

Aviation Safety Summary

1 July to 30 September 2014



Winter 2014

Cover photograph courtesy of Gavin Conroy.

Introduction to the Quarterly Safety Summary Report

Welcome to the CAA's quarterly safety summary report for the winter quarter of 2014. This report is designed to provide a summary of accidents, incidents and safety occurrences that were reported to the CAA for the period 1 July to 30 September 2014.

This quarter saw 15 accidents. That's only 13% of the 113 accidents for the past year (historically, winter and autumn are the quarters with the lowest number of accidents for the year). 7 of these accidents were in private operations (1 helicopter and 6 sport), 3 were Part 115 adventure aviation operations, 2 were in the airline sector (1 small aeroplane and 1 helicopter), 2 were in the other commercial sector (1 aeroplane and 1 helicopter), and 1 was in the agricultural sector (helicopter).

There were 2 fatal injuries, 13 serious injuries and 4 minor injuries, and 6 aircraft destroyed, which brought the social cost for the quarter to \$16 million dollars, up from the \$11 million incurred over the 2014 autumn quarter. The annual social cost of aviation (three year average) has levelled off to a neutral trend over the last four years. The three year average social cost now stands at \$72 million per year.

The social cost of accidents differentiates accidents by the amount of harm caused in each event. Therefore social cost remains a key safety performance indicator.

Safe flying,

J.D. Stanton

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Executive Summary - Aviation Safety to 30 Sep 2014

- There were a total of 15 accidents in the July to September quarter, the winter of 2014. There were 2 fatal, 13 serious and 4 minor injuries in these accidents and injury incidents. Social cost in this quarter has accrued from accidents and injury incidents in the following safety target groups:
 - Airline Operations - Small Aeroplanes 1 fatal injury and 2 serious injuries, and 1 aircraft destroyed
 - Airline Operations - Helicopters 1 fatal injury, 4 serious and 2 minor injuries, and 1 aircraft destroyed
 - Sport Transport 2 serious injuries
 - Other Commercial Operations - Helicopters 1 minor injury, and 1 aircraft destroyed
 - Agricultural Operations - Helicopters 1 aircraft destroyed
 - Private Operations - Helicopters 2 serious injuries, and 1 aircraft destroyed
 - Private Operations - Sport 3 serious injuries and 1 minor injury, and 1 aircraft destroyed

There were additional accidents in the groups above and other safety target groups that were not serious enough to contribute to the social cost outcome this quarter (no injuries or aircraft destroyed), but still represent safety risks, see page 3.

- The Annual Social Cost is now \$72 million (three year average). The social cost has halted its upward trend and now shows a neutral trend. In the last four years the cost has increased by 7% from \$67M to \$72M. See page 4.
- The overall accident rate over the period October 2009 to September 2014 has decreased to 4.5 accidents per 100,000 hours flown, which is below the average of approximately 5.1 accidents per 100,000 hours flown over the previous four years, see page 7.
- Airspace incident rates are increasing for medium aeroplanes, small aeroplanes, agricultural aeroplanes and helicopters, see page 11.
- The total annual number of hours flown for the year ending December 2013 is less than 1% lower than the year ending December 2009. The number of agricultural hours flown has increased by 60% over this period (an increase of approximately 48,000 hours) while the number of other commercial hours has decreased by 20% (a decrease of approximately 70,000 hours) and the number of private hours has decreased by 23% (a decrease of approximately 14,000 hours). (The comparison between the Oct to Dec quarter of 2013 and the Oct to Dec quarter of 2012 on page 14 shows a different picture, but this quarterly comparison is a short-term ‘snap shot’ only.) The reporting of adventure aviation hours as a separate category began in 2012, and is now at approximately 11,000 hours. See page 14.
- The annual number of air transport flights has increased from a slump in the year 2011, and the total for the year ending December 2013 is approximately the same as for 2009. However, the total annual number of aircraft movements from certificated aerodromes is continuing to decrease, by 9% from the year ending September 2010 to the year ending September 2014. See pages 15 and 16.
- The number of Private Pilot Licences (with an active class 1 or active class 2 medical certificate) decreased from 3,108 at 30 September 2013 to 2,763 at 30 September 2014, a decrease of 345 (11%).

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 2014. The table also shows the number of accidents in this quarter.

Legend:

