

Aviation Safety Summary

1 January to 31 March 2013



Summer 2013

Introduction to the Quarterly Safety Summary Report

Welcome to the CAA's quarterly safety summary report for the summer of 2013. The report is presented in four sections, providing more detailed information as you progress through the report.

Section 1 - Social Cost and Accidents

Section 1 presents the social cost of accidents that occurred in this quarter. Pages 3-4 can be read as the overall safety outcome. The pages immediately following provide trend information to put this quarter results into context.

Note about Social Cost

Social cost is a way of measuring safety performance by accounting for both the number of accidents and the severity of outcomes. 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 \$3.8 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.

Section 2 - Incidents

Section 2 provides a summary of other safety incidents. Incidents are potentially unsafe events, that did not become accidents. They give 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 (type of operation) and Section 2 presents them by Aircraft Statistics Category (type of 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.

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.

This report is necessarily a summary of the information held by the CAA, for a more detailed analysis of a given area or other safety related information, enquires can be directed to the email below.

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

jack.stanton@caa.govt.nz

Executive Summary - Aviation Safety to 31 Mar 2013

- There were a total of 37 accidents in the January to March quarter. There were 5 fatal, 8 serious, and 4 minor injuries in these accidents. Social cost in this quarter has accrued from accidents and injury incidents in the following safety target groups:
 - Airline Operations - Small Aeroplanes 1 serious injury and 1 aircraft destroyed
 - Airline Operations - Helicopters 1 fatal injury and 1 aircraft destroyed
 - Sport Transport (Part 115) 1 serious injury and 1 minor injury
 - Other Commercial Operations - Aeroplanes 1 aircraft destroyed
 - Private Operations - Aeroplanes 1 aircraft destroyed
 - Private Operations - Helicopters 1 minor injury and 2 aircraft destroyed
 - Private Operations - Sport 2 fatal, 6 serious and 7 minor injuries and 2 aircraft destroyed

Some accidents in the safety target groups above and accidents in other safety target groups were not serious enough to contribute to the social cost outcome this quarter (no injuries or aircraft destroyed), see page 4.

An accident in the 'Other' safety target group involved a foreign registered New Zealand resident small aeroplane in New Zealand and resulted in 2 fatal injuries and 1 aircraft destroyed.

- The Annual Social Cost is now \$76 million (three year average). The social cost has been trending upwards and in the last four years has increased by 43% from \$53M to \$76M, see page 6.
- While the overall accident rate is trending downwards, there are upward trends (when averaged over the last three years) in:
 - ‘Airline Operations - Medium Aeroplanes’
 - ‘Other Commercial Operations - Helicopters’.
- Large Aeroplanes are showing an upward trend in the number of defects reported per flying hour, see page 10.
- Aircraft incident rates are decreasing for Large Aeroplanes, Small Aeroplanes, Helicopters and Agricultural Aeroplanes, see page 11.
- Airspace occurrence rates are decreasing for Large Aeroplanes, see page 12.
- 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 15, 16 and 17.
- The total number of aircraft on the register is increasing, up 1.6% over the same time last year. There were increases in the numbers of helicopters, sport aircraft, medium aeroplanes and small aeroplanes, while agricultural aeroplanes and large aeroplanes decreased slightly, see page 18.

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 January to 31 March 2013. The table also shows the number of accidents in this quarter.

Legend:

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

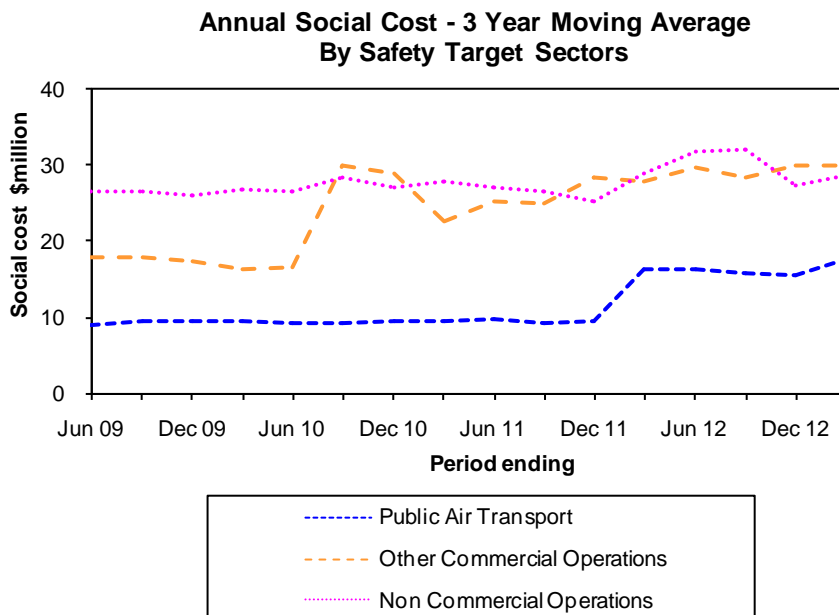
Total Safety Cost \$17.97 m	Public Air Transport \$6.79 m	Airline Operations - Large Aeroplanes	Social Cost	†	+	+	↓	△
		\$0.00 m	0	0	0	0	0	
		Airline Operations - Medium Aeroplanes	Social Cost					
		\$0.00 m	0	0	0	0	0	
		Airline Operations - Small Aeroplanes	Social Cost					
	\$0.71 m	0	1	0	1	1		
	Airline Operations - Helicopters	Social Cost						
	\$5.67 m	1	0	0	1	2		
	Sport Transport	Social Cost						
	\$0.41 m	0	1	1	0	1		
	Other Commercial Operations \$0.17 m	Other Commercial Operations - Aeroplanes	Social Cost					
		\$0.17 m	0	0	0	1	3	
		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	0			
Agricultural Operations - Sport	Social Cost							
\$0.00 m	0	0	0	0	0			
Non Commercial Operations \$11.02 m	Private Operations - Aeroplanes	Social Cost						
	\$0.17 m	0	0	0	1	7		
	Private Operations - Helicopters	Social Cost						
\$0.64 m	0	0	1	2	3			
Private Operations - Sport	Social Cost							
\$10.21 m	2	6	7	2	17			

