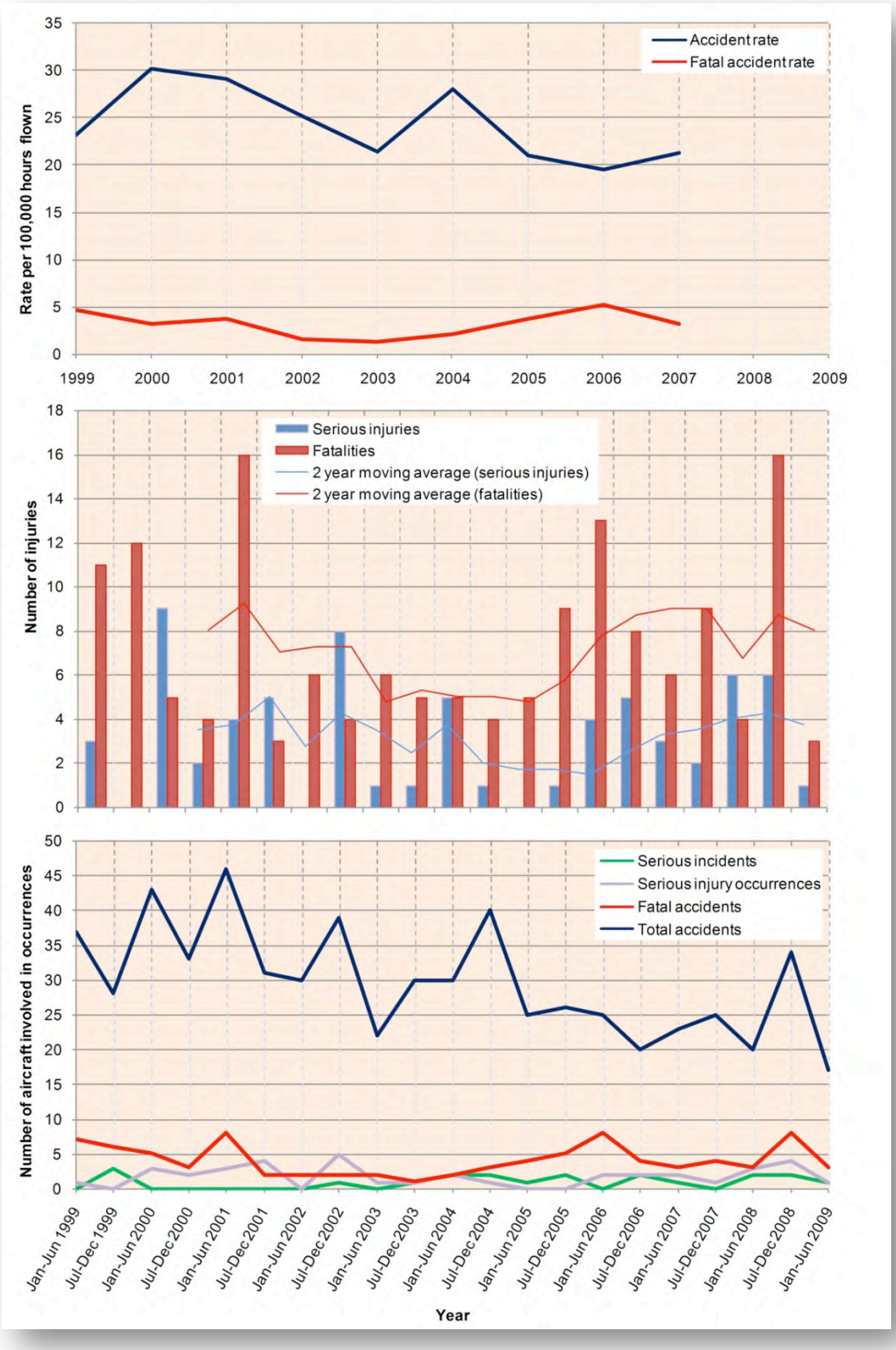
Compared with the total number of accidents, the number of fatal accidents and associated fatalities experienced a greater level of variability, with peaks noted in the years 1999, 2001, 2006 and 2008.

Table 14: Private occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	283	203	154	158	143	142	174	210	209	186	95
Serious incidents	3	0	0	1	1	4	3	2	1	4	1
Serious injury occurrences	1	5	7	5	2	3	0	4	3	7	1
Fatal accidents	13	8	10	4	3	5	9	12	7	11	3
Total accidents	65	76	77	69	52	70	51	45	48	54	17
Number of injuries											
Serious injuries	3	11	9	8	2	6	1	9	5	12	1
Fatalities	23	9	19	10	11	9	14	21	15	20	3
Rates											
Accident rate	23.22	30.09	29.02	25.22	21.42	27.94	21.04	19.55	21.25		
Fatal accident rate	4.64	3.17	3.77	1.46	1.24	2.00	3.71	5.21	3.10		

1. Rates are calculated as accidents and fatal accidents per 100,000 hours flown.

Figure 12: Private rates, injuries and occurrences (VH- only)



3.3.3 Sports aviation

Incidents numbers remained relatively low over the reporting period, which is somewhat expected given the small, yet growing number of sports aviation aircraft on the Australian civil aircraft register.

The total number of accidents and serious injury occurrences reported to the ATSB gradually declined, while the number of fatal accidents and associated fatalities increased.

