

Aviation Safety Summary

1 July to 30 September 2012



Winter 2012

Introduction to the Quarterly Safety Summary Report

Welcome to the reformatted version of the CAA's quarterly safety summary report. This report has been reorganised with the aim of improving its readability. This is necessarily a work in progress and some sections of the report remain unchanged. Your comments are welcome and will guide future efforts to improve the usefulness of the CAA's safety data.

The principal change has been to re-order the presentation of data. The report is presented in four sections representing a hierarchy of information from a high level in Section 1 down to more detailed information in later sections of the report.

Section 1 - Social Cost and Accidents

Section 1 presents the social cost in this quarter and can be read as the overall safety outcome. Results are presented by safety target group, which represents the type of operation. To put this quarter's result in context, the following pages provide trend information of the social cost within each safety target group and overall. As social cost is essentially driven by accidents, the number of accidents in the quarter is shown here. To provide context, the number of accidents is followed by accident rate trends for each safety target group.

Section 2 - Incidents

Section 2 provides a summary of other safety data, which gives some sense of the risks that are being managed within the sectors. A principal difference between Sections 1 and 2 is that Section 1 presents the data by Safety Target Group (operational type) and Section 2 presents them by Aircraft Statistics Category.

There are 6 Aircraft Statistics Categories which correspond to the type and complexity of the aircraft, hence 'Aeroplanes - Small, Medium, Large' and 'Helicopters'. The fifth category is 'Agricultural Aeroplanes'. Although they are a sub-category of small aircraft, they are considered separately because of their significance to NZ. The aircraft type has clear relevance when considering aircraft defects, and for convenience the incident and airspace data is also grouped by aircraft type (Aircraft Statistics Category). The sixth aircraft statistics category is 'Sport Aircraft'.

Section 3 - Activity

Section 3 provides statistical information on the activity levels within the 13 Safety Target Groups (types of operation). The activity data underpins the rate data in earlier sections. The format of Section 3 is largely unchanged from previous quarterly reports, but may be revised in a future quarter.

Section 4 - Quarterly Statistics

Section 4 provides key statistics in a table format for this quarter along with the previous 11 quarters. In effect, this table presents key statistics for the last three years.

J.D. Stanton
Manager Intelligence, Safety & Risk Analysis

Executive Summary - Aviation Safety to 30 Sep 2012

- The July to September quarter is the winter season and is traditionally quiet in terms of aviation activity and number of accidents. There were a total of 16 accidents in the 13 weeks of this period. There were no fatalities. Social cost in this quarter has accrued from accidents and injury incidents in the following safety target groups:
 - Sport Transport (Part 115) 1 minor injury
 - Private Operations - Aeroplanes 1 minor injury and 1 aircraft destroyed
 - Private Operations - Sport 2 serious injuries and 1 aircraft destroyed
- There were no injury accidents or incidents in the airline sectors of 'Public Air Transport' operations, and none in any of the sectors of 'Other Commercial' operations.
- There was an accident in the 'Airline Operations - Helicopters' safety target group, and the 'Agricultural Operations - Aeroplanes' and 'Agricultural Operations - Helicopters' groups had two accidents each, but none of these were serious enough to contribute to the social cost outcome this quarter (no injuries).
- However the Annual Social Cost is now \$74 million (three year average). The social cost has been trending upwards and in the last four years has increased by 43% from \$51M to \$74M, see page 5.
- While the overall accident rate is trending downwards, there are upward trends in 'Airline Operations - Large Aeroplanes' and 'Airline Operations - Medium Aeroplanes', as well as 'Other Commercial Operations - Helicopters', see pages 6 and 7.
- Large Aeroplanes, Medium Aeroplanes, Small Aeroplanes, Agricultural Aeroplanes and Helicopters are showing upward trends in the number of defects reported per flying hour, see page 8.
- Aircraft incident rates are decreasing for Large Aeroplanes, Medium Aeroplanes, Small Aeroplanes and Agricultural Aeroplanes, see page 9.
- Airspace occurrence rates are decreasing for Large Aeroplanes, see page 10.
- The total number of hours flown is increasing slightly, however the total number of air transport flights and the number of movements from certificated aerodromes are continuing to decrease, see pages 13, 14 and 15.
- The total number of aircraft on the register is increasing, up 1.4% over the same time last year. There were increases in the numbers of helicopters, sport aircraft and small aeroplanes, while all other categories decreased slightly, see page 16.

Section 1 - Social Cost and Accidents

Social Cost Quarterly Safety Outcome

The following table displays the social cost contribution from injuries and aircraft losses for each of the safety target groups for the quarter 1 July to 30 September 2012. The table also shows the number of accidents in this quarter.

Legend:

†	+	+	∇	△
Fatal Injuries	Serious Injuries	Minor Injuries	Aircraft Destroyed	Accidents

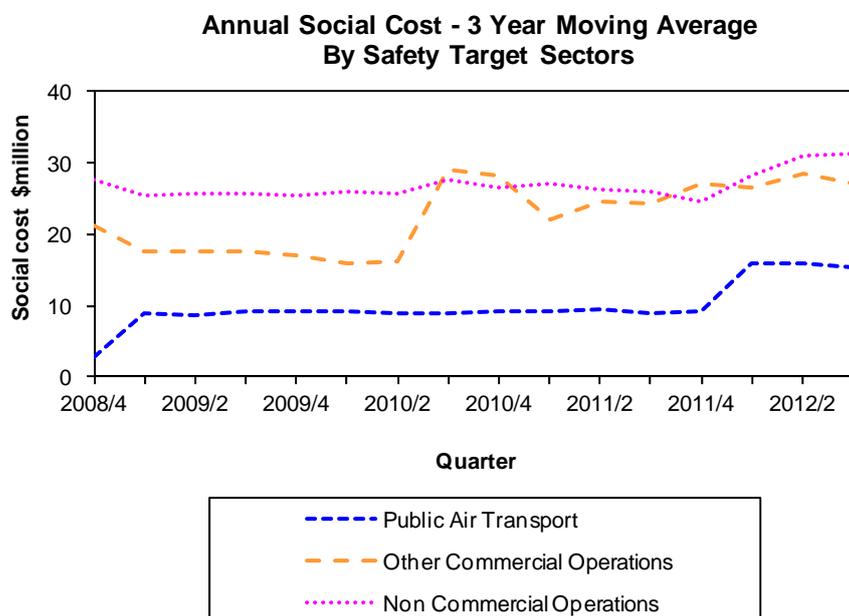
Total Safety Cost \$1.03 m	Public Air Transport \$0.02 m	Airline Operations - Large Aeroplanes	Social Cost	†	+	+	∇	△
		\$0.00 m	0	0	0	0	0	
		Airline Operations - Medium Aeroplanes	Social Cost					
		\$0.00 m	0	0	0	0	0	
		Airline Operations - Small Aeroplanes	Social Cost					
	\$0.00 m	0	0	0	0	0		
	Airline Operations - Helicopters	Social Cost						
	\$0.00 m	0	0	0	0	1		
	Sport Transport	Social Cost						
	\$0.02 m	0	0	1	0	1		
	Other Commercial Operations \$0.00 m	Other Commercial Operations - Aeroplanes	Social Cost					
		\$0.00 m	0	0	0	0	0	
		Other Commercial Operations - Helicopters	Social Cost					
		\$0.00 m	0	0	0	0	0	
		Agricultural Operations - Aeroplanes	Social Cost					
\$0.00 m	0	0	0	0	2			
Agricultural Operations - Helicopters	Social Cost							
\$0.00 m	0	0	0	0	2			
Agricultural Operations - Sport	Social Cost							
\$0.00 m	0	0	0	0	0			
Non Commercial Operations \$1.02 m	Private Operations - Aeroplanes	Social Cost						
	\$0.18 m	0	0	1	1	3		
	Private Operations - Helicopters	Social Cost						
\$0.00 m	0	0	0	0	0			
Private Operations - Sport	Social Cost							
\$0.83 m	0	2	0	1	7			

