CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Aviation Safety Summary

1 July to 30 September 2013

Winter 2013

Introduction to the Quarterly Safety Summary Report

Welcome to the CAA's quarterly safety summary report for the Winter of 2013. As in previous editions this report is presented in four sections, designed to provide more specific deatil as you progress through the report. Briefly the sections are:

Section 1 - Social Cost and Accidents

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

Section 2 - Incidents

Section 2 provides a summary of other safety data. Incidents are potentially unsafe events that did not become accidents.

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.

The Future of Safety Target Groups

Since revising the format of the quarterly safety summary reports we have received numerous constructive comments. As a result we are considering whether the present safety target group structure is still appropriate. There are currently 13 groups as outlined in the definitions section. These groups were set as result of extensive work in 2004-2005 and so are now approaching 10 years old. In those years significant changes have occurred such as the introduction of Part 115 adventure aviation and the ongoing growth of the sport aviation sector. While these two categories were foreseen in the safety target group structure, others such as the use of sport aircraft for private agricultural operations have not developed. This is currently a 'spare category' which might be better used to describe UAS vehicles.

Accordingly we'd welcome your views on the usefulness or otherwise of the present safety target group structure to your particular aviation risk situation. Under the responsible operator concept of the Swedavaia-McGregor approach, the aim of reporting under Part 12 is ultimately to provide safety information back to operators so that they themselves can understand and manage their own risk.

To that end if you need more detailed information concerning a given sector or other safety related information, enquires and comments can be directed to the email below.

Safe flying,

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

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Introduction

Summary

Executive Summary - Aviation Safety to 30 Sep 2013

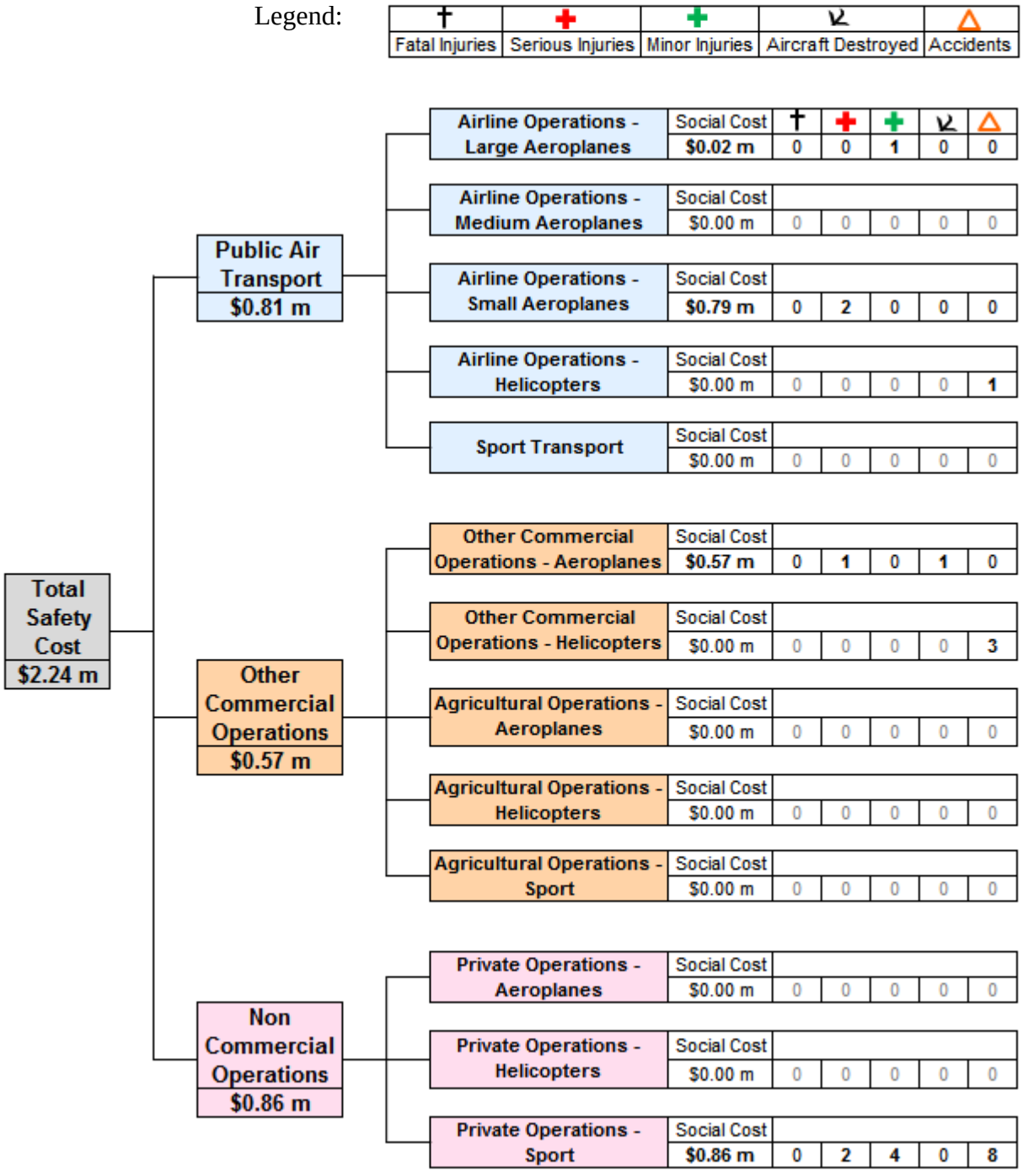
- There were a total of 37 accidents in the January to March quarter. There were 5 fatal, 8 serious, and 4 minor injuries in these accidents. Social cost in this quarter has accrued from accidents and injury incidents in the following safety target groups:
  - Airline Operations – Large Aeroplanes 1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