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

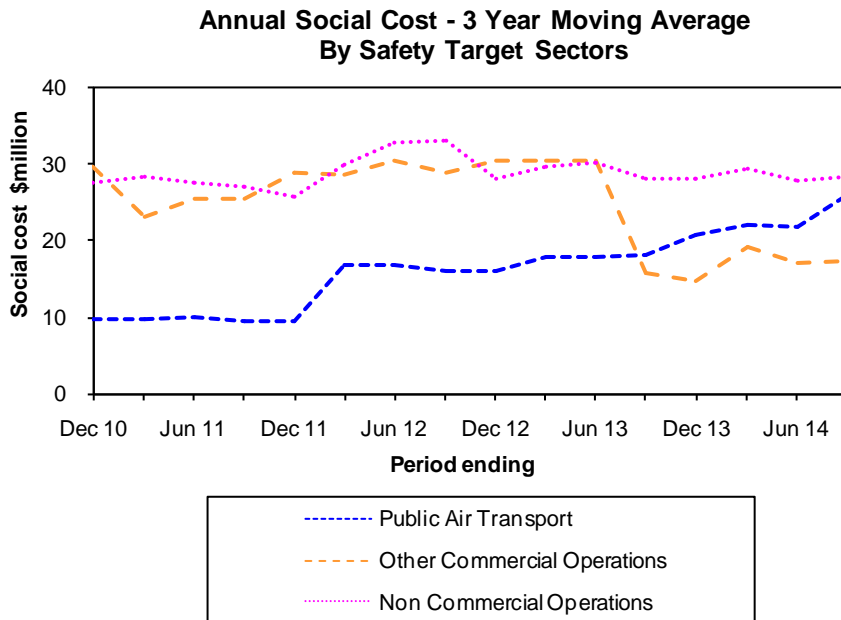
Total Safety Cost \$16.14 m	Public Air Transport \$13.07 m	Airline Operations - Large Aeroplanes	Social Cost	†	+	+	↓	△
			\$0.00 m	0	0	0	0	0
		Airline Operations - Medium Aeroplanes	Social Cost					
			\$0.00 m	0	0	0	0	0
		Airline Operations - Small Aeroplanes	Social Cost					
		\$4.85 m	1	2	0	1	1	
	Airline Operations - Helicopters	Social Cost						
		\$7.41 m	1	4	2	1	1	
	Sport Transport	Social Cost						
		\$0.81 m	0	2	0	0	3	
	Other Commercial Operations \$0.65 m	Other Commercial Operations - Aeroplanes	Social Cost					
			\$0.00 m	0	0	0	0	1
		Other Commercial Operations - Helicopters	Social Cost					
			\$0.33 m	0	0	1	1	1
		Agricultural Operations - Aeroplanes	Social Cost					
		\$0.00 m	0	0	0	0	0	
	Agricultural Operations - Helicopters	Social Cost						
	\$0.31 m	0	0	0	1	1		
Agricultural Operations - Sport	Social Cost							
	\$0.00 m	0	0	0	0	0		
Non Commercial Operations \$2.42 m	Private Operations - Aeroplanes	Social Cost						
		\$0.00 m	0	0	0	0	0	
	Private Operations - Helicopters	Social Cost						
	\$1.12 m	0	2	0	1	1		
Private Operations - Sport	Social Cost							
	\$1.29 m	0	3	1	1	6		

Notes:

1. Individual values in the table may not sum exactly to the subtotals or total shown due to rounding.
2. Sport groups include hang gliders and parachutes.
3. An explanation of the 2014 Safety Target Groups is provided by the diagram in the Definitions section.
4. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2013 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 2010 to 30 September 2014, (including the Sport Safety Target Groups).



Social Cost Analysis

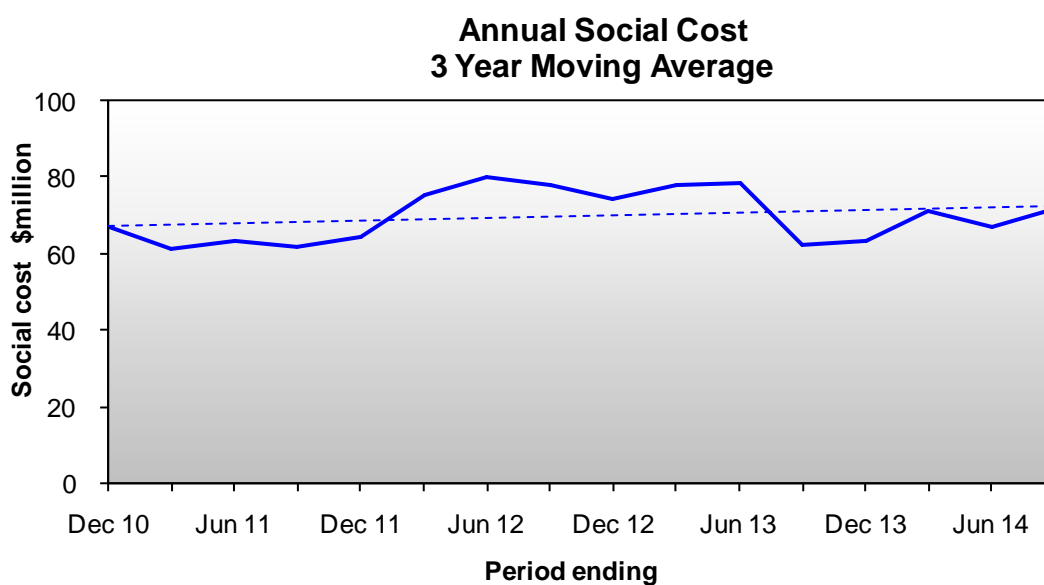
The graph above indicates the social cost contribution of each safety target sector averaged over the previous three years.

The social cost of the 'Public Air Transport' sector is showing a long-term increase. The biggest contributor in the 3rd quarter of 2014 was the 'Airline Operations - Helicopters' safety target group with 1 fatal injury, 4 serious and 2 minor injuries and 1 aircraft destroyed. The next biggest contributor was the 'Airline Operations - Small Aeroplanes' safety target group with 1 fatal injury, 2 serious injuries and 1 aircraft destroyed. Details of accidents in this sector are shown on pages 7 and 8.

The social cost of the 'Other Commercial' sector dropped significantly three years after the accident at Fox Glacier but increased again in the 1st quarter of 2014, driven by fatal accidents in commercial training aircraft and agricultural helicopters.

The contributors to the social cost within the 'Non Commercial Operations' sector in the latest quarter were the safety target groups 'Private Operations - Helicopters' and 'Private Operations - Sport'. Details of accidents in this sector are shown on page 8.