Notes:

- Individual values in the table may not sum exactly to the subtotals or total shown due to rounding.
- Sport groups include hang gliders and parachutes.
- An explanation of the 2014 Safety Target Groups is provided by the diagram in the Definitions section.
- Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2011 dollars.

Social Cost Trends

To provide context to this quarter's social cost outcome, the following graph shows the annual social cost (three year moving average) for the four-year period 1 October 2008 to 30 September 2012, (including the Sport Safety Target Groups).



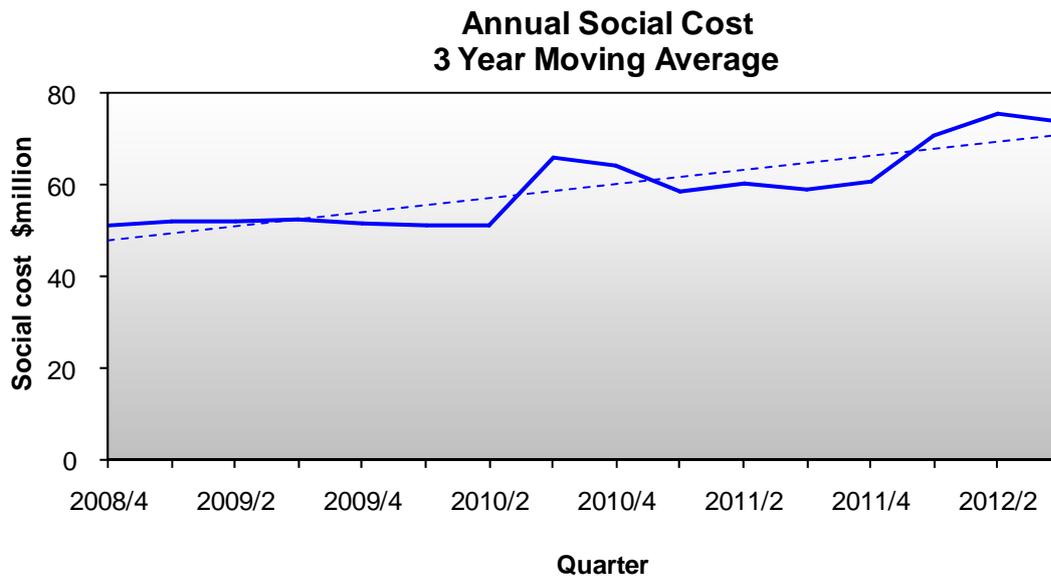
Social Cost Analysis

The graph above indicates the social cost contribution of each safety target sector. 'Non Commercial' operations continue to be the chief contributor of social cost in aviation.

Combining the contribution from each sector indicates that the total annual social cost has been trending up over the last four years as shown in the following graph. The annual cost is the average of the costs in the preceding three years. The annual social cost increased by 43% from \$51M to \$74M between 2008 and 2012.

The increase stems largely from increases in the 'Public Air Transport' sector, and partly from increases in the 'Other Commercial' sector. From the graph above, it is evident that significant increases in these sectors occurred in the 1st quarter of 2012, (Carterton balloon accident, 11 fatalities, Sport Transport), and in the 3rd quarter of 2010 (Fox Glacier, 9 fatalities, Other Commercial Operations - Aeroplanes). Although a major contributor, the Fox Glacier accident is not solely responsible for the rising cost in the 'Other Commercial' sector. This is evidenced by further increases through 2011 and 2012, which are due to accidents in the Other Commercial Operations - Helicopters and Agricultural Operations - Helicopters safety target groups.

The increase within the 'Public Air Transport' sector is being driven by the Sport Transport safety target group (now Part 115 Adventure Aviation) while the Airline Public Air Transport operations groups are trending downwards. The nature of Part 115 operations is such that they may be better categorised as 'Other Commercial - 115 operations'.