  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.
- The Annual Social Cost is now $61 million (three year average). The social cost has been trending upwards and in the last four years has increased by 16% from $53M to $61M, see page 5.
- While the overall accident rate is trending downwards, there is an upward trend in 'Other Commercial Operations - Helicopters'. All other groups are showing level or downward trends see pages 6 and 7.
- Large Aeroplanes are showing an upward trend in the number of defects reported per flying hour, see page 8.
- Aircraft incident rates are decreasing for Large Aeroplanes, Small Aeroplanes and Helicopters, see page 9.
- Airspace occurrence rates are decreasing for Large Aeroplanes, see pages 10 and 11.
- The total number of hours flown and the total number of air transport flights are increasing, 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 increased slightly, up 0.4% over the same time last year. There were increases in the numbers of large aeroplanes, helicopters and sport aircraft, while the numbers of medium aeroplanes small aeroplanes and agricultural aeroplanes decreased slightly, 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 July to 30 September 2013. The table also shows the number of accidents in this quarter.



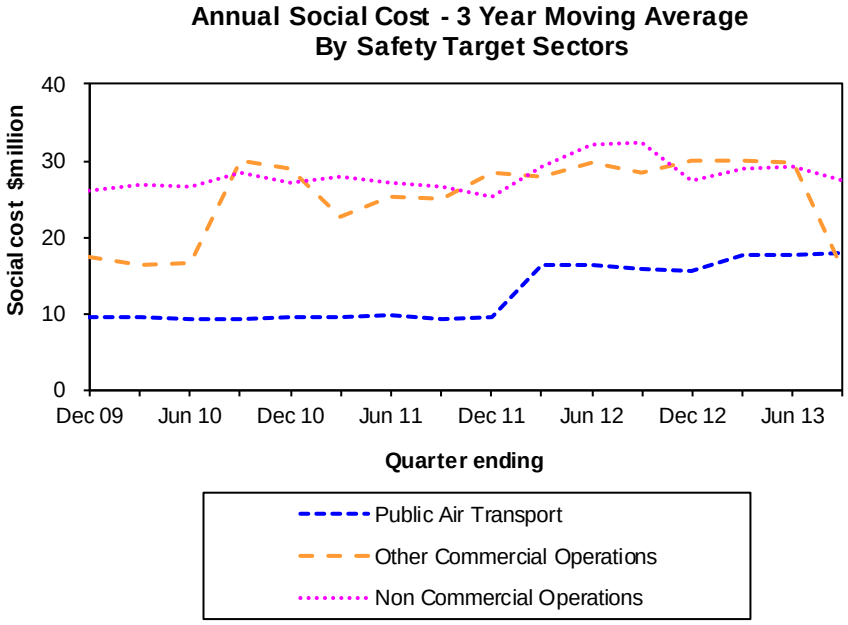
Notes:

