

BY RICK DARBY

Changing Course

Australian commercial aviation last year reversed unfavorable safety trends in two key areas.

The safety record of Australian-registered charter aircraft improved in 2009 after two years in which the numbers of aircraft involved and accidents had risen, according to a report from the Australian Transport Safety Bureau (ATSB) comparing accident data in the 1999–2009 period.¹ In commercial air transport, the number of aircraft involved in serious incidents also declined in 2009 after a couple of years of increases.²

“A general increase has been observed in the number of VH- [Australian-] and foreign-registered commercial air transport aircraft incidents over the 11 years of observation,” the report says. “This increase may be attributed to the introduction of the Transport Safety Investigation Regulations 2003, which

provides a prescriptive list of the types of occurrences that are required to be reported to the ATSB. This increase may also reflect a better reporting culture.”

In Australian commercial air transport, the 3,864 aircraft involved in incidents in 2009 were fewer than those in the previous two years (Table 1). Aircraft involved in serious incidents also declined in number in 2009 compared with the two previous years. The 26 aircraft involved in serious incidents represented a 43 percent decrease from 2008.

The 11 total accidents for 2009 were the lowest of any year in the study period, and 38 percent of the previous year’s total.

Data for accidents per million departures were not yet available for 2009. The trend for the study period has been increased rates in recent

years following a low point in 2005 and 2006 (Figure 1, p. 52).

“About one in 10 accidents involved a fatality, and there [were] about three fatal injuries for each accident that involved a fatality,” the report says of the 11-year period. For the first time since 2004, there were no fatalities in 2009 in commercial air transport.

The numbers of high-capacity, regular public transport (RPT) aircraft involved in incidents and serious incidents in 2009 were lower than the previous two years (Table 2).^{3,4} Fatal accidents in this category continued to flatline at zero. Accidents per million departures in 2009, at 2.1, were the lowest in the study period.

The accident rate declined from its highest point in 1999 — 23.9 per

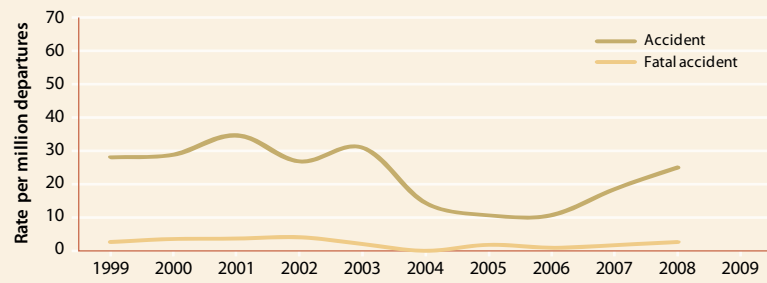
Accidents and Injuries, Australian Commercial Air Transport, 1999–2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of aircraft involved											
Incidents	3,185	3,213	3,142	3,011	2,695	3,464	4,119	3,708	3,915	4,053	3,864
Serious incidents	2	9	9	10	15	30	33	16	45	46	26
Serious injury accidents	0	2	1	3	1	0	2	0	1	3	2
Fatal accidents	3	4	4	4	2	0	2	1	2	3	0
Total accidents	32	33	38	27	31	16	12	12	22	29	11
Number of people involved											
Serious injuries	2	3	4	8	4	0	2	0	1	15	3
Fatalities	10	19	10	12	8	0	18	2	2	6	0
Rates											
Accidents per million departures	28.0	28.8	34.6	26.8	30.9	14.4	10.8	10.8	18.6	25.0	—
Fatal accidents per million departures	2.6	3.5	3.6	4.0	2.0	0.0	1.8	0.9	1.7	2.6	—

Source: Australian Transport Safety Bureau

Table 1

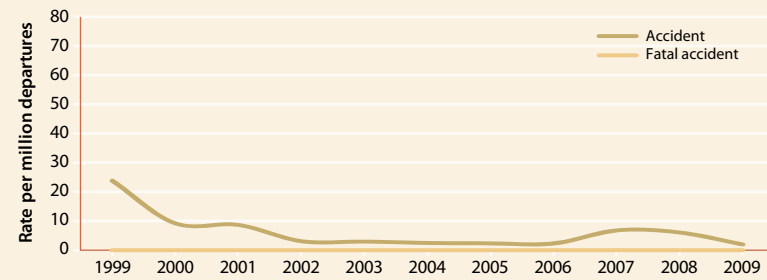
Accident Rates, Australian Commercial Air Transport, 1999–2009



Source: Australian Transport Safety Bureau

Figure 1

Accident Rates, Australian High-Capacity RPT, 1999–2009



RPT = regular public transport

Source: Australian Transport Safety Bureau

Figure 2

million departures — to 3.2 per million departures in 2002 (Figure 2). Aside from a slight “bump” in 2007 and 2008, the rate has stayed within a 2 to 3 per million departures range.

The 10 serious incidents in 2009 were described by the report as follows: “engine compressor blade damage, a breakdown of separation, an aircraft commencing to land with the landing gear retracted, a separation of the nosewheel from an aircraft, an in-flight windscreen fire, a cabin depressurization, an in-flight warning, and three occurrences involving crew incapacitation.”