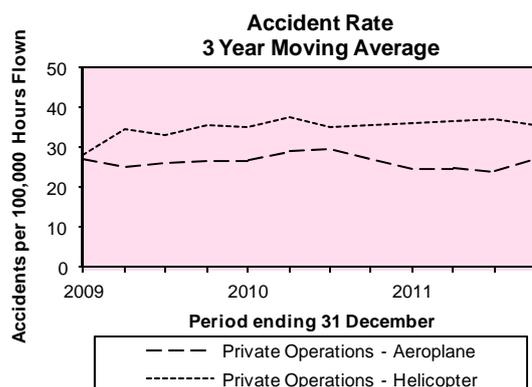
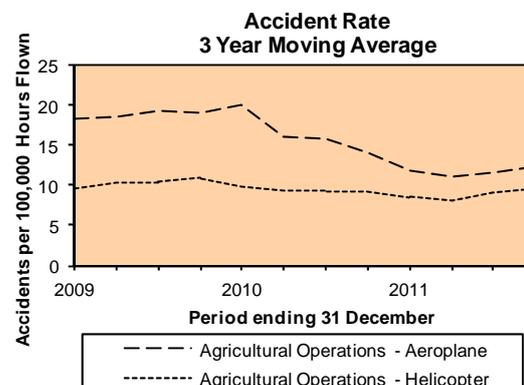
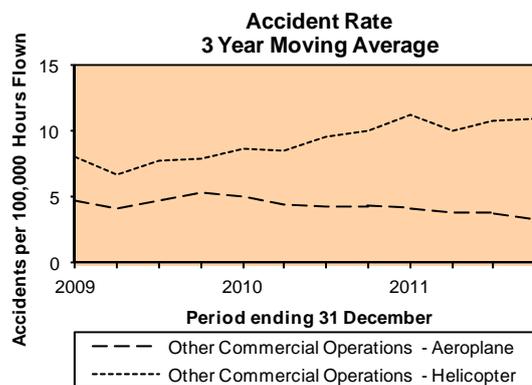
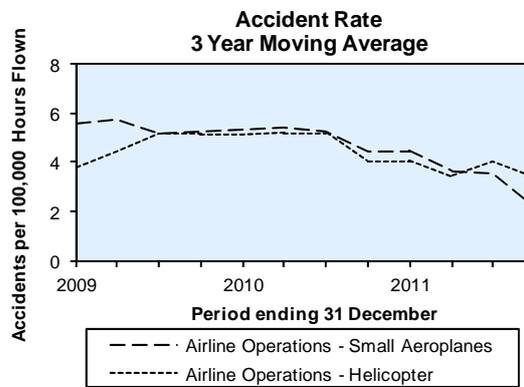
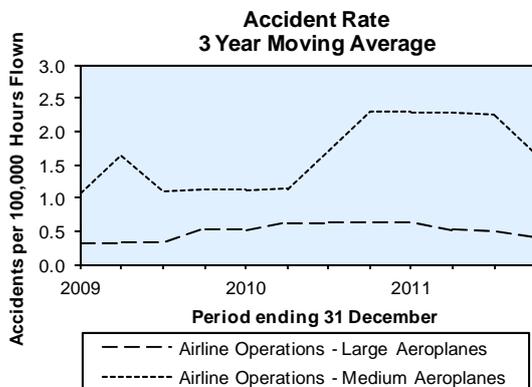


Accidents by Safety Target Group
Quarterly Comparison

Safety Target Group	1 Jul to 30 Sep 2012	Same Quarter Last Year
Airline Operations - Large Aeroplanes	0	0
Airline Operations - Medium Aeroplanes	0	1
Airline Operations - Small Aeroplanes	0	1
Airline Operations - Helicopter	1	0
Sport Transport	1	2
Other Commercial Operations - Aeroplane	0	1
Other Commercial Operations - Helicopter	0	1
Agricultural Operations - Aeroplane	2	0
Agricultural Operations - Helicopter	2	2
Agricultural Operations - Sport Aircraft	0	0
Private Operations - Aeroplane	3	1
Private Operations - Helicopter	0	1
Private Operations - Sport	7	6
Other	0	1
Total	16	17

Trends

The following graphs show the aircraft accident rates (three year moving average) for the three-year period 1 October 2009 to 30 September 2012 (excluding the Sport Safety Target Groups, for which no accurate activity information is available).



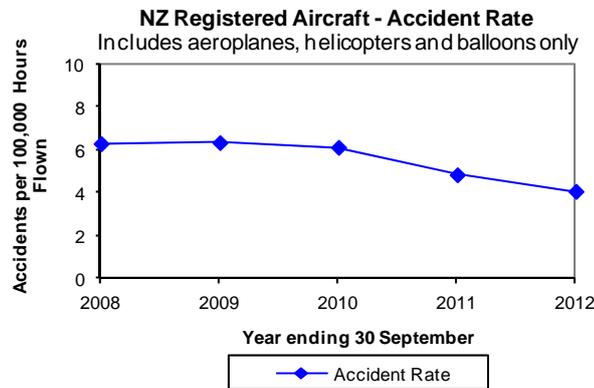
No accident rate information available for Sport Transport or Private Operations - Sport.

Sport Transport (Part 115) data not available for this period but may be provided from a future period.

Activity data is not provided by all aircraft classes in the Private Operations - Sport group (private amateur built aircraft, microlights, gliders, hang gliders and parachutes do not provide activity reports).

Overall Accident Rate

The following graph shows the overall accident rate per 100,000 hours flown. This data includes the aircraft classes aeroplane, helicopter and balloon only. Other aircraft classes such as amateur built aircraft, microlights, gliders, hang gliders and parachutes are excluded from this rate information. Data shown is for the five-year period 1 October 2007 to 30 September 2012.



Note that this graph does not show a moving average.

Summary of Injury Accidents

This section describes injury accidents that occurred during the period 1 July to 30 September 2012, these accidents contributed to the social cost for the quarter.

Private Operations - Aeroplane

Small Aeroplanes

- The engine of an Auster light aircraft failed to respond when power was increased for a late go-around. A turn was made to attempt a landing in an adjacent paddock, but the aircraft stalled, landing in the top of a tree. The pilot received minor injuries and the aircraft was substantially damaged.

Private Operations - Sport

Sport Aircraft

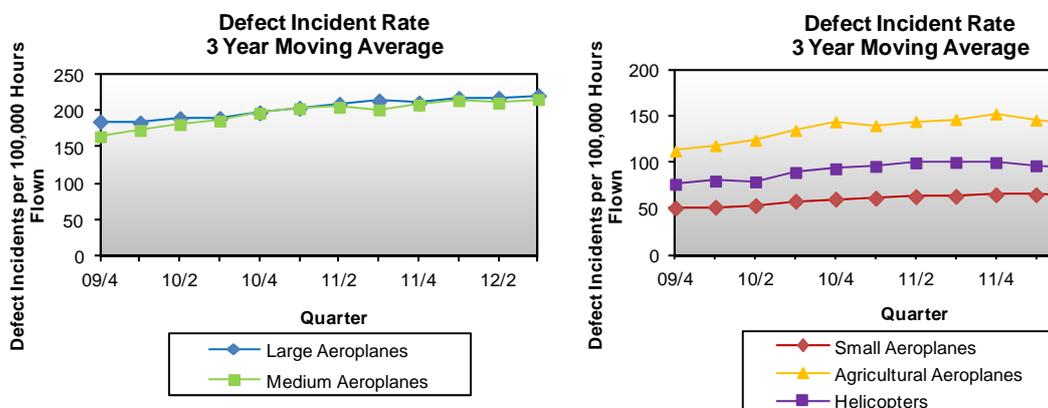
- During approach at less than 100 ft, a class 2 microlight experienced a sudden downdraft causing the aircraft to sink, despite the pilot's attempts to increase power. The aircraft landed in an effluent pond, sustaining damage to the capsule, suspension and propeller. The pilot received serious injuries and the aircraft was substantially damaged and was subsequently written off.
- One of the steering lines of a sport skydiver's chute became snagged, causing an uncontrolled turn and rapid descent. The main chute was cut away but the skydiver was unable to open his reserve due to his high rotation speed. The reserve deployed automatically but was slow to open and fully deployed only seconds before the ground. This resulted in a heavy landing and the skydiver receiving serious injuries.

