Australian Government
Australian Transport Safety Bureau

ATSB TRANSPORT SAFETY RESEARCH REPORT
B2006/0034

Fatal Aircraft Accidents

Far North Queensland in Context

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ISBN and formal report title: see 'Document retrieval information' on page v.

CONTENTS

DOCUMENT RETRIEVAL INFORMATION

Report No.	Publication date	No. of pages	ISBN
B2006/0034	October 2006	74	1 921092 556

Publication title Fatal Aircraft Accidents: Far North Queensland in Context

Prepared by

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Acknowledgements

The ATSB would like to thank the BTRE, particularly John Streeter and John Goodrich, for their assistance and the provision of data. The Bureau would also like to thank the BTRE for the methodology to aggregate activity data used in this report, which was developed by them for their publication, *General Aviation: An industry overview*.

Abstract

This research paper examined the number and rate of fatal accidents in Australia, Queensland and Far North Queensland involving aircraft with a maximum take-off weight of 11,000 kg or less between 1990 and 2005. The latest year available for exposure data (number of landings, flying hours) was 2004. The purpose of this paper was to examine fatal accidents in Queensland, and specifically Far North Queensland, and provide a context in which to view the results. However, the examination of fatal aircraft accidents from a regional or state perspective raised issues that limited the conclusions that could be drawn from the results. These issues included the generally independent relationship between a fatal accident's contributory factors and the accident location, the availability of suitable activity data and the low number of fatal accidents and fatalities in Australia. Hence, the results described below indicate what happened in a particular area of Australia as opposed to the level of aviation safety. The inter-state analyses showed that between 1990 and 2005, the majority of the 318 fatal accidents involving aircraft with a MTOW of 11,000 kg or less occurred in Queensland (n = 102), NSW/ACT (n = 102) and Victoria (n = 37). In terms of fatalities, the highest number occurred in Queensland, where 225 of the 647 fatalities in Australia occurred. There were 0.9 fatal accidents and 1.9 fatalities per 100,000 landings in Queensland between 1990 and 2004, compared with the national rates of 0.7 and 1.3 respectively. Tasmania recorded the highest fatal accident and fatality rates of 1.8 and 4.1 respectively. However, the significance of these rates should be interpreted with caution due to the low number of fatal accidents and activity in Tasmania. Across Queensland, almost half the 102 fatal accidents occurred in the South region of the state with the remaining fatal accidents almost evenly distributed across the Central (n = 19), North (n = 19) and Far North regions (n = 17). The South region of Queensland recorded the lowest fatal accident rate of all the regions, with 0.7 fatal accidents per 100,000 landings between 1990 and 2004. The Central and North regions both recorded 1.2 fatal accidents per 100,000 landings and Far North Queensland recorded a rate of 1.0. Of the 225 fatalities in Queensland, South Queensland (83) recorded the highest number of fatalities followed by the Far North (64), North (42) and Central (36) regions between 1990 and 2005. However, South Queensland recorded the lowest fatality rate with 1.3 fatalities per 100,000 landings between 1990 and 2004. The Central, North and Far North regions recorded 2.3, 2.6 and 3.0 fatalities per 100,000 landings respectively. The Far North Queensland rate does not include the 15 fatalities that occurred in the Lockhart River accident in 2005, which would further increase the North Queensland fatality rate. A fluctuation in fatality numbers, such as that arising from the Lockhart River accident, highlights the influence a single aircraft accident can have when fatal accident and fatality numbers are relatively low.

EXECUTIVE SUMMARY

On 7 May 2005, a Fairchild Metroliner SA227-DC aircraft was being operated on a scheduled passenger service from Bamaga to Cairns via Lockhart River, Far North Queensland (FNQ). While on approach to Lockhart River, the aircraft impacted the ground and all 15 occupants were fatally injured. This was Australia's worst civil aviation accident since 1968.

In response to questions concerning aviation safety in FNQ, the ATSB initiated a study to compare fatal accident and fatality numbers between the states, territories and some regions of Australia. The study covers the period 1990 to 2005, with a particular focus on Queensland (Qld) and FNQ. Four sets of analyses were conducted to gain an overall perspective of Qld and FNQ compared with the rest of Australia. The analysis focused on aircraft with a maximum take-off weight of 11,000 kg or less. The latest year available for exposure data (number of landings, flying hours) was 2004 and so rate data could only be calculated for the period 1990 to 2004.

The first set of analyses provides a comparison between all the states and territories, setting a baseline for fatal accidents and fatalities and associated rates in Australia. This second stage compares Qld with the rest of Australia combined, developing a baseline for Qld fatal accidents, fatalities and associated rates. The third stage of analysis focuses specifically on Qld. Queensland was divided into four regions (Far North, North, Central and South[1]) using Australian Bureau of Statistics (ABS) statistical divisions, providing a baseline for each of the regions within the state. The final analysis compared the regions of Qld with those of the state judged to be most similar in area and population, Western Australia (WA). Like Qld, WA can be divided into four regions (Far North, North, Central and South) using ABS statistical divisions. This allowed a comparison between the equivalent regions in the two states.

However, while state and regional comparisons were undertaken, there are inherent difficulties associated with assessing aviation safety from a regional perspective, or within state boundaries. Aviation can be a regional, national or international activity and the location of any accident can be simply extraneous. These issues, coupled with the difficulty of obtaining comprehensive and relevant aircraft activity data for specific regions over a 15-year period, and the small number of fatal aviation accidents in Australia, means the assessment and interpretation of state and regional fatal accident and fatality numbers and rates must be treated cautiously. The number and rate of fatal accidents and fatalities provided in this report reflect what happened in a particular state or region as opposed to the level of aviation safety.

The inter-state analyses showed that between 1990 and 2005, the majority of the 318 fatal accidents involving aircraft with a maximum take-off weight (MTOW) of 11,000 kg or less occurred in Queensland (n = 102), NSW/ACT (n = 102) and Victoria (n = 37). While the highest number of fatalities occurred in Qld, accounting for 225 of the 647 fatalities in Australia, the highest rate of fatal accidents (1.8 fatal accidents per 100,000 landings) and fatalities (4.1 fatalities per 100,000 landings) occurred in Tasmania. The data for Tasmania should be treated with caution because of the low number of fatal accidents and landings in that state. The second highest fatal accident and fatality rates were recorded by Qld, with 0.9 fatal accidents and 1.9 fatalities per 100,000 landings, which were above the national rates of 0.7 and 1.3 respectively.

1 **Far North Queensland** encompasses Weipa, Cooktown, Cairns and Innsifail. **North Queensland** includes Townsville, Charters Towers, Mount Isa and Normanton. **Central Queensland** encompasses Bowen, Mackay, Gladstone, Rockhampton, Emerald and Longreach. **South Queensland** includes Brisbane, Gold Coast, Bundaberg, Toowoomba, Goondiwindi, Roma and Dalby. The regions of Queensland are shown on the map on page 8.

The second set of analyses examined fatal accidents, fatalities and associated rates for Qld compared with the rest of Australia combined. Queensland recorded approximately one-third of the fatal accidents (102 of 318 fatal accidents) and one-third of fatalities (225 of 427 fatalities) over the period 1990 to 2005. In terms of activity, Qld accounts for 24 per cent of the total recorded landings for Australia between 1990 and 2004. The fatality rate in Qld was 1.9 fatalities per 100,000 landings, or almost 70 per cent higher than the rest of Australia combined. Similarly, the fatal accident rate in Qld of 0.9 was 50 per cent higher than the rest of Australia.

The inter-regional comparison for Qld showed almost half of the 102 fatal accidents between 1990 and 2005 occurred in the South where over half the activity was concentrated. The remaining fatal accidents were almost evenly distributed among the Central (n = 19), North (n = 19) and Far North (n = 17) regions. In the South region, private/business operations accounted for the greatest proportion of fatal accidents. For the remaining regions, the greatest proportion of fatal accidents involved commercial operations associated with charter, other aerial work, agriculture and low capacity RPT operations. The fatal accident rates ranged from 0.7 fatal accidents per 100,000 landings in South Qld to 1.0 in the Far North, and 1.2 in both Central and North Qld.

The distribution of fatalities across the regions of Qld differed somewhat from the fatal accidents, reflecting the different flying operations of the aircraft involved in each region. As a result, 37 per cent of fatalities occurred in the South region, 28 per cent in Far North Queensland, and 19 per cent and 16 per cent in the North and Central regions respectively between 1990 and 2005. The proportion of fatalities involving commercial passenger operations increased with the northward progression of the regions. The lowest number of fatalities arising from commercial (including charter) passenger operations occurred in South Qld (13 per cent) followed by Central Qld (28 per cent), North Qld (40 per cent) and Far North Queensland (75 per cent). However, this finding reinforces the limited utility of using aircraft accident locations as a form of safety indicator. One fatal accident (VH-SKC) in North Qld involved a charter aircraft that had departure and destination points in WA[2]. The accident resulted in eight fatalities, or almost half of the commercial passenger operation fatalities in the North region.

The lowest fatality rate occurred in South Qld, where 1.3 fatalities per 100,000 landings were recorded, followed by the Central (2.3) and North (2.6) regions. The highest fatality rate occurred in Far North Qld, with 3.0 fatalities per 100,000 landings between 1990 and 2004. This would increase further if the fatal accident near Lockhart River, which resulted in 15 fatalities, was included. A fluctuation in fatality numbers, such as that arising from the Lockhart River accident, highlights the influence of a single aircraft accident when fatal accident and fatality numbers are relatively low.

The final comparison of Qld and WA regions was limited by the low number of fatal accidents and fatalities across the regions, particularly in WA. However, the highest number of fatal accidents and fatalities and the lowest fatal accident and fatality rates occurred in the South regions of both states.

To place this study in context, it is important to acknowledge that Australia's aviation safety record is among the best in the world (ATSB, 2006b) and that the rate of fatal accidents and fatalities has been declining over the last decade (ATSB, 2006a). This report shows that there is some apparent variation in the fatal accident rates across different parts of Australia. But with low fatal accident numbers, an assessment of statistically significant differences is not possible.

2 The accident involving Beech Super King Air 200 (VH-SKC) near Burketown on 4 September 2000 was recorded with a Queensland location by the ATSB. However, the Western Australian Coroner conducted the coronial into this accident.

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
ASGC	Australian Standard Geographical Classification
ATSB	Australian Transport Safety Bureau
BTRE	Bureau of Transport and Regional Economics
CASA	Civil Aviation Safety Authority
DOTARS	Australian Government Department of Transport and Regional Services
FNQ	Far North Queensland
ICAO	International Civil Aviation Organization
MTOW	Maximum take-off weight
n	number
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
RPT	Regular Public Transport
SA	South Australia
Tas	Tasmania
Vic	Victoria
WA	Western Australia

1 INTRODUCTION

1.1 The Australian Transport Safety Bureau

The Australian Transport Safety Bureau (ATSB) is an operationally independent multi-modal body located within the Australian Government Department of Transport and Regional Services (DOTARS).

The ATSB's mission is to maintain and improve transport safety and public confidence through:

- independent transport accident and incident investigation;
- safety data analysis and research; and
- safety communication and education.

The ATSB investigates aircraft accidents and incidents (occurrences) to identify contributing factors and make safety recommendations. The ATSB also maintains a database of aviation safety occurrences involving Australian civil registered aircraft (occurring both in Australia and overseas) and occurrences in Australia involving foreign-registered aircraft. Transport safety investigations and analyses of safety data are conducted in accordance with the International Civil Aviation Organization (ICAO), Annex 13 Standards and Recommended Practices and the *Transport Safety Investigation Act 2003* and regulations.

1.1.1 Background to the report

On 7 May 2005, a Fairchild Metroliner SA227-DC aircraft was being operated on a scheduled passenger service from Bamaga to Cairns via Lockhart River, Far North Queensland[3]. While on approach to Lockhart River, the aircraft impacted the ground, resulting in fatal injuries to all of the 15 occupants (BO/200501977). This was Australia's worst civil aviation accident since 1968. This paper was initiated in response to questions about the relative safety of flying in Far North Queensland compared to other parts of Queensland and to compare Queensland with other states in Australia.

1.1.2 Objectives of the report

The overall objective of this report was to examine the pattern of fatal accidents in Queensland, and in particular Far North Queensland, and to compare them with those in the rest of Australia and with other states. Specifically, the objectives were to:

- Compare the number of fatal accidents and fatalities across Australian states and territories, between 1990 and 2005; and compare the respective fatal accident and fatality rates between 1990 and 2004[4].

3 **Far North Queensland** includes Weipa, Cooktown, Cairns, and Innsifail as shown on the map at page 8.

4 The latest year available for exposure data (landings, flying hours) was 2004.

- Compare the number of fatal accidents and fatalities for Queensland with the rest of Australia, between 1990 and 2005; and compare the respective fatal accident and fatality rates between 1990 and 2004.
- Compare the number of fatal accidents and fatalities across the different regions in Queensland, between 1990 and 2005; and compare the respective fatal accident and fatality rates between 1990 and 2004.
- Compare the number of fatal accidents and fatalities across the different regions in Queensland by aircraft operational category, between 1990 and 2005.
- Compare the number of fatal accidents and fatalities across the different regions in Queensland and Western Australia, between 1990 and 2005; and compare the respective fatal accident and fatality rates between 1990 and 2004.
- Compare the number of fatal accidents and fatalities across the different regions in Queensland and Western Australia by aircraft operational category, between 1990 and 2005.

2 BACKGROUND INFORMATION

2.1 The Australian aviation industry

The Australian civil aviation industry can be divided into four main categories based on *Civil Aviation Regulations 1988*[5]. These are regular public transport (RPT), charter, aerial work and private operations. Civil aviation operations do not include military operations.

Regular public transport[6] operations are those used for the commercial purpose of transporting persons generally, or transporting cargo for persons generally, for hire or reward in accordance with fixed schedules to and from fixed terminals over specific routes with or without intermediate stopping places between terminals. Charter[7] operations are those that carry passengers or cargo for hire or reward and either not on fixed schedules or not available for use by persons generally.

Aerial work[8] is further sub-divided as:

- aerial surveying;
- aerial spotting;
- agricultural operations;
- aerial photography;
- advertising;
- flying training;
- ambulance functions;
- carriage of goods for the purposes of trade other than on fixed schedules; and
- any other purpose that is substantially similar to those specified above.

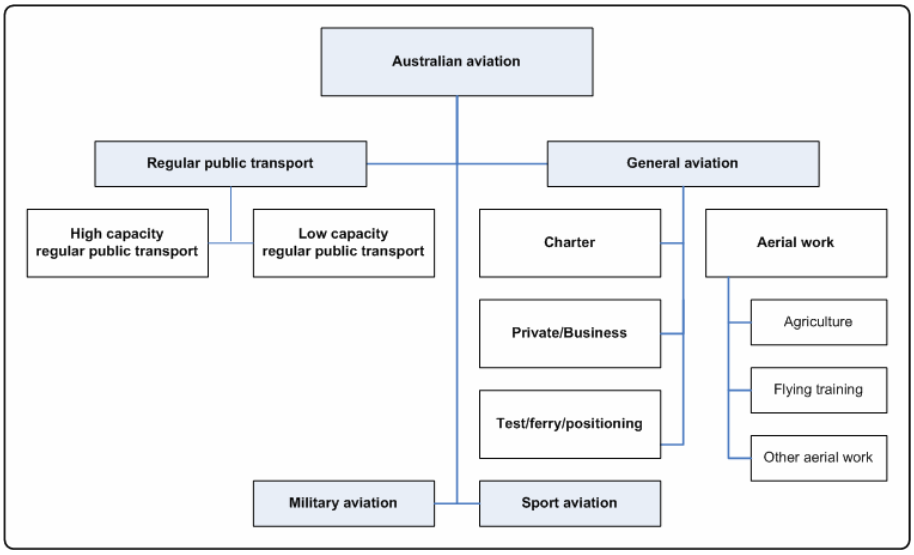
Private[9] operations include the personal transportation of the aircraft owner, operations for purposes that do no include remuneration, and those components of flying training relating to endorsement of an additional type or category of aircraft in a pilot licence.

5 Civil Aviation Regulations 1988 (CAR) 2 (6).
6 CAR 206 (1) (c) and CAR 2 (7) (c).
7 CAR 206 (1) (b) and CAR 2 (7) (b).
8 CAR 206 (1) (a) and CAR 2 (7) (a).
9 CAR 2 (7) (d).

2.2 ATSB accident and incident database

The ATSB is responsible for the independent investigation of accidents and incidents involving civil aircraft in Australia. The ATSB's aviation accident and incident database captures data predominantly from accidents and incidents involving RPT and general aviation aircraft. Some data on sport and military operations are included in the database. Investigations into accidents involving sport operations (eg ultralights, microlights, gyrocopters, gliders and hang gliders) will only be conducted if it benefits future safety and sufficient resources are available (ICAO, 2003). Military operations are generally overseen by military safety authorities.

Figure 1: Aircraft operational groups used in this report



For the purposes of this report, the aviation industry was divided into several different groups. As shown in Figure 1, the two major groups are RPT and general aviation, with RPT divided into high capacity and low capacity operations. General aviation is divided into charter, private[10] and business, test/ferry/positioning, and aerial work. Aerial work includes operations involving agriculture, flying training and other aerial work. Typically, the ATSB allocates test, ferry and positioning accident and activity data to the principal category of operation that is generally undertaken by an aircraft. However, in this report test, ferry and positioning fatal accidents were grouped separately to isolate the commercial activities of charter and aerial work operations from the test and ferry, and positioning activities.

10 Amateur and kit-built aircraft on the Australian civil aircraft register are flown under the experimental designation. For the purposes of this report, these aircraft have been allocated to either the private/business or test/ferry/positioning categories, as appropriate.

The main statistical groups used in this report are:

Regular public transport [11]

Regular public transport operations refer to commercial operations used for the purpose of transporting persons generally, or transporting cargo for persons generally. These operations are conducted for hire or reward in accordance with fixed schedules to and from fixed terminals over specific routes with or without intermediate stopping places between terminals.

- ***High capacity RPT*** [12]

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*** [13]

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. The ATSB refers to these aircraft as low capacity aircraft.

General aviation

'General aviation' is defined as all non-scheduled civil flying activity other than RPT and sport aviation operations.

- ***Charter operations***

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

- ***Aerial work*** [14]

Aerial work operations comprise agricultural operations, flying training and other aerial work.

a. **Agricultural operations** - operations involving the carriage and/or spreading of chemicals, seed, fertilizer or other substances for agricultural purposes. It includes operations for the purpose of pest and disease control. Agricultural operations are a component of aerial work, but are usually separated for analysis purposes.

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11 CAR 206 (1) (c) and CAR 2 (7) (c).

12 Civil Aviation Orders Section 82.0.

13 Civil Aviation Orders Section 82.0.

14 Due to the large proportion of aerial work operations associated with agricultural operations and flying training, these groups are separated for analysis. The remaining aerial work operations are referred to as 'other aerial work'.

b. **Flying training** - flying under instruction for the issue or renewal of a license, 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.

c. **Other aerial work** - includes operations conducted for the purposes of aerial work other than 'flying training' and 'agricultural operations'. Operations classified as other aerial work include 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.

- ***Private and Business***

Flying conducted for non-commercial purposes.

- Private flying refers to flying for recreation or personal transport.
- Business flying is a component of private 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.

- ***Test, ferry and positioning***

Flying associated with the testing of an aircraft, or with its delivery or movement to another location for maintenance, hire or other planned use.

Sport aviation

Sport aviation refers to operations by hang gliders, balloons, autogyros, gliders/sailplanes, ultralights and airships.

2.3 Accident indicators

To identify aviation industry safety trends it is necessary to use some type of measure or indicator. Previous ATSB research papers have used a number of different indicators to examine aviation safety and industry trends in Australia, including: (1) activity indicators such as hours flown, departures, and aircraft movements, (2) industry indicators relating to the year of aircraft manufacture, and (3) accident indicators such as fatal and non-fatal accidents.