The number of incidents involving low-capacity RPT aircraft has decreased by about 30 percent during the study period, the report said.⁵ Twenty accidents in the category were recorded during the period, with one in 2009. There were four serious incidents in 2009. The report said, “Two occurrences involved flight control systems, one being a trim system failure and nose pitch-up, and the other being a nose pitch-down event of unknown origin. The other two serious incidents related to airspace separation and an airprox.”⁶

Between 1999 and 2003, the fluctuation in the number of charter aircraft involved in occurrences was relatively stable. But between

Accidents and Incidents, Australian High-Capacity RPT, 1999–2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of aircraft involved											
Incidents	1,672	1,711	1,733	1,776	1,478	1,976	2,391	2,184	2,242	2,457	2,404
Serious incidents	1	4	5	6	6	10	12	4	16	20	10
Serious injury accidents	0	1	1	1	1	0	1	0	1	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 people involved											
Serious injuries	0	2	1	1	4	0	1	0	1	12	1
Fatalities	0	0	0	0	0	0	0	0	0	0	0
Rates											
Accidents per million departures	23.9	9.3	8.8	3.2	3.1	2.6	2.5	2.4	6.9	6.2	2.1
Fatal accidents per million departures	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accidents per million hours	9.9	3.9	3.8	1.4	1.3	1.1	1.1	1	3	2.7	—
Fatal accidents per million hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	—

RPT = regular public transport

Source: Australian Transport Safety Bureau

Table 2

Accidents and Incidents, Australian Charter Operations, 1999–2009											
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of aircraft involved											
Incidents	424	435	357	411	374	445	522	577	689	712	599
Serious incidents	1	0	0	1	3	9	6	6	13	13	11
Serious injury accidents	0	1	0	2	0	0	1	0	0	2	1
Fatal accidents	3	3	4	4	2	0	1	1	2	3	0
Total accidents	21	26	32	20	26	15	9	10	18	26	8
Number of people involved											
Serious injuries	2	1	3	7	0	0	1	0	0	3	2
Fatalities	10	11	10	12	8	0	3	2	2	6	0
Rates											
Accidents per million departures	43.3	56.4	71.3	45.2	60.2	30.4	18.8	21.1	33.2	52.5	—
Fatal accidents per million departures	6.2	6.5	8.9	9.0	4.6	0.0	2.1	2.1	3.7	6.1	—
Accidents per million hours	41.3	54.2	68.2	44.6	60.2	31.0	18.6	20.8	32.9	49.9	—
Fatal accidents per million hours	5.9	6.3	8.5	8.9	4.6	0.0	2.1	2.1	3.7	5.8	—

Source: Australian Transport Safety Bureau

Table 3

2004 and 2008, the range was about 48 percent higher, comparing the means of each range (Table 3).⁷ The 599 charter aircraft involved in incidents in 2009 marked a reversal of the seven-year trend, however.

Of all air transport operations, charters had the highest rate of aircraft involved in accidents and fatal accidents per million departures in the most recent year for which data are available, 2008 (Figure 3). This aircraft accident rate — 52.5 per million departures — was a 58 percent increase over 2007.

In 2009, there were eight accidents involving charter aircraft. That number was the lowest in the study period. “Four accidents were associated with wheels-up landing — three related to landing gear malfunction and one due to pilot error,” the report says. “There were three engine failure accidents and one aircraft flipped over on the aerodrome apron due to a strong gust of wind.”

Notes

1. The report, *Aviation Occurrence Statistics: 1999 to 2009*, is available via the Internet

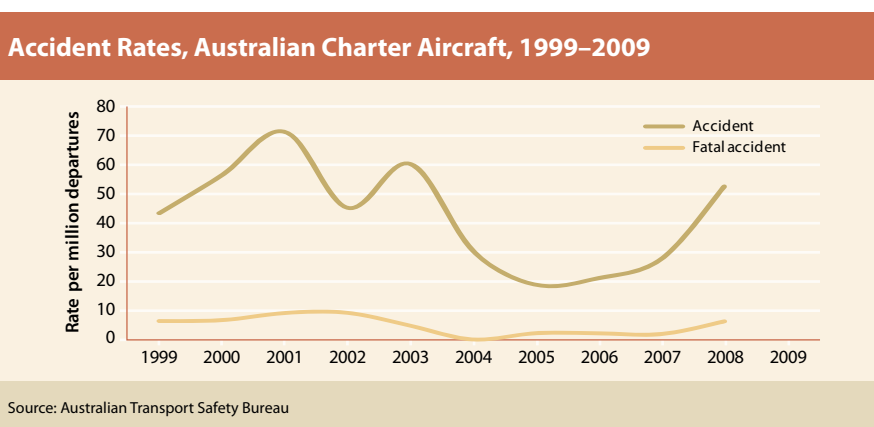


Figure 3

- at <[www.atsb.gov.au/publications/2009/ar2009016\(3\).aspx](http://www.atsb.gov.au/publications/2009/ar2009016(3).aspx)>.
- Commercial air transport includes high-capacity RPT, low-capacity RPT and charter. Accidents and incidents involving non-Australian-registered aircraft in Australian airspace are included.
- A high-capacity aircraft is one that is certified as having a maximum capacity exceeding 38 seats or a maximum payload exceeding 4,200 kg (9,259 lb).
- Regular public transport operations are conducted with fixed schedules, to and from fixed terminals, over specific routes.
- A low-capacity aircraft is one that has a lower seating capacity or maximum payload than a high-capacity aircraft.
- Australian Transport Safety Regulations define an airprox as “an occurrence in which two or more aircraft come into such close proximity that a threat to the safety of the aircraft exists or may exist, in airspace where the aircraft are not subject to an air traffic separation standard or where separation is a pilot responsibility.”
- 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.