The combined annual social cost of all three sectors is shown in the graph on the next page and has increased by 7% from \$67M to \$72M between 2010 and 2014.



Accidents by Safety Target Group
Quarterly Comparison

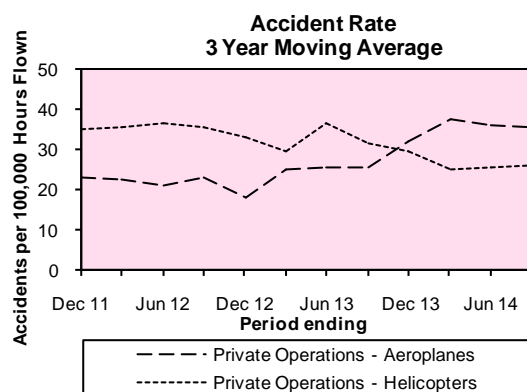
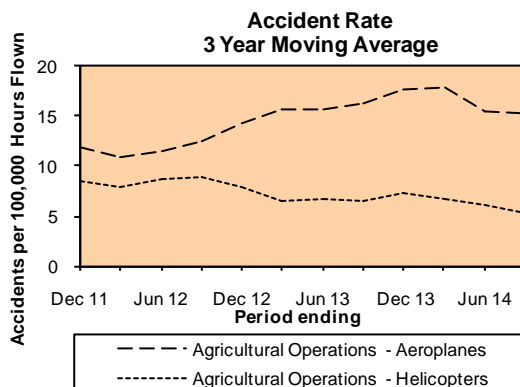
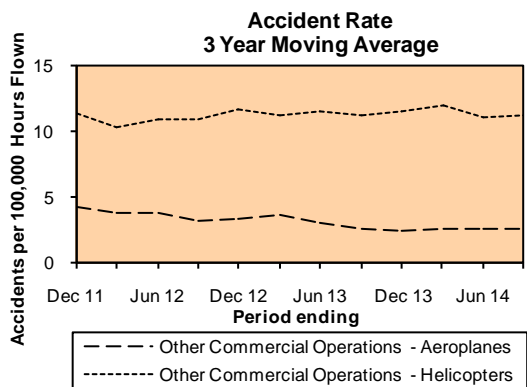
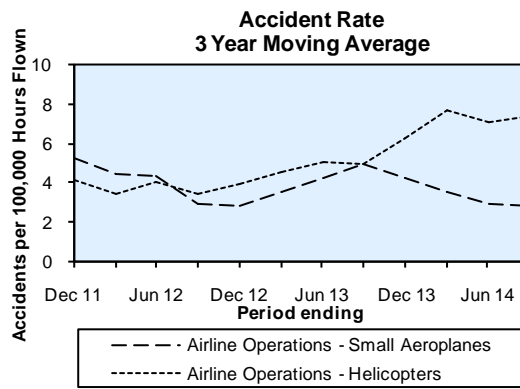
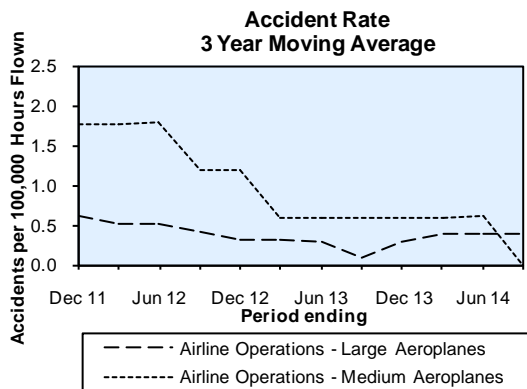
Safety Target Group	1 Jul to 30 Sep 2014	Same Quarter Last Year
Airline Operations - Large Aeroplanes	0	0
Airline Operations - Medium Aeroplanes	0	0
Airline Operations - Small Aeroplanes	1	1
Airline Operations - Helicopters	1	0
Sport Transport	3	0
Other Commercial Operations - Aeroplanes	1	3
Other Commercial Operations - Helicopters	1	0
Agricultural Operations - Aeroplanes	0	1
Agricultural Operations - Helicopters	1	1
Agricultural Operations - Sport Aircraft	0	0
Private Operations - Aeroplanes	0	0
Private Operations - Helicopters	1	0
Private Operations - Sport	6	8
Other	0	0
Total	15	14

Comment

Overall accident numbers in the 2014 winter quarter have increased by 1 (7%) in comparison to the 2013 winter quarter. The biggest increase is within the Sport Transport group.

Trends

The following graphs show the aircraft accident rates (three year moving average) for the three-year period 1 October 2011 to 30 September 2014 (excluding the Sport Safety Target Groups, for which no accurate activity information is available).



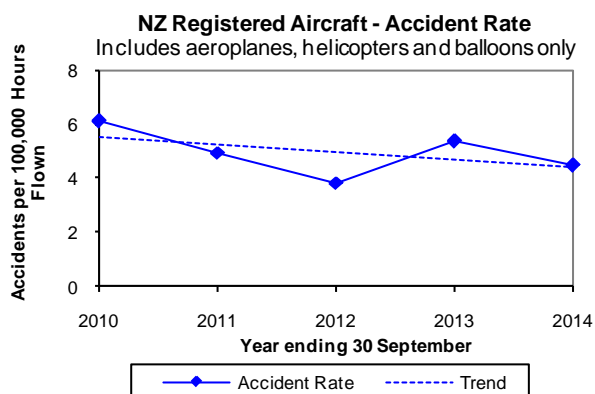
No accident rate information available for Sport Transport or Private Operations - Sport.

