CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Aviation Safety Summary

1 October to 31 December 2013

Spring 2013

Cover photo courtesy of Bob Jelley, CAA Aviation Safety Advisor

Introduction to the Quarterly Safety Summary Report

Welcome to the CAA's quarterly safety summary report for the spring quarter of 2013. This report is designed to provide a summary of accidents, incident and safety occurrences that were reported to CAA in the period 1 Oct to 31 Dec 2013. Safety occurrence reporting reached a record number in 2013, with more than 6600 occurrences reported.

This report also provides a summary of NZ aviation activity. Activity within aviation sectors is expressed in flying hours and flights. The aviation activity data is used to underpin the accident data to provide accident rates for each sector. Accident rates provide a better measure of the comparative safety performance of different sectors and the NZ aviation system as a whole.

This activity and rate information relies upon on the return of aircraft operating statistics which are required by rule part 12.151. Unfortunately some sectors are providing less than the expected number of returns for aircraft registered in that sector. To compensate the CAA has an estimation process but it depends upon a series of assumptions and this is hampering the understanding of safety risk in those sectors. For reference the requirements of rule part 12.151 are restated below;

Commercial Operations

Report	Period Covered	Due Date
1st Quarter	1 Jan through 31 Mar	**1 May**
2nd Quarter	1 Apr through 30 Jun	**1 Aug**
3rd Quarter	1 Jul through 30 Sep	**1 Nov**
4th Quarter	1 Oct through 31 Dec	**1 Feb**

Private Operations

Report	Period Covered	Due Date
Annual	1 Jan through 31 Dec	**15 Feb**

Rule part 12.151 states 'The reports required by paragraph (a) must be submitted on form CAA605; or by a means acceptable to the Director.

Electronic copies of the form CAA605 can be found on the website under 'Aircraft Forms, and can be emailed to stats@caa.govt.nz

However the 'means acceptable to the Director' can include any reasonably coherent table or spreadsheet that identifies the aircraft, the period and the type of flying. Several industry associations have produced MS excel spreadsheets for their members and this approach is entirely acceptable. The headings on form CAA605 form can be used for guidance or please contact the undersigned.

Safe flying,

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

jack.stanton@caa.govt.nz

Summary

Executive Summary - Aviation Safety to 31 Dec 2013

- There were a total of 33 accidents in the October to December quarter. There were 2 fatalities, 6 serious, and 17 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 – Large Aeroplanes — 2 serious and 5 minor injuries
  - Airline Operations - Helicopters — 1 Fatality, 1serious injury and 5 minor injuries , 2 aircraft destroyed.
  - Commercial – Agricultural Helicopters — 1 Fatality, 1 minor injury and 2 aircraft destroyed
  - Private Operations – Helicopters — 1 serious and 1 minor injury
  - Private operations – Sport aircraft — 2 serious and 3 minor injuries

  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), see page 4.

- The Annual Social Cost is now $61 million (three year average). The social cost has continued trending upwards and in the last four years has increased by 16% from $53M to $61M, see page 5.

- The overall accident rate has increased sharply. After trending downward through 2010,2011,2012 and averaging 4.8/100K hours, in 2013 it has increased to 6.1 accidents per/100k flying hours, see page 7.

- The increase in overall accident rate is being driven by a sharp increase in the airline helicopter accident rate and also private aeroplane and helicopter operations, see page 6.

- Defect incident rate for large aircraft are increasing in contrast to all other sectors where defects rates per flying hour are decreasing see page 8.

- Airspace occurrence rates are increasing for medium aeroplanes and small aeroplanes , see pages 10 and 11.

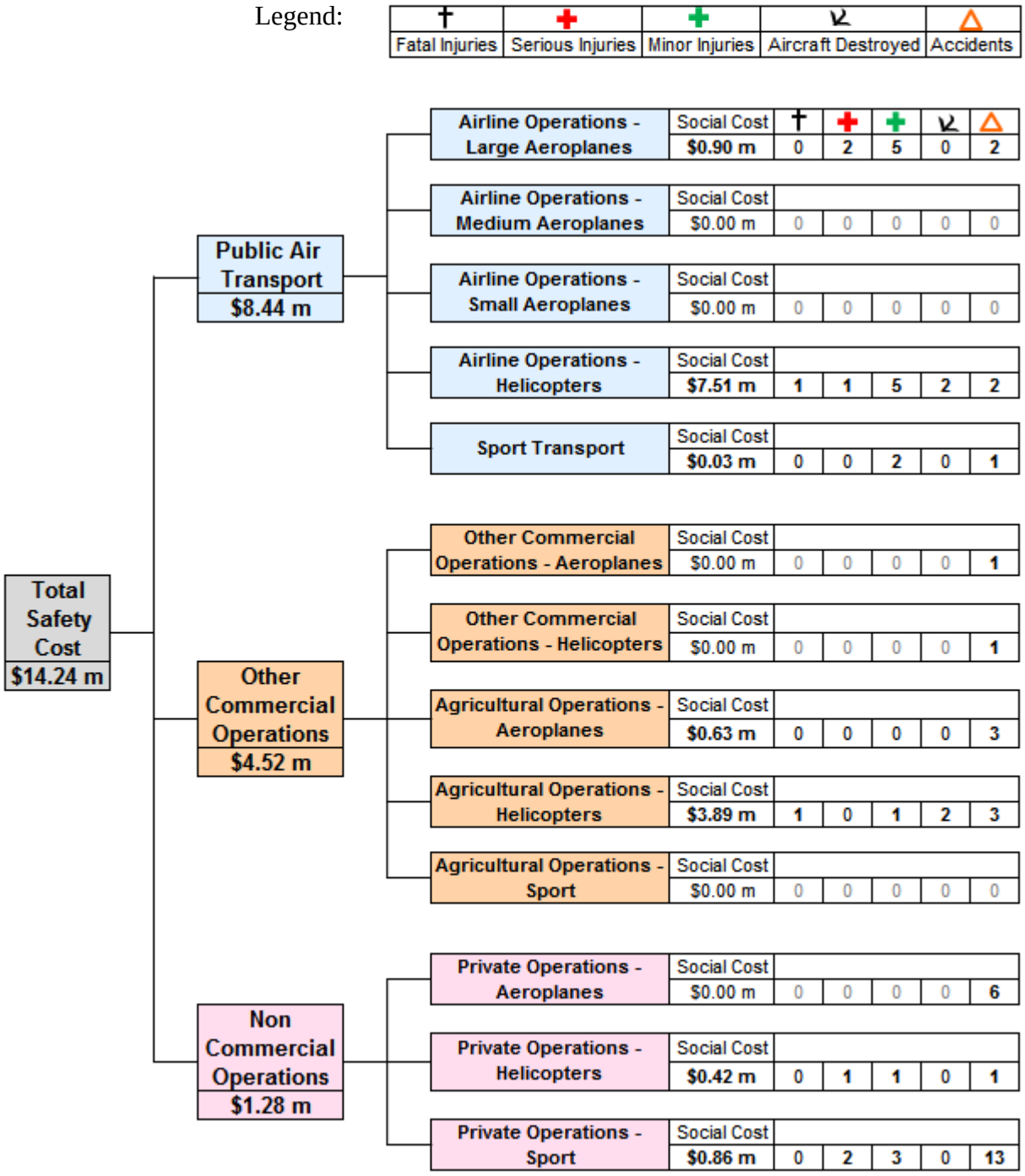
- The total number of hours flown has increased for the third year in a row and the total for 2013 is now 11.25% higher than 2010. The increase is largely driven by increasing number of air transport flights which are up 19.3% from a slump in 2011. However the total number movements from certificated aerodromes is continuing to decrease, see pages 14, 15, and 16.