This report uses fatal accidents, fatalities and landing activity data as the indicators examined. Accident indicators enable the ATSB to examine the characteristics and safety trends of accidents, fatal accidents and fatalities in Australia. The definition of an aircraft accident, as used in this report, has been developed by the International Civil Aviation Organization (ICAO) and adopted by its member States.

The definition is provided in Annex 13 to the Convention on International Civil Aviation (ICAO, 2001):

- **Accident** - an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:

  a) a person is fatally or seriously injured as a result of:

  – being in the aircraft, or

  – direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or

  – direct exposure to jet blast,

  except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

  b) the aircraft sustains damage or structural failure which:

  – adversely affects the structural strength, performance or flight characteristics of the aircraft, and

  – would normally require major repair or replacement of the affected component,

  except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or

  c) the aircraft is missing or is completely inaccessible.

  Note 1. For statistical uniformity only an injury resulting in death within thirty days of the date of the accident is classified as a fatal injury by ICAO.

  Note 2. An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

The ICAO definition for an aircraft accident has been adopted by Australia and has been incorporated into ATSB investigative and data analysis processes. In this report, accidents involving a fatal injury, are referred to hereafter as ‘fatal accidents’.

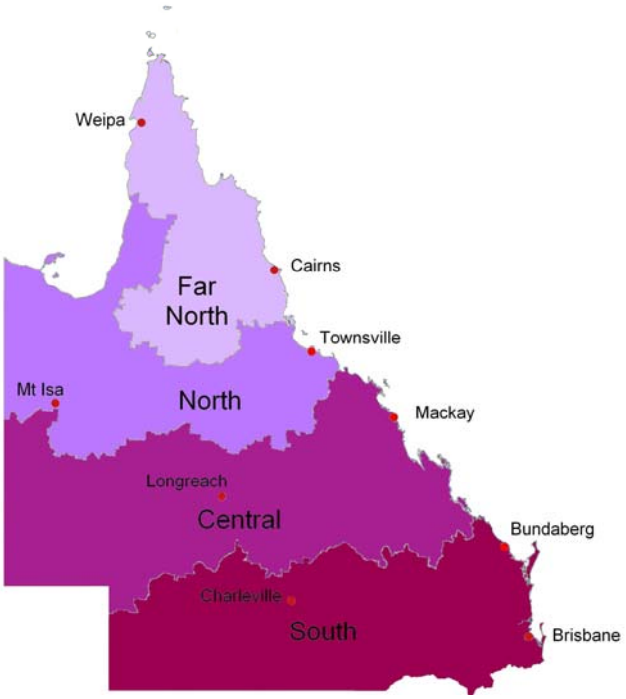
2.4 Regions of Queensland

For the purposes of this report, Queensland was divided into four main regions based on the statistical divisions defined in the Australian Bureau of Statistics' (ABS) Statistical Geography Volume 1 Australia Standard Geographical Classification (ASGC) 2001[15]. The regions were defined as follows:

1. Far North – this region encompassed the far north region of Queensland, including Weipa, Cooktown, Cairns and Innisfail.
2. North – this region included Townsville, Charters Towers, Mount Isa and Normanton.
3. Central – this region included Bowen, Mackay, Gladstone, Rockhampton, Emerald and Longreach.
4. South – this region encompassed the far south region of Queensland, including Brisbane, the Gold Coast, Bundaberg, Toowoomba, Goondiwindi, Charleville, Roma and Dalby.

The four regions examined in this report are presented in Figure 2.

Figure 2: The four regions of Queensland



15 The ASGC provides a common framework of statistical geography enabling the production of statistics which are comparable and spatially integrated (Australian Bureau of Statistics, 2001).

2.5 Regions of Western Australia

For the purposes of this report, Western Australia was divided into four main regions based on ABS statistical divisions. The regions were defined as follows:

1. Far North – this region encompassed the far north region of Western Australia, and included Kununurra, Derby and Broome.
2. North – this region included, Port Hedland, Karratha, Tom Price and Newman.
3. Central – this region included Exmouth, Carnarvon and Geraldton.
4. South – this region encompassed the far south region of Western Australia, and included Moora, Northam, Merredin, Kalgoorlie, Perth, Bunbury, Albany and Esperance.

The four regions examined in this report are presented in Figure 3.

Figure 3: The four regions of Western Australia

3 METHODOLOGY

3.1 Data sources

The ATSB aviation accident and incident database was searched to identify all fatal accidents within Australian territory involving civil registered aircraft during the period 1 January 1990 to 31 December 2005. Fatal accidents involving foreign-registered aircraft that occurred in Australian territory were included in the dataset. Fatal accidents involving sport aviation aircraft including gliders were excluded, as aircraft flown in these categories are not usually investigated by the ATSB. All of the fatal accidents identified during the search process involved aircraft with a maximum take-off weight (MTOW) of 11,000 kg or less.

The 11,000 kg MTOW threshold excludes aircraft used commonly in airline fleets, but includes aircraft typically used in private/business operations, and most commercial operations and low capacity air transport operations. Hence, the analysis would include aircraft like the Fairchild Metroliner, but would exclude the SAAB 340, Dash-8 and other larger aircraft.

The activity data was aligned to the fatal accident dataset to only include activity for aircraft with a MTOW of 11,000 kg or less. The number of landings and hours flown (activity) for aircraft with a MTOW of 11,000 kg or less, for all operations, was provided by the Bureau of Transport and Regional Economics (BTRE)[16].

3.2 Method of analysis

Fatal accidents

Information about fatal accidents was extracted from the ATSB database and grouped by state or territory. The fatal accidents for Queensland and Western Australia were assigned to regions within each state using the statistical division boundaries defined in the Statistical Geography Volume 1 Australia Standard Geographical Classification (ASGC) 2001 (Australian Bureau of Statistics, 2001).

Landing data

The landing data sourced from the BTRE were aggregated based on the postcode of where the aircraft was based. If this was unknown, the aircraft owner's postcode was used. Once aggregated, the data was assigned to a state or territory, and for Queensland and Western Australia was further assigned to a region.

16 The latest year available for exposure data (landings, flying hours) was 2004.

The fatal accidents between 1990 and 2005 were examined as follows:

(1) Inter-state comparison:

- The number of fatal accidents and fatalities in each state and territory of Australia.
- The number of fatal accidents and fatalities per 100,000 landings in each state and territory of Australia.

(2) Comparison of Queensland with the rest of Australia:

- The number of fatal accidents and fatalities for Queensland and the rest of Australia.
- The number of fatal accidents and fatalities per 100,000 landings for Queensland and the rest of Australia.

(3) Queensland regional comparison:

- The number of fatal accidents and fatalities across the regions of Queensland.
- The number of fatal accidents and fatalities per 100,000 landings across the regions of Queensland.
- The number of fatal accidents and fatalities by aircraft operational category across the regions of Queensland.

(4) Comparison of Queensland regions with Western Australian regions:

- The number of fatal accidents and fatalities between Queensland and Western Australian regions.
- The number of fatal accidents and fatalities per 100,000 landings between Queensland and Western Australian regions.
- The number of fatal accidents and fatalities by aircraft operational category between Queensland and Western Australian regions.

3.3 Explanatory notes

- The ATSB aviation accident and incident database is dynamic and data may change over time. This may result in some differences between the data contained in this report and data previously published.
- Fatal accidents involving Australian civil registered aircraft and foreign-registered aircraft with a MTOW of 11,000 kg or less undertaking RPT or general aviation operations were included in the dataset. Hence, the data excludes large turboprop and jet operations.
- Fatal accident and fatality data was available for the period 1990 to 2005.
- Where there were multiple aircraft involved, only the data concerning the aircraft involving fatal injures, is included in the analysis.

- Data was adjusted for activity using aircraft landings where available. This was the most suitable activity data available. Where aircraft landing data was not available, flying hours data was used to provide context to the fatal accident data.
- The most recent activity data (landings and hours flown) available for Australian RPT and general aviation operations involving aircraft with a MTOW of 11,000 kg or less was for 2004.
- Landing activity data, and where appropriate flying hours data, was allocated to a state, territory or region using the postcode of the reported aircraft base or, if this was unknown, the postcode of the registered owner.
- For the purposes of inter-state comparisons, New South Wales (NSW) and the Australia Capital Territory (ACT) were combined and titled NSW/ACT.

3.4 Limitations

Landing data

To examine aviation fatal accidents and fatality rates in Australia, it is necessary to use some measure of activity, such as the number of landings. In this report fatal accidents between 1990 and 2005 across the Australian states, territories, and regions within Queensland and Western Australia were examined. The preferred form of activity data for a comparative analysis across the states, territories and regions is data based on the actual number of landings conducted at each location (landing site). However, given that not all aerodromes, aircraft landing areas or flight strips in Australia are monitored for activity, complete activity data by location is not available.

Furthermore, for those locations that record landing activity data, the ability to determine whether the aircraft's MTOW is 11,000 kg or below is lacking. An alternative activity source, as used in this report, is activity recorded for individual aircraft listed on the Australian civil aircraft register. The landing data collected by the BTRE for these aircraft was aggregated based on the postcode of where the aircraft was based. If this was unknown, the aircraft owner's postcode was used in its place[17]. Once aggregated, the data was assigned to a state or territory, or where applicable, a region. This was achieved by reference to the ABS concordance tables that assign postcodes to ABS statistical divisions.

The aircraft landing activity data has been used to calculate fatal accident rates across the states and territories; and some regions. While not ideal, the use of landing data determined from Australian civil aircraft landings, rather than aerodrome landings, does allow for a broad comparative analysis of fatal accident and fatality rates. However, the results should be treated as indicative only, noting that:

- aircraft landing data does not include landings by foreign-registered aircraft;

17 This methodology was developed by the BTRE for *the General Aviation: An industry overview* report and adopted by the ATSB.

- the location of an aircraft's base may not accurately reflect where an aircraft landed (Bureau of Transport and Regional Economics, 2005); and
- the location of an aircraft's registered owner may not accurately reflect where an aircraft landed (Bureau of Transport and Regional Economics, 2005).

While aircraft landing data provides the most appropriate means to examine aircraft activity by a state, territory or region, it provides no scope for analyses based on aircraft operational type (eg charter, private/business etc) because the landing data are not classified in this way. Consequently, hours flown data, which is collected by operational type, was used to enable a general comparison of fatal accidents and fatalities across the various aircraft operational groups. The hours flown data for each aircraft was assigned to regions using the same method employed for the aggregation of the aircraft landing data as outlined above. The process for hours flown data is affected by the same limitations as the aircraft landing data described above. Hence, hours flown data calculated this way should be considered as approximate.

Fatal accident data

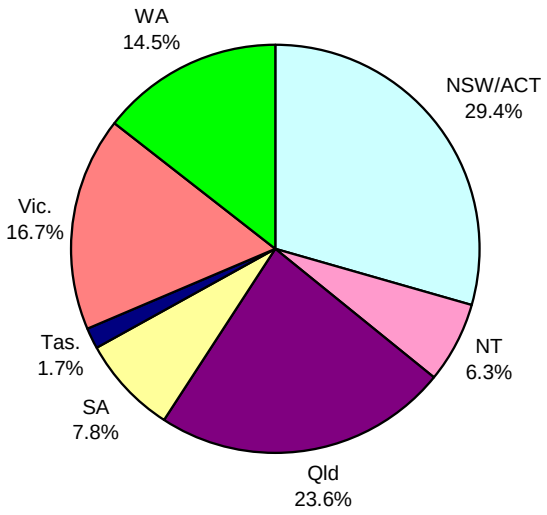
The number of fatal accidents and the amount of activity in a state, territory or region may affect the ability to accurately compare data and may limit any of the conclusions that can be drawn. Fatal accident data for states, territories or regions that have a low number of fatal accidents and/or a low number of landings are more sensitive to relatively small fluctuations than those states or regions that have a higher number of fatal accidents and greater activity.

4 RESULTS

4.1 Inter-state comparison

Figure 4 shows the distribution of the 46 million landings across all the Australian states and territories recorded between 1990 and 2004, involving Australian civil registered aircraft with a MTOW of 11,000 kg or less. The greatest proportion of activity occurred in NSW/ACT (29.4 per cent) followed by Queensland (23.6 per cent). Tasmania recorded the lowest number of landings, accounting for 1.7 per cent of national activity.

Figure 4: Landings involving Australian civil registered aircraft with a MTOW of 11,000 kg or less by state/territory, 1990 to 2004



4.1.1 Fatal accidents

Figure 5 shows the number[18] and distribution of fatal accidents across the Australian states and territories between 1990 and 2005. Of the 318 fatal accidents recorded during this period, Queensland and NSW/ACT each recorded the highest number (n = 102). The lowest number of fatal accidents occurred in both the Northern Territory and Tasmania (n = 14).

18 Individual accident sites may not be identifiable on the map, as more than one accident may have occurred at the sites identified.

Figure 5: Fatal accidents across the states and territories of Australia, 1990 to 2005

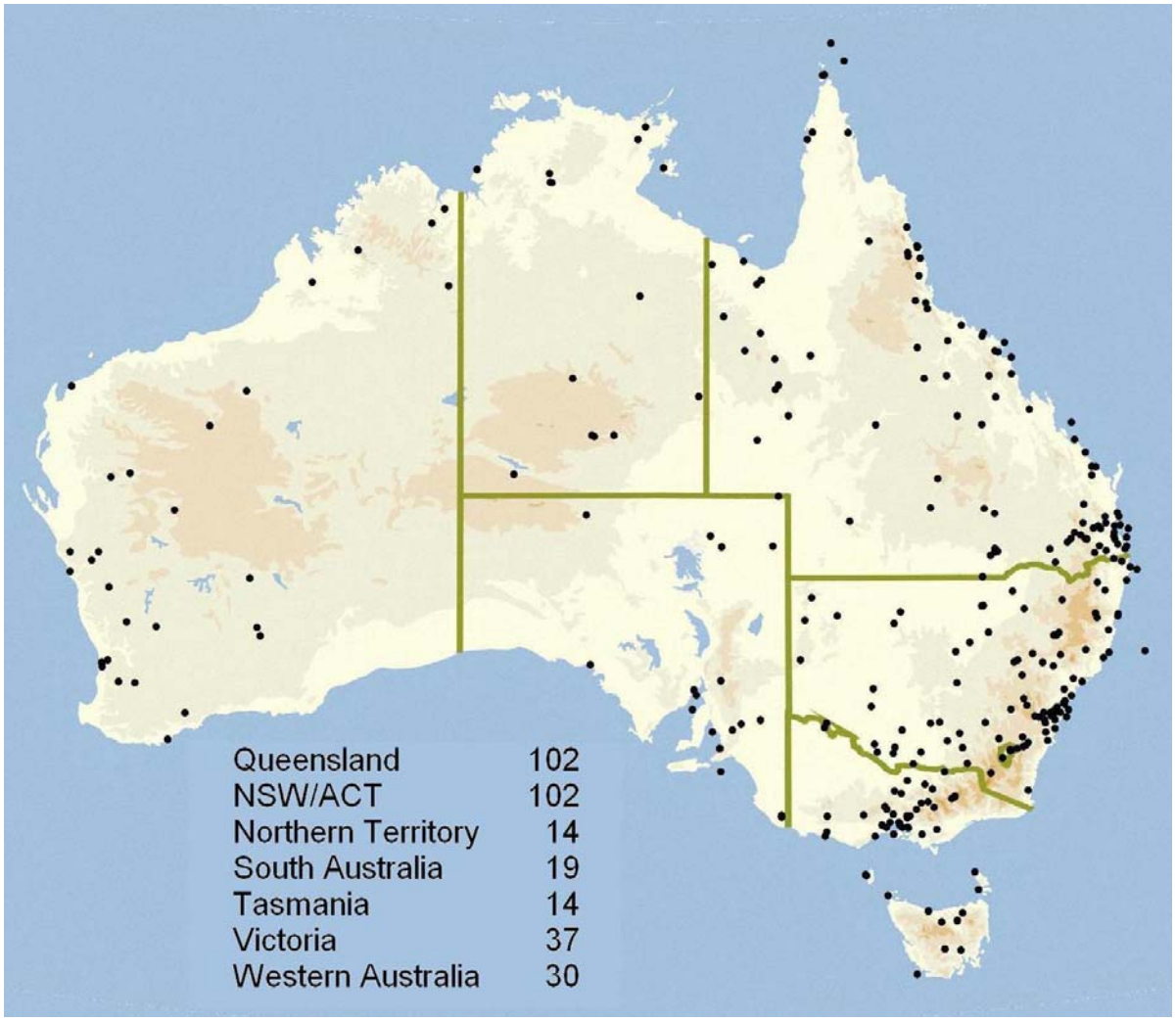
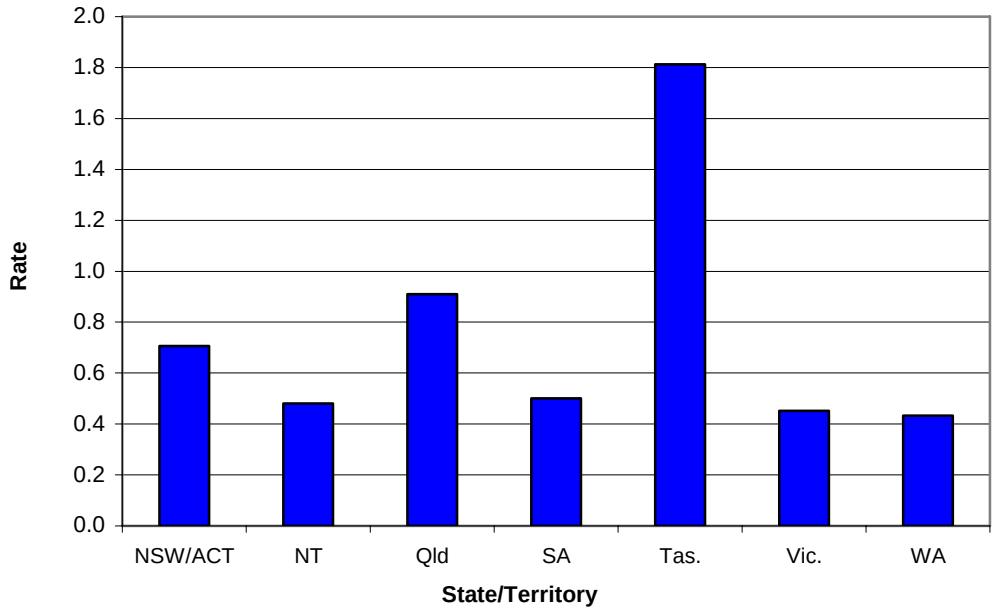


Figure 6 shows the rate of fatal accidents across the Australian states and territories between 1990 and 2004. The highest rate was recorded in Tasmania, where 1.8 fatal accidents per 100,000 landings occurred. The lowest rate occurred in Western Australia, where 0.4 fatal accidents per 100,000 landings were recorded. The overall national rate was 0.7 fatal accidents per 100,000 landings.

Figure 6: Fatal accidents per 100,000 landings for all states and territories in Australia, 1990 to 2004



4.1.2 Fatalities

Figure 7 shows the number of fatalities in Australia between 1990 and 2005. In total, there were 647 fatalities involving aircraft with a MTOW of 11,000 kg or less. The highest number of fatalities occurred in Queensland (n = 225) followed by NSW/ACT (n = 206). Between them, Queensland and NSW/ACT also recorded six of the seven fatal accidents with the highest number of fatalities in Australia. These particular accidents are responsible for 41 fatalities recorded in Queensland and 16 fatalities in NSW. The seven fatal accidents, all with seven or more fatalities, were:

- A Fairchild Metroliner SA227-DC aircraft, conducting a low capacity RPT service, impacted the ground near Lockhart River, Queensland on 7 May 2005 (15 fatalities) - BO/200501977.
- A Cessna 500 Astec Eagle aircraft, conducting a charter passenger operation, impacted the eastern slopes of Mt Emerald near Atherton, Queensland on 11 May 1990 (11 fatalities) - BO/199003068.
- A Rockwell Commander 690B aircraft, conducting a charter passenger operation, was lost at sea enroute Williamtown to Lord Howe Island, NSW on 2 October 1994 (nine fatalities) - BO/199402804.