Section 2 - Incidents

Defect Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported defect incident rates (three year moving average) for the three-year period 1 October 2009 to 30 September 2012 (excluding the Sport Aircraft statistics category).



Quarterly Comparison

Number of Reported Defect Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2012	Same Quarter Last Year
◆ Large Aeroplanes	258	247
■ Medium Aeroplanes	43	28
◆ Small Aeroplanes	51	42
▲ Agricultural Aeroplanes	5	11
■ Helicopters	27	37
Sport Aircraft	3	4
Unknown Aircraft	16	3
Total	403	372

Severity of Reported Defect Incidents

Severity	1 Jul to 30 Sep 2012	Same Quarter Last Year
Critical	1	0
Major	70	56
Minor	332	316

The only critical defect incident reported in the 1 July to 30 September 2012 quarter was in the 'Agricultural Aeroplanes' statistics category.

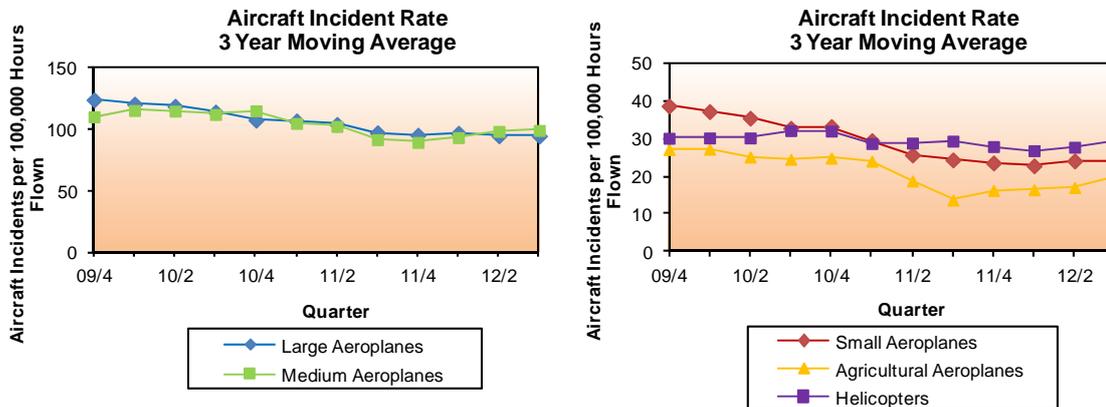
Rate Monitoring

Defect incident rate monitoring of individual types of large and medium air transport aircraft has been estimated for the period ended 30 June 2012, due to a shortage of returned Aircraft Operations Statistics for some of these aircraft. Despite this, medium and large aircraft are continuing to show an upward trend in the number of defects reported per flying hour. The reasons behind these increased rates are not well understood and may require investigation. Medium and large aircraft categories include all aircraft with more than 10 passenger seats operated under CAR Part 125 or 121.

Aircraft Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported aircraft incident rates (three year moving average) for the three-year period 1 October 2009 to 30 September 2012 (excluding the Sport Aircraft statistics category). An aircraft incident is any safety occurrence related to the operation of an aircraft that does not result in an accident and is not classified as one of the other nine incident types. Examples of aircraft incidents include hard landings, lightning strikes, icing encounters, turn backs, diversions and go-arounds.



Quarterly Comparison

Number of Reported Aircraft Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2012	Same Quarter Last Year
Large Aeroplanes	97	94
Medium Aeroplanes	18	10
Small Aeroplanes	17	23
Agricultural Aeroplanes	3	0
Helicopters	16	18
Sport Aircraft	5	1
Unknown Aircraft	28	31
Total	184	177

Severity of Reported Aircraft Incidents

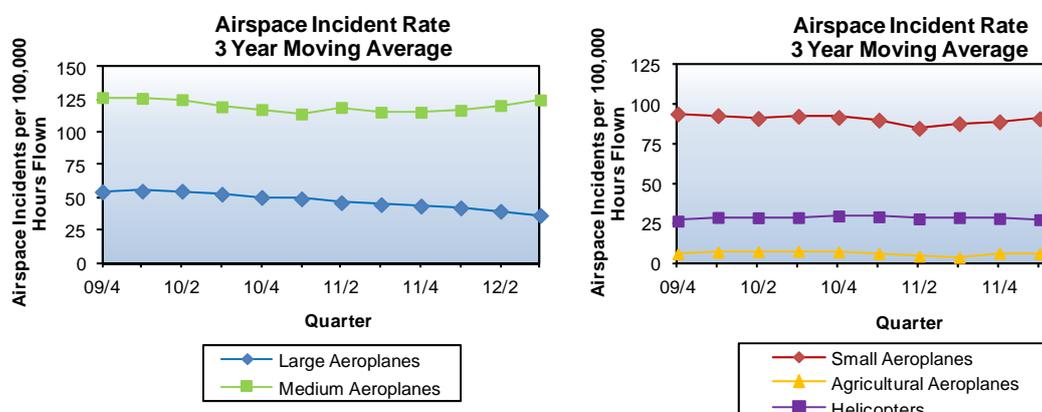
Severity	1 Jul to 30 Sep 2012	Same Quarter Last Year
Critical	4	0
Major	23	22
Minor	157	155

Of the four critical aircraft incidents reported in the 1 July to 30 September 2012 quarter, two were in the 'Agricultural Aeroplanes' statistics category and two were in the 'Helicopters' statistics category.

Airspace Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported airspace incident rates (three year moving average) for the three-year period 1 October 2009 to 30 September 2012 (excluding the Sport Aircraft statistics category).