- The total number of aircraft on the register decreased slightly down 0.4 % from the same time last year. There were increases in the numbers of large aeroplanes (+3) and helicopters +10, while the numbers of all other aircraft declined, see page 17.

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 October to 31 December 2013. The table also shows the number of accidents in this quarter.



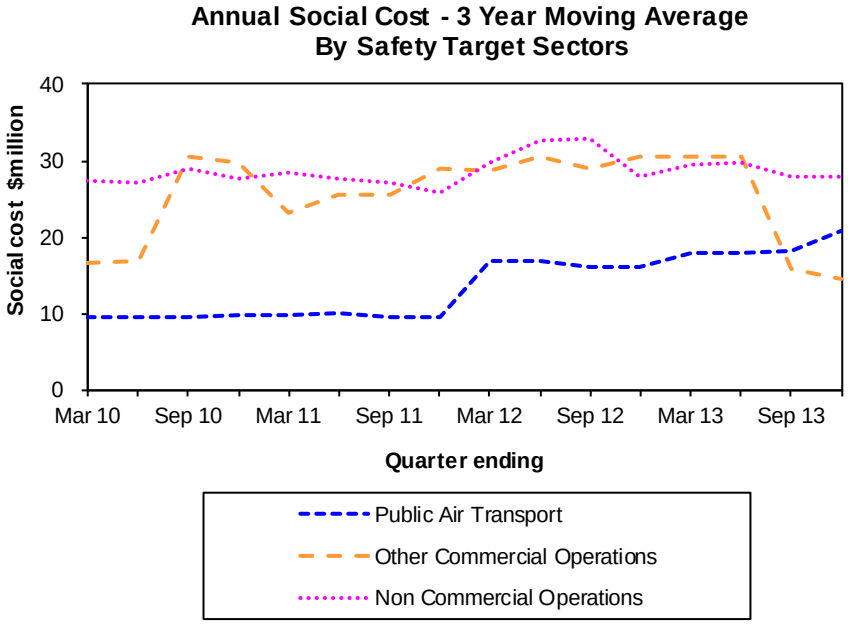
Notes:

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.

Section 1

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 January 2010 to 31 December 2013, (including the Sport Safety Target Groups).



Social Cost Analysis

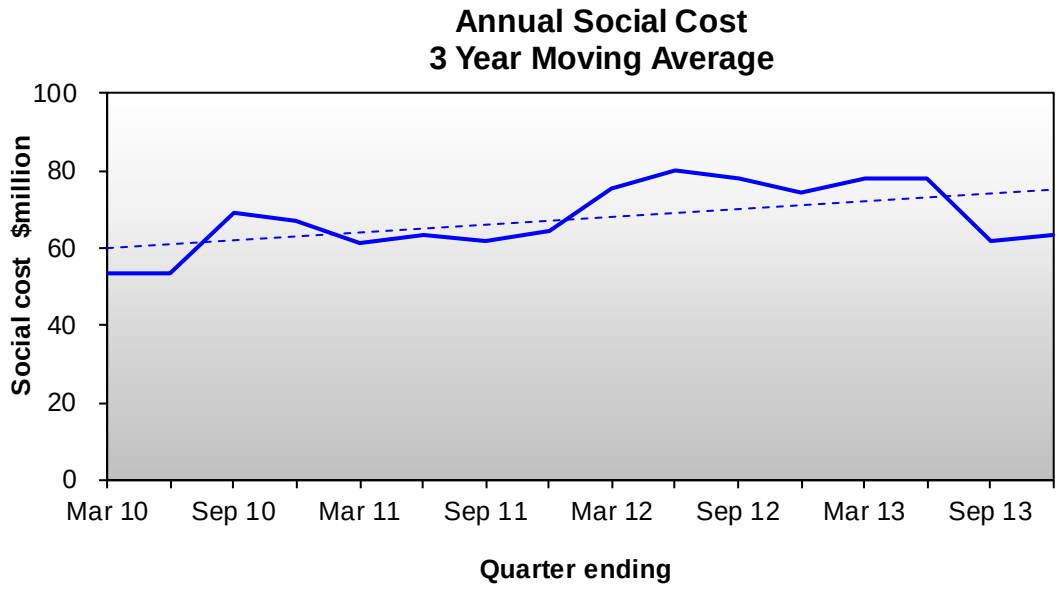
The graph above indicates the social cost contribution of each safety target sector averaged over the previous three years. The contribution from the 'Other Commercial' sector dropped significantly three years after the accident at Fox Glacier and has continued to decline in this 4th quarter of 2013.