- A Beech Super King Air 200 aircraft, conducting a charter passenger operation, impacted the ground near Burketown, Queensland on 4 September 2000 (eight fatalities) - BO/200003771.
- A Piper PA31-350 Chieftain aircraft, conducting a low capacity RPT service, impacted the water in the Spencer Gulf, South Australia on 31 May 2000 (eight fatalities) - BO/200002157.
- A Piper PA31-350 Chieftain aircraft, conducting a low capacity RPT service, impacted the ground near Young aerodrome, NSW on 11 June 1993 (seven fatalities) - BO/199301743.
- A Bell 206L-1 helicopter, conducting a private flight, impacted the beach of South Stradbroke Island, Queensland on 3 March 1991 (seven fatalities) - BO/199102520.

The remaining states and territories recorded fewer than 70 fatalities each, with the Northern Territory recording the lowest number of fatalities (n = 23).

Figure 7: Fatalities across the states and territories of Australia, 1990 to 2005

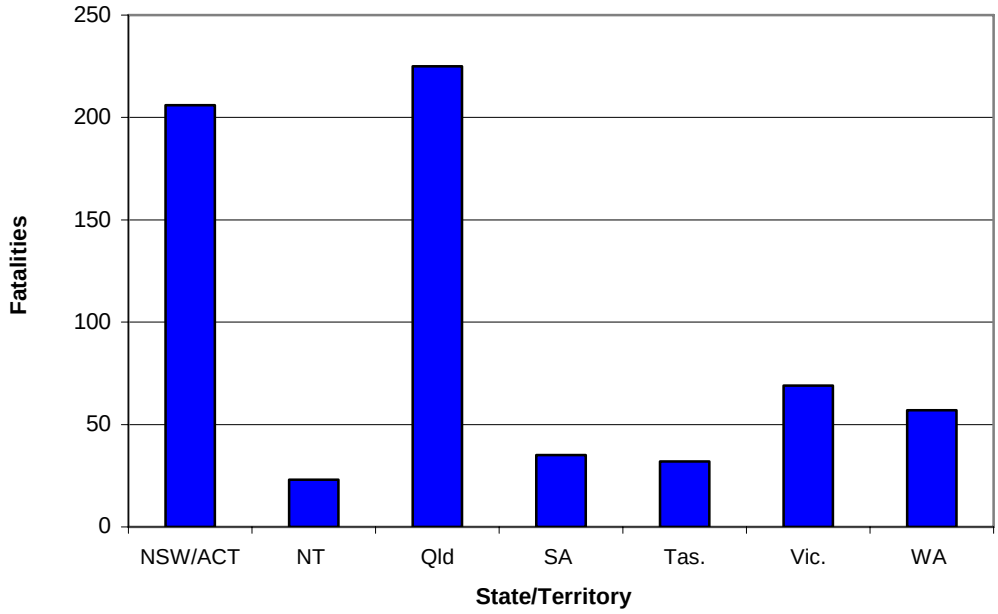
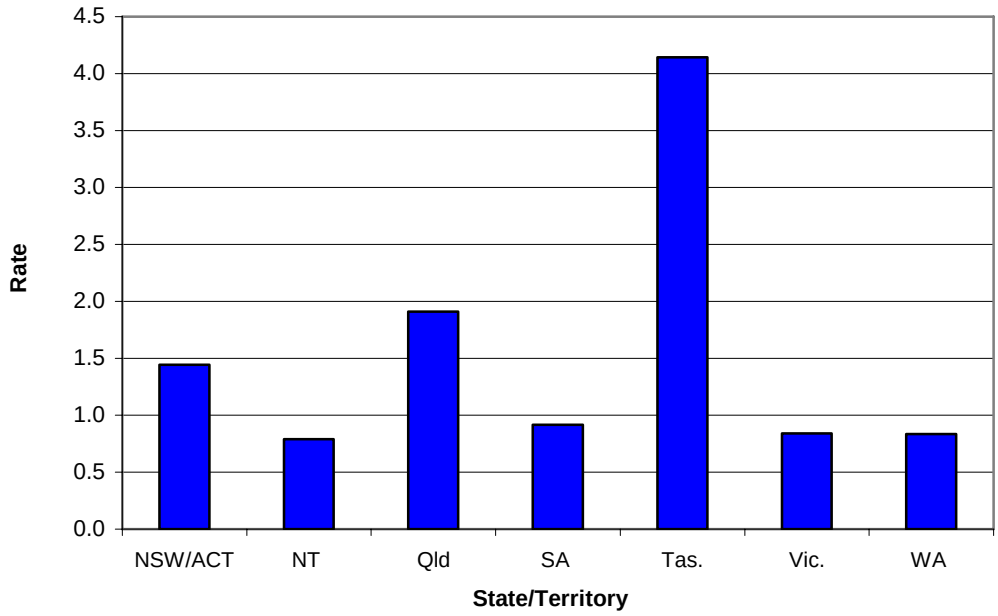


Figure 8 shows the rate of fatalities across the Australian states and territories, between 1990 and 2004. Tasmania recorded the highest rate, with 4.1 fatalities per 100,000 landings. Victoria, Western Australia and the Northern Territory all recorded the lowest rate, with 0.8 fatalities per 100,000 landings occurred. The overall national rate was 1.3 fatalities per 100,000 landings.

Figure 8: Fatalities per 100,000 landings for all states and territories in Australia, 1990 to 2004

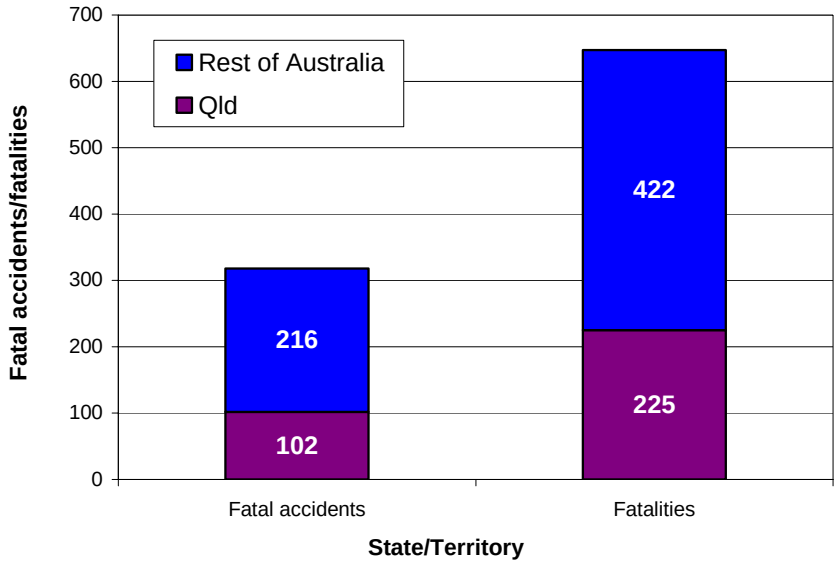


4.2 Queensland compared with the rest of Australia

4.2.1 Fatal accidents and fatalities

Figure 9 shows the number of fatal accidents and fatalities for Queensland compared with the rest of Australia, between 1990 and 2005. Of the 318 fatal accidents recorded in Australia during this period, Queensland accounted for almost one-third (n = 102) of the total. Queensland also accounted for one-third (n = 225) of the 647 fatalities recorded nationally.

Figure 9: Fatal accidents and fatalities for Queensland and the rest of Australia, 1990 to 2005



4.2.2 Fatal accident and fatality rates

Figure 10 shows the number of fatal accidents per 100,000 landings for Queensland and the rest of Australia, between 1990 and 2004. Queensland recorded the higher rate with 0.9 fatal accidents per 100,000 landings compared with the rest of Australia, which recorded 0.6 fatal accidents per 100,000 landings. The national rate was 0.7 fatal accidents per 100,000 landings.

Figure 10: Fatal accidents per 100,000 landings for Queensland and the rest of Australia, 1990 to 2004

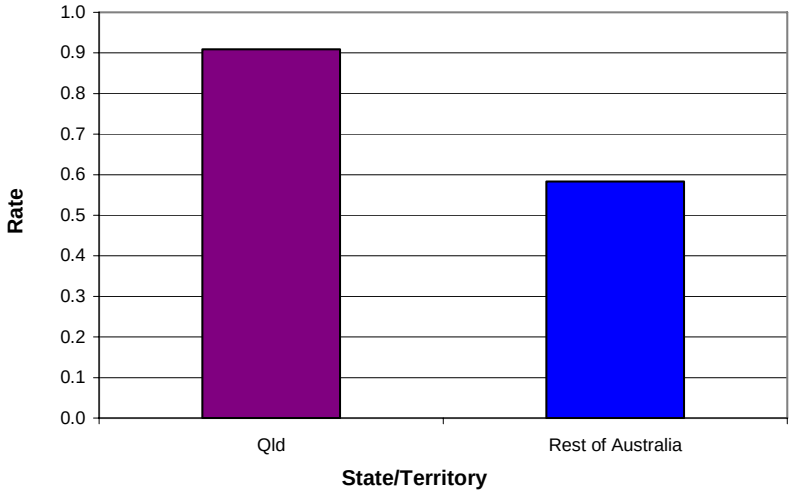
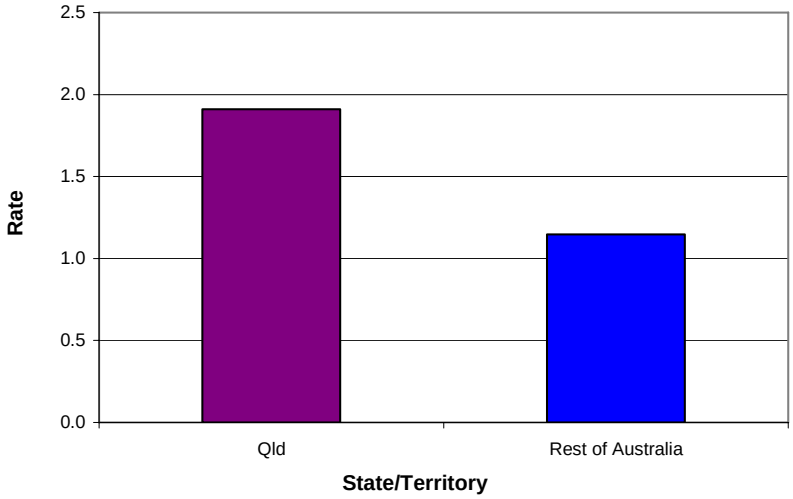


Figure 11 shows the rate of fatalities for Queensland compared with the rest of Australia between 1990 and 2004. Queensland recorded the higher rate with 1.9 fatalities per 100,000 landings, compared with 1.1 fatalities per 100,000 for the rest of Australia. The national rate was 1.3 fatalities per 100,000 landings.

Figure 11: Fatalities per 100,000 landings for Queensland and the rest of Australia, 1990 to 2004



4.3 Queensland regions

4.3.1 Fatal accidents

Figure 12 shows the number[19] and distribution of fatal accidents between 1990 and 2005 for the four regions of Queensland: South, Central, North and Far North. The highest number of fatal accidents occurred in South Queensland (n = 47) followed by North Queensland and Central Queensland, which both recorded 19 fatal accidents. The lowest number occurred in Far North Queensland, which recorded 17 fatal accidents.

Figure 12: Fatal accidents across the regions of Queensland, 1990 to 2005

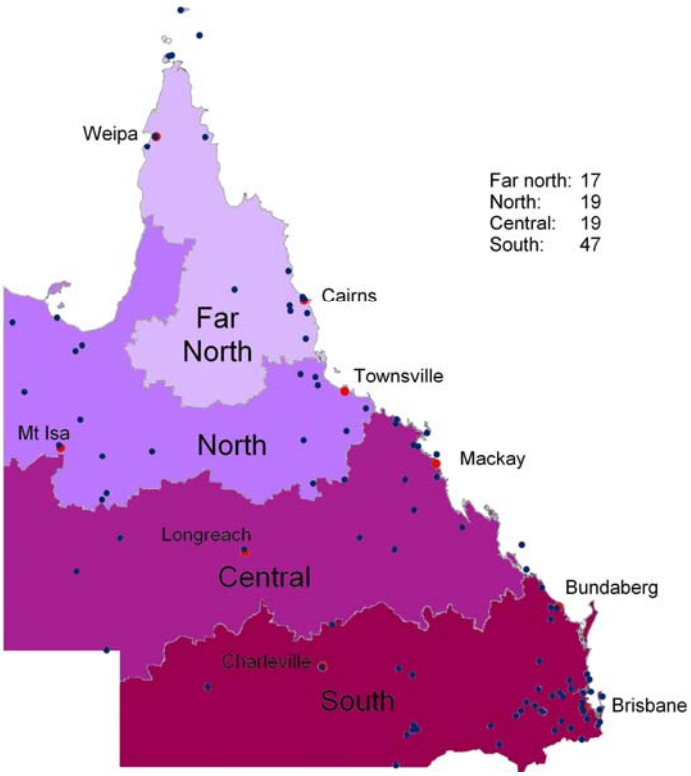
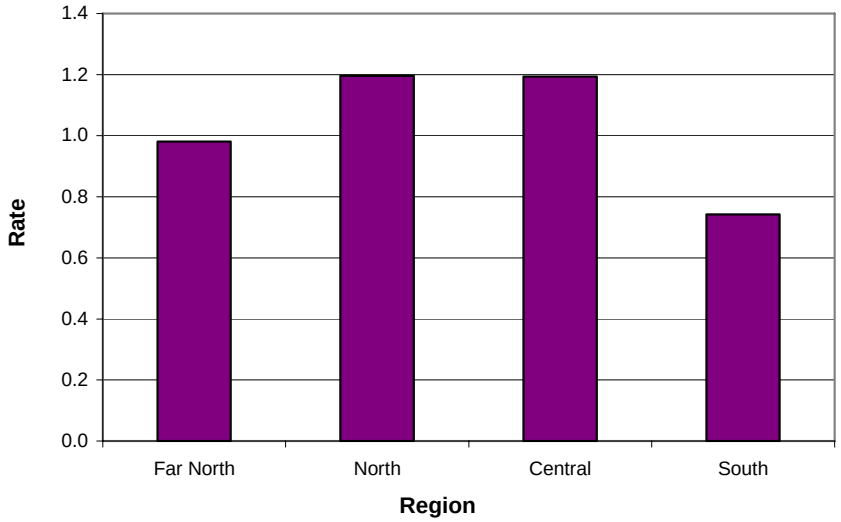


Figure 13 shows the rate of fatal accidents for the regions within Queensland between 1990 and 2004. North and Central Queensland both recorded the highest rate with 1.2 fatal accidents per 100,000 landings, followed by Far North Queensland, which recorded 1.0 fatal accidents per 100,000 landings. The lowest rate occurred in South Queensland, where 0.7 fatal accidents per 100,000 landings were recorded.

19 Individual accident sites may not be identifiable on the map, as more than one accident may have occurred at the sites identified.

Figure 13: Fatal accidents per 100,000 landings for the regions of Queensland, 1990 to 2004



4.3.2 Fatalities

The number of fatalities reported between 1990 and 2005 for the regions of Queensland is shown in Figure 14. The highest number of fatalities was recorded in South Queensland (n = 83), followed by Far North Queensland (n = 64) and North Queensland (n = 42). The lowest number of fatalities was recorded in Central Queensland (n = 36).

Figure 14: Fatalities across the regions of Queensland, 1990 to 2005

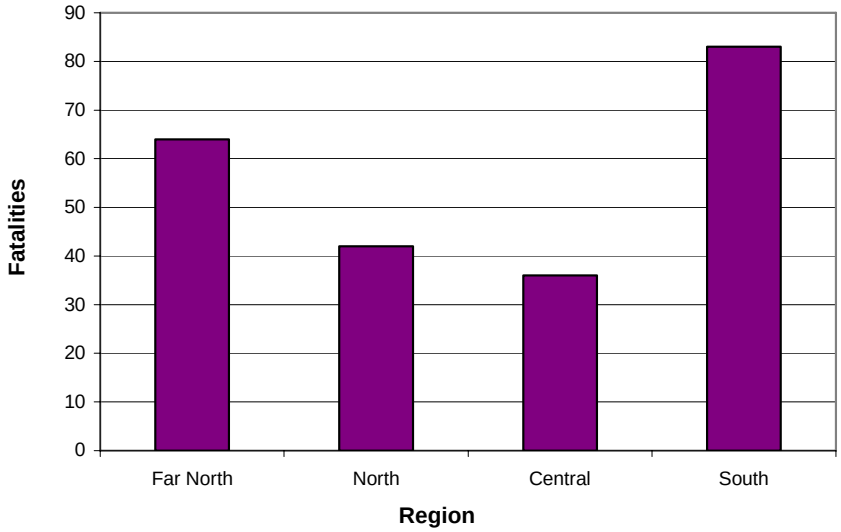
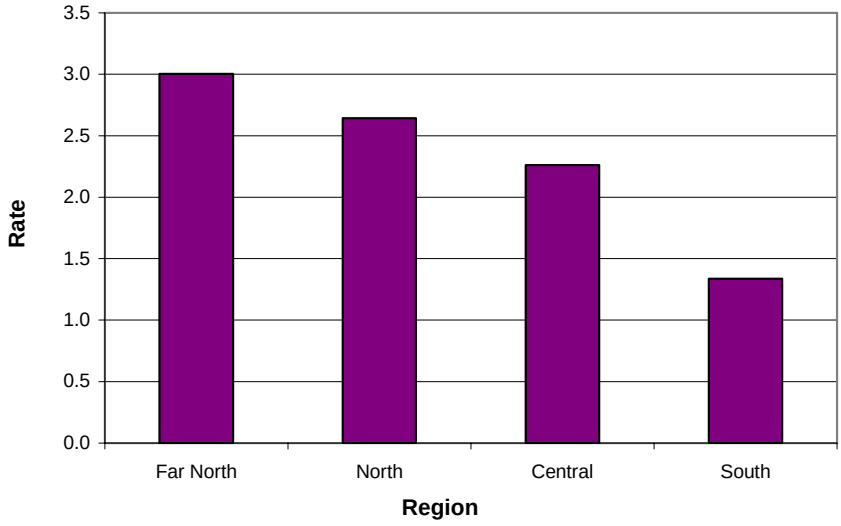


Figure 15 shows the rate of fatalities for the regions of Queensland between 1990 and 2004. The highest rate was recorded in Far North Queensland, where 3.0 fatalities per 100,000 landings occurred. North Queensland recorded 2.6 fatalities per 100,000 landings followed by Central Queensland (2.3). The lowest rate occurred in South Queensland, with 1.3 fatalities per 100,000 landings.

Figure 15: Fatalities per 100,000 landings across the regions of Queensland, 1990 to 2004



4.3.3 Aircraft operational category

The number of fatal accidents across the regions of Queensland by aircraft operational category between 1990 and 2005 is shown in Table 1 and Figure 16. The highest number of fatal accidents by aircraft operational category occurred in South Queensland in the private/business category (n = 34) which accounted for 72 per cent of fatal accidents in this region. Charter operations in Far North Queensland was the next highest category with eight fatal accidents, comprising 47 per cent of fatal accidents in the Far North. This was followed by other aerial work operations in North Queensland and Central Queensland with eight (42 per cent) and seven fatal accidents (37 per cent) respectively.