Quarterly Comparison

Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2012	Same Quarter Last Year
Large Aeroplanes	28	38
Medium Aeroplanes	26	14
Small Aeroplanes	104	115
Agricultural Aeroplanes	0	0
Helicopters	20	16
Sport Aircraft	11	10
Unknown Aircraft	92	78
Total	281	271

Severity of Reported Airspace Incidents

Severity	1 Jul to 30 Sep 2012	Same Quarter Last Year
Critical	2	5
Major	31	35
Minor	248	231

Of the two critical airspace incidents reported in the 1 July to 30 September 2012 quarter, one was in the 'Small Aeroplanes' statistics category and one was in the 'Helicopters' statistics category. Occurrence 12/4856 involved avoiding action by a Piper PA28 to avoid a Piper PA38 at Aylesbury west of Christchurch. Occurrence 12/2957 involved a helicopter taking action to avoid a Robin light aircraft at Waipara north of Christchurch.

Attributability

Of the 281 reported airspace incidents in the 1 July to 30 September 2012 quarter, 17% are Air Traffic Service (ATS) attributable, 71% are pilot attributable, 1% are ATS and pilot attributable, and 11% are unknown attributable. (Note that the percentages may not sum exactly to 100% due to rounding.)

Since October 2009 the long-term trend of the ATS attributable airspace occurrence rate is upward and the long-term trend of the pilot attributable rate is upward.

Bird Incident Rates

Bird hazard monitoring has been carried out for the period ended 30 September 2012.

There were three aerodromes with strike rates in the high risk category of the CAA standard (10.0 and above bird strikes per 10,000 aircraft movements), one having a long-term upward trend, one having a long-term constant trend and one having a long-term downward trend.

There were three aerodromes with strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), one having a long-term upward trend and two having long-term constant trends.

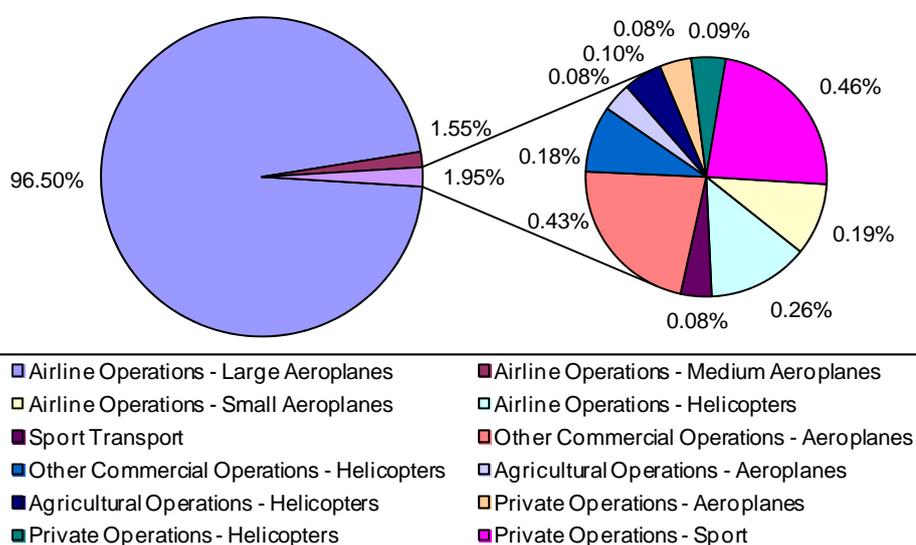
21 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), eight having long-term upward trends, six having long-term constant trends and seven having long-term downward trends.

Section 3 - Activity

Industry Size and Shape by Safety Target Group

The following graph and table show the size and shape of the aviation industry as determined from Aircraft Operating Statistics in the relevant 2014 Safety Target Group categories for the period 1 October to 31 December 2011 (the most recent quarter for which Aircraft Operating Statistics data are available). For each Safety Target Group the total number of hours flown is multiplied by the average number of seats and the appropriate load factor, to give the number of seat hours utilised by the group (person exposure). For Safety Target Groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of person exposure. For the Sport Safety Target Groups a standard estimate of seat hours offered is used as well as reported data for such aircraft in these groups, as most sport aircraft do not report hours or seats.

Percentage Sector Seat Hours



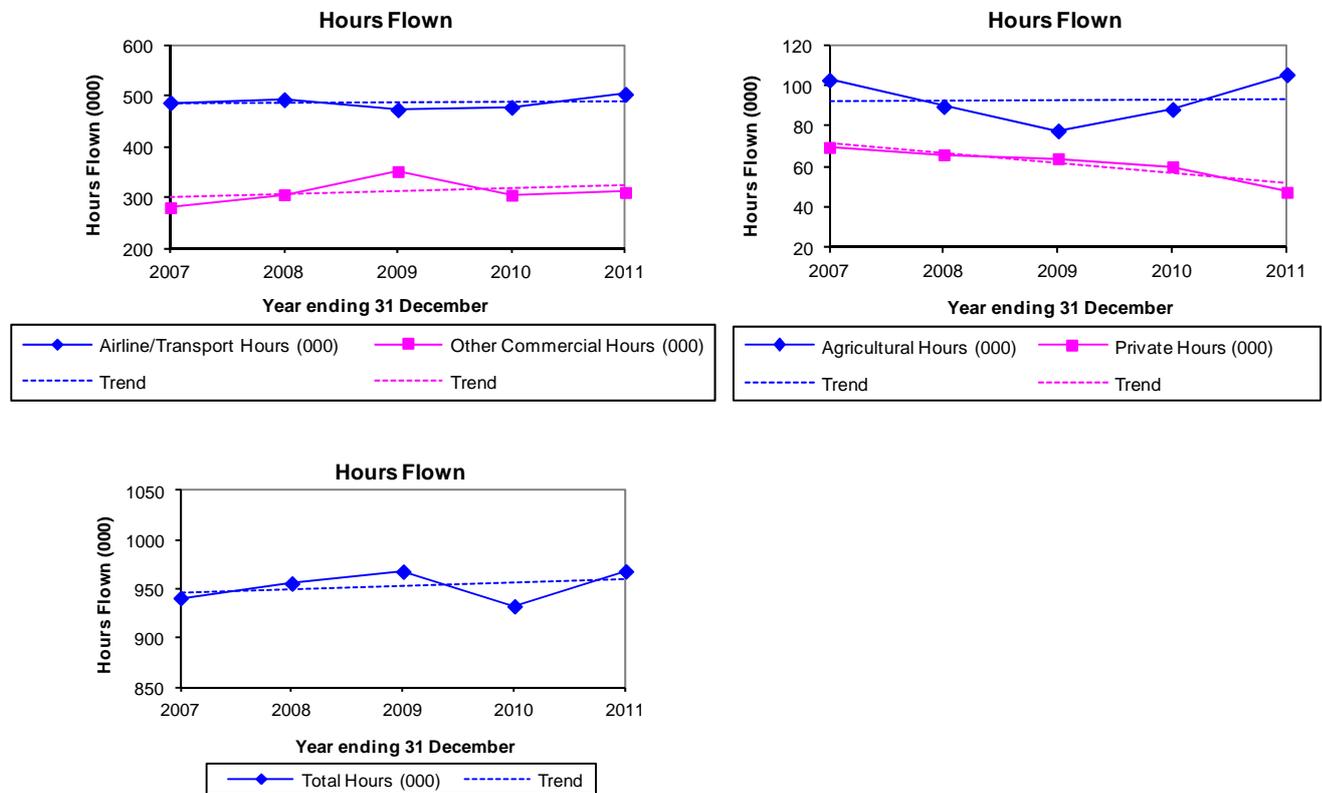
Safety Target Group	Percentage Sector Seat Hours
Airline Operations - Large Aeroplanes	96.50
Airline Operations - Medium Aeroplanes	1.55
Airline Operations - Small Aeroplanes	0.19
Airline Operations - Helicopters	0.26
Sport Transport	0.08
Other Commercial Operations - Aeroplanes	0.43
Other Commercial Operations - Helicopters	0.18
Agricultural Operations - Aeroplanes	0.08
Agricultural Operations - Helicopters	0.10
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.08
Private Operations - Helicopters	0.09
Private Operations - Sport	0.46