The combined annual social cost of all three sectors is shown in the graph below and has increased by 16% from $53M to $61M between 2009 and 2013.

The biggest contributor to social cost in the 4th quarter of 2013 was the 'Airline Helicopter' sector with 2 accidents, 1 crew fatality, 6 injuries and 2 aircraft destroyed. Part 115 sport transport suffered only 2 minor injuries.

The chief contributor within the Other Commercial sector was 'Agricultural Helicopters with 1 fatality and 2 aircraft destroyed . Although the 'Other Commercial – Helicopter' sector experienced no accidents in this quarter, their 3yr average accident rate continues to exceed the accident rate of 'Agricultural - Helicopter'; 9.1 vs 7.9 accidents per 100,000 flying hours.

The chief contributor of the cost within the 'Non Commercial' sector is the 'Private Operations - Sport Aircraft' safety target group. Meanwhile both the Private Operations – Aeroplanes and Private Operations - Helicopters groups have shown a marked increase in accidents and accident rates this quarter.



Accidents by Safety Target Group

Quarterly Comparison

Safety Target Group	1 Oct to 31 Dec 2013	Same Quarter Last Year
Airline Operations - Large Aeroplanes	2	0
Airline Operations - Medium Aeroplanes	0	0
Airline Operations - Small Aeroplanes	**0**	0
Airline Operations - Helicopter	**2**	1
Sport Transport	**1**	**1**
Other Commercial Operations - Aeroplane	**1**	2
Other Commercial Operations - Helicopter	1	**1**
Agricultural Operations - Aeroplane	**3**	4
Agricultural Operations - Helicopter	3	**1**
Agricultural Operations - Sport Aircraft	0	0
Private Operations - Aeroplane	**6**	**0**
Private Operations - Helicopter	**1**	2
Private Operations - Sport	**13**	**12**
Other	**1**	**0**
Total	**34**	**24**

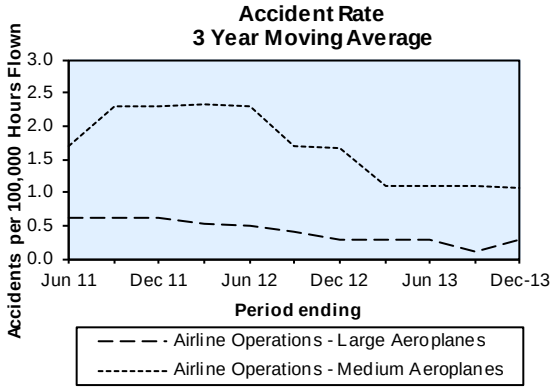
Comment

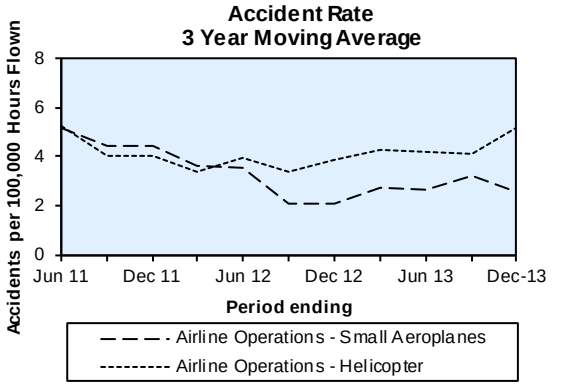
Overall accident numbers in the spring quarter have increased 41% in comparison to the 2012 spring quarter. Biggest increase is within private aeroplanes group but agricultural helicopters and airline helicopters and large aeroplanes accidents have contributed to the increase.