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 2009 to 30 September 2014. The accident rate has decreased to 4.5 accidents per 100,000 hours flown, which is below the average of approximately 5.1 accidents per 100,000 hours flown over the previous four years.



Note that this graph shows an annual rate and not a 3 year moving average.

Summary of Injury Accidents

This section describes injury accidents that occurred during the period 1 July to 30 September 2014. These descriptions are classified according to the highest level of injury sustained and the safety target group. Not all of these accidents were investigated by the CAA, and some of the CAA investigations have not been completed, so the text may be condensed from the original accident notification.

Fatal Accidents

Airline Operations - Small Aeroplanes

- A Piper aeroplane on a passenger transport A to B flight crashed while enroute. The pilot was killed, and the two passengers were seriously injured. The aircraft was destroyed.

Airline Operations - Helicopters

- A Eurocopter helicopter on a passenger transport A to B flight crashed on a mountainside. One passenger was killed, the two crew members and two passengers were seriously injured, and the other two passengers received minor injuries. The aircraft was destroyed.

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Serious Injury Accidents

Sport Transport

- A tandem parachute master was seriously injured (a broken tibia and fibula) after turbulence and sink encountered upon landing caused their full weight to fall on one leg. The passenger was not injured.
- A tandem parachute passenger was seriously injured (a broken tibia and fibula) upon landing, when they appeared to trap their foot while sliding in the landing. The pilot was not injured.

Private Operations - Helicopters

- During a private hunting flight (deer recovery), it appears the passenger tried to board the Schweizer helicopter while in hover, causing it to be unbalanced. The pilot and passenger were seriously injured. The aircraft was destroyed.

Private Operations - Sport

- A paraglider pilot was seriously injured when the paraglider's left hand wing tip contacted a cabbage tree, which spun the aircraft around and impacted it on to a steep hill face.
- A paraglider pilot was seriously injured (a broken leg) when the paraglider's wing collapsed near a vertical rock face resulting in loss of control and direct impact with the rock face.
- A hang glider pilot was seriously injured (fracture of tibia and fibula) on a solo training flight when the hang glider lost directional control too close to the ground, which combined with a change in wind direction caused a sudden altitude loss and increase in speed, resulting in a hard landing on one leg.

Minor Injury Accidents

Other Commercial Operations - Helicopters

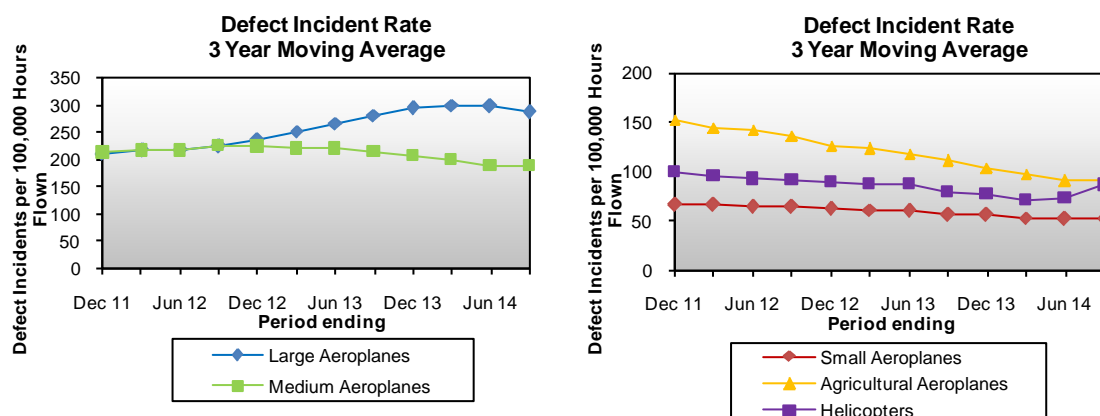
- A Robinson helicopter on a solo training flight suffered dynamic rollover on liftoff, then the main rotor cut off the tail boom. The pilot received minor injuries and the aircraft was destroyed.

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 2011 to 30 September 2014 (excluding the Sport Aircraft statistics category).



Quarterly Comparison

Number of Reported Defect Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2014	Same Quarter Last Year
◆ Large Aeroplanes	153	308
■ Medium Aeroplanes	30	18
◆ Small Aeroplanes	61	47
▲ Agricultural Aeroplanes	14	6
■ Helicopters	134	37
Sport Aircraft	5	6
Unknown Aircraft	34	26
Total	431	448

Severity of Reported Defect Incidents

Severity	1 Jul to 30 Sep 2014	Same Quarter Last Year
Critical	0	0
Major	140	61
Minor	291	387

No critical defect incidents were reported in the 1 July to 30 September 2014 quarter.