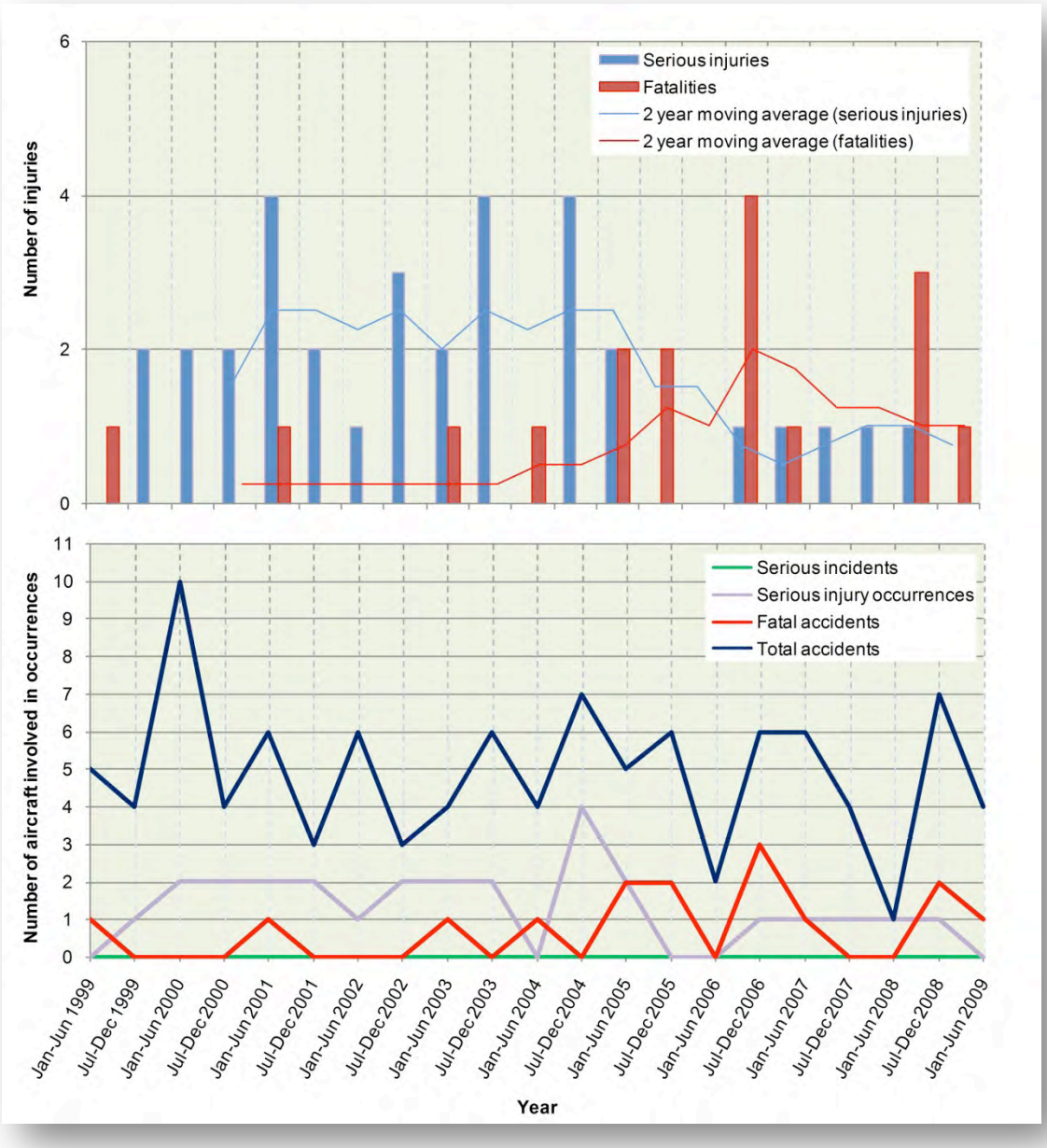
As complete hours flown data are not available, these numbers should be treated with caution as rates per 100,000 hours flown cannot be calculated.

Table 15: Sports aviation occurrence statistics, 1999 to 30 June 2009 (VH- only)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	47	53	41	42	43	47	34	14	34	46	13
Serious incidents	0	0	0	0	0	0	0	0	0	0	0
Serious injury occurrences	1	4	4	3	4	4	2	1	2	2	0
Fatal accidents	1	0	1	0	1	1	4	3	1	2	1
Total accidents	9	14	9	9	10	11	11	8	10	8	4
Number of injuries											
Serious injuries	2	4	6	4	6	4	2	1	2	2	0
Fatalities	1	0	1	0	1	1	4	4	1	3	1

1. Data excludes occurrences involving Australian non-VH registered recreational aircraft.
2. Rates are not provided for sports aviation as complete hours flown data is unavailable.
3. Sports aviation includes aircraft such as hang gliders, balloons and gliders.

Figure 13: Sports aviation rates, injuries and occurrences (VH- only)



3.3.4 Foreign-registered aircraft

Table 16: Private/sports aviation foreign-registered aircraft occurrence statistics, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in occurrences											
Incidents	6	2	4	2	1	2	2	2	2	5	1
Serious incidents	0	0	0	0	0	0	0	0	1	0	0
Serious injury occurrences	0	0	0	1	0	0	0	0	0	0	0
Fatal accidents	1	1	0	0	0	1	0	0	0	0	0
Total accidents	2	2	0	3	0	1	0	1	0	0	0
Number of injuries											
Serious injuries	0	0	0	1	0	0	0	0	0	0	0
Fatalities	2	1	0	0	0	2	0	0	0	0	0

1. Data provided is for foreign registered aircraft operating within Australian territory only.
2. Data includes private and sports aviation.

4 OCCURRENCES BY AIRCRAFT TYPE

As at 30 June 2009, fixed-wing aircraft (aeroplanes) accounted for 77 per cent of all aircraft on the Civil Aviation Safety Authority's civil aircraft register. This was followed by rotary-wing aircraft (helicopters), accounting for 12 per cent.

Explanatory notes

- Data is based on the number of aircraft involved in an occurrence. Occurrences involving more than one aircraft are recorded once for each aircraft involved.
- If an injury or fatality was recorded for one aircraft in a multi-aircraft accident, that injury or fatality was recorded only in the operation type where the injury or fatality occurred.
- Likewise, in a multi-aircraft fatal accident, an accident is recorded as a fatal accident only within the operation type of the aircraft where the fatal injury was contained.
- Incident numbers may be under-reported as the following tables provide data for occurrences where only the aircraft registration type is known, that is, if an aircraft is Australian registered (VH-) or foreign-registered.
- Data excludes occurrences involving Australian non-VH registered recreational aircraft.