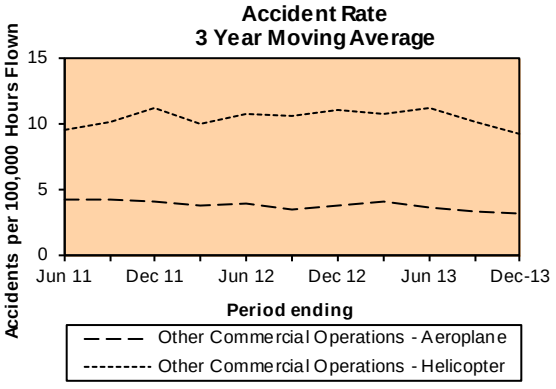
Section 1

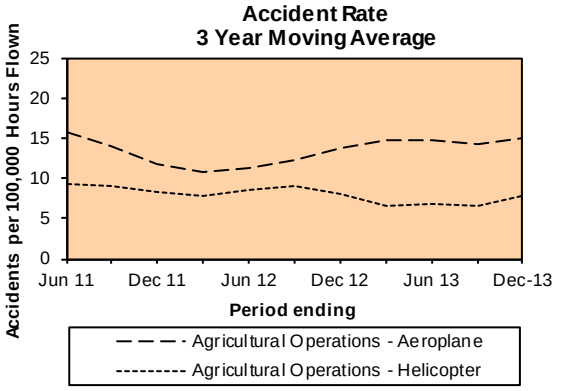
Trends

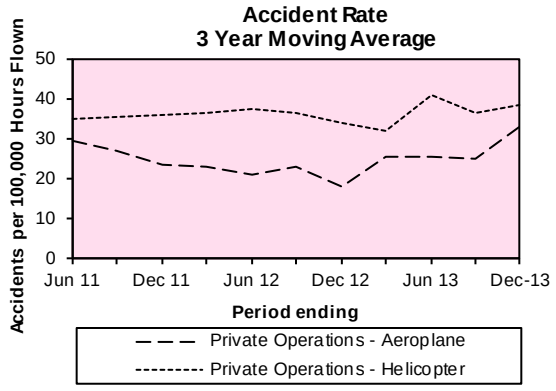
The following graphs show the aircraft accident rates (three year moving average) for the three-year period 1 January 2011 to 31 December 2013 (excluding the Sport Safety Target Groups, for which no accurate activity information is available).











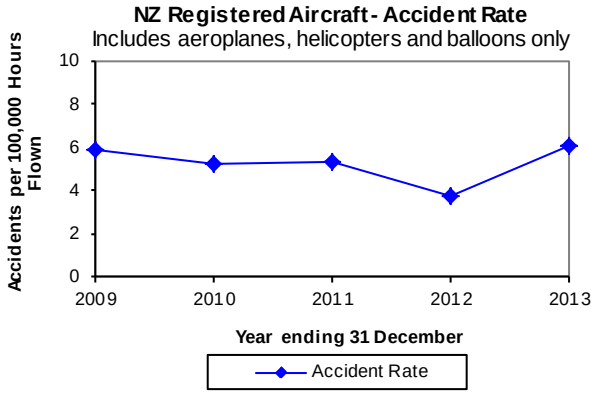
No accident rate information available for Sport Transport or Private Operations - Sport.

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 January 2009 to 31 December 2013. Accident rate has risen to 6.1, which is above the average of approximately 5.4 over the previous 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 October to 31 December 2013. Classified according to highest level of injury sustained. Not all were CAA investigated, so text may be condensed from original accident notification.

Fatal Accidents

Airline Operations - Helicopters

- Hu369 reported at Greenstone Valley tracking to Dumpling Hut to uplift one person, but did not arrive. A company helicopter found the wreckage east of Lake Ross. The wreckage field was described as compact, 10-15 metres across with evidence of fire. Fatalities 1 crew.

Agricultural Operations - Helicopter

- Robinson R22 crashed and caught fire south west of Cheviot, Fatalities 1 crew.

Serious Injury Accidents

Airline Operations – Large Aeroplanes

- Aircraft had just reached FL370 when severe turbulence was encountered. Four injuries to passengers and one to a cabin crew member, taken to hospital. Serious injuries 1 passenger, minor injuries 1 crew 3 passengers.
- During severe clear air turbulence a seated passenger received severe burns from contents of coffee pot. A second passenger received burns to right arm. Both doused in water, only one ice pack, so provided to severe case and soft-drink cans used as improvised cold packs for other passenger. Serious injuires 1 passenger, minor injuires 1 passenger.

Airline Operations - Helicopters

- Helicopter attempting to land on a snow field, struck main rotor of a previously landed helicopter while conducting a go-around. Serious injuries 1 crew, minor injuries 5 passengers.

Private Operations - Sport

- Guimbal Colibri undertaking flight training, nose yawed past centre and then got away from the student in control. The helicopter yawed left and rotated twice before instructor took control and settled the helicopter in a hard landing from approximately 8ft. Helicopter rolled onto its left side, coming to rest at a 45 degree angle. Serious injuries 1 passenger(student).
- Paraglider collapsed due to strong winds and turbulence, with the pilot unable to re-inflate the canopy before impacting the mountain slope. The pilot suffered spinal injuries. Serious injuries 1 crew.
- Class 3 paraglider, pilot braked too hard coming in to land, spun and crashed. Serious injuries 1 crew.

Minor Injury Accidents

Agricultural Operations - Helicopter

- Bell 206B with loaded bucket had an un-commanded release. As the bucket fell away, one of the broken pneumatic control lines flicked up and struck both the helicopter and the pilot's eye. A precautionary landing made and the wind screen was noted to be cracked. Pilot sustained a small cut to his right eye. Minor injuries 1 crew.

Other Commercial- Sport aircraft

- Tecnam P2008 believed to have stalled climbing through 150-200ft. The right wing dropped, with the aircraft turning approximately 90 from the runway heading before striking the ground and sliding into an unoccupied C172 parked on the pickets 50 metres from the club house. Minor injuries 1 crew.

Private Operations - Sport

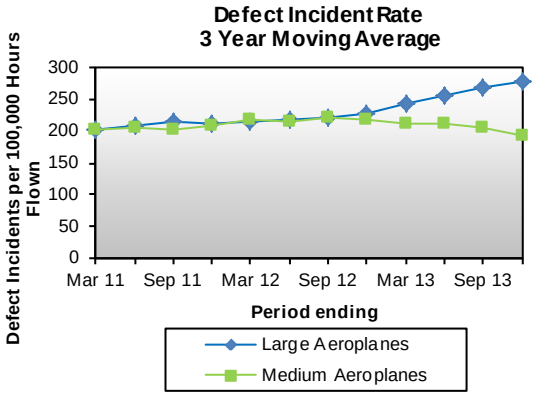
- Fly Synthesis Storch carrying out forced landing practice towards a farm paddock. While on the go-around the engine coughed then stopped. With the crew unable to restart the engine a decision was made to overfly the paddock and turn back into wind. Struck ground while completing turn and came to rest inverted. Minor injuries 2 crew.
- Autoflight Dominator II Gyrocopter experienced rotor flap during take-off on runway 06 while rolling over camber of sealed runway 10/28. The gyrocopter overturned, causing substantial damage, spilling fuel, and causing minor injuries to the pilot. Minor injuries 1 crew.