Note that the percentages may not sum exactly to 100.00% due to rounding.

Hours by Operation Type

Trends

The following graphs show the number of hours flown (annual data) for the five-year period 1 January 2007 to 31 December 2011 (for the aircraft classes aeroplane, helicopter and balloon only). Flying hours data for the 1st, 2nd and 3rd quarters of 2012 are not available yet due to later returns from operators.



Note that the scales on these graphs do not start at zero.

Quarterly Comparison

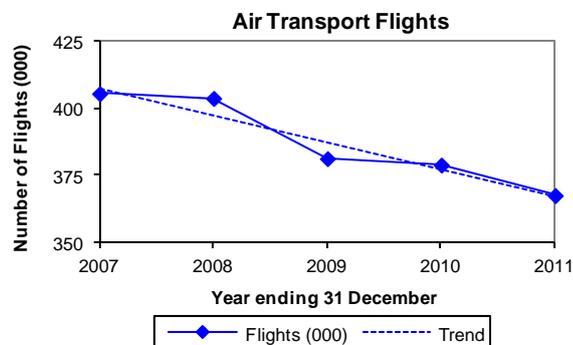
Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2010	2011	Number	Percentage
Airline/Transport Hours	130,854	135,213	+ 4,359	+ 3.3
Other Commercial Hours	69,826	72,435	+ 2,610	+ 3.7
Agricultural Hours	26,748	22,052	- 4,696	- 17.6
Private Hours	16,012	13,448	- 2,564	- 16.0
Total Hours	243,440	243,148	- 291	- 0.1

Note that these assessments include the aircraft classes aeroplane, helicopter and balloon only and exclude other aircraft classes such as hang gliders and parachutes, and foreign registered aircraft that are operated in New Zealand. These assessments are based on the reported Aircraft Operating Statistics for periods up to the quarter ended 31 December 2011 (the most recent quarter for which these data are available) with an allowance for aircraft for which reports were not received.

Air Transport Flights

Trends

The following graph shows the number of air transport flights (annual data) for the five-year period 1 January 2007 to 31 December 2011 (for the aircraft classes aeroplane, helicopter and balloon only).



Note that the scale on this graph does not start at zero.

Quarterly Comparison

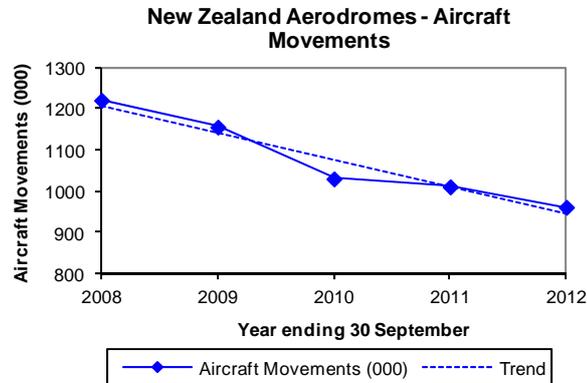
Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2010	2011	Number	Percentage
Air Transport Flights	100,227	93,995	- 6,232	- 6.2

Note that these assessments include the aircraft classes aeroplane, helicopter and balloon only and exclude other aircraft classes such as hang gliders and parachutes, and foreign registered aircraft that are operated in New Zealand. These assessments are based on the reported Aircraft Operating Statistics for periods up to the quarter ended 31 December 2011 (the most recent quarter for which these data are available) with an allowance for aircraft for which reports were not received.

Aircraft Movements

Trends

The following graph shows the number of aircraft movements at certificated aerodromes (annual data) for the five-year period 1 October 2007 to 30 September 2012.



Note that the scale on this graph does not start at zero.

Quarterly Comparison

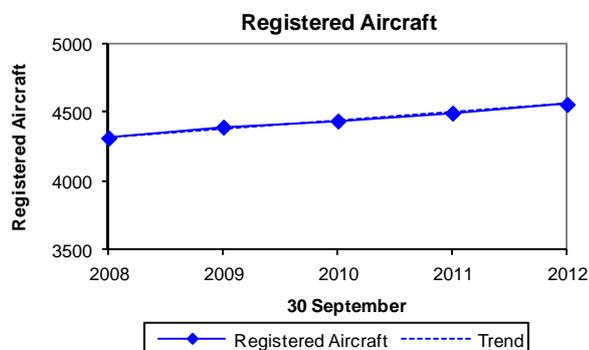
Activity	1 Jul to 30 Sep	1 Jul to 30 Sep	Change	
	2011	2012	Number	Percentage
Aircraft Movements	256,117	231,371	- 24,746	- 9.7

Note that this covers certificated aerodromes only. These figures are as reported to CAA by Airways Corporation and Taupo Airport. Includes Auckland, Christchurch, Dunedin, Gisborne, Hamilton, Invercargill, Napier, Nelson, New Plymouth, Ohakea, Palmerston North, Queenstown, Rotorua, Taupo, Tauranga, Wellington and Woodbourne. Excludes Chatham Islands/Tuuta Airport, Hokitika (certificated from Apr 2010), Kerikeri/Bay of Islands, Mount Cook (certificated until Sep 2009), Paraparaumu (certificated from Apr 2009), Te Anau/Manapouri, Timaru, Wanganui, Westport and Whangarei.