4.1.1 Aircraft type by operation

Table 17: Aircraft type by operational category, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in accidents											
Fixed-wing aircraft											
Commercial air transport	30	29	35	25	28	12	12	11	15	23	6
Other commercial	60	55	33	33	34	31	36	17	33	38	16
Private/sports aviation	62	71	70	67	46	67	38	39	42	41	16
Rotary-wing aircraft											
Commercial air transport	2	4	3	2	3	4	0	1	5	7	1
Other commercial	19	33	32	16	19	29	16	16	17	20	12
Private/sports aviation	7	9	8	5	7	5	15	8	8	14	5
Number of aircraft involved in fatal accidents											
Fixed-wing aircraft											
Commercial air transport	2	4	4	3	1	0	2	1	1	2	0
Other commercial	3	3	3	1	4	2	2	2	2	8	1
Private/sports aviation	11	8	10	4	3	5	8	10	7	10	3
Rotary-wing aircraft											
Commercial air transport	1	0	0	1	1	0	0	0	1	1	0
Other commercial	2	2	4	1	4	3	1	2	2	0	4
Private/sports aviation	3	1	1	0	1	1	2	2	0	1	1
Fatalities											
Fixed-wing aircraft											
Commercial air transport	9	19	10	8	4	0	18	2	1	2	0
Other commercial	3	3	6	1	6	8	2	2	3	10	1
Private/sports aviation	21	8	19	10	10	9	13	19	15	19	3
Rotary-wing aircraft											
Commercial air transport	1	0	0	4	4	0	0	0	1	4	0
Other commercial	3	6	5	1	8	4	1	7	2	0	4
Private/sports aviation	4	2	1	0	2	2	2	2	0	1	1

4.1.2 Aircraft type by number of engines

Table 18: Aircraft type by engine, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Number of aircraft involved in accidents											
Fixed-wing aircraft											
Single-engine	124	117	106	97	76	94	70	52	74	88	29
Multi-engine	28	38	32	28	32	16	16	15	16	14	9
Rotary-wing aircraft											
Single-engine	28	45	41	23	29	36	31	25	30	38	18
Multi-engine	0	1	2	0	0	2	0	0	0	3	0
Number of aircraft involved in fatal accidents											
Fixed-wing aircraft											
Single-engine	15	12	12	8	4	3	8	11	7	18	4
Multi-engine	1	3	5	0	4	4	4	2	3	2	0
Rotary-wing aircraft											
Single-engine	6	3	5	2	6	4	3	4	3	2	5
Multi-engine	0	0	0	0	0	0	0	0	0	0	0
Fatalities											
Fixed-wing aircraft											
Single-engine	30	13	20	19	10	6	10	18	12	26	4
Multi-engine	3	17	15	0	10	11	23	5	7	5	0
Rotary-wing aircraft											
Single-engine	8	8	6	5	14	6	3	9	3	5	5
Multi-engine	0	0	0	0	0	0	0	0	0	0	0

5 OCCURRENCES BY STATE/TERRITORY

A transport safety research report released by the ATSB in October 2006[3] highlighted the inherent difficulties associated with assessing aviation safety from a regional perspective or within state boundaries.

While aviation is a regional, national and international activity, the location of an occurrence may be unrelated. This, coupled with the difficulty of obtaining comprehensive activity data for a specific State/Territory, means that the assessment and interpretation of occurrence numbers must be treated cautiously. Consequently, rate data cannot be calculated for the following table.

The number of accidents, fatal accidents and fatalities provided below reflects what happened in a particular State or Territory and not the level of aviation safety.

Explanatory notes

- Data includes VH- registered and foreign-registered aircraft accidents.
- Data includes all aircraft types (fixed-wing, rotary-wing, balloons, gliders and ultralights).
- Data is based on the number of occurrences.
- Numbers include known and unknown operation types, excluding accidents involving only military aircraft.
- Fatal accident numbers are based on the highest injury level involved with the occurrence.
- Fatalities do not include those resulting from: parachuting operations where aircraft safety was not a factor; suicides; and criminal acts.
- Data excludes sports aviation aircraft with an Australian non-VH (recreational) registration and those with an unknown aircraft registration.
- State/Territory 'Other' refers to occurrences involving VH-registered aircraft only operating outside mainland Australia, and Tasmanian and Australian territories 12 nautical mile limit.
- For 2007, the number of fatalities for the State of Victoria includes a mid-air collision accident between a VH-registered aircraft and a sport-registered Avid Flyer ultralight. The fatality for this accident is attributed to the ultralight. The investigation is continuing (ATSB investigation AO-2007-065).

[3] ATSB (2006). *Fatal Aircraft Accidents: Far North Queensland in Context (B2006/0034).* Canberra: Australian Transport Safety Bureau.

Table 19: State/Territory occurrence statistics, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*
Australian Capital Territory											
Total accidents	3	1	2	0	4	0	0	1	0	0	1
Fatal accidents	1	0	1	0	0	0	0	0	0	0	0
Fatalities	1	0	4	0	0	0	0	0	0	0	0
New South Wales											
Total accidents	46	56	40	47	41	34	43	28	26	40	12
Fatal accidents	6	1	2	3	5	2	7	10	3	10	1
Fatalities	11	1	5	8	10	4	11	14	3	16	1
Northern Territory											
Total accidents	11	17	18	10	11	11	6	9	13	12	7
Fatal accidents	1	2	1	2	0	1	0	2	2	3	0
Fatalities	1	2	1	5	0	1	0	3	4	4	0
Queensland											
Total accidents	48	60	52	38	34	49	33	23	30	32	14
Fatal accidents	7	8	8	3	3	3	6	4	1	6	2
Fatalities	16	20	16	8	9	4	20	13	1	9	2
South Australia											
Total accidents	17	10	13	9	8	11	10	3	9	8	1
Fatal accidents	3	2	1	0	1	0	1	0	0	0	0
Fatalities	6	9	1	0	2	0	2	0	0	0	0
Tasmania											
Total accidents	4	2	3	6	5	5	0	5	2	3	2
Fatal accidents	0	0	1	0	1	1	0	0	0	0	0
Fatalities	0	0	1	0	4	1	0	0	0	0	0
Victoria											
Total accidents	28	28	23	17	20	25	15	13	22	21	13
Fatal accidents	2	3	3	2	0	4	3	3	4	2	3
Fatalities	5	4	4	3	0	12	5	4	9	2	3
Western Australia											
Total accidents	26	31	35	25	20	17	15	15	21	28	5
Fatal accidents	2	2	4	0	4	1	1	1	4	3	2
Fatalities	2	2	8	0	9	2	1	2	6	8	3
Other (VH- only)											
Total accidents	2	5	3	0	0	4	2	1	3	2	0
Fatal accidents	0	0	1	0	0	0	0	0	0	0	0
Fatalities	0	0	1	0	0	0	0	0	0	0	0

6 OCCURRENCE TYPES: WHAT HAPPENED?

Accidents and incidents are complex occurrences, often involving a chain or sequence of events. The challenge is to classify these in a meaningful way, and in doing so, capture its main character to identify what contributed to the occurrence. The aim of this classification method, known as occurrence types, is to ensure consistency in accident and incident classification and allow for useful comparisons to be made.