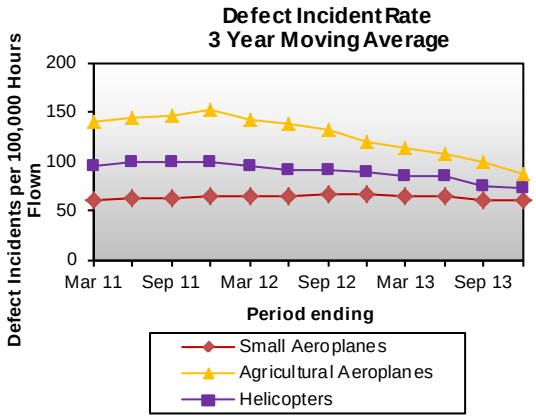
Section 2 - Incidents

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 January 2011 to 31 December 2013 (excluding the Sport Aircraft statistics category).





Quarterly Comparison

Number of Reported Defect Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2013	Same Quarter Last Year
Large Aeroplanes	299	245
Medium Aeroplanes	22	22
Small Aeroplanes	40	49
Agricultural Aeroplanes	5	7
Helicopters	38	34
Sport Aircraft	7	4
Unknown Aircraft	20	7
Total	**431**	**368**

Severity of Reported Defect Incidents

Severity	1 Oct to 31 Dec 2013	Same Quarter Last Year
Critical	0	2
Major	61	52
Minor	370	314

Rate Monitoring

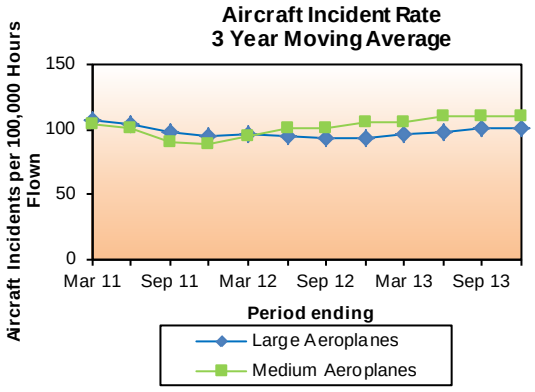
Large aeroplanes are continuing to show an upward trend in the number of defects reported per flying hour. The reasons behind the increased rate are not well understood but the source of the increase has been identified. Medium and large aeroplane categories include all aircraft with more than 10 passenger seats operated under CAR Part 125 or 121.

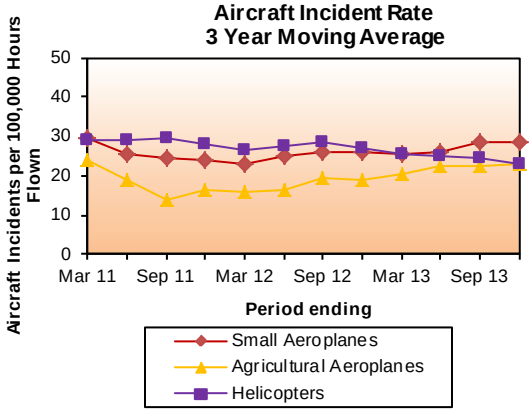
Section 2

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 January 2011 to 31 December 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 Oct to 31 Dec 2013	Same Quarter Last Year
Large Aeroplanes	71	103
Medium Aeroplanes	25	18
Small Aeroplanes	24	21
Agricultural Aeroplanes	2	1
Helicopters	11	10
Sport Aircraft	9	6
Unknown Aircraft	34	30
Total	**176**	**189**

Severity of Reported Aircraft Incidents

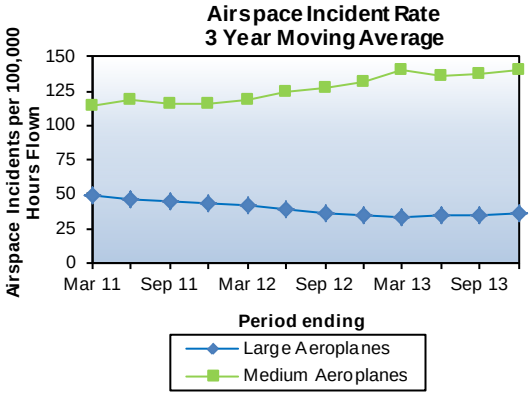
Severity	1 Oct to 31 Dec 2013	Same Quarter Last Year
Critical	3	2
Major	20	28
Minor	153	159

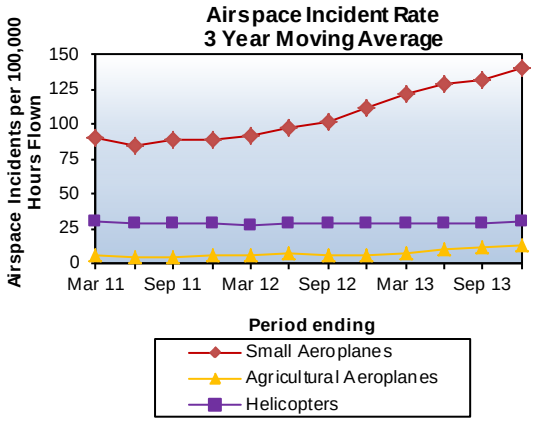
Of the 3 critical aircraft incidents reported in the 1 October to 31 December 2013 quarter, 1 was in the 'Large Aeroplanes' statistics category and 2 were in the 'Helicopters' statistics category.

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 January 2011 to 31 December 2013 (excluding the Sport Aircraft statistics category).