Rate Monitoring

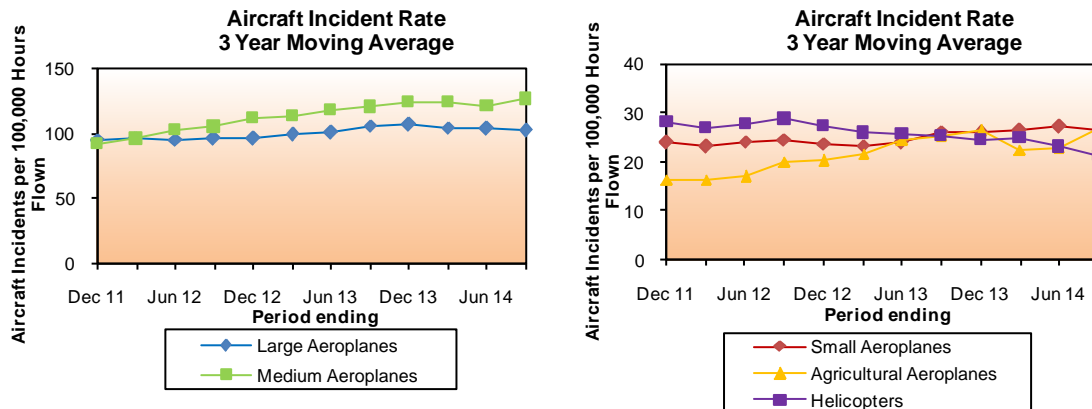
Defect incident rate monitoring of individual types of large and medium air transport aircraft has been carried out for the period ended 30 September 2014, using estimated data for some of the aircraft types due to a shortage of returned Aircraft Operations Statistics for these aircraft. Analysis shows that 2 of the 15 monitored aircraft types have defect rates above the “trigger level” for CAA action (1 of the 12 types of large aeroplane and 1 of the 3 types of medium aeroplane).

Medium and large aeroplane 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 2011 to 30 September 2014 (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 2014	Same Quarter Last Year
◆ Large Aeroplanes	84	112
■ Medium Aeroplanes	20	16
◆ Small Aeroplanes	26	38
▲ Agricultural Aeroplanes	5	2
■ Helicopters	10	18
Sport Aircraft	9	2
Unknown Aircraft	40	52
Total	194	240

Severity of Reported Aircraft Incidents

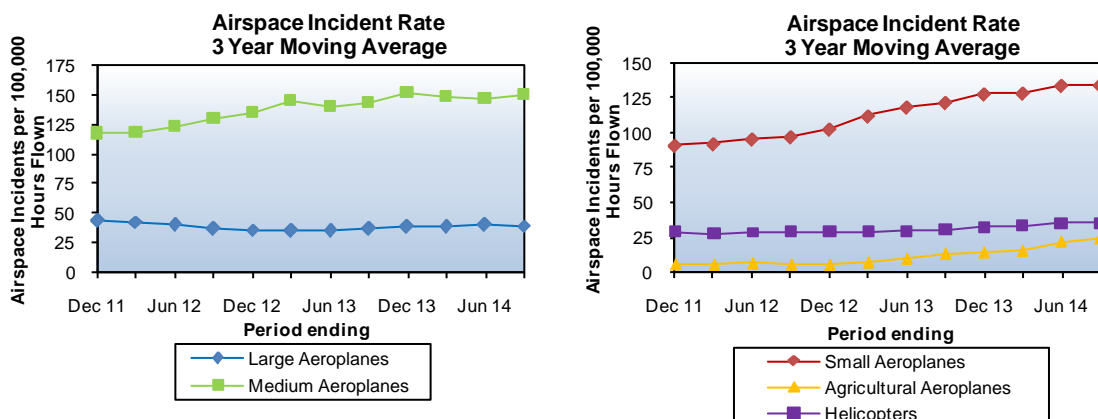
Severity	1 Jul to 30 Sep 2014	Same Quarter Last Year
Critical	0	2
Major	20	25
Minor	174	213

No critical aircraft incidents were reported in the 1 July to 30 September 2014 quarter.

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 2011 to 30 September 2014 (excluding the Sport Aircraft statistics category).



Quarterly Comparison

Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2014	Same Quarter Last Year
◆ Large Aeroplanes	30	39
■ Medium Aeroplanes	20	19
◆ Small Aeroplanes	169	116
▲ Agricultural Aeroplanes	3	5
■ Helicopters	23	11
Sport Aircraft	16	19
Unknown Aircraft	122	132
Total	383	341

Severity of Reported Airspace Incidents

Severity	1 Jul to 30 Sep 2014	Same Quarter Last Year
Critical	0	5
Major	23	33
Minor	360	303

No critical airspace incidents were reported in the 1 July to 30 September 2014 quarter. Analysis of reported airspace incidents continues on next page.

Attributability

Of the 383 reported airspace incidents in the 1 July to 30 September 2014 quarter, 17% are Air Traffic Service (ATS) attributable, 69% are pilot attributable, 3% 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 2011 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 2014.

There were 2 aerodromes with strike rates in the high risk category of the CAA standard (10.0 and above bird strikes per 10,000 aircraft movements), both having long-term upward trends.

There were 7 aerodromes with strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), 3 having long-term upward trends, 1 having a long-term constant trend and 3 having long-term downward trends.

19 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), 7 having long-term upward trends, 7 having long-term constant trends and 5 having long-term downward trends.