There are four different occurrence type categories used by the ATSB:

- airspace
- aerodrome and airways facility
- mechanical
- operational.

Explanatory notes

- For occurrences involving multiple aircraft: aircraft with the same operation type are recorded once; and aircraft with different operation types are recorded against the corresponding operation type.
- Data provided is based on the primary occurrence type associated with the occurrence, that is, the key or pivotal event in the occurrence sequence.
- Data includes accidents, serious incidents and incidents involving VH-registered aircraft within and outside Australian territory, and foreign-registered aircraft within Australian territory only.

6.1 Commercial air transport

6.1.1 Accidents and serious incidents

Table 20: Commercial air transport occurrence types – accidents and serious incidents, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*	Total
Airspace												
Aircraft separation	0	1	1	2	1	2	3	1	7	12	2	**32**
Airspace incursion	0	0	0	0	0	0	0	1	0	0	0	**1**
Procedural error	0	1	0	0	0	0	0	0	0	0	0	**1**
Operational non-compliance	0	0	0	0	1	0	0	0	2	2	0	**5**
Mechanical												
Airframe	10	5	4	3	5	7	5	2	6	4	2	**53**
Powerplant / propulsion	2	3	4	3	5	3	2	6	9	9	2	**48**
Systems	3	2	4	1	0	1	4	1	3	4	2	**25**
Operational												
Significant event	4	15	13	12	10	8	8	7	13	25	4	**119**
Collision	4	2	9	4	6	2	3	2	5	8	0	**45**
Ground operations	4	4	0	3	2	1	2	5	1	2	1	**25**
Aircraft control	3	2	2	2	0	0	2	3	4	5	1	**24**
Fuel related	0	3	2	2	3	4	2	0	1	4	0	**21**
Weather / environment	3	1	2	0	1	2	0	1	2	1	0	**13**
Bird / animal strike	1	0	4	1	0	0	0	0	2	0	0	**8**
Navigation / flight planning	0	0	0	0	0	0	4	0	1	1	0	**6**
Cabin Safety	0	1	1	0	0	0	0	0	1	0	0	**3**
Miscellaneous	0	0	0	1	0	0	0	2	0	0	0	**3**
Warning device	0	0	0	0	0	1	0	1	0	1	0	**3**

1. Data includes high capacity RPT, low capacity RPT and charter.

6.1.2 Incidents

Table 21: Commercial air transport occurrence types – incidents, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*	Total
Aerodrome and airways facility												
Airways facility	33	42	25	21	23	20	39	16	6	7	3	**235**
Aerodrome related	13	20	18	16	14	18	14	19	17	24	25	**198**
Airspace												
Operational non-compliance	224	243	247	332	357	473	649	544	660	661	253	**4,643**
Breakdown of co-ordination	94	107	83	91	81	131	154	122	154	121	55	**1,193**
Aircraft separation	110	105	113	73	107	93	108	103	101	128	63	**1,104**
Procedural error	53	46	36	42	54	50	82	75	73	72	25	**608**
Information error	45	47	29	28	42	34	79	68	62	34	24	**492**
Airspace incursion	57	64	53	36	31	38	34	23	58	55	22	**471**
Other	27	25	17	15	15	3	9	14	3	5	1	**134**
Mechanical												
Systems	211	230	241	249	175	236	282	245	279	318	161	**2,627**
Powerplant / propulsion	150	194	172	168	134	126	132	113	149	165	110	**1,613**
Airframe	123	124	104	114	100	86	127	103	175	191	107	**1,354**
Operational												
Bird / animal strike	510	595	598	604	637	839	926	865	924	1,038	603	**8,139**
Warning device	421	532	503	350	266	372	493	322	239	278	142	**3,918**
Significant event	211	197	214	227	137	185	223	317	246	233	94	**2,284**
Weather / environment	101	86	104	109	94	145	146	150	155	179	62	**1,331**
Ground operations	62	63	65	74	71	77	65	64	73	69	24	**707**
Communications	42	42	26	45	41	78	73	77	52	67	19	**562**
Aircraft loading	59	30	45	29	12	33	36	65	106	81	42	**538**
Navigation / flight planning	178	41	31	47	21	35	51	32	47	22	7	**512**
Cabin Safety	56	36	62	53	21	18	23	29	39	24	9	**370**
Aircraft control	25	24	14	20	13	25	27	31	43	27	10	**259**
Fuel related	15	20	18	27	14	21	14	25	38	33	11	**236**
Collision	6	15	8	6	16	15	13	18	21	13	8	**139**
Miscellaneous	20	18	15	18	9	11	9	5	19	8	1	**133**
Regulations and SOPs	3	1	0	4	2	4	3	5	18	6	2	**48**

1. Data includes high capacity RPT, low capacity RPT and charter.

6.2 Other commercial

6.2.1 Accidents and serious incidents

Table 22: Other commercial occurrence types – accidents and serious incidents, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*	Total
Airspace												
Aircraft separation	0	0	0	0	0	2	0	0	3	2	2	**9**
Airspace incursion	0	0	0	0	0	0	0	1	0	0	0	**1**
Mechanical												
Powerplant / propulsion	5	11	8	4	5	10	4	6	9	5	4	**71**
Airframe	2	6	1	1	2	2	3	4	1	4	1	**27**
Systems	1	1	0	0	2	2	0	1	1	0	2	**10**
Operational												
Collision	26	34	33	18	26	27	22	13	20	31	12	**262**
Significant event	18	21	12	11	9	15	11	1	10	11	3	**122**
Ground operations	12	4	5	6	5	2	6	2	3	1	2	**48**
Aircraft control	4	2	1	0	1	1	1	5	6	2	7	**30**
Bird / animal strike	4	5	3	3	1	2	3	0	1	1	0	**23**
Fuel related	8	3	3	3	2	0	2	0	1	1	0	**23**
Regulations and SOPs	0	0	0	0	0	1	1	0	0	0	0	**2**
Warning device	0	0	0	0	1	0	0	0	0	0	1	**2**
Weather / environment	0	0	0	0	0	0	0	1	0	1	0	**2**
Miscellaneous	0	0	0	0	0	1	0	0	0	0	0	**1**