Quarterly Comparison

Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2013	Same Quarter Last Year
Large Aeroplanes	31	30
Medium Aeroplanes	23	31
Small Aeroplanes	130	138
Agricultural Aeroplanes	1	0
Helicopters	25	14
Sport Aircraft	25	16
Unknown Aircraft	137	122
Total	**372**	**351**

Severity of Reported Airspace Incidents

Severity	1 Oct to 31 Dec 2013	Same Quarter Last Year
Critical	5	1
Major	32	50
Minor	335	300

Of the 5 critical airspace incidents reported in the 1 October to 31 December 2013 quarter, 1 was in the 'Small Aeroplanes' statistics category, 1 was in the 'Helicopters' statistics category, and 1 was in the 'Sport Aircraft' statistics category. The 2 critical events in the 'Unknown Aircraft' category where a paraglider reporting an unknown light aircraft and a RNZAF B200 reporting an unknown agricultural aircraft, both were 'near collision' events in uncontrolled airspace.Analysis of reported airspace incidents continues on next page

Reported Critical Airspace Incidents continued

- Aircraft came to within approximately 50ft of an opposite direction C172 while tracking to Hamilton. Pilot took avoiding action by turning left as the conflicting aircraft was to the right. Both aircraft were in uncontrolled airspace to the south of HN Control Zone at 2500 ft. The arrival had received joining instructions and was then passed opposing traffic information but the traffic information came a little late.
- Pilot over Jabiru Microlight used RH circuit at Raglan aerodrome instead of LH and passed 20 ft under another a/c on aproach.
- Helicopter was required to take avoiding action from another R44 while conducting a recce orbit prior to a confined area exercise in the Whitford Forest.
- Unknown light aircraft passed through HGA training area and within 100m of hangliders in the air at approx 50ft altitude.
- RNZAF Kingair had near collision with an unknown agricultural aircraft during a low level training flight. The ag aircraft was observed passing under the aircraft from right to left approximately 50ft below. There was no time for an avoiding manoeuvre and the ag aircraft did not appear to make any. The aircraft did not appear on the Kingair's TCAS.

Attributability

Of the 372 reported airspace incidents in the 1 October to 31 December 2013 quarter, 15% are Air Traffic Service (ATS) attributable, 77% are pilot attributable, 2% are ATS and pilot attributable, and 5% are unknown attributable. (Note that the percentages may not sum exactly to 100% due to rounding.)

Since January 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 31 December 2013.

There was 1 aerodrome with a strike rate in the high risk category of the CAA standard (10.0 and above bird strikes per 10,000 aircraft movements) with a long-term upward trend.

There were 12 aerodromes with strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), 7 having long-term upward trends, 2 having long-term constant trends and 3 having long-term downward trends.

15 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), 5 having long-term upward trends, 4 having long-term constant trends and 6 having long-term downward trends.

Intentionally blank

Consideration is being given to the development of a graphical means of displaying birdstrike hazard information. How would this data be used? Who would use it? Are seasonal effects evident or important? Species or Bird Size?

Comments welcome at inwards safety information:

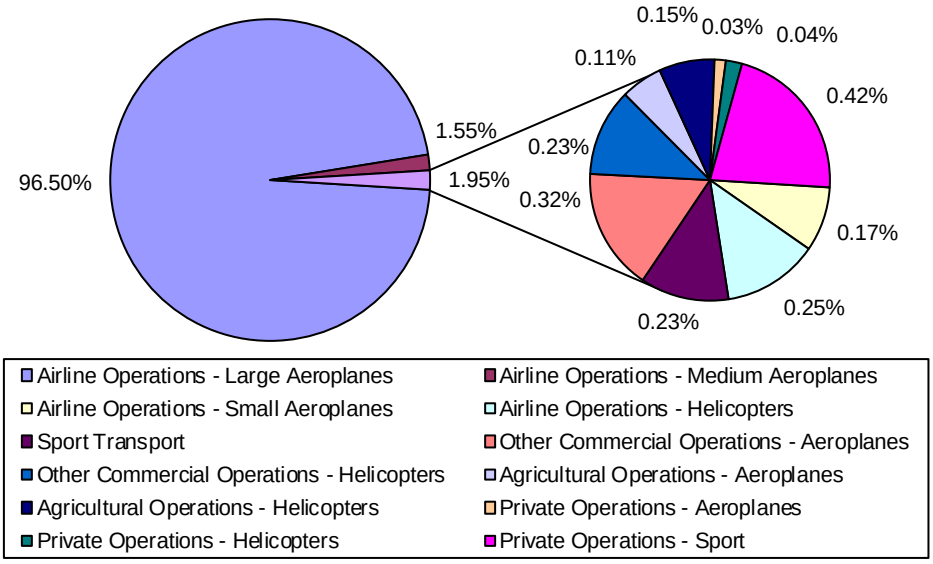
isi@caa.govt.nz

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 (hours flown for the most recent quarter have been estimated). 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	0.17
Airline Operations - Helicopters	0.25
Sport Transport	0.23
Other Commercial Operations - Aeroplanes	0.32
Other Commercial Operations - Helicopters	0.23
Agricultural Operations - Aeroplanes	0.11
Agricultural Operations - Helicopters	0.15
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.03
Private Operations - Helicopters	0.04
Private Operations - Sport	0.42

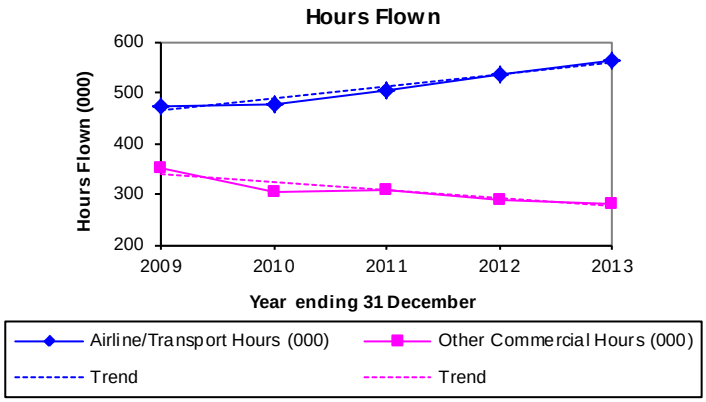
Note that the percentages may not sum exactly to 100.00% due to rounding.