Table 1: Fatal accidents across the regions of Queensland by aircraft operational category, 1990 to 2005

	Far North	North	Central	South	Total
Low capacity - air transport	1	0	0	0	**1**
As percentage of fatal accidents in region	*5.9%*	*0.0%*	*0.0%*	*0.0%*	
Charter	8	4	3	3	**18**
As percentage of fatal accidents in region	*47.1%*	*21.1%*	*15.8%*	*6.4%*	
Agriculture	1	1	4	4	**10**
As percentage of fatal accidents in region	*5.9%*	*5.3%*	*21.1%*	*8.5%*	
Flying training	0	0	1	3	**4**
As percentage of fatal accidents in region	*0.0%*	*0.0%*	*5.3%*	*6.4%*	
Other aerial work	1	8	7	1	**17**
As percentage of fatal accidents in region	*5.9%*	*42.1%*	*36.8%*	*2.1%*	
Test/ferry/positioning	1	2	2	2	**7**
As percentage of fatal accidents in region	*5.9%*	*10.5%*	*10.5%*	*4.3%*	
Private/business	5	4	2	34	**45**
As percentage of fatal accidents in region	*29.4%*	*21.1%*	*10.5%*	*72.3%*	
Total	**17**	**19**	**19**	**47**	**102**

Figure 16: Fatal accidents across the regions of Queensland by aircraft operational category, 1990 to 2005

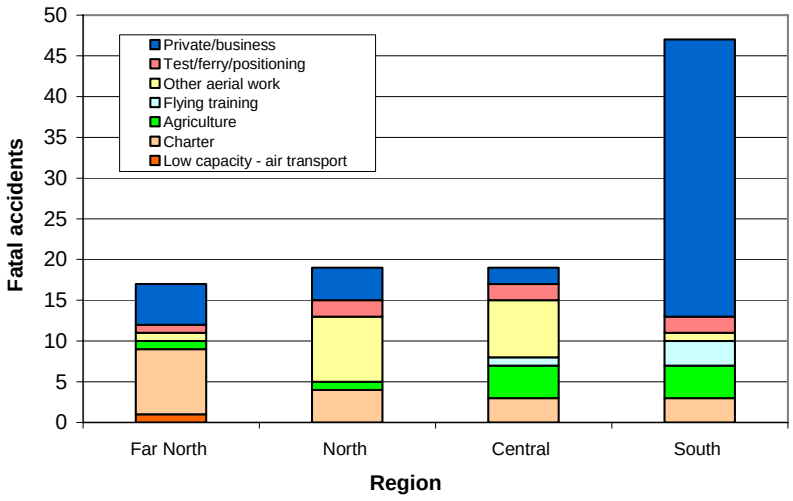
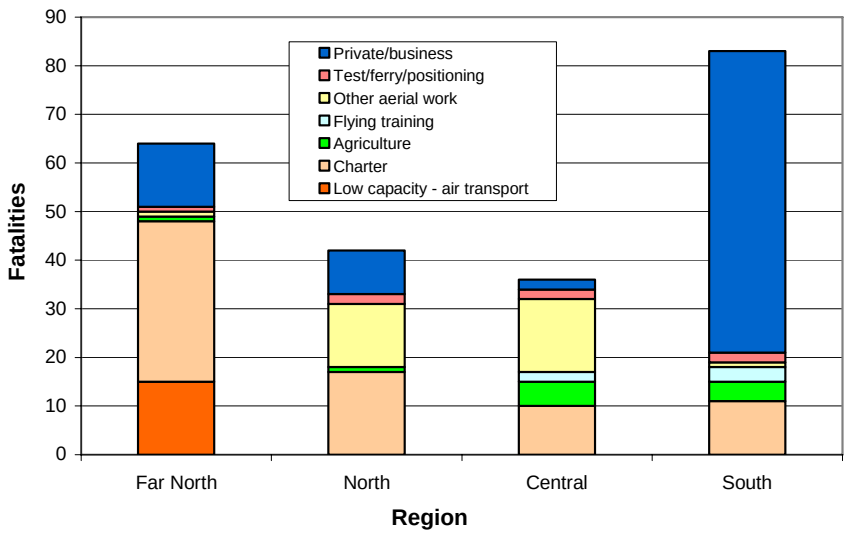


Table 2 and Figure 17 shows the number of fatalities across the regions of Queensland by aircraft operational category between 1990 and 2005. The highest number of fatalities by aircraft operational category occurred in South Queensland, with 62 fatalities in the private/business category, which accounted for 75 per cent of fatalities in the region. Charter operations in Far North Queensland was the next highest category with 33 fatalities (52 per cent of fatalities in the region). This was followed by charter operations in North Queensland with 17 fatalities, which represented 40 per cent of the region's fatalities. There were 15 fatalities in both low capacity operations in Far North Queensland and other aerial work operations in the Central Queensland. These two categories represented 23 per cent and 43 per cent of fatalities in the respective regions. Each of the other operational categories across the regions recorded 13 or fewer fatalities.

Table 2: Fatalities across the regions of Queensland by aircraft operational category, 1990 to 2005

	Far North	North	Central	South	Total
Low capacity - air transport	15	0	0	0	**15**
As percentage of fatalities in region	*23.4%*	*0.0%*	*0.0%*	*0.0%*	
Charter	33	17	10	11	**71**
As percentage of fatalities in region	*51.6%*	*40.5%*	*27.8%*	*13.3%*	
Agriculture	1	1	5	4	**11**
As percentage of fatalities in region	*1.6%*	*2.4%*	*13.9%*	*4.8%*	
Flying training	0	0	2	3	**5**
As percentage of fatalities in region	*0.0%*	*0.0%*	*5.6%*	*3.6%*	
Other aerial work	1	13	15	1	**30**
As percentage of fatalities in region	*1.6%*	*31.0%*	*41.7%*	*1.2%*	
Test/ferry/positioning	1	2	2	2	**7**
As percentage of fatalities in region	*1.6%*	*4.8%*	*5.6%*	*2.4%*	
Private/business	13	9	2	62	**86**
As percentage of fatalities in region	*20.3%*	*21.4%*	*5.6%*	*74.7%*	
Total	**64**	**42**	**36**	**83**	**225**

Figure 17: Fatalities across the regions of Queensland by aircraft operational category, 1990 to 2005



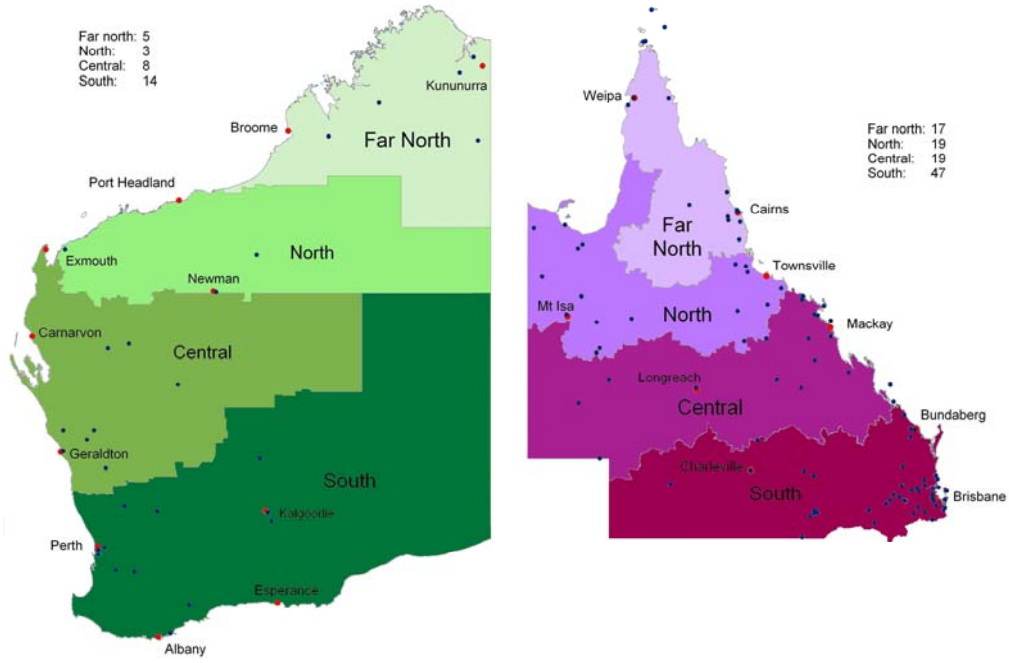
4.4 Queensland compared with Western Australia

4.4.1 Fatal accidents

The following analysis compares fatal accident and fatality data across the regions of Queensland with those of the state most similar in area and population, Western Australia. During the period 1990 to 2005, Queensland recorded 102 fatal accidents, with an average of 6.4 fatal accidents per year. In comparison, Western Australia recorded 30 fatal accidents, with an average of 1.9 per year.

Figure 18 shows the number[20] and distribution of fatal accidents recorded across the four regions (Far North, North, Central and South) of Queensland and Western Australia between 1990 and 2005. The highest number of fatal accidents occurred in the South region for both Queensland (n = 47) and Western Australia (n = 14), accounting for 46 per cent of fatal accidents in Queensland and 47 per cent in Western Australia. In the Central region, Queensland recorded 19 fatal accidents compared with eight in Western Australia. In the North region, there were 19 fatal accidents in Queensland compared with three in Western Australia, the lowest number of fatal accidents across both states during the reporting period. The lowest number of fatal accidents for Queensland (n = 17) occurred in the Far North region, compared with Western Australia, which recorded five fatal accidents.

Figure 18: Fatal accidents for Queensland and Western Australian regions, 1990 to 2005

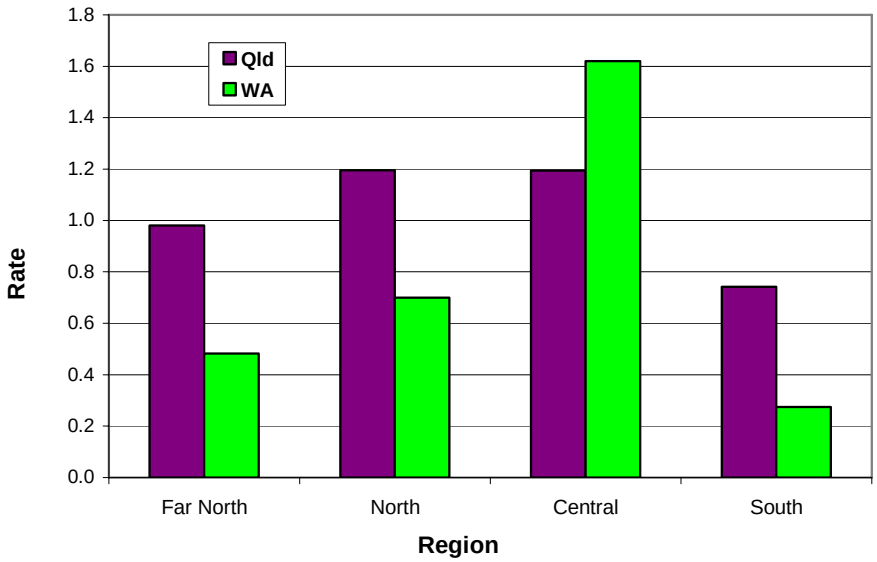


20 Individual accident sites may not be identifiable on the map, as more than one accident may have occurred at the sites identified.

Queensland recorded 1.6 times more landings than Western Australia between 1990 and 2004, the latest year for which activity data was available. Of the 10.9 million landings in Queensland during the reporting period, almost 56 per cent were in the South region. The remaining regions within Queensland each accounted for approximately 15 per cent of the activity. In comparison, 71 per cent of the 6.7 million landings in Western Australia occurred in the South region followed by approximately 15 per cent in the Far North. The Central and North regions accounted for approximately 7 per cent and 6 per cent respectively.

Figure 19 shows the rate of fatal accidents for the regions within Queensland and Western Australia between 1990 and 2004. Queensland recorded the higher rate across all the regions, with the exception of the Central region. In the Far North, Queensland recorded a fatal accident rate of 1.0; double that of Western Australia, which recorded 0.5 fatal accidents per 100,000 landings. In the North region, Queensland recorded a rate of 1.2 compared with Western Australia, where 0.7 fatal accidents per 100,000 landings occurred. In the Central region, 1.6 fatal accidents per 100,000 landings occurred in Western Australia, the highest rate recorded across the states. In comparison, Central Queensland recorded 1.2 fatal accidents per 100,000 landings. The lowest rate across the states occurred in the South region of Western Australia, where 0.3 fatal accidents per 100,000 landings occurred, compared with South Queensland, which recorded a rate of 0.7. The overall fatal accident rate for Queensland was 0.9, while the rate for Western Australia was 0.4.

Figure 19: Fatal accidents per 100,000 landings for Queensland and Western Australian regions, 1990 to 2004



4.4.2 Fatalities

During the period 1990 to 2005, Queensland recorded 225 fatalities, with an average of 14.1 fatalities per year. Over the same period, Western Australia recorded 57 fatalities, with an average of 3.6 fatalities per year. Figure 20 shows the number of fatalities recorded across the four regions (Far North, North, Central and South) of Queensland and Western Australia between 1990 and 2005.

Queensland recorded the higher number of fatalities across the four regions examined, compared with Western Australia. The highest number occurred in the South regions for both states, where Queensland recorded 83 fatalities and Western Australia recorded 26. The lowest number of fatalities occurred in the Central region (n = 36) for Queensland and in the North region (n = 7) for Western Australia.

Figure 20: Fatalities for Queensland and Western Australian regions, 1990 to 2005

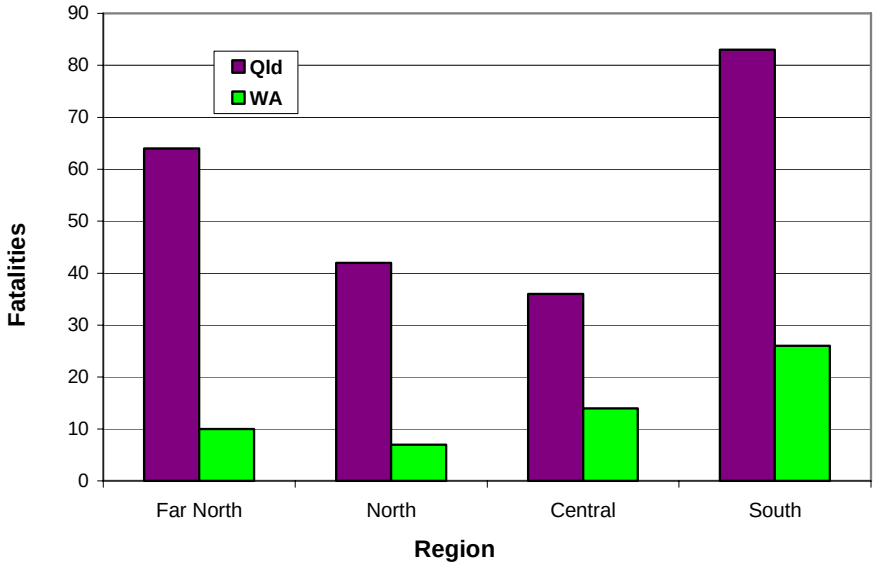
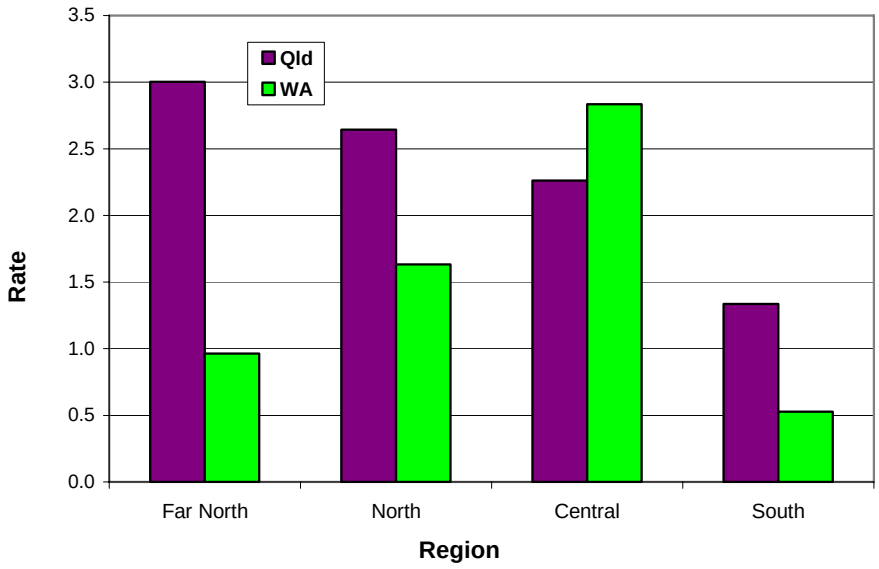


Figure 21 shows the rate of fatalities for the regions within Queensland and Western Australia between 1990 and 2004. The highest rate recorded across the regions for both states occurred in Far North Queensland, with 3.0 fatalities per 100,000 landings. The Central region of Western Australia recorded the second highest rate, with 2.8 fatalities per 100,000 landings followed by North Queensland, which recorded 2.6. The lowest rate across the regions in both states occurred in the South region of Western Australia, where 0.5 fatalities per 100,000 was recorded. The lowest rate for Queensland also occurred in the South region, with 1.3 fatalities per 100,000 landings. The overall fatality rate for Queensland was 1.9, and the overall rate for Western Australia was 0.8.

Figure 21: Fatalities per 100,000 landings for Queensland and Western Australian regions, 1990 to 2004



4.4.3 Aircraft operational category

Fatal accidents

Table 3 and Figure 22 show the number of fatal accidents for Queensland and Western Australia by aircraft operational category between 1990 and 2005. For both states, the greatest proportion of fatal accidents occurred in the private/business, charter, and other aerial work operational categories in that order.

In Queensland, 44 per cent of fatal accidents involved private/business operations (n = 45), 18 per cent involved charter operations (n = 18), and 17 per cent involved other aerial work operations (n = 17).

In Western Australia, private/business operations accounted for 53 per cent (n = 16) of fatal accidents. Other aerial work operations accounted for 23 per cent (n = 7) and charter operations accounted for 20 per cent (n = 6).