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 2012 dollars.
- A social cost of \$7.9 million is excluded from the table above because it is classified as being in the 'Other' safety target group (an accident in New Zealand involving a foreign registered New Zealand resident small aeroplane resulted in 2 fatal injuries and 1 aircraft destroyed).

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 April 2009 to 31 March 2013, (including the Sport Safety Target Groups).



Social Cost Analysis

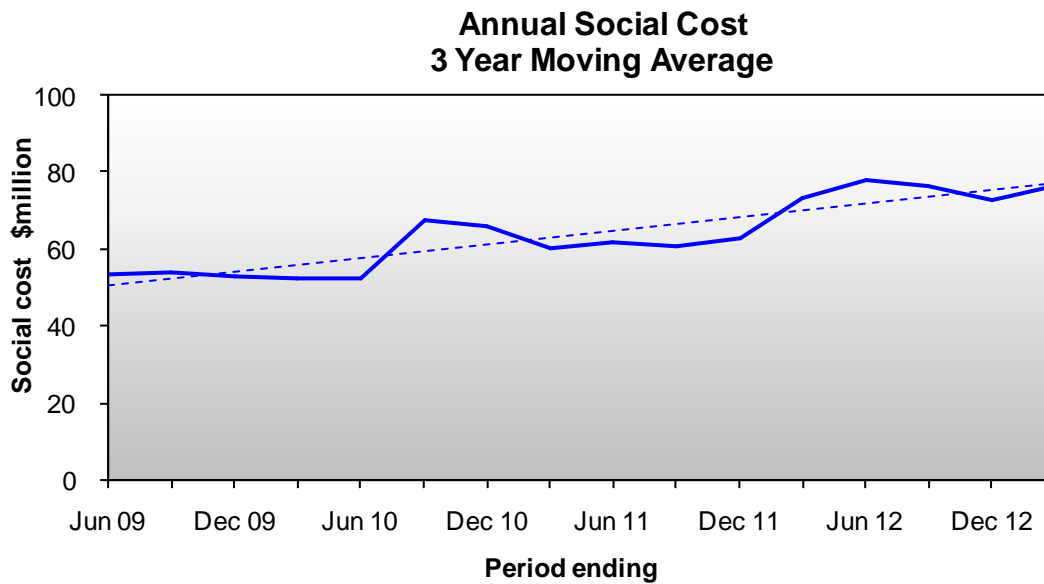
The graph above indicates the social cost contribution of each safety target sector. 'Other Commercial' and 'Non Commercial' operations continue to be the chief contributors of social cost in aviation.

In this quarter the greatest contribution to social cost with Public Air Transport Sector came from a single fatal accident within the Airline Operations - Helicopters Sector (\$5.67 million) when a Robinson R66 crash killing the sole crew member. An additional airline helicopter accident caused no injuries or significant social cost.

The chief contributor to cost within the 'Non Commercial' sector is the 'Private Operations – Sport' safety target group. 1 crash of a Bantam microlight with 2 fatalities contributed over half the cost with most of the balance coming from serious injuries in glider and hang/paraglider accidents. While their social cost contribution was moderate in this quarter 'Private – Aeroplanes' and 'Private – Helicopters' safety target groups are showing an increase in number of accidents over the same period last year.

The combined 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 \$53M to \$76M between 2009 and this first quarter of 2013.

While the increase over the last three years has been largely driven by two significant accidents in the 'Public Air Transport' and 'Other Commercial' sectors, there have been further increases in the 'Other Commercial' sector through 2012 and into 2013. The 'Other Commercial' sector has now narrowly overtaken 'Non-Commercial' as the leading contributor to annual social cost (3 year average).