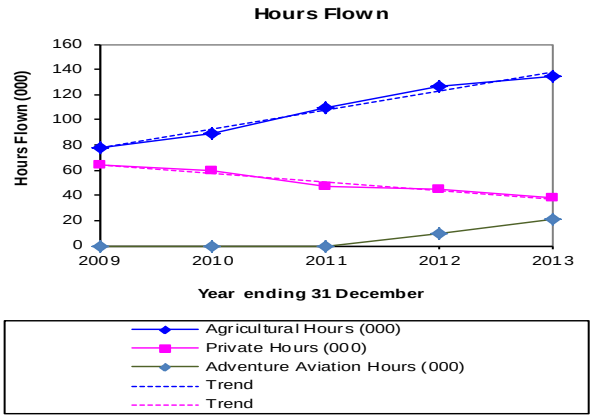
Section 3

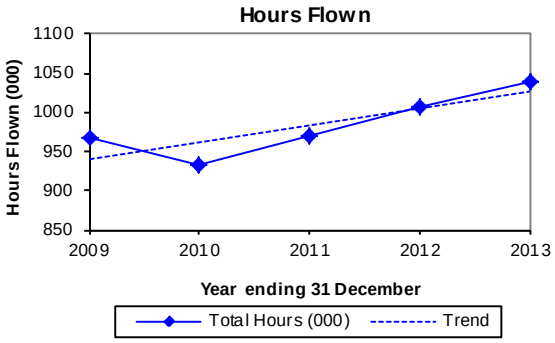
Hours by Operation Type

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).







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

Quarterly Comparison

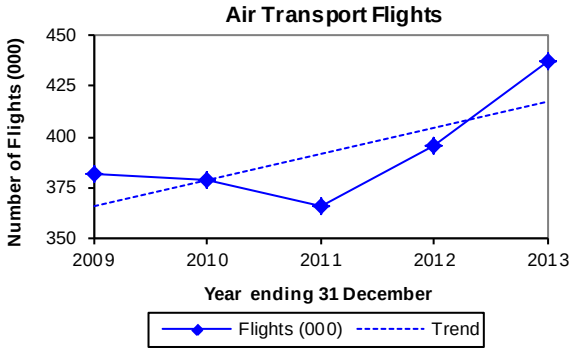
Activity	1 Oct to 31 Dec 2012	1 Oct to 31 Dec 2013	Change	
			Number	Percentage
Airline/Transport Hours	141,439	146,243	+ 4,804	+ 3.4
Adventure Aviation Hours	4,819	6,427	+ 1,607	+ 33.4
Other Commercial Hours	67,418	67,519	+ 101	+ 0.1
Agricultural Hours	33,356	35,111	+ 1,755	+ 5.3
Private Hours	8,986	5,776	- 3,209	- 35.7
Total Hours	**256,018**	**261,076**	**+ 5,058**	**+ 2.0**

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

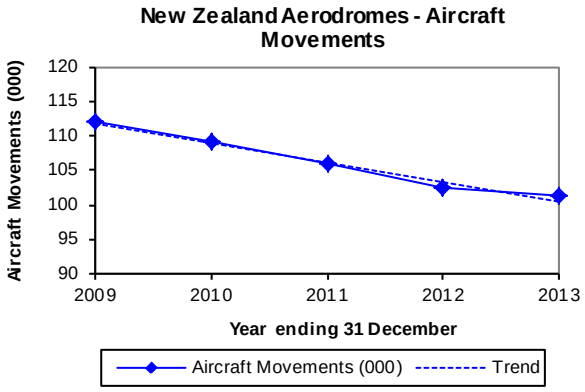
Activity	1 Oct to 31 Dec 2012	1 Oct to 31 Dec 2013	Change	
			Number	Percentage
Air Transport Flights	108,013	108,353	+ 341	+ 0.3

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 January 2009 to 31 December 2013.



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

Quarterly Comparison

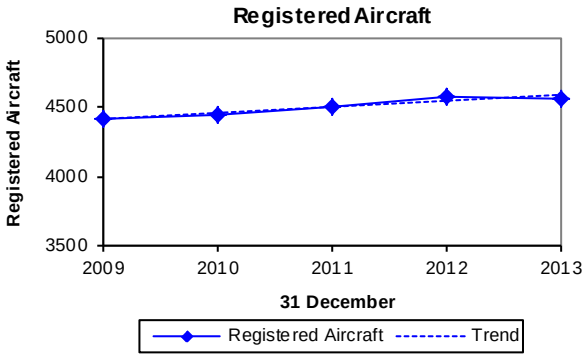
Activity	1 Oct to 31 Dec 2012	1 Oct to 31 Dec 2013	Change	
			Number	Percentage
Aircraft Movements	26,106	25,769	- 337	- 1.3

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, 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 December 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 December 2012	31 December 2013	Change	
			Number	Percentage
Large Aeroplanes	125	128	+ 3	+ 2.4
Medium Aeroplanes	86	85	- 1	- 1.2
Small Aeroplanes	1,523	1,506	- 17	- 1.1
Agricultural Aeroplanes	107	104	- 3	- 2.8
Helicopters	787	797	+ 10	+ 1.3
Sport Aircraft	1,953	1,942	- 11	- 0.6
Total	**4,581**	**4,562**	**- 19**	**- 0.4**