1. Data includes aerial work, flying training and business.

6.2.2 Incidents

Table 23: Other commercial occurrence types – incidents, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*	Total
Aerodrome and airways facility												
Aerodrome related	2	1	2	0	5	2	4	7	4	2	0	**29**
Airways facility	0	0	1	1	3	1	1	8	0	1	0	**16**
Airspace												
Operational non-compliance	44	34	35	34	22	23	58	72	92	65	27	**506**
Aircraft separation	50	42	33	31	40	34	41	45	29	37	17	**399**
Airspace incursion	65	59	51	34	5	2	28	36	43	45	15	**383**
Breakdown of co-ordination	12	6	8	4	5	14	14	14	17	8	2	**104**
Procedural error	3	4	4	5	2	0	8	8	4	13	3	**54**
Information error	0	6	1	1	4	5	5	3	6	3	2	**36**
Other	17	7	1	2	0	1	5	3	0	0	0	**36**
Mechanical												
Powerplant / propulsion	89	66	58	56	69	72	73	59	68	73	30	**713**
Systems	50	51	36	37	48	57	57	56	49	38	15	**494**
Airframe	25	37	32	35	32	38	26	38	49	33	30	**375**
Operational												
Bird / animal strike	41	60	69	87	95	85	114	74	81	92	67	**865**
Significant event	63	62	55	50	67	64	58	78	68	37	14	**616**
Warning device	15	21	22	24	26	31	34	32	20	34	14	**273**
Ground operations	25	14	10	19	21	27	44	40	21	23	8	**252**
Collision	14	18	19	11	18	19	22	14	19	23	6	**183**
Navigation / flight planning	17	13	9	19	9	14	16	12	10	8	1	**128**
Aircraft control	6	7	8	2	5	4	8	6	16	7	3	**72**
Communications	11	7	5	4	2	8	4	5	9	4	2	**61**
Fuel related	8	9	4	8	7	4	5	6	4	2	1	**58**
Weather / environment	3	11	1	3	2	2	6	3	7	4	2	**44**
Miscellaneous	2	0	1	4	2	1	1	2	3	2	2	**20**
Cabin Safety	1	0	0	5	1	1	2	1	0	0	0	**11**
Aircraft loading	2	2	0	2	0	1	1	0	2	0	0	**10**
Regulations and SOPs	0	1	0	2	1	2	0	1	1	2	0	**10**

1. Data includes aerial work, flying training and business.

6.3 Private/sports aviation

6.3.1 Accidents and serious incidents

Table 24: Private/sports aviation occurrence types – accidents and serious incidents, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*	Total
Aerodrome and airways facility												
Aerodrome related	0	0	0	0	1	0	0	0	0	0	1	**2**
Airspace												
Aircraft separation	0	0	0	0	1	2	0	1	1	1	1	**7**
Operational non-compliance	1	0	0	0	0	0	0	0	0	0	0	**1**
Mechanical												
Powerplant / propulsion	6	11	12	8	4	17	8	7	12	9	5	**99**
Airframe	6	6	3	4	7	3	1	3	3	2	1	**39**
Systems	2	1	1	0	0	0	1	0	0	1	0	**6**
Operational												
Collision	24	26	31	17	21	22	25	21	22	27	7	**243**
Significant event	22	31	16	29	18	22	17	6	4	13	2	**180**
Ground operations	10	10	8	10	8	8	2	3	2	4	2	**67**
Aircraft control	3	2	7	7	2	7	5	5	8	5	2	**53**
Fuel related	2	3	2	1	1	1	2	3	0	3	0	**18**
Weather / environment	2	1	1	1	1	0	0	1	2	0	0	**9**
Cabin Safety	0	0	2	0	0	1	1	1	1	0	0	**6**
Bird / animal strike	0	0	1	0	0	0	1	0	1	1	1	**5**
Miscellaneous	0	1	1	0	0	0	1	0	0	0	0	**3**
Navigation / flight planning	0	0	1	0	0	0	0	0	2	0	0	**3**
Warning device	0	0	1	0	0	0	0	0	0	0	0	**1**

6.3.2 Incidents

Table 25: Private/sports aviation occurrence types – incidents, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	*2009*	Total
Aerodrome and airways facility												
Aerodrome related	0	0	1	2	0	0	0	1	1	2	0	**7**
Airways facility	0	0	1	0	0	0	0	0	0	0	0	**1**
Airspace												
Operational non-compliance	31	24	15	15	18	9	25	30	35	46	15	**263**
Airspace incursion	68	36	15	16	6	1	10	6	21	10	3	**192**
Aircraft separation	25	18	12	6	7	5	15	2	7	9	3	**109**
Other	16	1	0	2	0	0	1	1	0	1	0	**22**
Breakdown of co-ordination	2	0	1	1	0	3	1	2	0	0	0	**10**
Procedural error	1	0	0	0	1	0	0	0	1	1	0	**4**
Information error	1	1	1	0	0	0	0	0	0	0	0	**3**
Mechanical												
Powerplant / propulsion	32	30	31	29	36	26	18	26	49	34	20	**331**
Airframe	11	15	23	14	10	13	12	22	24	25	9	**178**
Systems	15	16	11	14	18	19	18	19	13	19	10	**172**
Operational												
Significant event	36	34	25	29	27	37	35	39	23	22	14	**321**
Collision	7	12	12	14	13	16	22	16	13	17	10	**152**
Bird / animal strike	15	10	10	12	8	14	12	6	9	10	6	**112**
Ground operations	11	9	7	9	5	13	10	6	6	5	1	**82**
Warning device	7	3	6	10	11	3	5	11	8	8	2	**74**
Fuel related	5	12	8	7	10	6	5	3	4	2	1	**63**
Navigation / flight planning	13	9	1	5	4	4	0	6	1	2	3	**48**
Communications	5	8	4	5	1	6	5	5	5	3	0	**47**
Aircraft control	3	2	3	3	1	1	3	6	8	8	6	**44**
Weather / environment	4	3	3	4	1	2	2	2	4	5	3	**33**
Miscellaneous	4	1	0	3	0	0	3	1	0	0	2	**14**
Cabin Safety	1	0	1	0	0	1	0	1	5	1	0	**10**
Regulations and SOPs	0	2	1	0	1	0	0	0	0	2	0	**6**
Aircraft loading	0	0	1	0	0	0	1	0	1	1	0	**4**

7 ATSB INVESTIGATIONS

In the 6 month period from 1 January to 30 June 2009, the Australian Transport Safety Bureau (ATSB) commenced 24 aviation safety occurrence investigations. The following provides a brief synopsis of these investigations. With the exception of those investigations with a status of 'Completed', the details below are preliminary and subject to change as further information are gathered throughout the course of the investigation.