Accidents by Safety Target Group

Quarterly Comparison

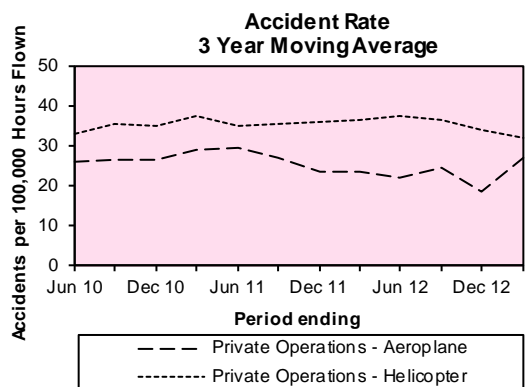
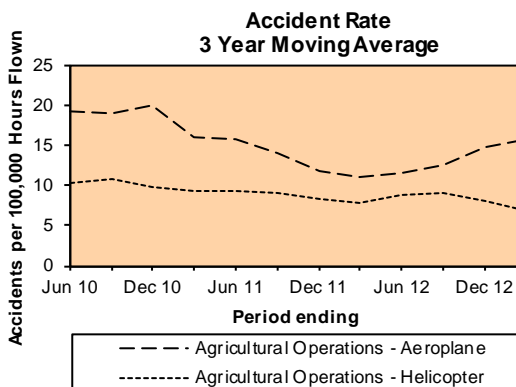
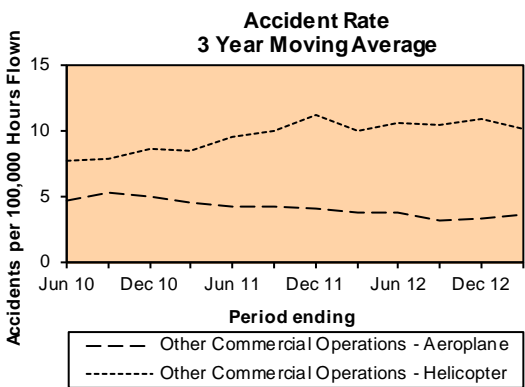
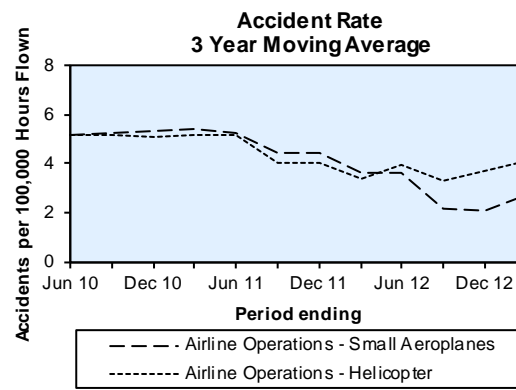
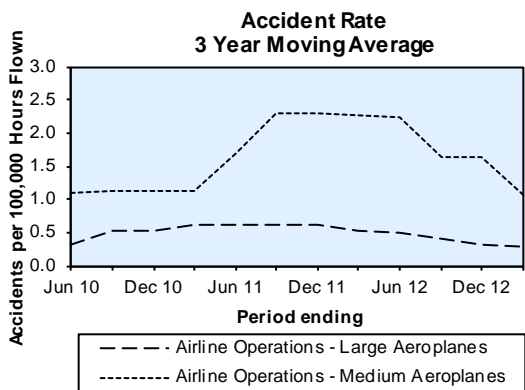
Safety Target Group	1 Jan to 31 Mar 2013	Same Quarter Last Year
Airline Operations - Large Aeroplanes	0	0
Airline Operations - Medium Aeroplanes	0	0
Airline Operations - Small Aeroplanes	1	0
Airline Operations - Helicopter	2	0
Sport Transport	1	3
Other Commercial Operations - Aeroplane	3	0
Other Commercial Operations - Helicopter	0	1
Agricultural Operations - Aeroplane	2	0
Agricultural Operations - Helicopter	0	1
Agricultural Operations - Sport Aircraft	0	0
Private Operations - Aeroplane	7	2
Private Operations - Helicopter	3	0
Private Operations - Sport	17	15
Other	1	1
Total	37	23

Comment

Overall accident numbers have increased by 61% in comparison to the summer quarter last year, note the increases in the 'Airline Operations - Helicopter', 'Other Commercial Operations - Aeroplane', 'Agricultural Operations - Aeroplane', 'Private Operations - Aeroplane', 'Private Operations - Helicopter' and 'Private Operations - Sport' safety target groups.

Trends

The following graphs show the aircraft accident rates (three year moving average) for the three-year period 1 April 2010 to 31 March 2013 (excluding the Sport Safety Target Groups, for which no accurate activity information is available).



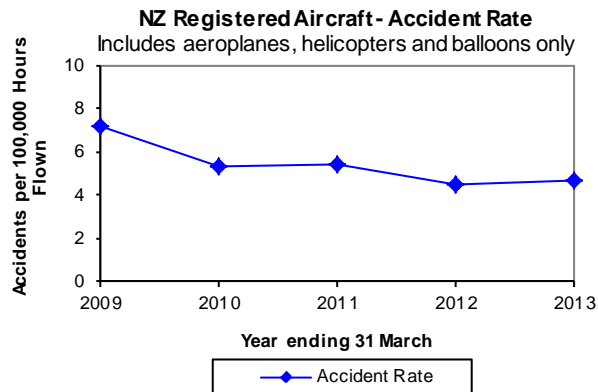
No accident rate information available for Sport Transport or Private Operations - Sport.