Table 3: Fatal accidents for Queensland and Western Australia by aircraft operational category, 1990 to 2005

Aircraft operational type	Qld	WA
Low Capacity - air transport	1	0
Charter	18	6
Agriculture	10	1
Flying training	4	0
Other aerial work	17	7
Test/ferry/positioning	7	0
Private/business	45	16
Total	***102***	***30***

Figure 22: Fatal accidents for Queensland and Western Australia by aircraft operational category, 1990 to 2005

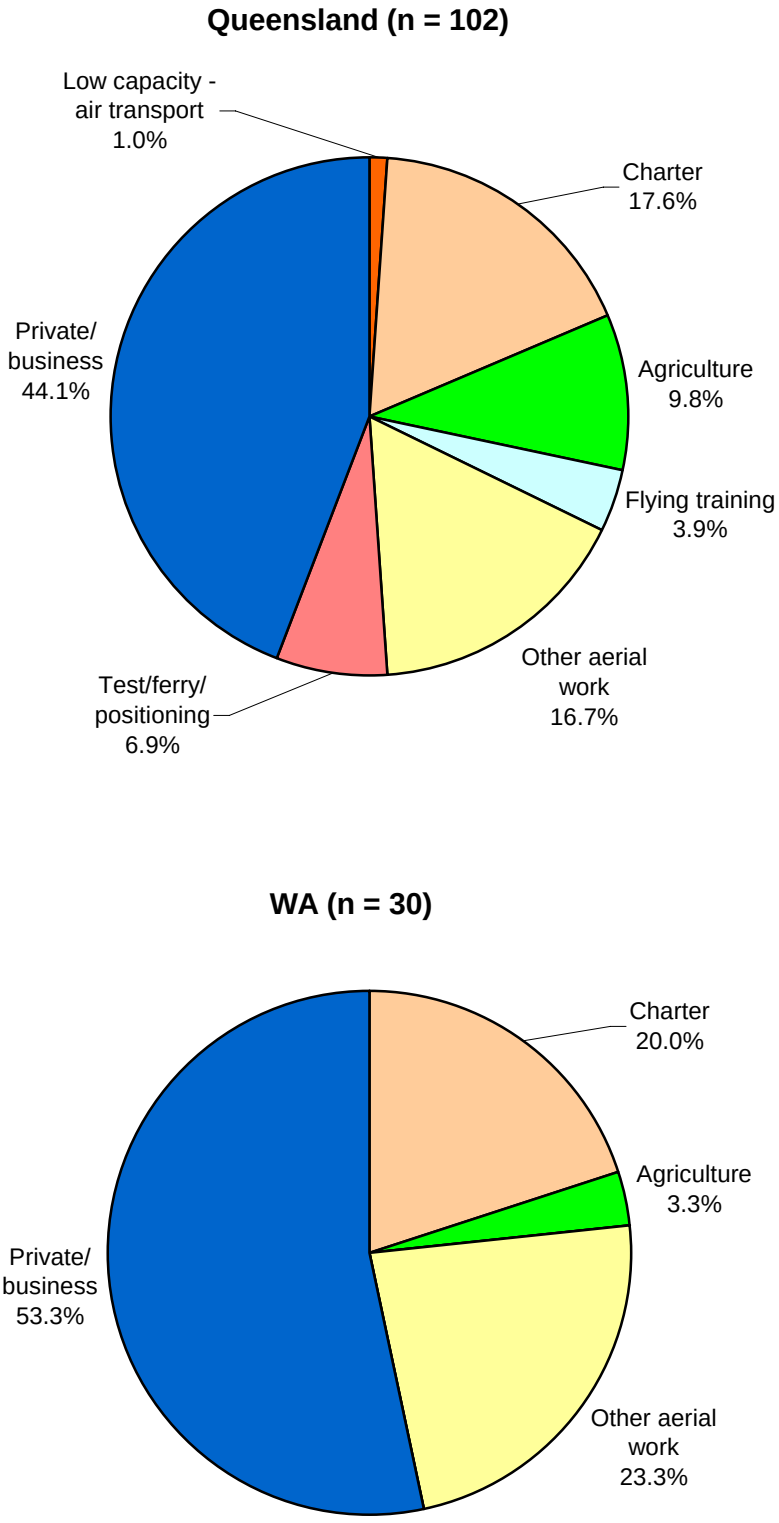
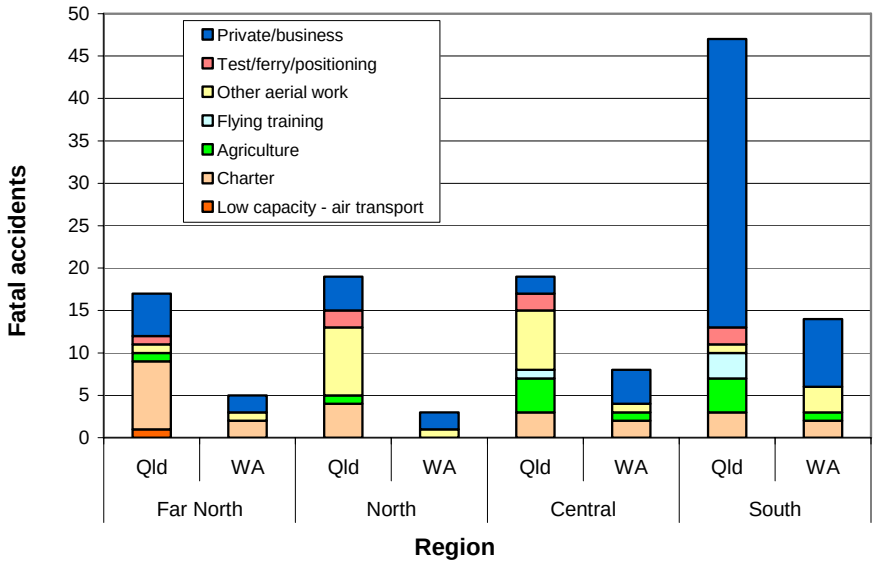


Figure 23 shows the number of fatal accidents across the regions of Queensland and Western Australia by aircraft operational category between 1990 and 2005. In summary:

- In the Far North region, the highest number of fatal accidents involved charter operations (n = 8) for Queensland and involved both charter and private/business operations (n = 2) for Western Australia.
- In the North and Central regions, the highest number of fatal accidents involved other aerial work operations (n = 8 and n = 7 respectively) for Queensland, compared with private/business operations in Western Australia (n = 2 and n = 4 respectively).
- In the South region, both states recorded the highest number of fatal accidents in the private/business operational category, with Queensland recording 34 fatal accidents and Western Australia recording eight.

Only one fatal accident involving low capacity RPT operations occurred during the reporting period (Lockhart River, Far North Queensland in 2005), where 15 people were fatally injured.

Figure 23: Fatal accidents across the regions of Queensland and Western Australia by operational category, 1990 to 2005



Fatalities

Table 4 and Figure 24 show the number of fatalities for Queensland and Western Australia by aircraft operational category between 1990 and 2005. For both states, the greatest proportion of fatal accidents occurred in the private/business, charter, and other aerial work operational categories in that order.

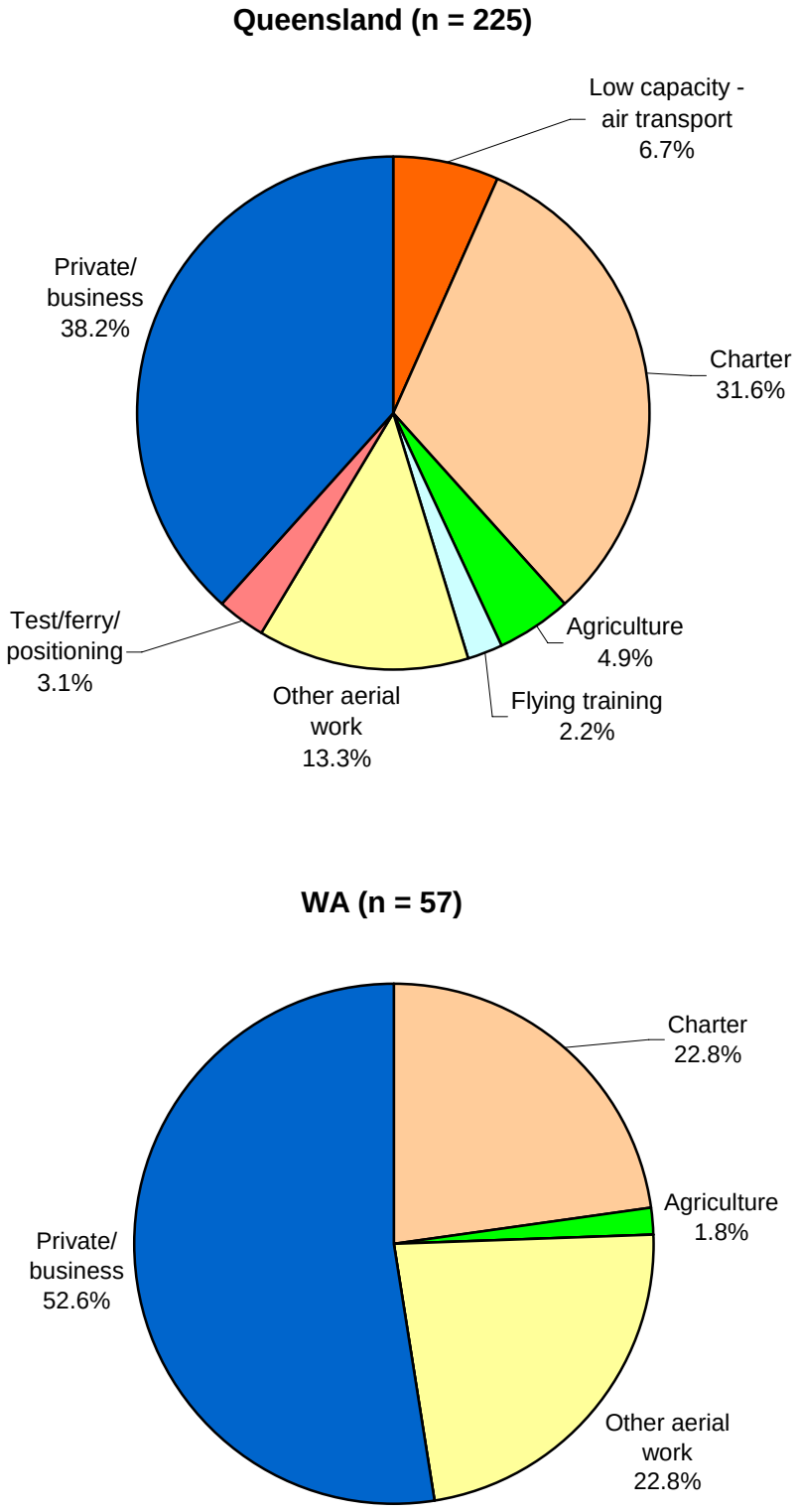
In Queensland, 38 per cent of fatal accidents involved private/business operations (n = 86), 32 per cent involved charter operations (n = 71), and 13 per cent involved other aerial work operations (n = 30).

In Western Australia, private/business operations accounted for 53 per cent (n = 30) of fatal accidents. Charter and other aerial work operations each accounted for 23 per cent (n = 13) of fatalities.

Table 4: Fatalities for Queensland and Western Australia by aircraft operational category, 1990 to 2005

Aircraft operational type	Qld	WA
Low Capacity - air transport	15	0
Charter	71	13
Agriculture	11	1
Flying training	5	0
Other aerial work	30	13
Test/ferry/positioning	7	0
Private/business	86	30
Total	***225***	***57***

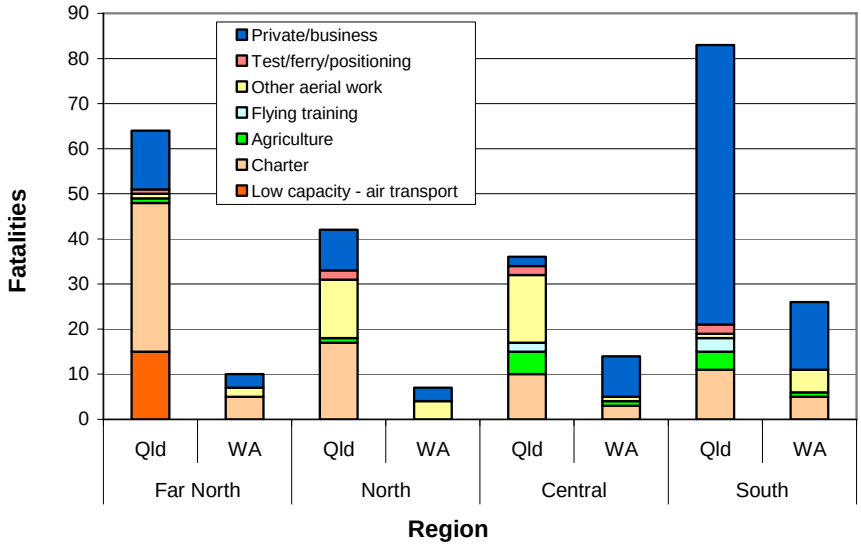
Figure 24: Fatalities for Queensland and Western Australia by aircraft operational category, 1990 to 2005



The number of fatalities across the regions of Queensland and Western Australia by aircraft operational category between 1990 and 2005 is shown in Figure 25. In summary:

- In the Far North region, both states recorded the highest number of fatalities in charter operations with Queensland recording 33 fatalities and Western Australia recording five. Far North Queensland's next highest category involved low capacity RPT operations in which 15 fatalities occurred in one accident.
- In the North region, the highest number of fatalities occurred in charter operations (n = 17) for Queensland and other aerial work operations (n = 4) for Western Australia.
- In the Central region, other aerial work operations (n = 15) recorded the highest number for Queensland compared with private/business operations (n = 9) in Western Australia.
- In the South region, both states recorded the highest number of fatalities in the private/business category, with Queensland and Western Australia recording 62 and 15 fatalities respectively.

Figure 25: Fatalities across the regions of Queensland and Western Australia by aircraft operational category, 1990 to 2005



5 DISCUSSION

The objective of this paper was to compare fatal accidents, fatalities and associated rates between the states, territories and regions of Australia between 1990 and 2005, with a particular emphasis on Queensland and Far North Queensland. To do this, four sets of comparisons were conducted to gain an understanding of fatal aviation accidents in Queensland, and more particularly Far North Queensland, and how these findings compared with other parts of Australia.

The first comparison examined the national level, comparing all the states and territories in order to establish a baseline for fatal accidents and fatalities and associated rates in Australia. The next analysis then examined Queensland against the rest of Australia combined, developing a baseline for Queensland fatal accidents, fatalities and associated rates. The third comparison focused specifically on Queensland. Queensland was divided into four regions (Far North, North, Central and South) based on ABS statistical divisions, providing a baseline for each of the regions within the state. The final analysis compared the regions of Queensland with those of Western Australia, a state with the greatest similarities in terms of area and population. Like Queensland, Western Australia was divided into four regions (Far North, North, Central and South) based on ABS statistical divisions. This provided a basis for comparison between the individual regions across the two states.

The difficulties associated with assessing aviation safety from a regional perspective, or within state boundaries, are many because aviation can be a regional, national or international activity and the location of any accident can be simply extraneous. This issue, coupled with the difficulty of obtaining comprehensive and relevant aircraft activity data for specific regions over a lengthy period, and the small number of fatal aviation accidents in Australia, means that the assessment and interpretation of state and regional fatal accident and fatality numbers and rates must be treated cautiously. As a result, the number and rate of fatal accidents and fatalities provided in this report reflect what happened in a particular state or region, but cannot be used to indicate differences in aviation safety by region.

There are a number of factors that may contribute to a fatal aircraft accident, such as aircraft type and operation, aircraft maintenance, pilot training and experience, pilot health, organisational and regulatory factors, and environmental conditions. Many of these contributory factors are independent of the accident location.

In some cases, an accident may occur in a location that could not be predicted from an aircraft's flight plan. A notable example occurred on 4 September 2000. A Beech Super King Air 200 aircraft departed Perth, Western Australia on a charter flight to Leonora, Western Australia, with one pilot and seven passengers on board. About 5 hours after departing Perth, the aircraft impacted the ground near Burketown, Queensland, fatally injuring all occupants. The investigation concluded that the pilot and passengers became incapacitated during the flight and that the aircraft was being controlled by the autopilot until its collision with the ground. Even though the aircraft's planned departure and destination points were in Western Australia, the aircraft's final accident location was in Queensland (BO/200003771). Consequently, this accident appears against Queensland.

Furthermore, an accident may occur at any point along an aircraft's flight planned route, which may cross state and regional boundaries. On 1 October 2003, a Piper PA-23-250 Aztec aircraft was conducting a private flight from Mareeba, Queensland to Roma, Queensland, with a family of five persons from New South Wales onboard. Shortly after takeoff the aircraft impacted the ground, fatally injuring all occupants. The investigation indicated that the pilot may have been incapacitated during the flight due to coronary artery disease. Prior to the accident flight, the family had been in North Queensland on holidays. During this time they had visited a number of locations, which crossed state and regional boundaries. The accident could have happened at any one of these locations (BO/200304091).

Accidents, like those described above, clearly demonstrate that the contributory factors to an accident may not be directly related to the aircraft accident's location and these accidents could have occurred in another state or region. This is an important issue when interpreting the results of the analyses presented here, as the number of fatal accidents in a particular area and the aircraft involved do not necessarily reflect the existence of underlying aviation safety issues in that area.

5.1.1 Inter-state comparison

The first comparison of fatal accidents, fatalities and associated rates involving aircraft with a MTOW of 11,000 kg or less was between all the states and territories of Australia.

Fatal accidents

Of the 318 fatal accidents reported in Australia between 1990 and 2005, NSW/ACT and Queensland recorded the highest number, with 102 fatal accidents each. Victoria recorded the third highest number of fatal accidents with 37. Queensland, NSW/ACT and Victoria together accounted for 76 per cent of the total number of fatal accidents and 77 per cent of the total number of fatalities in Australia during the reporting period. These proportions were similar to the distribution of the Australian population, with 79 per cent of people located in Queensland, NSW/ACT and Victoria in the 15 years to 2005 (Australian Bureau of Statistics, 1997, 2005).

Between 1990 and 2004, the national rate of fatal accidents was 0.7 fatal accidents per 100,000 landings. Across the states and territories, the lowest fatal accident rate occurred in Western Australia, where 0.4 fatal accidents per 100,000 landings were recorded. The highest rate occurred in Tasmania, with 1.8 fatal accidents per 100,000 landings followed by Queensland with 0.9. While the fatal accident rate in Tasmania was double that of Queensland, Tasmania accounted for only 1.7 per cent of the total activity in Australia. As a result of both the low number of fatal accidents and low activity in Tasmania, the fatal accident rate is very sensitive to even minor fluctuations in fatal accident numbers.

In addition, the profiles of flights associated with the fatal accidents in Tasmania differed from the other states. In Tasmania, 43 per cent of fatal accidents with known departure and destination points were intra-state flights. For all the other states and territories, the percentage of fatal accidents associated with intra-state flights ranged from 84 per cent in South Australia to 100 per cent in the Northern Territory and Western Australia. Of the seven fatal accidents in Tasmania, where the aircraft's departure point or destination was outside the state, six aircraft were

being flown either to or from the state of Victoria. If the states of Victoria and Tasmania were combined:

- the percentage of intra-state fatal accidents would be 88 per cent, similar to the intra-state flight profile of the remaining states and territories;
- the activity would account for 18 per cent of the total activity in Australia during the period 1990 to 2004; and
- the combined fatal accident rate would be 0.6 fatal accidents per 100,000 landings.

Combining Tasmania and Victoria somewhat eliminates the variability of the results due to the increased number of fatal accidents and the higher amount of flying activity. Furthermore, the intra-state and inter-state flight profiles of fatal accidents would be similar to the remaining states and territories.

Fatalities

During the reporting period, Tasmania recorded the highest rate of fatalities, with 4.1 fatalities per 100,000 landings, which was more than double the second highest rate of 1.9 recorded by Queensland. The lowest rate was recorded by Victoria, the Northern Territory and Western Australia, which all recorded 0.8 fatalities per 100,000 landings. If Tasmania and Victoria were combined, the fatality rate would be 1.1 fatalities per 100,000 landings, which would be lower than the national rate of 1.3 fatalities per 100,000 landings.

5.1.2 Queensland compared with the rest of Australia

The second analyses examined fatal accidents, fatalities and associated rates for Queensland compared with the rest of Australia combined. Of the 318 fatal accidents and 647 fatalities Australia-wide between 1990 and 2005, Queensland accounted for approximately one-third, with 102 fatal accidents and 225 fatalities. In terms of activity, Queensland represented 24 per cent of the total recorded landings for Australia during the reporting period. As a result, Queensland's fatality rate of 1.9 fatalities per 100,000 landings was 70 per cent higher than the rest of Australia combined (1.1). Similarly, Queensland's fatal accident rate of 0.9 was 50 per cent higher compared with the remaining states and territories combined (0.6).

5.1.3 Queensland regions

The next comparison of fatal accident and fatality data focused on the four regions within Queensland (Far North, North, Central and South). Between 1990 and 2004 (the latest year for which activity data was available) the highest number of landings was attributed to South Queensland, accounting for almost 56 per cent of the total number of landings in the state. The remaining landings were almost evenly distributed between the Central, North and Far North regions, accounting for approximately 15 per cent each.

Fatal Accidents

Of the 102 fatal accidents that were recorded in Queensland between 1990 and 2005, 46 per cent (n = 47) occurred in the South region. The remaining 54 per cent (n = 55) were almost evenly distributed over the remaining three regions with 19 fatal accidents in both the North and Central regions and 17 in the Far North. Of these fatal accidents, 99 occurred between 1990 and 2004 and three happened in 2005. The fatal accidents that occurred in 2005 were: an aerial agriculture accident involving an Air Tractor AT-802A aircraft in South Queensland (BO/200500004) with one fatality; a low capacity RPT accident in Far North Queensland with 15 fatalities (BO/200501977); and an accident involving a private aircraft in South Queensland, with one fatality (BO/200504646).