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

Section 4 - Quarterly Statistics

Quarter	2011/1	2011/2	2011/3	2011/4	2012/1	2012/2
Social Cost $ million1	13.64	22.57	1.80	22.69	59.35	15.96
Number of Fatal Accidents2	2	4	0	3	4	2
Number of Fatal Injuries2	2	5	0	4	15	3
Number of Serious + Minor Injuries2	11	6	3	9	3	7
Number of Aircraft Accidents2						
Large Aeroplanes	1	0	0	0	0	0
Medium Aeroplanes	0	1	1	0	0	0
Small Aeroplanes	4	4	4	5	3	3
Agricultural Aeroplanes	3	3	0	1	0	2
Helicopters	5	6	4	8	2	5
Sport Aircraft	17	5	5	6	9	9
Unknown Aircraft	1	1	1	0	1	0
Hang Gliders	6	3	0	2	6	1
Parachutes	1	3	2	2	4	3
Number of Incidents3	1,230	1,239	1,230	1,119	1,297	1,184
Number of Aviation Related Concerns4	245	155	271	230	219	194
Number of Hours Flown5	271,462	224,597	227,585	245,462	283,044	228,417
Number of Air Transport Flights5	105,261	82,173	85,482	93,488	103,673	88,665
Number of Aircraft Movements6	26,674	25,429	26,662	27,223	26,311	25,127
Number of Aircraft on the Register7	4,480	4,490	4,495	4,499	4,516	4,532
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	15
Air Operator – Helicopters and Small Aeroplanes	173	174	174	175	176	171
Number of Part 115 Adventure Aviation Operators	0	0	0	1	1	20
Number of Part 137 Agricultural Aircraft Operators	107	104	106	105	101	99
Number of Part 141 Training Organisations	55	54	55	57	58	57
Number of Part 149 Recreation Organisations	9	9	9	8	9	9
Number of Licences (Type of Medical Certificate)[8]						
Recreational Pilot Licence (RPL Medical)	162	180	189	205	222	221
Private Pilot Licence (Class 1 & 2)	3,611	3,603	3,577	3,513	3,479	3,458
Commercial Pilot Licence (Class 2 only)	2,131	2,229	2,236	2,284	2,325	2,379
Commercial Pilot Licence (Class 1)	2,372	2,339	2,380	2,362	2,350	2,337
Airline Transport Pilot Licence (Class 2 only)	928	909	965	962	925	915
Airline Transport Pilot Licence (Class 1)	1,155	1,188	1,118	1,124	1,166	1,175
Air Traffic Controller Licence (Class 3)	363	361	361	362	370	374
Aircraft Maintenance Engineer Licence (N/A)	2,511	2,519	2,540	2,549	2,563	2,575

[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 with an allowance for aircraft for which reports were not received. Estimated for 2013/3 and 2013/4.

Quarter	2012/3	2012/4	2013/1	2013/2	2013/3	2013/4
Social Cost $ million1	1.09	15.30	26.30	3.00	2.48	14.26
Number of Fatal Accidents2	0	3	3	0	0	2
Number of Fatal Injuries2	0	3	5	0	0	2
Number of Serious + Minor Injuries2	4	7	12	9	6	22
Number of Aircraft Accidents2						
Large Aeroplanes	0	0	0	0	0	2
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	3	2	11	6	4	7
Agricultural Aeroplanes	2	4	2	3	1	3
Helicopters	3	5	5	8	1	7
Sport Aircraft	5	7	11	8	6	10
Unknown Aircraft	0	0	1	0	0	1
Hang Gliders	2	3	4	4	2	5
Parachutes	2	3	3	1	0	0
Number of Incidents3	1,270	1,322	1,514	1,456	1,368	1,340
Number of Aviation Related Concerns4	220	156	206	181	217	197
Number of Hours Flown5	239,515	256,018	290,419	233,043	254,217	261,076
Number of Air Transport Flights5	94,849	108,013	120,891	104,040	103,822	108,353
Number of Aircraft Movements6	24,944	26,106	25,687	24,542	25,281	25,769
Number of Aircraft on the Register7	4,558	4,581	4,587	4,579	4,578	4,562
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	9	9	9	9	9
Air Operator – Medium Aeroplanes	14	15	16	16	16	15
Air Operator – Helicopters and Small Aeroplanes	166	168	174	171	168	166
Number of Part 115 Adventure Aviation Operators	28	33	33	33	34	34
Number of Part 137 Agricultural Aircraft Operators	99	104	103	102	98	99
Number of Part 141 Training Organisations	58	59	59	58	57	56
Number of Part 149 Recreation Organisations	7	7	7	8	8	8
Number of Licences (Type of Medical Certificate)[8]						
Recreational Pilot Licence (RPL Medical)	224	240	248	199	174	149
Private Pilot Licence (Class 1 & 2)	3,451	3,361	3,298	3,151	3,108	3,017
Commercial Pilot Licence (Class 2 only)	2,428	2,420	2,561	2,562	2,573	2,571
Commercial Pilot Licence (Class 1)	2,316	2,366	2,225	2,191	2,167	2,150
Airline Transport Pilot Licence (Class 2 only)	953	993	1,053	986	1,060	1,052
Airline Transport Pilot Licence (Class 1)	1,140	1,119	1,078	1,175	1,121	1,120
Air Traffic Controller Licence (Class 3)	374	363	363	372	375	380
Aircraft Maintenance Engineer Licence (N/A)	2,595	2,611	2,626	2,641	2,647	2,660

[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.

Note about Social Cost

Social cost is a way of measuring safety performance by accounting for the number of accidents as well as the number and severity of casualties. 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