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 2012 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 October 2009 to 30 September 2013, (including the Sport Safety Target Groups).



Social Cost Analysis

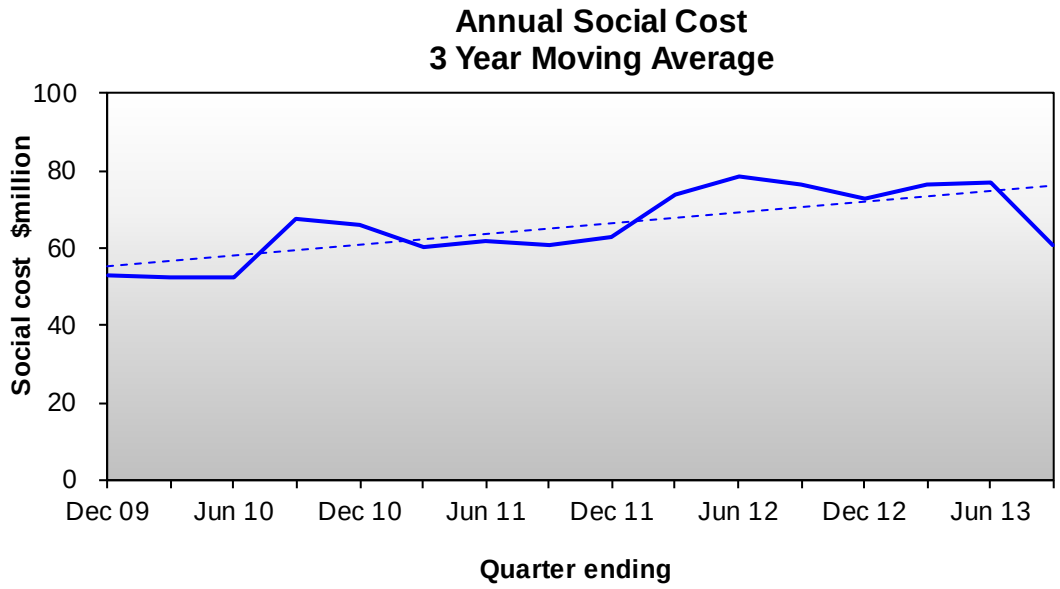
The graph above indicates the social cost contribution of each safety target sector averaged over three years. The contribution from the 'Other Commercial' sector has dropped as three year have elapsed since the tragic accident at Fox Glacier.

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

Although Sport Transport (part 1115) safety target group has been the chief contributor to the 3 year average social cost within the 'Public Air Transport' sector in this winter quarter they had **NO accidents** and no injuries.

While the 'Non Commercial' sector continues to be the leading contributor to annual social cost (3 year average) this quarter the Airline -small aircraft sector contributed with a serious accident that injured two pilots on a training exercise. In addition the Other Commercial Aeroplanes and particularly other commercial Helicopters are contributing. The accident rate for 'Other Commercial - Helicopter **now exceeds** the accident rate of 'Agricultural - Helicopter'; 10.17 vs 6.7 accidents per 100,000 flying hours.

The chief contributor of the cost within the 'Non Commercial' sector is the Private Operations - Sport safety target group, while the Private Operations – Aeroplanes and Private Operations - Helicopters safety target group is showing an increasing trend.