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 April 2008 to 31 March 2013.



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 January to 31 March 2013, these accidents contributed to the social cost for the quarter.

Airline Operations - Small Aeroplanes

- A Britten-Norman Islander on a passenger transport A to B flight encountered wind shear on short final and suffered a heavy landing. Damage was caused to landing gear, brakes, and upper and lower wing skins. One passenger suffered serious injuries. The aircraft was substantially damaged and written off.

Airline Operations - Helicopter

- A Robinson R66 on a ferry/positioning flight was reported missing by the operator. Wreckage was found in steep bush covered terrain with the pilot deceased nearby.

Private Operations - Helicopter

- A Robinson R22 Beta was flying up a valley and suddenly lost altitude due to a suspected downdraft. The helicopter hit the ground and rolled 6 times, breaking off the tail. The pilot suffered minor injuries and the aircraft was destroyed.

Sport Transport

- The tandem parachute passenger dislocated their shoulder (serious injury) when releasing the harness after exit from the aircraft. The passenger had not declared a previous dislocation of their shoulder.

Summary of Injury Accidents continues on next page

Summary of Injury Accidents continued

Private Operations - Sport

- The class 2 microlight was reported overdue from a private hunting flight. The wreckage was found the following morning with both occupants deceased.
- As the pilot turned into wind, the front left corner collapsed causing the paraglider to fall approximately 50 feet and crash into scrub. The pilot suffered minor injuries and the passenger serious injuries.
- The class 1 microlight bounced and overturned when landing. The pilot suffered serious injuries. The aircraft was substantially damaged.
- The glider landed heavily following a poor winch launch. The pilot raised the nose to clear a fence sited late, but then checked forward, landing heavily before a flare could be commenced. The pilot suffered serious injuries. The aircraft was substantially damaged.
- The hang glider pilot on a solo training flight landed slightly cross wind with only 3/4 flare, resulting in a firm landing that caused serious injuries.
- The paragliding wing experienced several tip collapses while launching in gusty conditions. When the pilot was approximately 1.5 m above the ground there was a larger left hand collapse, pulling the pilot to the ground and causing serious injuries.
- A student paraglider pilot was launching on a solo flight and jumped into the air. This caused the paraglider to lose pressure and swing causing the student to hit the ground sustaining serious injuries.
- The class 2 microlight bounced while conducting a three-point landing, became airborne, and landed heavily. The main gear collapsed, the propeller struck the ground, and the passenger received minor injuries. The aircraft was substantially damaged.
- A parachutist bumped into the cameraman on landing. The cameraman sustained minor injuries.

Other

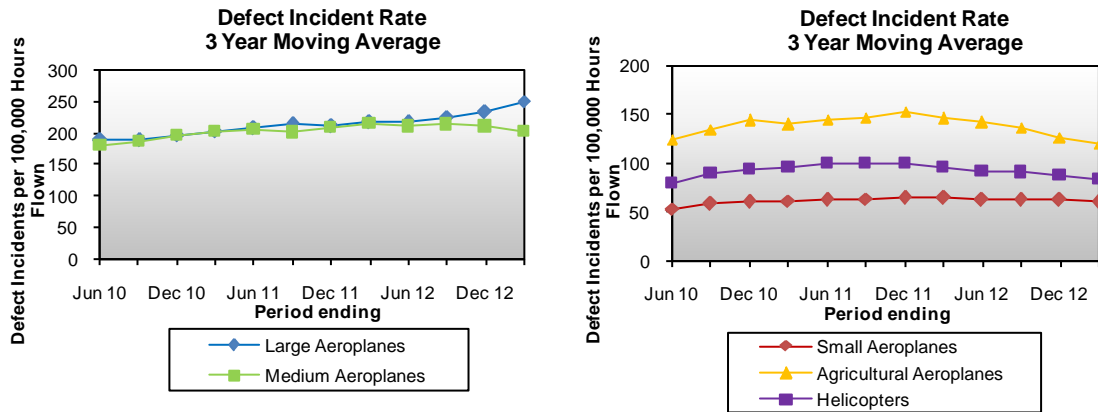
- A foreign registered (New Zealand resident) small aeroplane on a private flight declared a mayday due to engine failure. Shortly after, the aircraft disappeared from radar. A Rescue helicopter flew over the area and the pilot sighted debris and an oil slick. The two people on board were killed.

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 April 2010 to 31 March 2013 (excluding the Sport Aircraft statistics category).