The fatal accident rates across the Far North, North and Central regions of Queensland were all above the national rate of 0.7 fatal accidents per 100,000 landings for 1990 to 2004. The fatal accident rate in South Queensland was the lowest of the four regions and equal to the national rate. In this region 73 per cent of the fatal accidents between 1990 and 2004 were the result of private/business operations, but only 28 per cent of the hours flown were in this category. For Far North Queensland, the region with the next lowest fatal accident rate (1.0 fatal accidents per 100,000 landings), 50 per cent of the fatal accidents in the region between 1990 and 2004 involved charter operations carrying passengers for commercial purposes. This proportion is similar to the activity level associated with charter operations in the Far North, where 44 per cent of hours flown were in this category. In the Central and North regions of Queensland, which both had a fatal accident rate of 1.2, other aerial work operations accounted for the greatest proportion of accidents in each region between 1990 and 2004 with 42 per cent and 37 per cent respectively. While other aerial work was the most prevalent activity undertaken in North Queensland (37 per cent of hours flown), both charter and private/business operations accounted for 31 per cent of hours flown in Central Queensland compared with 19 per cent in other aerial work operations.

Fatalities

Of the 225 fatalities in Queensland between 1990 and 2005, the highest number was recorded in South Queensland region, which accounted for 83 fatalities (37 per cent). Even though the numbers of fatal accidents were generally evenly dispersed across the Central, North and Far North regions, the distribution of fatalities varied. Far North Queensland recorded 64 fatalities compared with the North and Central regions, which recorded 42 and 36 fatalities respectively. This variation was partly due to the differences in operational categories of the fatal accident aircraft between the regions. Specifically, one accident at Lockhart River involving a low capacity passenger aircraft was responsible for nearly one quarter of the total Far North Queensland fatalities.

The fatality rates across the Far North, North and Central regions of Queensland were above the national rate of 1.3 fatalities per 100,000 landings for 1990 to 2004. South Queensland recorded a fatality equal to the national rate. The highest rate of fatalities occurred in Far North Queensland, where 3.0 fatalities per 100,000 landings were recorded between 1990 and 2004. This rate excluded the fatal accident near Lockhart River in 2005, which resulted in 15 fatalities. If the landing activity in this region for 2005 was similar to that of 2004, the fatality rate between 1990 and 2005 would increase to 3.7. Of the 49 fatalities recorded for Far North

Queensland between 1990 and 2004, 67 per cent involved charter aircraft carrying passengers for commercial purposes. If the period examined is extended to include 2005 data, 75 per cent (n = 48) of the 64 fatalities in Far North Queensland would be associated with commercial passenger operations (charter and low capacity RPT combined) compared with 40 per cent, 28 per cent and 13 per cent in North, Central and South Queensland respectively. However, this result also shows the influence that accidents with a relatively high number of fatalities can have on fatality numbers when the overall total is low: with 26 of the 48 fatalities (54 per cent) associated with commercial passenger operations in Far North Queensland between 1990 and 2005 being the result of just two fatal accidents.

Between 1990 and 2004, North Queensland recorded 2.6 fatalities per 100,000 landings. Of the 42 fatalities in the region, charter work operations accounted for 40 per cent (n = 17) during this period. However, one of the fatal accidents in the North Queensland region involved a charter aircraft that had a departure and destination point in Western Australia. The accident resulted in eight fatalities, which accounted for almost half of the total charter fatalities for this region. If this accident was excluded from the dataset, other aerial work operations would account for the greatest proportion of fatalities in the region.

Between 1990 and 2004, the Central region of Queensland recorded 2.3 fatalities per 100,000 landings. Of the 36 fatalities in the region, other aerial work operations accounted for 42 per cent (n = 15). The lowest rate across the regions was recorded in South Queensland, where 1.3 fatalities per 100,000 landings occurred, with 75 per cent of the fatalities involving private/business operations.

5.1.4 Queensland compared with Western Australia

In order to examine the fatal accidents, fatalities and associated rates in Queensland, and in particular, Far North Queensland, the final analyses compared the individual regions with those of a state most similar in area and population, Western Australia. According to the Australian Bureau of Statistics (ABS), Western Australia is the largest state in Australia in terms of area, followed by Queensland. In terms of population, Queensland is the third largest state, accounting for 17 per cent of Australia's total population in the early 1990s to 20 per cent in 2005. Western Australia is the fourth largest state in terms of population, accounting for 10 per cent of the total population over the last 15 years (Australian Bureau of Statistics, 1997, 2005, 2006a, 2006b). Like Queensland, Western Australia was divided into four regions (Far North, North, Central and South) based on the ABS statistical division boundaries. However, the low number of fatal accidents across the four regions of Western Australia limits any conclusions that can be validly drawn from the data and as a result, only a broad discussion will be undertaken.

Of the Australian states and territories, Queensland recorded the second highest level of activity (landings) between 1990 and 2004 for aircraft with a MTOW of 11,000 kg or less, accounting for 24 per cent. In comparison, Western Australia was the fourth highest, accounting for 15 per cent.

Of the 102 fatal accidents recorded in Queensland between 1990 and 2005, 99 occurred up to the end of 2004. Between 1990 and 2004, Queensland's fatal accident rate was 0.9 fatal accidents per 100,000 landings, above the national rate of 0.7. In comparison, of the 30 fatal accidents recorded in Western Australia between 1990 and 2005, 29 occurred up to the end of 2004. Between 1990 and 2004,

Western Australia recorded 0.4 fatal accidents per 100,000 landings, considerably below the national rate.

Between 1990 and 2005, the greatest proportion of fatal accidents for both states was recorded in the private/business aircraft operational category, accounting for 53 per cent in Western Australia and 44 per cent in Queensland. Charter and other aerial work operations were also prominent in both states, with charter accounting for 20 per cent of fatal accidents in Western Australia and 18 per cent in Queensland. Other aerial work operations accounted for 23 per cent and 17 per cent of fatal accidents in Western Australia and Queensland respectively.

Both Queensland and Western Australia recorded the highest number of fatal accidents and the lowest fatal accident rate in the South region. For the remaining regions, the number of fatal accidents in Queensland was higher than that for Western Australia. In terms of fatal accidents rates, the Far North and North regions of Queensland were higher than the corresponding regions in Western Australia. In the Central region, Western Australia recorded the higher fatal accident rate compared with Queensland. However, the very low number of fatal accidents across the regions of Western Australia, means the fatal accident rates cannot be used for a reliable comparison.

Of the 225 fatalities recorded in Queensland between 1990 and 2005, 208 occurred up to the end of 2004. Between 1990 and 2004, Queensland's fatality rate was 1.9 fatalities per 100,000 landings, above the national rate of 1.3. Western Australia recorded 57 fatalities between 1990 and 2005, with 56 occurring up to the end of 2004. Between 1990 and 2004, Western Australia's fatality rate was 0.8 fatalities per 100,000 landings, which was below the national rate.

Between 1990 and 2005, the greatest proportion of fatalities for both states was recorded in the private/business aircraft operational category, accounting for 52 per cent in Western Australia and 38 per cent in Queensland. Commercial charter and RPT operations collectively accounted for 38 per cent of fatalities in Queensland compared with 23 per cent in Western Australia.

Both states recorded the highest number of fatalities and the lowest fatality rate in the South region, which includes the major population centre for both states. For the remaining regions, the number of fatalities in Queensland was higher than that for Western Australia. In terms of fatality rates, the Far North and North regions of Queensland were higher than the corresponding regions in Western Australia. In the Central region, Western Australia recorded the highest fatality rate compared with Queensland. Again, the low numbers of fatalities across the regions of Western Australia makes reliable comparisons with the regions of Queensland problematic.

6 CONCLUSION

The comparison of fatal accidents, fatalities and associated rates presented in this report provides a broad overview of the distribution of fatal aircraft accidents and associated fatalities across the states, territories and regions of Australia. There are a number of factors that may contribute to a fatal aircraft accident such as aircraft type and operation, aircraft maintenance, pilot training and experience, pilot health, organisational and regulatory factors, and environmental conditions. However, many of these contributory factors are independent of the accident location. Even though an accident occurred at a particular location; there is often no reason to suggest that the same accident could not have occurred in another state, territory or region. As a result, the analyses undertaken in this report reflect what occurred in a particular state, territory or region and does not necessarily indicate the level of safety in a region.

Between 1990 and 2005, the majority of the 318 fatal accidents and 647 fatalities involving aircraft with a MTOW of 11,000 kg or less occurred in Queensland, NSW/ACT and Victoria, which accounted for the greatest proportion of Australia's population. Queensland and NSW/ACT both recorded the highest number of fatal accidents (n = 102) during the reporting period. In terms of fatalities, the highest number occurred in Queensland, accounting for 225 fatalities. The highest rate of fatal accidents and fatalities occurred in Tasmania. The second highest fatal accident and fatality rate was recorded by Queensland, with 0.9 fatal accidents and 1.9 fatalities per 100,000 landings, above the national rates of 0.7 and 1.3 respectively. However, these results should be treated with caution due to the low number of fatal accidents, and for Tasmania, the low level of flying activity.

For Queensland, almost half of the fatal accidents between 1990 and 2005 occurred in the South region, which also had slightly more than half of that state's aviation activity. The remaining fatal accidents were generally evenly distributed between the Central, North and Far North regions. In the South region, private/business operations accounted for the greatest proportion of fatal accidents. For the remaining regions, the greatest proportion of fatal accidents involved commercial operations associated with charter, other aerial work, agricultural and low capacity RPT operations.

The distribution of fatalities in Queensland was not the same as the distribution of fatal accidents. The difference is probably due to the different kinds of aviation activity in different regions. That is, there is a higher proportion of private aviation activity in the South, but less in the northern regions where commercial activity contributes a larger proportion of total activity. Accordingly, South Queensland records more fatalities in private operations (74 per cent of total fatalities), but Far North Queensland has more of its fatalities in the commercial categories. Because charter aircraft might be expected to carry more passengers than private operations, the number of fatalities in Far North Queensland is relatively high compared with the number of fatal accidents. Fatalities from commercial operations were responsible for around 80 per cent of fatalities in Far North Queensland, but only 23 percent of fatalities in South Queensland. So while Far North and South Queensland recorded a similar rate of fatal accidents (1.0 per 100,000 landing and 0.7 per 100,000 landing respectively), the rate of fatalities is more clearly different (3.0 per 100,000 landing and 1.3 per 100,000 landing respectively).

However, our ability to draw firm conclusions about these differences is limited by the relatively small numbers involved. Moreover, the data cannot be interpreted to imply that location-specific factors can explain the apparent differences. For example, one commercial accident[21] in the North region involved eight fatalities, or nearly half of the fatalities recorded in that region for the 15 years this study examines. Yet that aircraft was chartered for a flight within Western Australia. All crew and passengers had become incapacitated during the flight and the flight continued until the fuel was exhausted and the aircraft impacted the ground in North Queensland.

The comparison of regions within Queensland and Western Australia was similarly limited by the low number of fatal accidents and fatalities, particularly for Western Australia. While the highest number of fatal accidents and fatalities occurred in the South region of both states, these regions also recorded the lowest fatal accident and fatality rates.

As a community we appear to be sensitive to fatal aviation accidents, and as the result of even one accident, are naturally curious about whether aviation safety is better or worse in one part of the country compared with another. To place this study in context it is important to acknowledge that Australia's aviation safety record is among the best in the world (ATSB, 2006b) and that the rates of fatal accidents and fatalities have been declining over the last decade (ATSB, 2006a). This report shows that there is some apparent variation in the fatal accident rates across different parts of Australia. But with low fatal accident numbers, an assessment of statistically significant differences is not possible. One accident can alter the statistics considerably, and taken out of context, might imply some underlying problem even if none exists.

21 The accident involving Beech Super King Air 200 (VH-SKC) near Burketown on 4 September 2000 was recorded with a Queensland location by the ATSB. However, the Western Australian Coroner conducted the coronial into this accident.

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8 ANNEX

New South Wales and the Australian Capital Territory

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199100007	24/02/1991	MT MCKEAHNIE ACT	ACT	Piper Aircraft Corp	PA-28-161	Private/Business	Pleasure/Travel	4
199300484	13/03/1993	4km SW Canberra Airport	ACT	Mikoyan Gurevich	MIG-15UTI	Private/Business	Pleasure/Travel	2
199905596	28/11/1999	3km E Canberra, Aerodrome	ACT	Cessna Aircraft Company	A150L	Flying Training	Dual	1
200100346	28/01/2001	1.3 km NW Canberra, Aerodrome	ACT	Beech Aircraft Corp	A23A	Private/Business	Pleasure/Travel	4
199001137	1/03/1990	Near DENILIQUIN 15NNW	NSW	Piper Aircraft Corp	PA-36-300	Agriculture	Aerial Agriculture/Baiting	1
199000582	17/04/1990	BROKEN HILL NSW	NSW	Piper Aircraft Corp	PA-28-140	Private/Business	Pleasure/Travel	1
199001998	20/07/1990	Near BANKSTOWN 24WNW	NSW	Cessna Aircraft Company	152	Flying Training	Solo	1
199002011	11/10/1990	Near KEMPSEY NSW 26NE	NSW	Piper Aircraft Corp	PA-32R-300	Private/Business	Pleasure/Travel	4
199000021	23/10/1990	Near BARELLAN NSW 2N	NSW	Hughes Helicopters	269C	Other Aerial Work	Powerline/Pipeline Patrol	1
199002021	2/11/1990	Near TOCUMWAL NSW 1S	NSW	Beech Aircraft Corp	V35A MK II	Other Aerial Work	Aerial Application/Survey etc	2
199000024	6/11/1990	Near MOREE NSW 56W	NSW	Cessna Aircraft Company	182Q	Private/Business	Aerial Application/Survey etc	3
199002025	7/11/1990	BATHURST NSW	NSW	Mitsubishi Aircraft Int	MU-2B-30	Charter	Cargo	1
199003108	11/11/1990	MILPARINKA NSW	NSW	Piper Aircraft Corp	PA-28-180	Private/Business	Pleasure/Travel	3
199002035	21/12/1990	Near CAMDEN NSW 30WNW	NSW	Cessna Aircraft Company	152	Flying Training	Dual	2
199002036	22/12/1990	OAKDALE NSW 15SW	NSW	Cessna Aircraft Company	210N	Other Aerial Work	Search and Rescue	4
199100006	13/02/1991	Near TRUNKEY CK NSW 3NW	NSW	Robinson Helicopter Co	R22 BETA	Private/Business	Pleasure/Travel	1
199102513	14/02/1991	TAMWORTH NSW	NSW	Aero Commander Div	681	Charter	Cargo	1
199100009	10/03/1991	Near FITZROY FALLS 2SW	NSW	Piper Aircraft Corp	PA-30	Private/Business	Pleasure/Travel	2
199100010	12/04/1991	Near MUDGEE NSW 2NW	NSW	Piper Aircraft Corp	PA-28-181	Flying Training	Solo	1
199101669	26/05/1991	Near SCHOFIELDS NSW 1W	NSW	Bellanca Aircraft Corp	8KCAB	Private/Business	Air Show/Air Racing/Air Trials	1
199100017	21/10/1991	Near MT MCQUOID 2NE	NSW	American Aircraft Corp	AA-5A	Private/Business	Pleasure/Travel	2
199100021	7/12/1991	Near MILDURA NSW 30SE	NSW	Piper Aircraft Corp	PA-32RT-300T	Private/Business	Pleasure/Travel	2
199101698	10/12/1991	Oxley Island	NSW	Piper Aircraft Corp	PA-28-181	Flying Training	Other Training	2
199201741	21/02/1992	Castle Rock Peak 15km NW Muswellbrook	NSW	Cessna Aircraft Company	310R	Charter	Cargo	1

NSW and ACT continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199200012	7/03/1992	"Turalla" 2km NW Bungendore	NSW	Evans Aircraft	VP-1	Private/Business	Pleasure/Travel	1
199202563	16/03/1992	10km E Blandford	NSW	Airparts (NZ) Ltd	FU-24/A4	Agriculture	Aerial Agriculture/Baiting	1
199201747	2/05/1992	Wedderburn, (ALA)	NSW	Jodel, Societs Des Avions	D11	Private/Business	Pleasure/Travel	1
199200014	19/06/1992	Near CANBERRA 45NE NSW	NSW	Beech Aircraft Corp	95-B55	Private/Business	Pleasure/Travel	6
199201765	6/09/1992	4km W Dapto	NSW	Bell Helicopter Co	47G-3B1	Private/Business	Pleasure/Travel	2
199200016	23/10/1992	17km NW Deniliquin	NSW	Centrum Naukowo-Produkcyjne-PZL	M-18	Agriculture	Aerial Agriculture/Baiting	1
199201782	1/12/1992	40km NNE Warren	NSW	Hughes Helicopters	269C	Agriculture	Aerial Agriculture/Baiting	1
199200018	20/12/1992	Near Lake Burrinjuck	NSW	Hughes Helicopters	369E	Private/Business	Pleasure/Travel	3
199300131	18/02/1993	7km S Coffs Harbour	NSW	Cessna Aircraft Company	172C	Private/Business	Pleasure/Travel	1
199300533	18/03/1993	Wire Lagoon Property 28km NE Wee Waa	NSW	Piper Aircraft Corp	PA-36-375	Agriculture	Aerial Agriculture/Baiting	1
199300601	20/03/1993	3km S Wyong	NSW	Robinson Helicopter Co	R22 BETA	Private/Business	Pleasure/Travel	2
199300822	9/04/1993	5km NW Evans Head	NSW	Piper Aircraft Corp	PA-28RT-201T	Private/Business	Pleasure/Travel	2
199301743	11/06/1993	"Golambo" 2km SSE Young	NSW	Piper Aircraft Corp	PA-31-350	Low Capacity - Air Transport	Domestic Low Capacity Passenger Scheduled	7
199303121	5/10/1993	7km SW Kanangra Walls	NSW	SOCATA - Groupe Aerospatiale	TB-20	Private/Business	Pleasure/Travel	2
199304015	4/12/1993	Coffs Harbour	NSW	Neico Aviation Inc	Lancair 235	Private/Business	Pleasure/Travel	2
199304119	13/12/1993	12km NE Bindook	NSW	Cessna Aircraft Company	210K	Charter	Cargo	1
199400096	14/01/1994	18km SSE Sydney	NSW	Aero Commander Div	690	Charter	Cargo	1
199400266	2/02/1994	Lithgow	NSW	Beech Aircraft Corp	A36	Private/Business	Pleasure/Travel	1
199400612	9/03/1994	15km NE Tamworth, Aerodrome	NSW	Swearingen Aviation Corp	SA226-AT	Charter	Cargo	1
199400782	20/03/1994	Berowra	NSW	Cessna Aircraft Company	152	Flying Training	Solo	1
199401106	1/05/1994	Luskintyre	NSW	de Havilland Aircraft	DH-82A	Private/Business	Pleasure/Travel	2
199401771	8/07/1994	12km N Bowral	NSW	Piper Aircraft Corp	PA-28R-200	Flying Training	Dual	3
199402804	2/10/1994	260km NE Williamtown	NSW	Rockwell International	690B	Charter	Passenger	9
199402904	9/10/1994	Walgett	NSW	Cessna Aircraft Company	337A	Private/Business	Pleasure/Travel	4
199403653	5/12/1994	16km NW Wakool	NSW	Piper Aircraft Corp	PA-36-300	Agriculture	Aerial Agriculture - Other	1