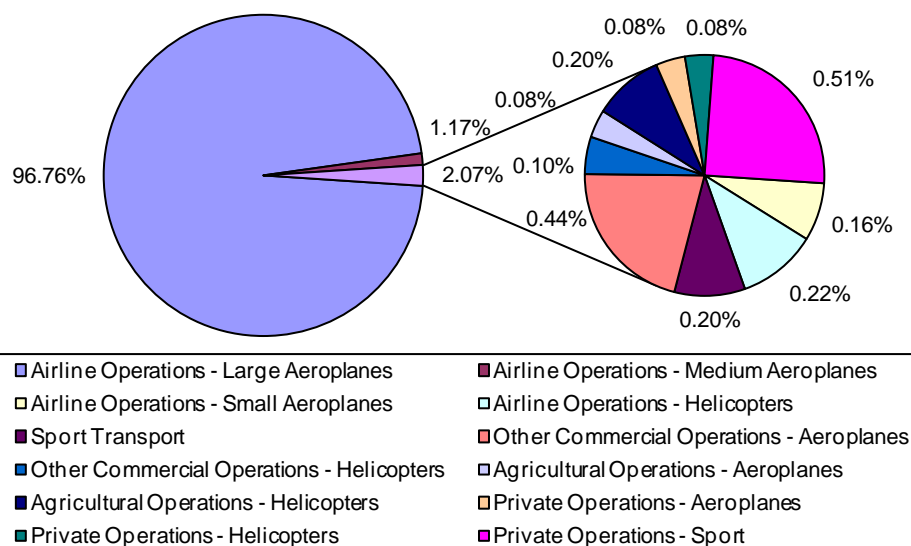
For more information visit the 'Bird Hazard Reports' section of the CAA web site http://www.caa.govt.nz/safety_info/safety_reports.htm

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 Safety Target Group categories for the period 1 October to 31 December 2013 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received. Adequate flying hours data for the 1st, 2nd and 3rd quarters of 2014, are not available yet due to later returns from operators. 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



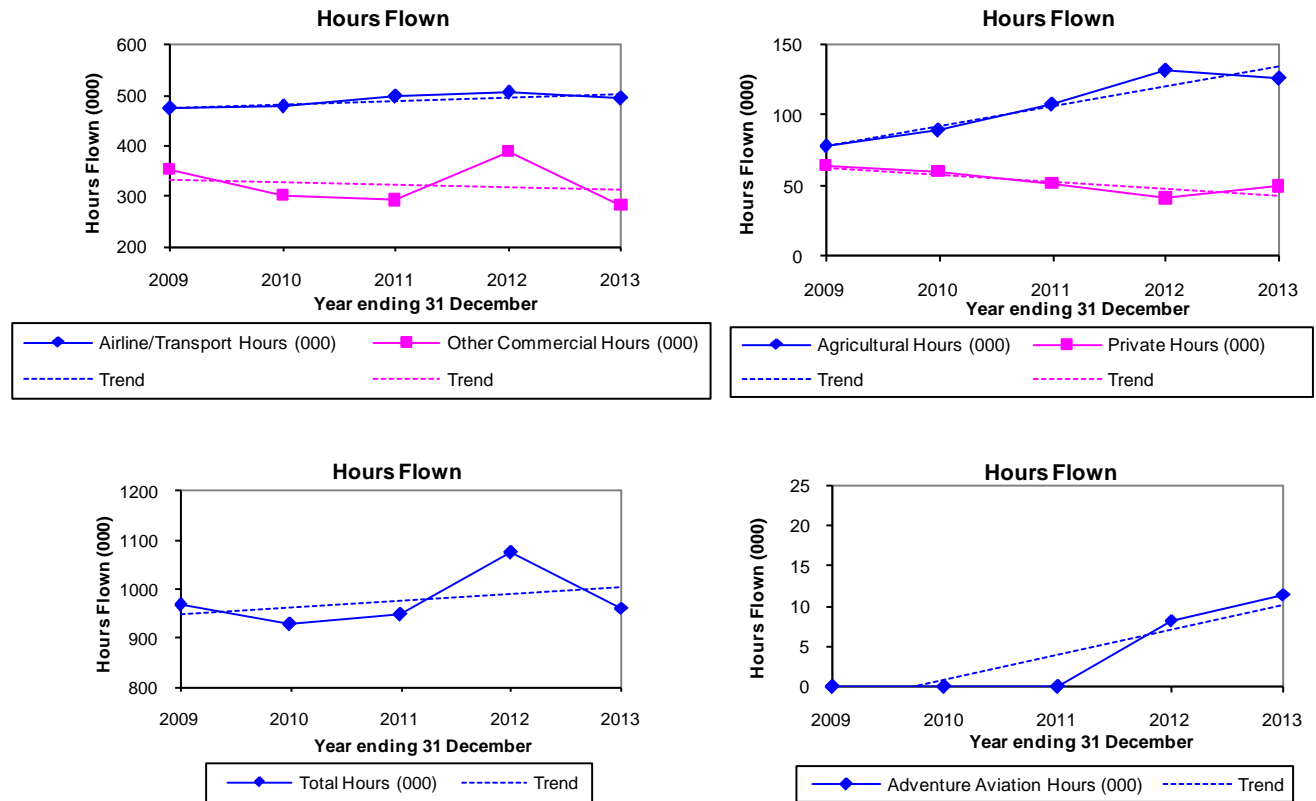
Safety Target Group	Percentage Sector Seat Hours
Airline Operations - Large Aeroplanes	96.76
Airline Operations - Medium Aeroplanes	1.17
Airline Operations - Small Aeroplanes	0.16
Airline Operations - Helicopters	0.22
Sport Transport	0.20
Other Commercial Operations - Aeroplanes	0.44
Other Commercial Operations - Helicopters	0.10
Agricultural Operations - Aeroplanes	0.08
Agricultural Operations - Helicopters	0.20
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.08
Private Operations - Helicopters	0.08
Private Operations - Sport	0.51

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 2009 to 31 December 2013 (for the aircraft classes aeroplane, helicopter and balloon only). Adequate flying hours data for the 1st, 2nd and 3rd quarters of 2014, are not available yet due to later returns from operators.