Quarterly Comparison

Number of Reported Defect Incidents

Aircraft Statistics Category	1 Jan to 31 Mar 2013	Same Quarter Last Year
◆ Large Aeroplanes	315	200
■ Medium Aeroplanes	18	34
◆ Small Aeroplanes	45	59
▲ Agricultural Aeroplanes	8	18
■ Helicopters	31	35
Sport Aircraft	4	12
Unknown Aircraft	5	12
Total	426	370

Severity of Reported Defect Incidents

Severity	1 Jan to 31 Mar 2013	Same Quarter Last Year
Critical	1	2
Major	69	82
Minor	356	286

The critical defect incident reported was in the ‘Small Aeroplanes’ statistics category. Event relates to a failure of the nose landing gear actuator on a Diamond DA42, causing uncommand yaw on climbout. Investigation and liaison with national authorities led to EASA AD issued 18 June 2013 CAA occurrence 13/1277 refers.

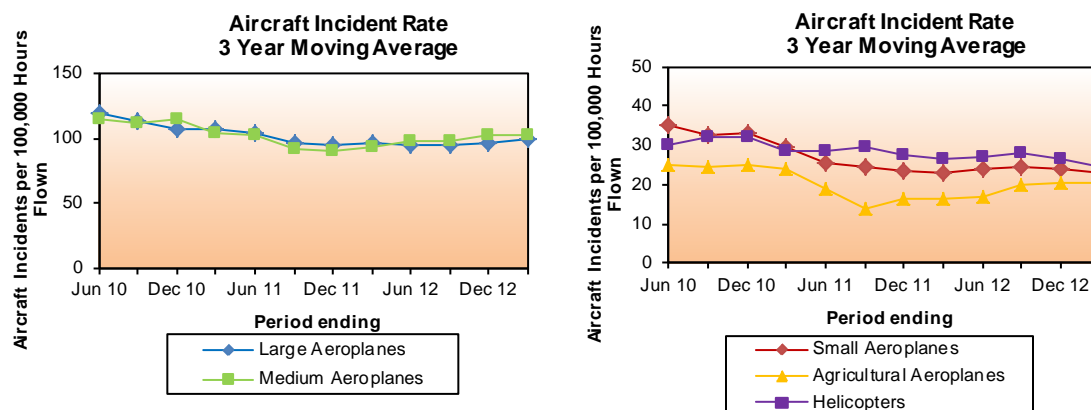
Rate Monitoring

Defect incident rate monitoring of individual types of large and medium air transport aeroplanes has been estimated for the period ended 30 June 2012, due to the non-return of statistics for some of these aircraft. Despite this, large aeroplanes 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.

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 April 2010 to 31 March 2013 (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 Jan to 31 Mar 2013	Same Quarter Last Year
Large Aeroplanes	112	73
Medium Aeroplanes	22	21
Small Aeroplanes	12	22
Agricultural Aeroplanes	2	3
Helicopters	3	11
Sport Aircraft	8	11
Unknown Aircraft	33	26
Total	192	167

Severity of Reported Aircraft Incidents

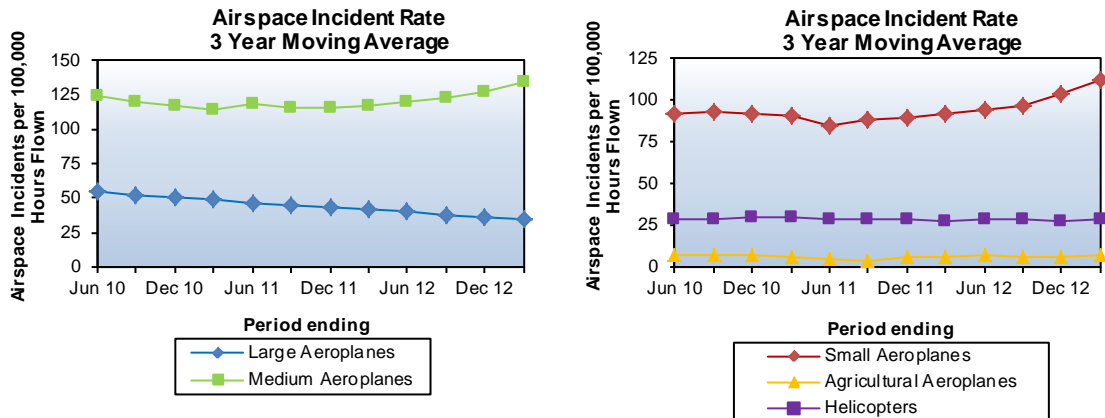
Severity	1 Jan to 31 Mar 2013	Same Quarter Last Year
Critical	4	0
Major	29	26
Minor	159	141

Of the four critical aircraft incidents reported in the 1 January to 31 March 2013 quarter, one was in the 'Small Aeroplanes' statistics category, one was in the 'Helicopters' statistics category, and two were in the 'Unknown Aircraft' statistics category. (paraglider incidents) The aircraft incident relates to a solo training flight abnormal approach to Tauranga (13/1436) and the helicopter incident was a handling event during dual training resulting in a mast bump(13/1663).

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 April 2010 to 31 March 2013 (excluding the Sport Aircraft statistics category).