NSW and ACT continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199403835	19/12/1994	60km NW Taree (Cooplacurripa Station)	NSW	de Havilland Canada	DHC-2	Agriculture	Aerial Agriculture - Other	1
199500124	22/01/1995	9 km S Bega	NSW	Aero Lab Inc	Skybolt	Private/Business	Pleasure/Travel	1
199500424	17/02/1995	1 km W Diamond Head	NSW	Beech Aircraft Corp	95-B55	Private/Business	Pleasure/Travel	2
199501063	9/04/1995	Uteara Station, 78km W Bourke	NSW	Cessna Aircraft Company	172N	Private/Business	Aerial Application/Survey etc	1
199501284	2/05/1995	North Head, Sydney Harbour	NSW	Piper Aircraft Corp	PA-38-112	Flying Training	Solo	1
199501793	18/06/1995	41km NW Grafton (Township)	NSW	Bell Helicopter Co	206B	Private/Business	Pleasure/Travel	2
199502371	28/07/1995	19km NNE Coolamon	NSW	Cessna Aircraft Company	310R	Charter	Passenger	4
199503057	16/09/1995	3km ESE Tamworth, Aerodrome	NSW	Fairchild Industries Inc	SA227-AC	Flying Training	Training	2
199503513	24/10/1995	Mt Warning	NSW	American Aircraft Corp	AA-5B	Private/Business	Practice	1
199600221	26/01/1996	5km E Walgett, Aerodrome	NSW	Air Tractor Inc	AT-502	Agriculture	Aerial Agriculture/Baiting	1
199600456	13/02/1996	3.6km W Windellama	NSW	Hughes Helicopters	269C	Other Aerial Work	Aerial Agriculture - Other	1
199601690	28/05/1996	Tyagarah, (ALA)	NSW	Beech Aircraft Corp	A36	Private/Business	Pleasure/Travel	2
199603537	30/10/1996	4km E Dunedoo	NSW	Airparts (NZ) Ltd	FU-24/A4	Agriculture	Aerial Agriculture - Other	1
199603734	15/11/1996	25km ENE Canberra, Aerodrome	NSW	Cessna Aircraft Company	U206F	Private/Business	Pleasure/Travel	3
199603735	15/11/1996	7km W Point Lookout	NSW	de Havilland Canada	DHC-2	Other Aerial Work	Aerial Agriculture - Other	1
199701900	13/06/1997	Coonamble, Aerodrome	NSW	Piper Aircraft Corp	PA-28R-201T	Private/Business	Business	3
199702473	2/08/1997	4km N Merriwa	NSW	Piper Aircraft Corp	PA-23-250	Private/Business	Business	1
199702713	26/08/1997	16km E Jerilderie, (ALA)	NSW	Cessna Aircraft Company	210M	Charter	Cargo	1
199702797	31/08/1997	'Kalimna Park' Galore	NSW	Auster Aircraft Ltd	IIIF	Private/Business	Pleasure/Travel	1
199703038	18/09/1997	15km S Nyngan	NSW	Air Tractor Inc	AT-502A	Agriculture	Aerial Agriculture - Other	1
199703150	29/09/1997	8km SE Yenda	NSW	Ayres Corp	S2R-T34	Agriculture	Aerial Agriculture - Other	1
199703221	3/10/1997	113km NNE Balranald, Aerodrome	NSW	Mooney Aircraft Corp	M20J	Private/Business	Pleasure/Travel	3
199801415	26/04/1998	16km W Eucumbene	NSW	Cessna Aircraft Company	210R	Private/Business	Pleasure/Travel	6
199802022	6/06/1998	2km NE Hoxton Park, Aerodrome	NSW	Piper Aircraft Corp	PA-38-112	Private/Business	Pleasure/Travel	2
199802757	20/07/1998	7km S Wagga Wagga, Aerodrome	NSW	Partenavia Costruzioni Aeronautiche SPA	P.68B	Charter	Cargo	2

NSW and ACT continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199802830	26/07/1998	Calabash Bay NSW	NSW	Cessna Aircraft Company	A185E	Charter	Passenger	5
199804109	30/09/1998	Kilfera Station, 24 km SW Ivanhoe NSW	NSW	Piper Aircraft Corp	PA-32-300	Private/Business	Pleasure/Travel	2
199804371	16/10/1998	37km E Hay, (ALA)	NSW	Gippsland Aeronautic Pty Ltd	GA-200	Agriculture	Aerial Agriculture/Baiting	1
199900044	2/01/1999	37km E Coolah, Aerodrome	NSW	Piper Aircraft Corp	PA-28-140	Private/Business	Pleasure/Travel	1
199900645	20/02/1999	26km ESE Holbrook, (ALA)	NSW	Agusta, SPA, Costruzioni Aeronautiche	47-G-2A1	Private/Business	Pleasure/Travel	2
199900970	10/03/1999	Hoxton Park, Aerodrome	NSW	Beech Aircraft Corp	C23	Flying Training	Solo	1
199902566	30/05/1999	Nowra, Aerodrome	NSW	Commonwealth Aircraft Corp Ltd	CA-16 MK 3	Private/Business	Air Show/Air Racing/Air Trials	2
199905037	27/10/1999	14km W Hernani	NSW	Cessna Aircraft Company	P210N	Private/Business	Pleasure/Travel	2
199905121	30/10/1999	9km WNW Oberon	NSW	Piper Aircraft Corp	PA-28-181	Private/Business	Pleasure/Travel	3
200004191	12/09/2000	9km NW Inverell, Aerodrome	NSW	Cessna Aircraft Company	A152	Private/Business	Practice	1
200101729	20/04/2001	8km WSW Goulburn, Non Directional Beacon	NSW	Beech Aircraft Corp	A36	Private/Business	Pleasure/Travel	2
200102289	27/05/2001	20km W Louth	NSW	Beech Aircraft Corp	C24R	Private/Business	Pleasure/Travel	3
200200377	16/02/2002	2km SW Williamtown, Aerodrome	NSW	de Havilland Aircraft	DH-82A	Private/Business	Pleasure/Travel	2
200201846	5/05/2002	2.3km ESE Bankstown, Aerodrome	NSW	Piper Aircraft Corp	PA-28-161	Private/Business	Pleasure/Travel	4
200204663	13/10/2002	2km W Bungendore	NSW	Cessna Aircraft Company	182B	Private/Business	Pleasure/Travel	2
200300224	7/02/2003	Camden, Aerodrome	NSW	Beech Aircraft Corp	76	Test/ferry/positioning	Test	1
200302820	20/06/2003	13km NW Camden, Aerodrome	NSW	Robinson Helicopter Co	R22 MARINER	Flying Training	Dual	2
200302847	22/06/2003	Wedderburn, (ALA)	NSW	Cessna Aircraft Company	172M	Private/Business	Pleasure/Travel	4
200303633	15/08/2003	1.45km W Camden, Aerodrome	NSW	Victa Ltd	AIRTOURER 100/A3	Flying Training	Solo	1
200304589	11/11/2003	Bankstown, Aerodrome	NSW	Piper Aircraft Corp	PA-34-200	Flying Training	Dual	2
200400242	27/01/2004	19km E Byron Bay	NSW	Ted Smith Aerostar Corp.	601	Flying Training	Dual	2
200404590	22/11/2004	12km SW Dunedoo, (ALA)	NSW	Bell Helicopter Co	206B	Other Aerial Work	Spotting - Other	2
200500322	31/01/2005	16km E Moulamein, (ALA)	NSW	Amateur Built Aircraft	EXEC 162F	Private/Business	Unknown	1

NSW and ACT continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
200501000	7/03/2005	7km WSW Tamworth, Aerodrome	NSW	Cessna Aircraft Company	310R	Test/ferry/positioning	Ferry	1
200504847	24/09/2005	35km E Tenterfield	NSW	Beech Aircraft Corp	A36	Private/Business	Pleasure/Travel	2
200504925	6/10/2005	Calindary Station, Populated place	NSW	Robinson Helicopter Co	R22 BETA	Private/Business	Pleasure/Travel	1
200506266	2/12/2005	28km N Condobolin	NSW	Piper Aircraft Corp	PA-31-350	Private/Business	Corporate/Executive	4
200506306	6/12/2005	30km W Packsaddle	NSW	Cessna Aircraft Company	150G	Private/Business	Aerial Mustering	1

Northern Territory

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199003049	27/02/1990	Near KATHERINE NT 45NW	NT	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	1
199000598	3/10/1990	ANNINGIE NT 15N	NT	Cessna Aircraft Company	150L	Other Aerial Work	Aerial Mustering	1
199300761	2/04/1993	75 km NNW Brunette Downs	NT	Cessna Aircraft Company	U206E	Other Aerial Work	Spotting - Other	1
199501246	27/04/1995	9km NW Alice Springs	NT	Israel Aircraft Industries Ltd	1124	Charter	Cargo	3
199502549	10/08/1995	Ayers Rock, Aerodrome	NT	Bell Helicopter Co	206B (III)	Charter	Passenger	1
199700744	6/03/1997	Tindal, Aerodrome	NT	North American Aviation Inc	T-6 MK IV	Private/Business	Pleasure/Travel	1
199702601	14/08/1997	6.6km W Tindal, Aerodrome	NT	Cessna Aircraft Company	210M	Charter	Passenger	5
199903335	9/07/1999	Ross River Homestead, 80km E Alice Springs	NT	Robinson Helicopter Co	R22 BETA	Private/Business	Pleasure/Travel	1
200003949	2/09/2000	24km NNE Port Keats, Aerodrome	NT	Piper Aircraft Corporation, Santa Maria Division	600A	Test/ferry/positioning	Positioning	1
200006078	16/12/2000	3km ESE Alice Springs, Aerodrome	NT	Piper Aircraft Corp	PA-28-161	Private/Business	Other	1
200100591	4/02/2001	1km E Lake Evella, Aerodrome	NT	Cessna Aircraft Company	210L	Test/ferry/positioning	Positioning	1
200201100	24/03/2002	Groote Eylandt, Aerodrome	NT	Cessna Aircraft Company	210N	Test/ferry/positioning	Positioning	1
200202656	5/06/2002	58km SSW Lake Evella, Aerodrome	NT	Bell Helicopter Co	206B (II)	Charter	Passenger	4
200401917	30/05/2004	40km S Tobermorey, (ALA)	NT	Robinson Helicopter Co	R22 MARINER	Other Aerial Work	Unknown	1

Queensland

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
Far North								
199003068	11/05/1990	Near ATHERTON QLD 10NW	QLD	Cessna Aircraft Company	500	Charter	Passenger	11
199102503	3/01/1991	Near CAIRNS QLD 8N	QLD	Cessna Aircraft Company	182P	Private/Business	Pleasure/Travel	2
199202595	25/09/1992	Cairns Harbour	QLD	Bell Helicopter Co	47G-5	Other Aerial Work	Aerial Mapping/Photo/Survey	1
199300241	9/01/1993	36km S Weipa	QLD	Cessna Aircraft Company	U206G	Private/Business	Pleasure/Travel	4
199400683	19/03/1994	Bellenden Ker Range	QLD	Piper Aircraft Corp	PA-23-250	Charter	Passenger	4
199400698	21/03/1994	Weipa	QLD	Britten Norman Ltd	BN-2A-21	Charter	Passenger	6
199504247	12/12/1995	Horn Island, Aerodrome	QLD	Aero Commander Div	500-S	Private/Business	Practice	1
199601505	7/05/1996	6km E Dauan Island, (ALA)	QLD	Bell Helicopter Co	206L-1	Charter	Passenger	2
199602965	10/09/1996	12km W Tully	QLD	Hughes Helicopters	269C	Agriculture	Aerial Agriculture - Other	1
199900220	16/01/1999	Coconut Island, (ALA)	QLD	Britten Norman Ltd	BN-2A-26	Charter	Passenger	3
199901009	12/03/1999	5km SE Cairns, VOR	QLD	Bell Helicopter Co	206L-3	Charter	Passenger	1
199904898	20/10/1999	Wrotham Park, Aerodrome	QLD	Cessna Aircraft Company	U206G	Private/Business	Business	1
200003233	3/08/2000	4km NNE Cairns, Aerodrome	QLD	Cessna Aircraft Company	P206C	Charter	Passenger	2
200101537	10/04/2001	85km N Cairns, Aerodrome	QLD	Aero Commander Div	500-S	Charter	Passenger	4
200200035	11/01/2002	9km E Horn Island, Aerodrome	QLD	Cessna Aircraft Company	U206F	Test/ferry/positioning	Positioning	1
200304091	1/10/2003	1km WSW Mareeba, Aerodrome	QLD	Piper Aircraft Corp	PA-23-250	Private/Business	Pleasure/Travel	5
200501977	7/05/2005	12km NW Lockhart River, Aerodrome	QLD	Fairchild Industries Inc	SA227-DC	Low Capacity - Air Transport	Domestic Low Capacity Passenger Scheduled	15
North								
199102518	2/03/1991	Near MT ISA QLD 240NNW	QLD	Bell Helicopter Co	47G-5A	Charter	Passenger	2
199102528	28/04/1991	Near MCKINLAY QLD 90SW	QLD	Robinson Helicopter Co	R22 BETA	Private/Business	Business	1
199202565	19/03/1992	28km S Ingham	QLD	Piper Aircraft Corp	PA-28-235	Private/Business	Pleasure/Travel	3
199202579	15/06/1992	20km SE Julia Creek	QLD	Robinson Helicopter Co	R22 BETA	Test/ferry/positioning	Ferry	1
199300693	24/01/1993	5km ESE Helenslee	QLD	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	1
199301767	16/06/1993	70km WNW Townsville	QLD	Hughes Helicopters	369D	Charter	Passenger	1

Queensland continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
North continued								
199303718	10/11/1993	142km WNW Burketown	QLD	Bell Helicopter Co	206L-1	Other Aerial Work	Other	2
199403314	9/11/1994	33km S Cloncurry	QLD	Aero Commander Div	680-F	Other Aerial Work	Aerial Mapping/Photo/Survey	2
199503772	10/11/1995	Kilclooney Station	QLD	Robinson Helicopter Co	R22 BETA	Test/ferry/positioning	Ferry	1
199503814	14/11/1995	Carse'Ogowrie Station	QLD	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	2
199503986	27/11/1995	Home Hill, (ALA)	QLD	Cessna Aircraft Company	A188B/A1	Agriculture	Aerial Agriculture - Other	1
199601583	19/05/1996	Bundubaroo Station, 170 km S Charters Towers	QLD	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	2
199800344	6/02/1998	Floraville Station	QLD	Pitts Aviation Enterprises	S-2A	Private/Business	Pleasure/Travel	2
199800604	26/02/1998	Osborne Mine	QLD	Cessna Aircraft Company	210N	Private/Business	Business	3
199803878	19/09/1998	2km W Kajabbi	QLD	Bell Helicopter Co	47G-5	Other Aerial Work	Aerial Mustering	2
199905562	24/11/1999	Near Sweers Island, Gulf of Carpentaria	QLD	Cessna Aircraft Company	U206A	Charter	Passenger	6
200003267	29/07/2000	30 km S Yarromere Station	QLD	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	1
200003771	4/09/2000	65km ESE Burketown, (ALA)	QLD	Beech Aircraft Corp	200	Charter	Passenger	8
200201723	25/04/2002	5.5km SW Mount Isa, Aerodrome	QLD	Robinson Helicopter Co	R22 ALPHA	Other Aerial Work	Aerial Mustering	1
Central								
199003075	16/06/1990	Near LONGREACH QLD 7NW	QLD	Cessna Aircraft Company	177RG	Flying Training	Other Training	2
199003087	22/07/1990	Near BOULIA QLD 102SE	QLD	Cessna Aircraft Company	182Q	Other Aerial Work	Aerial Mustering	2
199003096	30/08/1990	DYSART QLD 40NE	QLD	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	1
199102554	22/09/1991	40km SSE Tambo	QLD	Beech Aircraft Corp	C23	Agriculture	Aerial Agriculture/Baiting	2
199202606	12/12/1992	Near BLOOMSBURY QLD	QLD	Cessna Aircraft Company	150F	Private/Business	Pleasure/Travel	1
199302216	28/07/1993	20km NE Gladstone	QLD	Bell Helicopter Co	206B (III)	Charter	Passenger	3
199401443	2/06/1994	20km SW Bowen	QLD	Cessna Aircraft Company	A188B/A1	Agriculture	Aerial Agriculture - Other	1
199401731	5/07/1994	65km SW Mackay	QLD	Hughes Helicopters	269C	Other Aerial Work	Aerial Mustering	1
199502225	17/07/1995	Brighton Downs Station	QLD	Robinson Helicopter Co	R22 BETA	Test/ferry/positioning	Ferry	1

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
Central continued								
199601324	25/04/1996	194 km WSW Windorah, (ALA)	QLD	Robinson Helicopter Co	R22 BETA	Test/ferry/positioning	Ferry	1
199700051	8/01/1997	22km SSE Proserpine, Aerodrome	QLD	Cessna Aircraft Company	182F	Private/Business	Pleasure/Travel	1
199700583	26/02/1997	32km E Gladstone, Aerodrome	QLD	Hughes Helicopters	369HS	Charter	Other (Passenger)	1
199701568	14/05/1997	50km SW Clermont, (ALA)	QLD	Cessna Aircraft Company	210N	Other Aerial Work	Aerial Mapping/Photo/Survey	2
200003130	24/07/2000	"Kenela Park", 1km NW Marlborough	QLD	Bell Helicopter Co	206L-3	Other Aerial Work	Aerial Ambulance	5
200004186	2/09/2000	3km W Bowen, Aerodrome	QLD	Cessna Aircraft Company	T188C/A1	Agriculture	Aerial Agriculture - Other	1
200100443	29/01/2001	8km SSW Sarina	QLD	Bell Helicopter Co	206L-1	Agriculture	Aerial Agriculture - Other	1
200103100	17/07/2001	Luxor Station, (ALA)	QLD	Robinson Helicopter Co	R22 BETA	Other Aerial Work	Aerial Mustering	1
200204328	26/09/2002	Hamilton Island, Aerodrome	QLD	Piper Aircraft Corp	PA-32-300	Charter	Passenger	6
200304282	17/10/2003	28km N Mackay, Aerodrome	QLD	Bell Helicopter Co	407	Other Aerial Work	Aerial Ambulance	3
South								
199003053	23/03/1990	Near EROMANGA 26S QLD	QLD	Cessna Aircraft Company	T210N	Private/Business	Business	2
199003069	19/05/1990	TOOGOOLAWAH QLD	QLD	Bellanca Aircraft Corp	8KCAB	Private/Business	Pleasure/Travel	1
199003080	24/06/1990	COOYAR QLD	QLD	Cessna Aircraft Company	172RG	Flying Training	Dual	1
199003089	26/07/1990	WONDAI QLD	QLD	Beech Aircraft Corp	E90	Private/Business	Business	5
199003106	9/10/1990	TOOWOOMBA QLD	QLD	Cessna Aircraft Company	310R	Charter	Passenger	3
199003111	20/11/1990	Near ST GEORGE QLD 13E	QLD	Air Tractor Inc	AT-502	Agriculture	Aerial Agriculture - Other	1
199003121	29/12/1990	Near BOONAH QLD	QLD	Bellanca Aircraft Corp	8GCBC	Other Aerial Work	Glider Towing	1
199102520	3/03/1991	South Stradbroke Island	QLD	Bell Helicopter Co	206L-1	Private/Business	Pleasure/Travel	7
199102573	2/12/1991	Near TANGALOOMA QLD 1W	QLD	Victa Ltd	AIRTOURER 100	Private/Business	Pleasure/Travel	2
199202599	1/11/1992	3km NE Jondaryan	QLD	Piper Aircraft Corp	PA-25-235	Private/Business	Glider Towing	1
199302151	20/07/1993	18km NW Brisbane	QLD	Piper Aircraft Corp	PA-31	Private/Business	Pleasure/Travel	1
199303581	30/10/1993	25km N Kilcoy	QLD	Quickie Aircraft Corporation	Q200	Private/Business	Pleasure/Travel	2