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

Note that the reporting of adventure aviation hours as a separate category began in 2012.

Quarterly Comparison

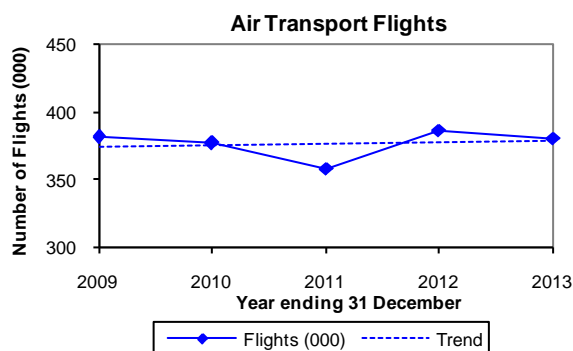
Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2012	2013	Number	Percentage
Airline/Transport Hours	134,281	122,956	- 11,324	- 8.4
Adventure Aviation Hours	3,927	2,826	- 1,101	- 28.0
Other Commercial Hours	100,061	67,741	- 32,321	- 32.3
Agricultural Hours	33,088	33,394	+ 306	+ 0.9
Private Hours	9,138	12,814	+ 3,676	+ 40.2
Total Hours	280,495	239,731	- 40,764	- 14.5

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 2013 (the most recent quarter for which adequate 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 2009 to 31 December 2013 (for the aircraft classes aeroplane, helicopter and balloon only).



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

Quarterly Comparison

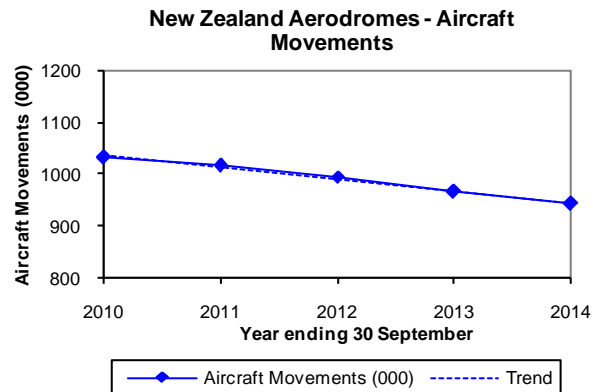
Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2012	2013	Number	Percentage
Air Transport Flights	112,375	96,542	- 15,833	- 14.1

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 2013 (the most recent quarter for which adequate 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 2009 to 30 September 2014.



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

Quarterly Comparison

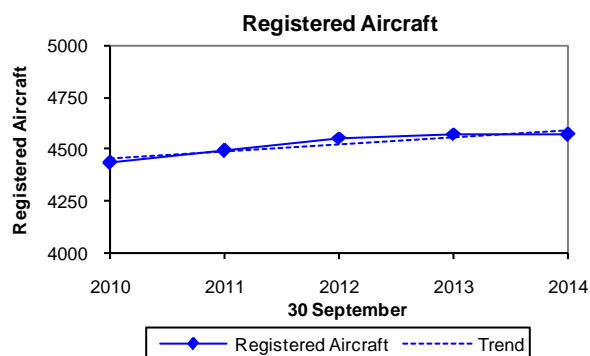
Activity	1 Jul to 30 Sep	1 Jul to 30 Sep	Change	
	2013	2014	Number	Percentage
Aircraft Movements	232,694	232,016	- 678	- 0.3

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, Paraparaumu (certificated from April 2009, included in the graph from late July 2011), 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 and from Nov 2012), 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 2010 to 2014.



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

Quarterly Comparison

Aircraft Statistics Category	30 September	30 September	Change	
	2013	2014	Number	Percentage
Large Aeroplanes	127	128	+ 1	+ 0.8
Medium Aeroplanes	78	78	0	0
Small Aeroplanes	1,522	1,495	- 27	- 1.8
Agricultural Aeroplanes	105	96	- 9	- 8.6
Helicopters	794	806	+ 12	+ 1.5
Sport Aircraft	1,951	1,967	+ 16	+ 0.8
Total	4,577	4,570	- 7	- 0.2

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

Licences and Organisations

The number of Private Pilot Licences (with an active class 1 or active class 2 medical certificate) decreased from 3,108 at 30 September 2013 to 2,763 at 30 September 2014, a decrease of 345 (11%).

Over the same period the number of Part 115 certificated Adventure Aviation Operators decreased from 34 to 27, a decrease of 7 (21%).