Quarterly Comparison

Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Jan to 31 Mar 2013	Same Quarter Last Year
◆ Large Aeroplanes	37	29
■ Medium Aeroplanes	38	27
◆ Small Aeroplanes	159	110
▲ Agricultural Aeroplanes	3	0
■ Helicopters	26	17
Sport Aircraft	38	28
Unknown Aircraft	121	138
Total	422	349

Severity of Reported Airspace Incidents

Severity	1 Jan to 31 Mar 2013	Same Quarter Last Year
Critical	3	3
Major	51	49
Minor	368	297

Of the three critical airspace incidents reported in the 1 January to 31 March 2013 quarter, one was in the 'Medium Aeroplanes' statistics category, one was in the 'Small Aeroplanes' statistics category, and one was in the 'Sport Aircraft' statistics category.

Severity of Reported Airspace Incidents continues on next page

Severity of Reported Airspace Incidents continued

A medium aeroplane turning crosswind received a radio call from a microlight, reporting the microlight's position. This was the current position of the aeroplane, so the turn was immediately stopped. Shortly afterwards an RA was received indicating a separation of 50 feet and requiring a climb of at least 2,000 feet/min. This was commenced and power increased until clear of the conflict.

A small aeroplane failed to follow instructions for initial climb and subsequent manoeuvring, and came into close proximity to another small aeroplane and descending towards it. The aeroplane was instructed to go-around to avoid a collision.

While carrying out an overhead rejoin, the sport aircraft (class 2 microlight) cut in front of four other aircraft established in the circuit causing another sport aircraft (class 2 microlight) to take avoiding action.

Attributability

Of the 422 reported airspace incidents in the 1 January to 31 March 2013 quarter, 16% are Air Traffic Service (ATS) attributable, 74% are pilot attributable, 1% are ATS and pilot attributable, and 9% are unknown attributable. (Note that the percentages may not sum exactly to 100% due to rounding.)

Since April 2010 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 31 March 2013.

There were two 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 and one having a long-term constant trend.

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

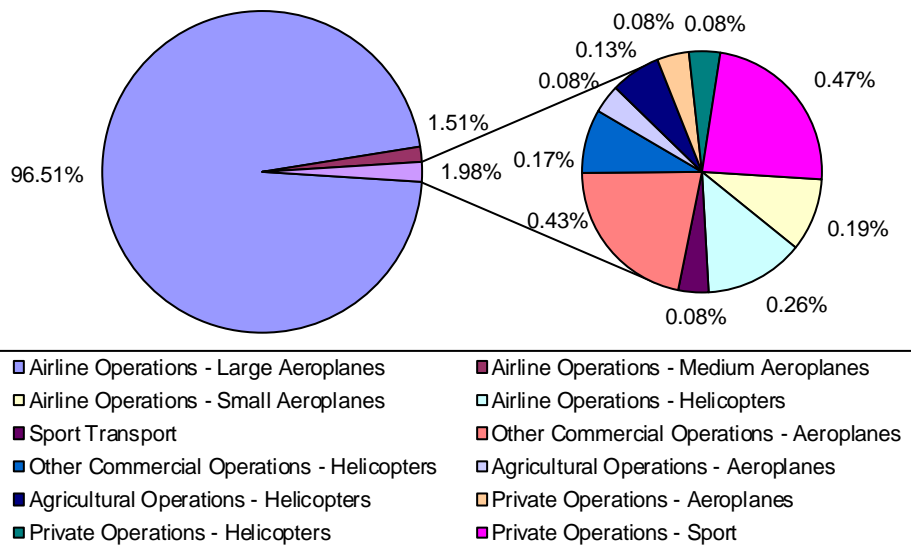
20 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), six having long-term upward trends, six having long-term constant trends and eight having long-term downward trends.