Registered Aircraft by Aircraft Statistics Category

Trends

The following graph shows the number of registered aircraft at 30 September for each of the five-years 2008 to 2012.



Note that the scale on this graph does not start at zero.

Quarterly Comparison

Aircraft Statistics Category	30 September		Change	
	2011	2012	Number	Percentage
Large Aeroplanes	127	125	- 2	- 1.6
Medium Aeroplanes	87	86	- 1	- 1.1
Small Aeroplanes	1,514	1,520	+ 6	+ 0.4
Agricultural Aeroplanes	109	108	- 1	- 0.9
Helicopters	767	787	+ 20	+ 2.6
Sport Aircraft	1,891	1,932	+ 41	+ 2.2
Total	4,495	4,558	+ 63	+ 1.4

Note that these figures include the sport aircraft statistics category but exclude hang gliders, paragliders and parachutes.

Section 4 - Quarterly Statistics

Quarter	2009/4	2010/1	2010/2	2010/3	2010/4	2011/1
Social Cost \$ million¹	24.82	7.22	1.95	48.84	9.79	13.08
Number of Fatal Accidents²	5	1	0	3	1	2
Number of Fatal Injuries²	6	1	0	12	2	2
Number of Serious + Minor Injuries²	11	16	10	6	7	11
Number of Aircraft Accidents²						
Large Aeroplanes	1	0	0	2	0	1
Medium Aeroplanes	0	1	0	0	0	0
Small Aeroplanes	7	2	9	6	4	4
Agricultural Aeroplanes	1	0	3	0	1	3
Helicopters	6	9	3	4	3	5
Sport Aircraft	16	9	6	5	13	17
Unknown Aircraft	0	0	0	0	0	1
Hang Gliders	6	10	5	2	2	6
Parachutes	2	2	1	1	2	1
Number of Incidents³	1,083	1,118	1,154	1,166	1,173	1,230
Number of Aviation Related Concerns⁴	97	124	153	154	203	244
Number of Hours Flown⁵	240,179	255,742	221,686	211,763	243,440	272,126
Number of Air Transport Flights⁵	97,144	108,108	86,015	84,630	100,227	105,782
Number of Aircraft Movements⁶	261,753	276,062	252,639	240,033	256,474	256,398
Number of Aircraft on the Register⁷	4,415	4,428	4,440	4,438	4,442	4,480
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	10	10	10	10	10	9
Air Operator – Medium Aeroplanes	15	15	15	15	16	15
Air Operator – Helicopters and Small Aeroplanes	173	172	174	175	175	173
Number of Part 115 Adventure Aviation Operators	0	0	0	0	0	0
Number of Part 137 Agricultural Aircraft Operators	107	108	108	106	108	107
Number of Part 141 Training Organisations	55	55	58	57	56	55
Number of Part 149 Recreation Organisations	9	9	9	9	8	9
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)	133	141	132	128	146	162
Private Pilot Licence (Class 1 & 2)	3,829	3,795	3,757	3,750	3,655	3,611
Commercial Pilot Licence (Class 2 only)	1,969	1,990	2,066	2,027	2,083	2,131
Commercial Pilot Licence (Class 1)	2,359	2,403	2,344	2,397	2,385	2,372
Airline Transport Pilot Licence (Class 2 only)	976	922	913	986	981	928
Airline Transport Pilot Licence (Class 1)	1,068	1,135	1,134	1,075	1,096	1,155
Air Traffic Controller Licence (Class 3)	363	366	363	358	362	363
Aircraft Maintenance Engineer Licence (N/A)	2,424	2,445	2,463	2,479	2,496	2,511

¹ All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2011 dollars.

² All accidents. All aircraft statistics categories. Includes hang gliders and parachutes.

³ Number of reported incidents. All incident sub-types.

⁴ Number of reported Aviation Related Concerns.

⁵ New Zealand registered aircraft. Includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes. Based on reported Aircraft Operating Statistics for periods up to the quarter ended 31 December 2011 with an allowance for aircraft for which reports were not received. Estimated for 2012/1, 2012/2 and 2012/3.

Quarter	2011/2	2011/3	2011/4	2012/1	2012/2	2012/3
Social Cost \$ million¹	21.54	1.73	19.48	56.51	15.23	1.03
Number of Fatal Accidents²	4	0	3	4	2	0
Number of Fatal Injuries²	5	0	4	15	3	0
Number of Serious + Minor Injuries²	6	3	8	3	7	3
Number of Aircraft Accidents²						
Large Aeroplanes	0	0	0	0	0	0
Medium Aeroplanes	1	1	0	0	0	0
Small Aeroplanes	4	4	6	3	3	3
Agricultural Aeroplanes	3	0	1	0	2	2
Helicopters	6	4	8	2	5	3
Sport Aircraft	5	5	6	9	9	5
Unknown Aircraft	1	1	0	1	0	0
Hang Gliders	3	0	1	4	1	1
Parachutes	3	2	3	4	3	2
Number of Incidents³	1,238	1,228	1,118	1,295	1,180	1,248
Number of Aviation Related Concerns⁴	155	271	229	219	191	218
Number of Hours Flown⁵	224,740	228,242	243,148	284,231	236,683	240,655
Number of Air Transport Flights⁵	82,062	85,803	93,995	109,514	86,383	87,867
Number of Aircraft Movements⁶	242,338	256,117	242,744	252,533	235,050	231,371
Number of Aircraft on the Register⁷	4,490	4,495	4,499	4,516	4,532	4,558
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	9	9	9	9	9
Air Operator – Medium Aeroplanes	15	15	15	15	15	14
Air Operator – Helicopters and Small Aeroplanes	174	174	175	176	171	166
Number of Part 115 Adventure Aviation Operators	0	0	1	1	20	28
Number of Part 137 Agricultural Aircraft Operators	104	106	105	101	99	99
Number of Part 141 Training Organisations	54	55	57	58	57	58
Number of Part 149 Recreation Organisations	9	9	8	9	9	7
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)	180	189	205	222	221	224
Private Pilot Licence (Class 1 & 2)	3,603	3,577	3,513	3,479	3,458	3,451
Commercial Pilot Licence (Class 2 only)	2,229	2,236	2,284	2,325	2,379	2,428
Commercial Pilot Licence (Class 1)	2,339	2,380	2,362	2,350	2,337	2,316
Airline Transport Pilot Licence (Class 2 only)	909	965	962	925	915	953
Airline Transport Pilot Licence (Class 1)	1,188	1,118	1,124	1,166	1,175	1,140
Air Traffic Controller Licence (Class 3)	361	361	362	370	374	374
Aircraft Maintenance Engineer Licence (N/A)	2,519	2,540	2,549	2,563	2,575	2,595