Section 4 - Quarterly Statistics

Quarter	2011/4	2012/1	2012/2	2012/3	2012/4	2013/1
Social Cost \$ million¹	22.69	59.75	15.96	1.09	15.30	26.37
Number of Fatal Accidents²	3	4	2	0	3	3
Number of Fatal Injuries²	4	15	3	0	3	5
Number of Serious + Minor Injuries²	9	4	7	4	7	12
Number of Aircraft Accidents²						
Large Aeroplanes	0	0	0	0	0	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	5	3	3	3	2	11
Agricultural Aeroplanes	1	0	2	2	4	2
Helicopters	8	2	5	3	5	5
Sport Aircraft	6	9	9	5	7	11
Unknown Aircraft	0	1	0	0	0	1
Hang Gliders	2	6	1	2	3	4
Parachutes	2	4	3	2	3	3
Number of Incidents³	1,119	1,297	1,184	1,271	1,324	1,515
Number of Aviation Related Concerns⁴	230	219	194	220	156	206
Number of Hours Flown⁵	244,252	297,347	239,823	256,075	280,495	268,795
Number of Air Transport Flights⁵	93,095	102,197	83,463	89,021	112,375	107,390
Number of Aircraft Movements⁶	250,101	261,767	243,135	239,410	248,728	256,386
Number of Aircraft on the Register⁷	4,499	4,516	4,532	4,558	4,581	4,587
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	9	9	9	9	9
Air Operator – Medium Aeroplanes	15	15	15	14	15	16
Air Operator – Helicopters and Small Aeroplanes	175	176	171	166	168	174
Number of Part 115 Adventure Aviation Operators	1	1	20	28	33	33
Number of Part 137 Agricultural Aircraft Operators	105	101	99	99	104	103
Number of Part 141 Training Organisations	57	58	57	58	59	59
Number of Part 149 Recreation Organisations	8	9	9	7	7	7
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)						
Private Pilot Licence (Class 1 & 2)	3,513	3,479	3,458	3,451	3,361	3,298
Commercial Pilot Licence (Class 2 only)	2,284	2,325	2,379	2,428	2,420	2,561
Commercial Pilot Licence (Class 1)	2,362	2,350	2,337	2,316	2,366	2,225
Airline Transport Pilot Licence (Class 2 only)	962	925	915	953	993	1,053
Airline Transport Pilot Licence (Class 1)	1,124	1,166	1,175	1,140	1,119	1,078
Air Traffic Controller Licence (Class 3)	362	370	374	374	363	363
Aircraft Maintenance Engineer Licence (N/A)	2,549	2,563	2,575	2,595	2,611	2,626

¹ All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2013 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 2013 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received. Estimated for 2014/1, 2014/2 and 2014/3.

Quarter	2013/2	2013/3	2013/4	2014/1	2014/2	2014/3
Social Cost \$ million¹	3.02	2.48	14.26	35.90	10.52	16.14
Number of Fatal Accidents²	0	0	2	5	1	2
Number of Fatal Injuries²	0	0	2	6	2	2
Number of Serious + Minor Injuries²	10	6	21	19	6	16
Number of Aircraft Accidents²						
Large Aeroplanes	0	0	2	2	0	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	6	4	7	8	3	2
Agricultural Aeroplanes	3	1	3	2	0	0
Helicopters	8	1	6	5	2	4
Sport Aircraft	8	6	10	22	5	2
Unknown Aircraft	0	0	1	2	0	0
Hang Gliders	4	2	4	6	0	5
Parachutes	1	0	1	4	3	2
Number of Incidents³	1,460	1,376	1,375	1,278	1,242	1,368
Number of Aviation Related Concerns⁴	181	219	208	269	171	214
Number of Hours Flown⁵	226,226	226,621	239,731	293,944	251,111	284,237
Number of Air Transport Flights⁵	89,409	87,761	96,542	110,796	90,095	100,003
Number of Aircraft Movements⁶	227,657	232,694	240,943	247,546	221,072	232,016
Number of Aircraft on the Register⁷	4,579	4,577	4,562	4,587	4,552	4,570
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	9	9	9	9	9
Air Operator – Medium Aeroplanes	16	16	15	15	14	13
Air Operator – Helicopters and Small Aeroplanes	173	168	166	167	168	167
Number of Part 115 Adventure Aviation Operators	33	34	34	32	28	27
Number of Part 137 Agricultural Aircraft Operators	103	98	99	99	99	98
Number of Part 141 Training Organisations	57	57	56	52	53	55
Number of Part 149 Recreation Organisations	7	8	8	8	8	8
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)						
Private Pilot Licence (Class 1 & 2)	3,193	3,108	3,017	2,948	2,816	2,763
Commercial Pilot Licence (Class 2 only)	2,554	2,578	2,571	2,527	2,544	2,515
Commercial Pilot Licence (Class 1)	2,217	2,167	2,150	2,147	2,098	2,107
Airline Transport Pilot Licence (Class 2 only)	993	1,060	1,052	990	994	986
Airline Transport Pilot Licence (Class 1)	1,163	1,121	1,120	1,204	1,223	1,232
Air Traffic Controller Licence (Class 3)	367	375	380	381	381	384
Aircraft Maintenance Engineer Licence (N/A)	2,639	2,647	2,660	2,678	2,699	2,708

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, Paraparaumu, Queenstown, Rotorua, Taupo, Tauranga, Wellington and Woodbourne. Excludes Chatham Islands/Tuuta Airport, Hokitika, Kerikeri/Bay of Islands, Mount Cook (certificated from Nov 2012), 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. RPL data has temporarily been removed from this report, and will be replaced in a future report. 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.

Note about Social Cost

Social cost is a way of measuring safety performance by accounting for the number and severity of casualties, and aircraft damage. The values used to estimate cost to the nation of fatal, serious and minor injuries are obtained from the annual report of the ‘Social Cost of Road Crashes and Injuries’ published by the Ministry of Transport. The Ministry of Transport has directed its agencies to use social cost to permit comparisons between transport modes. The current value of statistical life is \$3.85 million. Estimates of the values of aircraft destroyed or written off are made by the CAA on the basis of market prices in a number of developed aviation nations.

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