Queensland continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
South continued								
199400362	12/02/1994	Oakey	QLD	Rutan Aircraft Factory	LONG-EZ	Private/Business	Practice	1
199403499	22/11/1994	Norwin near Cecil Plains	QLD	Vans Aircraft	RV-4	Private/Business	Pleasure/Travel	1
199501051	9/04/1995	Near Gatton	QLD	Pitts Aviation Enterprises	S-2A	Private/Business	Practice	1
199501472	21/05/1995	Toowoomba	QLD	Cessna Aircraft Company	210M	Private/Business	Business	1
199503601	26/10/1995	14 km WNW Childers	QLD	Piper Aircraft Corp	PA-28R-200	Private/Business	Business	2
199504139	6/12/1995	16km W Bundaberg, Aerodrome	QLD	Cessna Aircraft Company	182Q	Private/Business	Pleasure/Travel	4
199600050	5/01/1996	Bribie Island	QLD	Cessna Aircraft Company	172N	Private/Business	Business	2
199600094	12/01/1996	North Stradbroke Island	QLD	Centrum Naukowo-Produkcyjne-PZL	PZL-104	Charter	Passenger	4
199600939	25/03/1996	St George	QLD	Mooney Aircraft Corp	M20J	Private/Business	Pleasure/Travel	3
199601209	16/04/1996	3km S Charleville, Aerodrome	QLD	Piper Aircraft Corp	PA-30	Test/ferry/positioning	Positioning	1
199602526	11/08/1996	20km WSW Roma Aerodrome	QLD	Mooney Aircraft Corp	M20E	Private/Business	Business	2
199603367	19/10/1996	65km WSW Millmerran, (ALA)	QLD	Amateur Built Aircraft	CJ-1	Private/Business	Pleasure/Travel	1
199700047	7/01/1997	Caboolture, (ALA)	QLD	Amateur Built Aircraft	Sidewinder	Private/Business	Other (including military)	2
199700480	19/02/1997	57km SW Oakey, Aerodrome	QLD	Cessna Aircraft Company	A188B/A1	Agriculture	Aerial Agriculture - Other	1
199800740	12/03/1998	72km NW Bundaberg, Aerodrome	QLD	Amateur Built Aircraft	Lancair 320	Private/Business	Pleasure/Travel	2
199801517	3/05/1998	Mt Chinghee, near Rathdowney	QLD	American Aircraft Corp	AA-5A	Private/Business	Pleasure/Travel	1
199802140	7/06/1998	1km WSW Bundaberg, Aerodrome	QLD	Cessna Aircraft Company	337A	Private/Business	Pleasure/Travel	1
199803297	18/08/1998	Mount Coot-tha, (ALA)	QLD	Bell Helicopter Co	206B (II)	Private/Business	Business	1
199900112	10/01/1999	Maroochydore/Sunshine Coast, Aerodrome	QLD	Cessna Aircraft Company	172N	Private/Business	Pleasure/Travel	2
199901175	20/03/1999	40km SW Ipswich ('Kalbar' property airstrip)	QLD	Amateur Built Aircraft	Mini 500	Test/ferry/positioning	Test	1
199904842	14/10/1999	7km NE Esk	QLD	Cessna Aircraft Company	182J	Private/Business	Pleasure/Travel	2
200000885	12/03/2000	Toowoomba, (ALA)	QLD	Amateur Built Aircraft	RV-3	Private/Business	Pleasure/Travel	1
200005572	24/11/2000	53km NE Oakey, Aerodrome	QLD	Amateur Built Aircraft	RV-6A	Private/Business	Pleasure/Travel	1

Queensland continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
South continued								
200005958	11/12/2000	15km N Saint George, Aerodrome	QLD	Ayres Corp	S2R-T34	Agriculture	Aerial Agriculture - Other	1
200100347	28/01/2001	Logan Village	QLD	Pitts Aviation Enterprises	S-1E	Private/Business	Practice	1
200102253	23/05/2001	Archerfield, Aerodrome	QLD	Piper Aircraft Corp	PA-30	Private/Business	Pleasure/Travel	2
200104092	29/08/2001	Mount Archer	QLD	Agusta, SPA, Costruzioni Aeronautiche	47-G-2A1	Flying Training	Solo	1
200104707	29/09/2001	Southport, Aerodrome	QLD	Avtech Pty Ltd	JABIRU ST3	Private/Business	Experimentation	2
200105618	27/11/2001	Toowoomba, (ALA)	QLD	Beech Aircraft Corp	C90	Charter	Passenger	4
200300982	19/03/2003	Caboolture, (ALA)	QLD	Bell Helicopter Co	47G-4A	Flying Training	Practice	1
200403006	15/08/2004	8.5km NNE Caloundra, (ALA)	QLD	Mooney Aircraft Corp	M20K	Private/Business	Business	1
200403351	8/09/2004	56km W Roma, Non Directional Beacon	QLD	Robinson Helicopter Co	R44	Private/Business	Pleasure/Travel	2
200404085	19/10/2004	20km SW Saint George, Aerodrome	QLD	FFT GMBH	SC01 B-160	Private/Business	Pleasure/Travel	1
200500004	6/01/2005	2.7km ESE Wynella Station	QLD	Air Tractor Inc	AT-802A	Agriculture	Aerial Application/Survey etc	1
200504646	13/09/2005	Near Whetstone	QLD	Amateur Built Aircraft	T-18C	Private/Business	Pleasure/Travel	1

South Australia

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199000586	16/05/1990	Near MOOMBA SA 40NE	SA	Cessna Aircraft Company	182Q	Other Aerial Work	Aerial Mustering	1
199000593	29/07/1990	Near TANUNDA SA 5S	SA	Aeronca Inc	7AC	Private/Business	Pleasure/Travel	1
199101024	26/01/1991	Near MT GAMBIER SA	SA	Piper Aircraft Corp	PA-32R-301	Private/Business	Pleasure/Travel	3
199200757	23/07/1992	Ceduna	SA	SOCATA - Groupe Aerospatiale	TB-20	Flying Training	Other Training	2
199202602	15/11/1992	18km NNW Mungerannie Station	SA	Cessna Aircraft Company	172E	Private/Business	Aerial Application/Survey etc	1
199303406	23/10/1993	10km SE Whyalla	SA	Bell Helicopter Co	47J-2A	Private/Business	Pleasure/Travel	1
199400478	22/02/1994	28km NW Cowarie Station	SA	Cessna Aircraft Company	182Q	Private/Business	Aerial Application/Survey etc	1
199401742	6/07/1994	83km S Whyalla	SA	Cessna Aircraft Company	U206G	Other Aerial Work	Aerial Mapping/Photo/Survey	1
199402476	4/09/1994	42km NW Adelaide	SA	Piper Aircraft Corp	PA-28RT-201	Private/Business	Pleasure/Travel	2
199703877	27/11/1997	7.5km SW Orroroo	SA	Hughes Helicopters	269C	Agriculture	Aerial Agriculture - Other	2
199800640	1/03/1998	Mount Gambier, Aerodrome	SA	Air Tractor Inc	AT-802	Private/Business	Air Show/Air Racing/Air Trials	1
199900844	2/03/1999	3km S Waikerie, Aerodrome	SA	Piper Aircraft Corp	PA-25-235	Private/Business	Glider Towing	1
199901057	7/03/1999	282km NNW Coober Pedy, Aerodrome	SA	Bell Helicopter Co	47J-2A	Test/ferry/positioning	Ferry	2
199901340	2/04/1999	3km NE Aldinga Aerodrome	SA	Amateur Built Aircraft	Lancair 235	Private/Business	Pleasure/Travel	2
200000778	8/03/2000	104km ESE Kingscote, Aerodrome	SA	Cessna Aircraft Company	P206C	Private/Business	Pleasure/Travel	1
200002157	31/05/2000	28km SE Whyalla, Aerodrome	SA	Piper Aircraft Corp	PA-31-350	Low Capacity - Air Transport	Domestic Low Capacity Passenger Scheduled	8
200105769	10/12/2001	5km N Mount Gambier, Aerodrome	SA	Beech Aircraft Corp	B200C	Other Aerial Work	Aerial Ambulance	1
200301337	29/03/2003	4km SW McLaren Vale	SA	Amateur Built Aircraft	Canadian Safari	Private/Business	Pleasure/Travel	2
200502116	15/05/2005	Stonefield	SA	Champion Aircraft Corp	7GCAA	Private/Business	Unknown	2

Tasmania

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199101018	9/01/1991	Near HOBART TAS 60NW	TAS	Cessna Aircraft Company	182K	Private/Business	Pleasure/Travel	4
199201230	24/09/1992	Cape Barren Island	TAS	Cessna Aircraft Company	172L	Private/Business	Pleasure/Travel	3
199203460	31/10/1992	37km NNE Launceston	TAS	Piper Aircraft Corp	PA-32R-301	Private/Business	Pleasure/Travel	2
199302851	17/09/1993	Launceston	TAS	Piper Aircraft Corp	PA-31-350	Private/Business	Pleasure/Travel	6
199500066	13/01/1995	5km S Deloraine	TAS	Hughes Helicopters	269C	Agriculture	Aerial Agriculture/Baiting	1
199500444	20/02/1995	1km N Launceston	TAS	North American Aviation Inc	T-28D	Private/Business	Pleasure/Travel	2
199600399	8/02/1996	3.5km SE King Island, Aerodrome	TAS	Piper Aircraft Corp	PA-31-350	Charter	Cargo	1
199601265	21/04/1996	Probably in the water north of Palana, Flinders Island	TAS	Beech Aircraft Corp	E55	Private/Business	Pleasure/Travel	2
199700357	7/02/1997	1km SE Gawler	TAS	Bell Helicopter Co	47G-2	Agriculture	Aerial Agriculture - Other	1
199800219	16/01/1998	1km W Abbotsham	TAS	Hughes Helicopters	269C	Agriculture	Aerial Agriculture - Other	1
199805365	26/11/1998	King Island, Aerodrome	TAS	Piper Aircraft Corp	PA-32R-300	Private/Business	Pleasure/Travel	3
200101881	5/04/2001	Southern Ocean	TAS	Cessna Aircraft Company	150L	Private/Business	Pleasure/Travel	1
200300929	14/03/2003	0.3km SE Trefoil Island (ALA)	TAS	Cessna Aircraft Company	172G	Charter	Passenger	4
200400610	19/02/2004	58km NNW Hobart, Aerodrome	TAS	Aero Commander Div	500-S	Test/ferry/positioning	Ferry	1

Victoria

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
199001153	11/08/1990	CARDINIA VIC	VIC	Aircraft Moravan National Corpor.	Z326	Private/Business	Pleasure/Travel	2
199001154	15/08/1990	Near LILYDALE VIC 9NW	VIC	Beech Aircraft Corp	D55	Charter	Cargo	1
199101026	5/03/1991	MT EVELYN	VIC	Piper Aircraft Corp	PA-32-300	Test/ferry/positioning	Ferry	1
199101056	30/11/1991	POINT COOK	VIC	de Havilland Aircraft	DH-82A	Flying Training	Dual	1
199101059	17/12/1991	Near ANGLESEA VIC4NE	VIC	Beech Aircraft Corp	23	Private/Business	Pleasure/Travel	3
199201218	2/05/1992	Skye	VIC	Beech Aircraft Corp	A36	Private/Business	Pleasure/Travel	1
199201221	12/06/1992	Moormbool VIC	VIC	Piper Aircraft Corp	PA-32R-300	Private/Business	Pleasure/Travel	5
199201226	2/09/1992	8km SE Mansfield	VIC	Bell Helicopter Co	47G-2	Test/ferry/positioning	Positioning	1
199201237	7/11/1992	4km NE Clyde	VIC	Pitts Aviation Enterprises	S-2A	Private/Business	Pleasure/Travel	2
199302930	22/09/1993	4 km SSW Mount Hotham	VIC	Bell Helicopter Co	206B (III)	Charter	Passenger	3
199303898	24/11/1993	3km NE Benalla	VIC	Piper Aircraft Corp	PA-25-235	Private/Business	Glider Towing	1
199400232	31/01/1994	Mount Murray	VIC	Weatherly Aviation Company Ltd	620B	Other Aerial Work	Fire Control	1
199401431	31/05/1994	Rosebud	VIC	Bell Helicopter Co	206B (III)	Private/Business	Pleasure/Travel	2
199403799	16/12/1994	10km N Leongatha	VIC	Hughes Helicopters	369HS	Agriculture	Aerial Agriculture - Other	1
199403842	21/12/1994	2km E Melbourne	VIC	Mitsubishi Aircraft Int	MU-2B-30	Charter	Cargo	1
199500373	14/02/1995	6km S Moorabbin Airport	VIC	Hughes Helicopters	269C	Test/ferry/positioning	Ferry	1
199503131	22/09/1995	12 km SE Dunkeld	VIC	Cessna Aircraft Company	172N	Other Aerial Work	Powerline/Pipeline Patrol	2
199503369	10/10/1995	Warrnambool, Aerodrome	VIC	Cessna Aircraft Company	182R	Private/Business	Business	3
199504205	13/12/1995	5km S Buxton	VIC	Bell Helicopter Co	205	Test/ferry/positioning	Ferry	1
199600643	29/02/1996	Ballarat	VIC	Beech Aircraft Corp	S35	Test/ferry/positioning	Test	2
199800442	13/02/1998	Mangalore, Aerodrome	VIC	Bell Helicopter Co	206B (II)	Flying Training	Solo	1
199802069	8/06/1998	Mount Macedon	VIC	Cessna Aircraft Company	210D	Private/Business	Pleasure/Travel	2
199903333	10/07/1999	Avalon, Aerodrome	VIC	Eagle Aircraft Pty Ltd	150B	Private/Business	Air Show/Air Racing/Air Trials	1
199905698	1/12/1999	6km NE Gisborne	VIC	Cessna Aircraft Company	172R	Private/Business	Pleasure/Travel	4

Victoria continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
200000932	18/03/2000	2.5km NNW Moorabbin, Aerodrome	VIC	Cessna Aircraft Company	210E	Private/Business	Pleasure/Travel	1
200001153	3/04/2000	Shepparton, Aerodrome	VIC	Cessna Aircraft Company	172M	Private/Business	Pleasure/Travel	1
200004369	27/09/2000	37km SE Mansfield, Non Directional Beacon	VIC	Hughes Helicopters	269C	Test/ferry/positioning	Ferry	2
200101082	13/03/2001	Nangiloc	VIC	Amateur Built Aircraft	Lancair 320	Private/Business	Demonstration	2
200104684	28/09/2001	Latrobe Valley, Aerodrome	VIC	Cessna Aircraft Company	172F	Flying Training	Solo	1
200203449	29/07/2002	Moorabbin, Aerodrome	VIC	Cessna Aircraft Company	172R	Flying Training	Other	1
200206005	20/12/2002	6km NE Drysdale	VIC	Neico Aviation Inc	Lancair IV-T	Private/Business	Experimentation	2
200304392	26/10/2003	19km S Warrnambool, Aerodrome	VIC	Cessna Aircraft Company	172M	Private/Business	Pleasure/Travel	1
200400437	7/02/2004	Eildon	VIC	Piper Aircraft Corp	PA-28R-200	Private/Business	Pleasure/Travel	4
200402669	19/07/2004	12km W Wodonga	VIC	Bell Helicopter Co	47G-3B1	Agriculture	Aerial Agriculture - Other	1
200402797	28/07/2004	34km SE Benalla, Aerodrome	VIC	Piper Aircraft Corp	PA-31T	Private/Business	Business	6
200501788	23/04/2005	7km S Healesville	VIC	Cessna Aircraft Company	A150L	Private/Business	Practice	1
200503265	8/07/2005	Mount Hotham, (ALA)	VIC	Piper Aircraft Corp	PA-31-350	Charter	Passenger	3

Western Australia

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
Far North								
199601982	27/06/1996	8 km N Silent Grove, 175 km NE Derby	WA	Kawasaki Heavy Industries	47G3B-KH4	Charter	Passenger	1
200002383	14/06/2000	100km E Halls Creek, Aerodrome	WA	Cessna Aircraft Company	172P	Private/Business	Aerial Mustering	1
200304074	28/09/2003	93km S Derby	WA	Robinson Helicopter Co	R22	Other Aerial Work	Aerial Mustering	2
200304546	8/11/2003	43km NW Kununurra, Aerodrome	WA	Robinson Helicopter Co	R44	Charter	Passenger	4
200403202	30/08/2004	El Questro, (ALA)	WA	Cessna Aircraft Company	421C	Private/Business	Pleasure/Travel	2
North								
199000089	28/05/1990	Near NEWMAN WA 200NE	WA	Robinson Helicopter Co	R22 MARINER	Private/Business	Aerial Application/Survey etc	2
199903463	16/07/1999	46km SW Onslow, Aerodrome	WA	Cessna Aircraft Company	172H	Private/Business	Aerial Mustering	1
200100348	26/01/2001	3km E Newman, Aerodrome	WA	Cessna Aircraft Company	310R	Other Aerial Work	Police Activities	4
Central								
199000073	26/01/1990	Near MEEKATHARRA 10N	WA	Mitsubishi Aircraft Int	MU-2B-60	Charter	Cargo	2
199100129	4/06/1991	Near LANDOR STN WA 16S	WA	Cessna Aircraft Company	150L	Private/Business	Aerial Mustering	1
199200230	25/08/1992	1km N Geraldton	WA	Beech Aircraft Corp	58	Private/Business	Pleasure/Travel	6
199603229	9/10/1996	20km SE Morawa	WA	Cessna Aircraft Company	A188B/A1	Other Aerial Work	Aerial Agriculture - Other	1
199703335	12/10/1997	204km NNE Geraldton, Aerodrome	WA	Bell Helicopter Co	206B (III)	Charter	Passenger	1
199803584	2/09/1998	Dalgety Downs Station	WA	Cessna Aircraft Company	A150M	Other Aerial Work	Aerial Mustering	1
199905026	24/10/1999	Binnu, 83km N Geraldton, Aerodrome	WA	Robinson Helicopter Co	R22 ALPHA	Private/Business	Business	1
200103274	25/07/2001	20km N Mullewa	WA	Amateur Built Aircraft	RV-4	Private/Business	Pleasure/Travel	1
South								
199200233	22/09/1992	Jandakot	WA	Cessna Aircraft Company	172M	Private/Business	Practice	1
199200236	15/10/1992	Paull's Valley	WA	Bell Helicopter Co	206B (III)	Private/Business	Pleasure/Travel	1
199401602	19/06/1994	3km NW Narrogin	WA	Beech Aircraft Corp	35-B33	Private/Business	Pleasure/Travel	2
199600012	3/01/1996	3km N Boddington	WA	Piper Aircraft Corp	PA-32RT-300	Private/Business	Pleasure/Travel	4

Western Australia continued

Occ No.	Date	Location	State	Manufacturer	Model	Operation Type	Operation Sub-type	Fatalities
South continued								
199600827	13/03/1996	45km E Albany	WA	Cessna Aircraft Company	337C	Charter	Passenger	4
199800218	23/01/1998	Jerramungup, (ALA)	WA	Cessna Aircraft Company	182L	Private/Business	Pleasure/Travel	2
199800648	28/02/1998	Wellard WA	WA	de Havilland Aircraft	DH-82A	Private/Business	Pleasure/Travel	2
199801114	5/04/1998	10km N Kambalda	WA	Bell Helicopter Co	47G-3B1	Private/Business	Pleasure/Travel	1
199802458	29/06/1998	15km S Leonora, Aerodrome	WA	Mooney Aircraft Corp	M20J	Private/Business	Business	2
200005357	16/11/2000	Jerramungup, (ALA)	WA	Gippsland Aeronautic Pty Ltd	GA-200	Agriculture	Aerial Agriculture - Other	1
200100252	18/01/2001	3km N Bencubbin	WA	Bell Helicopter Co	206B (III)	Other Aerial Work	Powerline/Pipeline Patrol	2
200105446	14/11/2001	10.7km ESE Kalgoorlie/Boulder, Aerodrome	WA	Cessna Aircraft Company	210N	Charter	Passenger	1
200303579	11/08/2003	Jandakot, Aerodrome	WA	Cessna Aircraft Company	404	Other Aerial Work	Aerial Application/Survey etc	2
200505236	22/10/2005	Ballidu	WA	Air Tractor Inc	AT-602	Other Aerial Work	Practice	1