Unstable approach

Investigation number:	AO-2009-001
Occurrence category:	Serious incident
Date/time:	26/12/2008 10:20 PM ESuT
Location:	Sydney Aerodrome, NSW
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-TQL
Manufacturer:	Bombardier Inc
Model:	DHC-8-315
Operation type:	High capacity regular public transport
Damage level:	Nil

Summary

After glideslope capture, speed was reducing and the crew were configuring the aircraft for landing. As the speed approached 120 kts with flaps running, the stick shaker operated. The crew carried out a missed approach.

Airframe event

Investigation number:	AO-2009-002
Occurrence category:	Serious incident
Date/time:	29/12/2008 10:00 AM CST
Location:	NM M 100 km, Alice Springs Aerodrome, NT
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-HZB
Manufacturer:	Robinson Helicopter Co
Model:	R22 Beta
Operation type:	Private
Damage level:	Serious

Summary

During a survey flight, the pilot noticed a vibration in the cyclic. The pilot carried out a precautionary landing and discovered that one of the main rotor blades had delaminated and peeled back approximately 2 cms and 10 cms from the blade tip.

Abnormal engine indications

Investigation number:	AO-2009-003
Occurrence category:	Incident
Date/time:	5/11/2008 6:30 PM EST
Location:	Overhead Gayndah (NDB)
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-UYI
Manufacturer:	S.A.A.B. Aircraft Co
Model:	340B
Operation type:	Low capacity regular public transport
Damage level:	Nil

Summary

While exiting in a holding pattern in icing conditions, the crew received over temperature warnings for both engines. The crew reduced power and continued onto Brisbane.

Operational event

Investigation number:	AO-2009-004
Occurrence category:	Serious incident
Date/time:	2/02/2009 10:30 AM EST
Location:	123° M 74 km, Townsville Aerodrome, QLD
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-ESH
Manufacturer:	Agusta, Spa, Construzioni Aeronautiche
Model:	AW139
Operation type:	Aerial work
Damage level:	Nil

Summary

During the cruise, the crew received multiple cautionary and advisory messages.

Airframe event

Investigation number:	AO-2009-006
Occurrence category:	Incident
Date/time:	6/02/2009 6:15 PM ESuT
Location:	Sydney Aerodrome, NSW
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-KDQ
Manufacturer:	S.A.A.B. Aircraft Co
Model:	340B
Operation type:	Low capacity regular public transport
Damage level:	Minor

Summary

The left outboard main landing gear wheel failed but remained attached to the hub.

Mid-air collision

Investigation number:	AO-2009-005
Occurrence category:	Serious incident
Date/time:	7/02/2009 7:36 AM CSuT
Location:	Parafield Aerodrome, SA
Injury level:	Nil
Investigation status:	Completed

Aircraft details 1

Registration:	VH-TGM
Manufacturer:	Grob – Burkhaart Flugzeugbau
Model:	G-115
Operation type:	Flying training
Damage level:	Minor

Aircraft details 2

Registration:	VH-YTG
Manufacturer:	S.O.C.A.T.A.-Groupe Aerospatiale
Model:	TB-10
Operation type:	Flying training
Damage level:	Minor

Summary

On 7 February 2009, five aircraft were engaged in circuit training and one aircraft was departing runway 03 left (03L) at Parafield Airport, SA. All of the aircraft in the circuit at the time were operated by a local flight school. The control tower was not open and Common Traffic Advisory Frequency – carriage and use of radio required, CTAF (R), procedures were in place.

At about 0736 Central Daylight-saving Time, a S.O.C.A.T.A.-Groupe Aerospatiale TB-10 (Tobago), registered VH-YTG, with an instructor and student on board, was on final approach for a practice short field landing. In the circuit behind the Tobago was a Grob – Burkhaart Flugzeugbau G-115 (Grob), registered VH-TGM, with an instructor and student on board.

Investigation number AO-2009-005 continued

The Grob was on final approach for a practice flapless approach and landing. The Grob collided with the Tobago from behind, damaging the Tobago's rudder with the Grob's right wing. Both aircraft remained controllable and were landed on runway 03L and 03 right.

The investigation found that the pilots of the Grob experienced sun glare and background visual clutter on the base leg for runway 03L and were unable to sight the preceding Tobago. The pilots of the Grob did not discern some broadcasts from the Tobago pilots, significantly diminishing their situational awareness. The pilots of the Grob continued the approach without positively identifying the preceding aircraft in the circuit.

Soon after the accident, the aircraft operator's flight safety officer produced a comprehensive accident investigation report that captured the key aspects of the accident. Included in the report were a number of recommendations, which were implemented by the operator.

The investigation identified a safety issue regarding definition of the circuit traffic limit in CTAF(R) and a safety issue related to the positive identification of traffic before turning final.

Collision on ground

Investigation number:	AR-2009-007
Occurrence category:	Incident
Date/time:	11/02/2009 7:22 PM EST
Location:	Townsville Aerodrome, QLD
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-SBW
Manufacturer:	Bombardier Inc
Model:	DHC-8-315
Operation type:	High capacity regular public transport
Damage level:	Nil

Summary

During the take-off run, the aircraft struck a runway light. The crew rejected the takeoff.

Collision with terrain

Investigation number:	AR-2009-009
Occurrence category:	Accident
Date/time:	24/02/2009 1:00 PM EST
Location:	SW M 120 km, Normanton Aerodrome, QLD
Injury level:	Fatal
Investigation status:	Active

Aircraft details

Registration:	VH-DAC
Manufacturer:	Piper Aircraft Corp
Model:	PA-28-180
Operation type:	Private
Damage level:	Serious

Summary

It was reported that the aircraft crashed. The pilot who was the sole occupant was fatally injured.

Weight and balance event

Investigation number:	AR-2009-011
Occurrence category:	Incident
Date/time:	6/03/2009 12:01 AM ESuT
Location:	Sydney Aerodrome, NSW
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-QPJ
Manufacturer:	Airbus Industrie
Model:	A330-303
Operation type:	High capacity regular public transport
Damage level:	Nil

Summary

During loading, the aircraft was overloaded to approximately one tonne above the maximum take-off weight.