Accidents by Safety Target Group

Quarterly Comparison

Safety Target Group	1 Jul to 30 Sep 2013	Same Quarter Last Year
Airline Operations - Large Aeroplanes	0	0
Airline Operations - Medium Aeroplanes	0	0
Airline Operations - Small Aeroplanes	**0**	0
Airline Operations - Helicopter	**1**	1
Sport Transport	**0**	**1**
Other Commercial Operations - Aeroplane	**0**	0
Other Commercial Operations - Helicopter	3	**0**
Agricultural Operations - Aeroplane	**0**	2
Agricultural Operations - Helicopter	0	**2**
Agricultural Operations - Sport Aircraft	0	0
Private Operations - Aeroplane	**0**	**3**
Private Operations - Helicopter	**0**	0
Private Operations - Sport	**8**	**8**
Other	**0**	**0**
Total	**12**	**17**

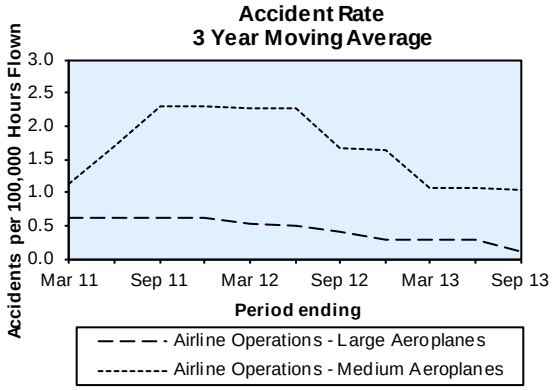
Comment

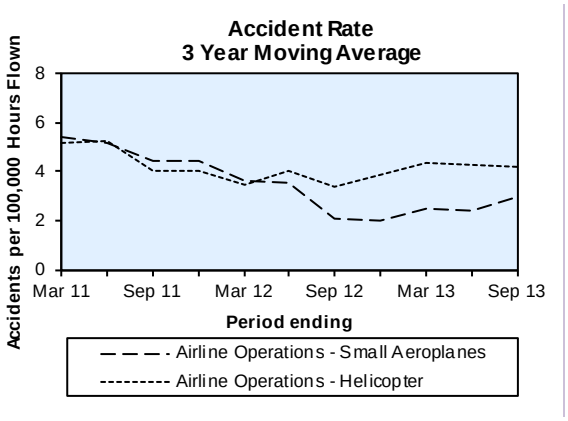
Overall accident numbers have decreased by 29% in comparison to the winter quarter of last year, note however the increase in the 'Other Commercial Operations - Helicopter' safety target group.