⁶ Certificated aerodromes. Reported to CAA by Airways Corporation and Taupo Airport. Includes Auckland, Christchurch, Dunedin, Gisborne, Hamilton, Invercargill, Napier, Nelson, New Plymouth, Ohakea, Palmerston North, Queenstown, Rotorua, Taupo, Tauranga, Wellington and Woodbourne. Excludes Chatham Islands/Tuuta Airport, Hokitika (certificated from Apr 2010), Kerikeri/Bay of Islands, Paraparaumu, Te Anau/Manapouri, Timaru, Wanganui, Westport and Whangarei.

⁷ As at the last day of the quarter. Includes the sport aircraft statistics category, excluding hang gliders, paragliders and parachutes.

⁸ As at the last day of the quarter. For RPL holders, a medical fitness certificate, in accordance with the NZTA medical fitness standards that are applicable for a Class 2, 3, 4 or 5 driver licence with a passenger endorsement. For PPL, CPL & ATPL holders, an active class 1 or active class 2 medical certificate; this means that for CPL and ATPL licences, the number with a class 2 medical only, must only be exercising PPL privileges (or not flying at all). For ATCL holders, an active class 3 medical certificate. This does not show the number of licence holders as each client may hold more than one licence.

Definitions

Accident

An occurrence that is associated with the operation of an aircraft and takes place between the time any person boards the aircraft with the intention of flight and such time as all such persons have disembarked and the engine or any propellers or rotors come to rest, being an occurrence in which–

- (1) a person is fatally or seriously injured as a result of–
 - (i) being in the aircraft; or
 - (ii) direct contact with any part of the aircraft, including any part that has become detached from the aircraft; or
 - (iii) direct exposure to jet blast–

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

- (2) the aircraft sustains damage or structural failure that–
 - (i) adversely affects the structural strength, performance, or flight characteristics of the aircraft; and
 - (ii) would normally require major repair or replacement of the affected component–

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

- (3) the aircraft is missing or is completely inaccessible.

Aircraft Incident

Any incident, not otherwise classified, associated with the operation of an aircraft which did not immediately affect the safety of an aircraft operation but which,

- (1) if allowed to continue uncorrected, or
- (2) if repeated in different but likely circumstances,

could affect the safety of an aircraft operation.

Aircraft Statistics Category

The following table shows the definition of each aircraft statistics category and the aircraft classes included.

Aircraft Statistics Category	Definition	Aircraft Class
Large Aeroplanes	Aeroplanes that must be operated under Part 121 when used for air transport	Aeroplane
Medium Aeroplanes	Aeroplanes that must be operated under Part 125 when used for air transport, except for those required to operate under Part 125 solely due to operating SEIFR	Aeroplane
Small Aeroplanes	Other Aeroplanes with Standard Category Certificates of Airworthiness	Aeroplane
Agricultural Aeroplanes	Aeroplanes with Restricted Category Certificates of Airworthiness limited to agricultural operations	Aeroplane
Helicopters	Helicopters with Standard or Restricted Category Certificates of Airworthiness	Helicopter
Sport Aircraft	All aircraft not included in the groups above	Aeroplane, Amateur Built Aeroplane, Amateur Built Glider, Amateur Built Helicopter, Balloon, Glider, Gyroplane, Helicopter, Microlight Class 1, Microlight Class 2, Power Glider

Other Aircraft Types (not included on the NZ Aircraft Register)

Hang Glider

A glider, including a powered glider, that is capable of being launched and landed solely by the use of the pilot's legs, and includes paragliders. **Paraglider** means a hang glider with no rigid primary structure.

Parachute

Any device, without a motor in operation, comprising a flexible drag, or lift/drag, surface from which a load is suspended by shroud lines capable of controlled deployment from a packed condition.

Airspace Incident

An incident involving deviation from, or shortcomings of, the procedures or rules for—

- (1) avoiding a collision between aircraft; or
- (2) avoiding a collision between aircraft and other obstacles when an aircraft is being provided with an Air Traffic Service.

Bird Incident

Means an incident where—

- (1) there is a collision between an aircraft and one or more birds; or
- (2) when one or more birds pass sufficiently close to an aircraft in flight to cause alarm to the pilot.

Defect Incident

An incident that involves failure or malfunction of an aircraft or aircraft component, whether found in flight or on the ground.

Fatal Injury

An injury which results in death within 30 days of the accident.

Incident

Any occurrence, other than an accident, that is associated with the operation of an aircraft and affects or could affect the safety of operation.

Incident Sub-Types	
Aerodrome Incident	Dangerous Goods Incident
Aircraft Incident	Defect Incident
Airspace Incident	Facility Malfunction Incident
Bird Incident	Promulgated Information Incident
Cargo Security Incident	Security Incident

Occurrence

Means an accident or incident.

Serious Injury

Means any injury that is sustained by a person in an accident and that–

- (1) requires hospitalisation for more than 48 hours, commencing within 7 days from the date the injury was received; or
- (2) results in a fracture of any bone, except simple fractures of fingers, toes, or nose; or
- (3) involves lacerations which cause severe haemorrhage, nerve, muscle, or tendon damage; or
- (4) involves injury to an internal organ; or
- (5) involves second or third degree burns, or any burns affecting more than 5% of the body surface; or
- (6) involves verified exposure to infectious substances or injurious radiation.

Severity

The following definitions apply to the severity accorded to accidents and incidents as the result of investigation of occurrences:

Severity	Definition
Critical	An occurrence or deficiency that caused, or on its own had the potential to cause, loss of life or limb;
Major	An occurrence or deficiency involving a major system that caused, or had the potential to cause, significant problems to the function or effectiveness of that system;
Minor	An isolated occurrence or deficiency not indicative of a significant system problem.

Safety Target Structure