Ground strike

Investigation number:	AO-2009-012
Occurrence category:	Accident
Date/time:	20/03/2009 10:32 PM ESuT
Location:	Melbourne Aerodrome, VIC
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	A6-ERG
Manufacturer:	Airbus Industrie
Model:	A340-541
Operation type:	High capacity regular public transport
Damage level:	Serious

Summary

At 2231 Eastern Daylight-saving Time, the aircraft commenced the take-off roll on runway 16 at Melbourne Airport on a scheduled, passenger flight to Dubai, United Arab Emirates with 257 passengers, 14 cabin crew and four flight crew. The takeoff was planned as a reduced-power takeoff and the first officer was the handling pilot for the departure. At 2231:53, the captain called for the first officer to rotate. The first officer attempted to rotate the aircraft, but it did not respond immediately with a nose-up pitch. The captain again called 'rotate' and the first officer applied a greater nose-up command. The nose of the aircraft was raised and the tail made contact with the runway surface, but the aircraft did not begin to climb. The captain then selected TOGA on the thrust levers, the engines responded immediately, and the aircraft commenced a climb.

The crew notified air traffic control of the tail strike and that they would be returning to Melbourne. While reviewing the aircraft's performance documentation in preparation for landing, the crew noticed that a take-off weight, which was 100 tonnes below the actual take-off weight of the aircraft, had inadvertently been used when completing the take-off performance calculation. The result of that incorrect take-off weight was to produce a thrust setting and take-off reference speeds that were lower than those required for the actual aircraft weight.

The aircraft subsequently landed at Melbourne with no reported injuries. The tail strike resulted in substantial damage to the tail of the aircraft and damaged some airport lighting and the instrument landing system.

As a result of the accident, the aircraft operator has advised the Australian Transport Safety Bureau that it is reviewing a number of procedures including human factors involved in take-off performance data entry.

Collision with terrain

Investigation number:	AO-2009-010
Occurrence category:	Accident
Date/time:	2/04/2009 2:00 PM EST
Location:	Proserpine/Whitsunday Coast Aerodrome, QLD
Injury level:	Serious
Investigation status:	Active

Aircraft details

Registration:	VH-YDA
Manufacturer:	Robinson Helicopter Co
Model:	R22 Beta
Operation type:	Flying training
Damage level:	Serious

Summary

It was reported that the helicopter collided with the runway. The two occupants sustained injuries.

Avionics system event

Investigation number:	AO-2009-013
Occurrence category:	Incident
Date/time:	7/04/2009 12:10 PM EST
Location:	Sydney Aerodrome, NSW
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-VYL
Manufacturer:	The Boeing Company
Model:	737-838
Operation type:	High capacity regular public transport
Damage level:	Nil

Summary

While passing 150 ft on short final approach to runway 16R, the co-pilot’s radar altimeter indicated 60 ft and the GPWS gave a 10 ft alert. As a result, the autopilot disconnected and the thrust levers moved towards idle. The crew manually increased the thrust.

Wirestrike

Investigation number:	AO-2009-017
Occurrence category:	Accident
Date/time:	20/04/2009 2:00 PM EST
Location:	220° T 27 km, Edenhope (ALA), VIC
Injury level:	Fatal
Investigation status:	Active

Aircraft details

Registration:	VH-EZT
Manufacturer:	Robinson Helicopter Co
Model:	R44 II
Operation type:	Aerial work
Damage level:	Serious

Summary

It was reported that the helicopter struck powerlines and collided with the ground. The pilot sustained fatal injuries.

Powerplant/propulsion event

Investigation number:	AO-2009-019
Occurrence category:	Accident
Date/time:	3/05/2009 6:24 AM EST
Location:	Rolleston (ALA), 180° M 2Km, QLD
Injury level:	Minor
Investigation status:	Active

Aircraft details

Registration:	VH-IDU
Manufacturer:	Bell Helicopter Co
Model:	47G-3B1
Operation type:	Private
Damage level:	Serious

Summary

As the helicopter climbed through 150 ft AGL at 40 kts, the pilot felt a bounce, lowered the collective then heard a loud bang. The engine began racing so the pilot reduced power and carried out a forced landing. The helicopter landed heavily and the main rotor severed the tailboom.

Mid-air collision

Investigation number:	AO-2009-018
Occurrence category:	Accident
Date/time:	5/05/2009 10:50 AM WST
Location:	N M 50 km, Halls Creek Aerodrome, WA
Injury level:	Fatal
Investigation status:	Active

Aircraft details 1

Registration:	VH-PHT
Manufacturer:	Robinson Helicopter Co
Model:	R22 Beta
Operation type:	Private
Damage level:	Serious

Aircraft details 2

Registration:	VH-HCB
Manufacturer:	Robinson Helicopter Co
Model:	R22 Beta
Operation type:	Private
Damage level:	Serious

Summary

It was reported that two helicopters collided while mustering.

Flight control system event

Investigation number:	AO-2009-021
Occurrence category:	Incident
Date/time:	18/05/2009 1:00 PM EST
Location:	Near Gold Coast Aerodrome, QLD
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-VNC
Manufacturer:	Airbus Industrie
Model:	A320-232
Operation type:	High capacity regular public transport
Damage level:	Unknown

Summary

During cruise, the aircraft encountered aileron control problems and diverted to the Gold Coast.

Forced landing

Investigation number:	AO-2009-022
Occurrence category:	Incident
Date/time:	21/05/2009 3:20 PM EST
Location:	Canberra Aerodrome, 220° M 63Km, ACT
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-WAL
Manufacturer:	Piper Aircraft Corp
Model:	PA-31-310
Operation type:	Private
Damage level:	Nil

Summary

It was reported that the aircraft made a precautionary landing due to a fuel problem.

Aerodrome related event

Investigation number:	AO-2009-024
Occurrence category:	Incident
Date/time:	22/05/2009 7:00 PM CST
Location:	Darwin Aerodrome, NT
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-NXM
Manufacturer:	The Boeing Company
Model:	717-200
Operation type:	High capacity regular public transport
Damage level:	Nil

Summary

While holding, the crew were advised by ATC that the runway lights had failed and that standby or portable lighting was not available. The aircraft was diverted to Tindal.

Fumes event

Investigation number:	AO-2009-025
Occurrence category:	Incident
Date/time:	5/06/2009 6:00 PM EST
Location:	Near Tamworth Aerodrome, NSW
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-VBL
Manufacturer:	The Boeing Company
Model:	737-7Q8
Operation type:	High capacity regular public transport
Damage level:	Nil

Summary

During cruise, cabin crew members reported fumes in the rear cabin that dissipated approximately 20 minutes later. As the aircraft descended through 5,000 ft, the fumes returned, causing mild illness to four cabin crew members.