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



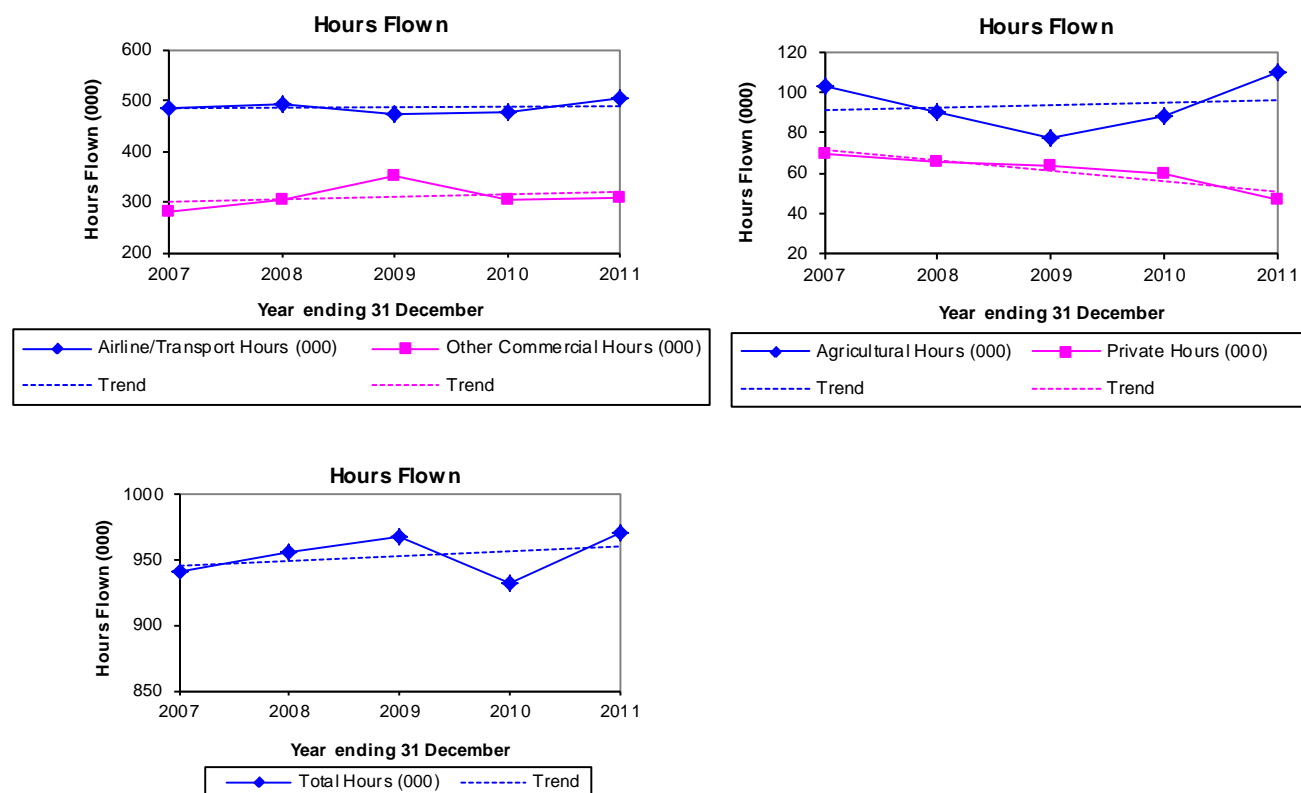
Safety Target Group	Percentage Sector Seat Hours
Airline Operations - Large Aeroplanes	96.51
Airline Operations - Medium Aeroplanes	1.51
Airline Operations - Small Aeroplanes	0.19
Airline Operations - Helicopters	0.26
Sport Transport	0.08
Other Commercial Operations - Aeroplanes	0.43
Other Commercial Operations - Helicopters	0.17
Agricultural Operations - Aeroplanes	0.08
Agricultural Operations - Helicopters	0.13
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.08
Private Operations - Helicopters	0.08
Private Operations - Sport	0.47

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, 3rd and 4th quarters of 2012 and the 1st quarter of 2013 are not available yet due to later returns from operators.



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

Quarterly Comparison

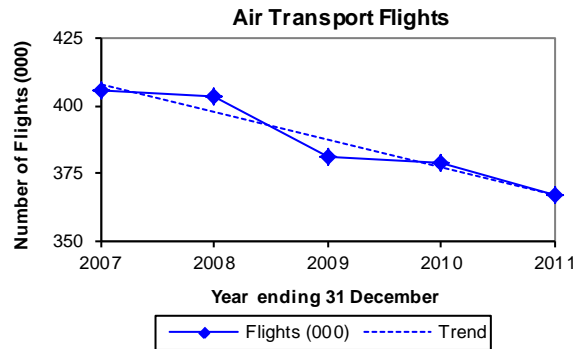
Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2010	2011	Number	Percentage
Airline/Transport Hours	130,854	134,749	+ 3,895	+ 3.0
Adventure Aviation Hours	0	3	+ 3	-
Other Commercial Hours	69,826	71,410	+ 1,584	+ 2.3
Agricultural Hours	26,748	26,047	- 700	- 2.6
Private Hours	16,012	13,226	- 2,786	- 17.4
Total Hours	243,440	245,436	+ 1,996	+ 0.8

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 which exaggerate the decrease but nonetheless the number of air transport flights is declining. See table below.

Quarterly Comparison

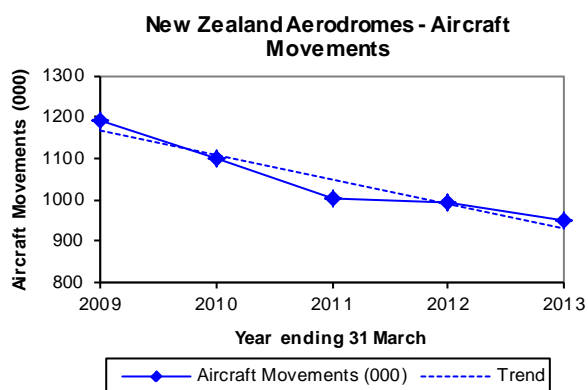
Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2010	2011	Number	Percentage
Air Transport Flights	100,227	93,573	- 6,654	- 6.6

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 April 2008 to 31 March 2013.



Note that the scale on this graph does not start at zero, which exaggerates the decrease but nonetheless the number of movements reported at certificated aerodromes is declining. See table below.