Total power loss

Investigation number:	AO-2009-026
Occurrence category:	Accident
Date/time:	10/06/2009 3:50 PM EST
Location:	Dreamworld (HLS), QLD
Injury level:	Serious
Investigation status:	Active

Aircraft details

Registration:	VH-JTI
Manufacturer:	Bell Helicopter Co
Model:	206B (II)
Operation type:	Charter
Damage level:	Serious

Summary

During final approach, the engine failed. The aircraft impacted the ground and rolled over.

Inflight fire

Investigation number:	AO-2009-027
Occurrence category:	Serious incident
Date/time:	10/06/2009 15:23 UTC
Location:	SW M 427 km, Guam international Airport, Other
Injury level:	Nil
Investigation status:	Active

Aircraft details

Registration:	VH-EBF
Manufacturer:	Airbus Industrie
Model:	A330-202
Operation type:	High capacity regular public transport
Damage level:	Unknown

Summary

During cruise, the crew declared an in-flight emergency due to a reported windscreen fire. The aircraft was diverted to Guam and landed safely. There were no reported injuries.

Turbulence event

Investigation number:	AO-2009-029
Occurrence category:	Incident
Date/time:	21/06/2009 18:22 UTC
Location:	352.2° M 58 km, Kota Kinabalu International Airport, Other
Injury level:	Minor
Investigation status:	Active

Aircraft details

Registration:	VH-QPI
Manufacturer:	Airbus Industrie
Model:	A330-303
Operation type:	High capacity regular public transport
Damage level:	Minor

Summary

When the aircraft encountered severe turbulence, several occupants suffered injuries.

Wirestrike

Investigation number:	AO-2009-030
Occurrence category:	Accident
Date/time:	23/06/2009 12:15 PM EST
Location:	Near Albury Aerodrome, NSW
Injury level:	Minor
Investigation status:	Active

Aircraft details

Registration:	VH-CAP
Manufacturer:	Bell Helicopter Co
Model:	206B
Operation type:	Aerial work
Damage level:	Serious

Summary

It was reported that during spraying operations, the helicopter struck power lines and subsequently collided with terrain. The helicopter was seriously damaged and the pilot sustained minor injuries.

Collision with terrain

Investigation number:	AO-2009-031
Occurrence category:	Accident
Date/time:	26/06/2009 time to be determined
Location:	280° M 120 km, Paraburdoo Aerodrome, WA
Injury level:	Fatal
Investigation status:	Active

Aircraft details

Registration:	VH-HXO
Manufacturer:	Robinson Helicopter Co
Model:	R22
Operation type:	Private
Damage level:	Serious

Summary

The helicopter was reported missing. Searching aircraft sighted wreckage which was later confirmed as the missing helicopter.

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8 BIRDSTRIKES

The birdstrike data provided below is for major aerodromes, General Aviation Airport Procedure (GAAP) aerodromes, and towered regional aerodromes. The data includes birdstrikes up to a 5 km radius from the aerodrome.

The data includes birdstrike events for all aircraft operations and all aircraft registrations (VH- and foreign-registered aircraft, recreational (non-VH) aircraft, and aircraft with an unknown registration).

8.1 Birdstrikes at major aerodromes

Table 26: Birdstrikes at major aerodromes, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Adelaide	50	30	43	36	40	71	70	62	56	48	32	**538**
Brisbane	34	48	42	77	79	82	82	87	78	123	71	**803**
Cairns	37	34	37	41	66	64	109	64	103	104	32	**691**
Canberra	6	21	24	11	9	20	31	47	37	31	6	**243**
Darwin	34	30	29	72	66	98	118	69	77	85	55	**733**
Gold Coast	17	12	23	22	37	24	42	36	31	31	11	**286**
Hobart	7	5	16	20	19	11	29	30	37	25	12	**211**
Melbourne	47	42	46	43	38	74	76	83	43	88	33	**613**
Perth	15	28	14	17	38	46	42	53	41	50	23	**367**
Sydney	55	67	58	61	76	108	102	85	102	96	76	**886**
Total	**302**	**317**	**332**	**400**	**468**	**598**	**701**	**616**	**605**	**681**	**351**	**5,371**

1. Gold Coast aerodrome was previously referred to as Coolangatta aerodrome.

8.2 Birdstrikes at GAAP aerodromes

Table 27: Birdstrikes at GAAP aerodromes, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Archerfield	3	6	1	1	1	3	5	8	6	7	7	**48**
Bankstown	1	2	7	17	14	11	11	7	10	13	7	**100**
Camden	1	2	1	3	0	1	1	1	1	1	0	**12**
Jandakot	4	8	12	27	17	23	16	29	21	4	4	**165**
Moorabbin	6	5	6	9	7	11	12	7	10	11	8	**92**
Parafield	4	10	27	22	16	20	33	16	27	32	11	**218**
Total	**19**	**33**	**54**	**79**	**55**	**69**	**78**	**68**	**75**	**68**	**37**	**635**

8.3 Birdstrikes at towered regional aerodromes

Table 28: Birdstrikes at towered regional aerodromes, 1999 to 30 June 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Albury	3	4	7	6	2	10	10	10	15	11	7	**85**
Alice Springs	11	23	34	28	11	11	12	15	15	6	10	**176**
Avalon	0	5	2	3	2	1	15	5	8	8	8	**57**
Coffs Harbour	7	11	3	3	7	5	14	10	14	9	1	**84**
Essendon	1	2	6	5	3	6	8	13	7	8	5	**64**
Hamilton Island	0	2	6	2	2	5	9	10	10	6	1	**53**
Launceston	6	3	14	9	1	9	11	5	8	20	6	**92**
Mackay	15	4	13	16	8	32	24	17	11	12	11	**163**
Maroochydore/ Sunshine Coast	2	0	4	6	5	8	7	10	19	7	7	**75**
Rockhampton	5	15	14	14	41	33	34	40	23	38	23	**280**
Tamworth	3	2	1	15	22	13	10	19	18	23	9	**135**
Townsville	16	32	27	18	23	41	36	34	49	47	35	**358**
Williamtown	2	3	5	2	2	1	4	20	21	18	12	**90**
Total	**71**	**106**	**136**	**127**	**129**	**175**	**194**	**208**	**218**	**213**	**135**	**1,712**

Aviation occurrence statistics: 1 January 1999 to 30 June 2009