Quarterly Comparison

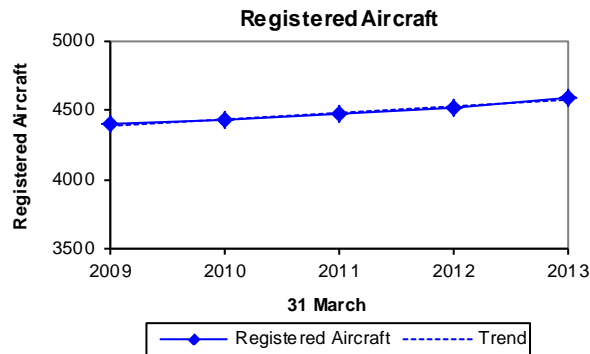
Activity	1 Jan to 31 Mar	1 Jan to 31 Mar	Change	
	2012	2013	Number	Percentage
Aircraft Movements	252,533	244,947	- 7,586	- 3.0

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 and from Nov 2012), 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 31 March for each of the five-years 2009 to 2013.



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

Quarterly Comparison

Aircraft Statistics Category	31 March	31 March	Change	
	2012	2013	Number	Percentage
Large Aeroplanes	128	126	- 2	- 1.6
Medium Aeroplanes	84	85	+ 1	+ 1.2
Small Aeroplanes	1,517	1,529	+ 12	+ 0.8
Agricultural Aeroplanes	109	106	- 3	- 2.8
Helicopters	771	790	+ 19	+ 2.5
Sport Aircraft	1,907	1,951	+ 44	+ 2.3
Total	4,516	4,587	+ 71	+ 1.6

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

Section 4 - Quarterly Statistics

Quarter	2010/2	2010/3	2010/4	2011/1	2011/2	2011/3
Social Cost \$ million¹	2.00	50.17	10.05	13.40	22.12	1.77
Number of Fatal Accidents²	0	3	1	2	4	0
Number of Fatal Injuries²	0	12	2	2	5	0
Number of Serious + Minor Injuries²	10	6	7	11	6	3
Number of Aircraft Accidents²						
Large Aeroplanes	0	2	0	1	0	0
Medium Aeroplanes	0	0	0	0	1	1
Small Aeroplanes	9	6	4	4	4	4
Agricultural Aeroplanes	3	0	1	3	3	0
Helicopters	3	4	3	5	6	4
Sport Aircraft	6	5	13	17	5	5
Unknown Aircraft	0	0	0	1	1	1
Hang Gliders	5	2	2	6	3	0
Parachutes	1	1	2	1	3	2
Number of Incidents³	1,154	1,166	1,173	1,230	1,239	1,229
Number of Aviation Related Concerns⁴	153	154	203	245	155	271
Number of Hours Flown⁵	221,686	211,763	243,440	272,126	224,740	228,242
Number of Air Transport Flights⁵	86,015	84,630	100,227	105,782	82,062	85,803
Number of Aircraft Movements⁶	252,639	240,033	256,474	256,398	242,338	256,117
Number of Aircraft on the Register⁷	4,440	4,438	4,442	4,480	4,490	4,495
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	10	10	10	9	9	9
Air Operator – Medium Aeroplanes	15	15	16	15	15	15
Air Operator – Helicopters and Small Aeroplanes	174	175	175	173	174	174
Number of Part 115 Adventure Aviation Operators	0	0	0	0	0	0
Number of Part 137 Agricultural Aircraft Operators	108	106	108	107	104	106
Number of Part 141 Training Organisations	58	57	56	55	54	55
Number of Part 149 Recreation Organisations	9	9	8	9	9	9
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)	132	128	146	162	180	189
Private Pilot Licence (Class 1 & 2)	3,757	3,750	3,655	3,611	3,603	3,577
Commercial Pilot Licence (Class 2 only)	2,066	2,027	2,083	2,131	2,229	2,236
Commercial Pilot Licence (Class 1)	2,344	2,397	2,385	2,372	2,339	2,380
Airline Transport Pilot Licence (Class 2 only)	913	986	981	928	909	965
Airline Transport Pilot Licence (Class 1)	1,134	1,075	1,096	1,155	1,188	1,118
Air Traffic Controller Licence (Class 3)	363	358	362	363	361	361
Aircraft Maintenance Engineer Licence (N/A)	2,463	2,479	2,496	2,511	2,519	2,540

¹ All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2012 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, 2012/3, 2012/4 and 2013/1.

Quarter	2011/4	2012/1	2012/2	2012/3	2012/4	2013/1
Social Cost \$ million¹	21.88	58.11	15.63	1.06	15.00	25.87
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	8	3	7	3	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	1	4	1	1	3	4
Parachutes	2	4	3	2	3	3
Number of Incidents³	1,119	1,297	1,183	1,268	1,318	1,475
Number of Aviation Related Concerns⁴	229	219	192	220	154	206
Number of Hours Flown⁵	245,436	283,412	257,766	253,946	272,075	290,276
Number of Air Transport Flights⁵	93,573	112,555	92,685	94,292	103,639	113,290
Number of Aircraft Movements⁶	242,744	252,533	235,050	231,371	240,384	244,947
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)	205	222	221	224	240	248
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

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, Kerikeri/Bay of Islands, Mount Cook (certificated from Nov 2012), 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