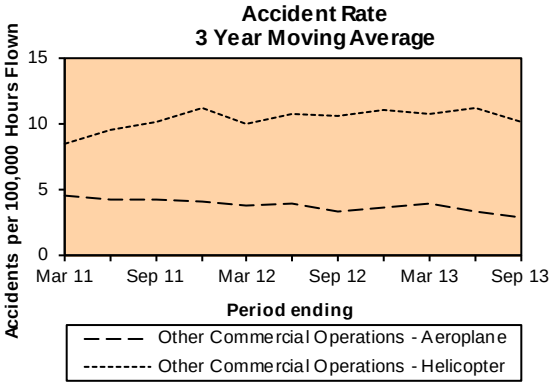
Section 1

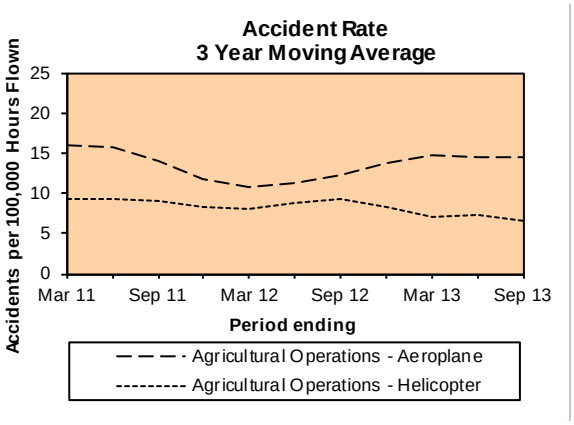
Trends

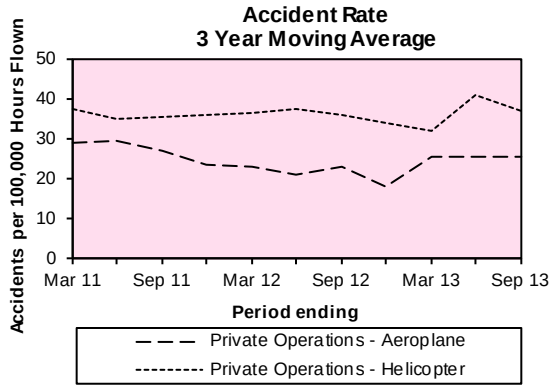
The following graphs show the aircraft accident rates (three year moving average) for the three-year period 1 October 2010 to 30 September 2013 (excluding the Sport Safety Target Groups, for which no accurate activity information is available).











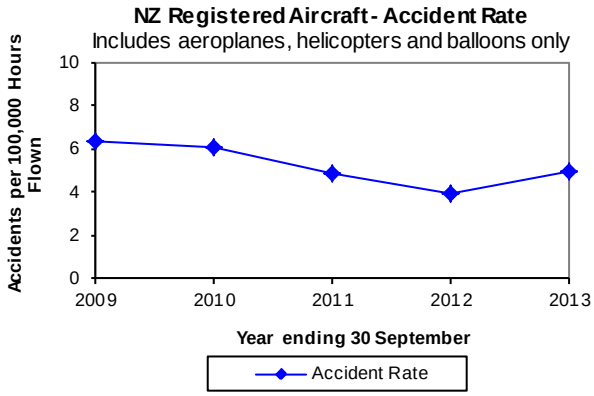
No accident rate information available for Sport Transport or Private Operations - Sport.

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 October 2008 to 30 September 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 July to 30 September 2013, which were the accidents that contributed to the social cost for the quarter. Not all were CAA investigated, so text maybe from accident notification.

Airline Operations - Small Aeroplanes

- A Cessna 207A had an accident on an airstrip to the east of North Mavora Lake during a check flight, possibly during a FLWOP exercise. Both pilots sustained serious injuries.

Private Operations - Helicopter

- The engine of a Diamond DA20-C1 failed due to fuel exhaustion during a solo cross country flight. During the resulting forced landing the aircraft's left wing struck a tree, with the aircraft rolling over on landing, sliding approximately 12 metres before coming to a stop. The pilot was able to exit the aircraft with minor injuries. The aircraft was substantially damaged and written off.

Private Operations - Sport

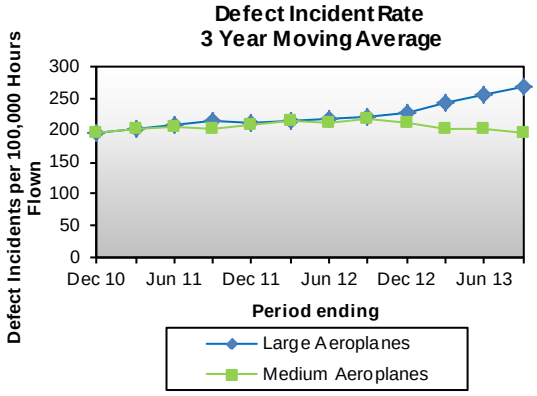
- A Solo Wings Windlass Aquilla overran the threshold on landing and impacted a tree. The pilot was seriously injured and the aircraft substantially damaged.
- A hang glider pilot misjudged final approach and impacted ground heavily, crushing 2 vertebrae.
- A Fly Synthesis Storch S stalled while initiating a go-around on short final for a private strip neighbouring Te Kowhai airfield. The aircraft's port wing dropped and the aircraft struck the ground, causing the nose gear to collapse with the aircraft coming to a stop facing in the opposite direction against the Te Kowhai runway 05 boundary fence.

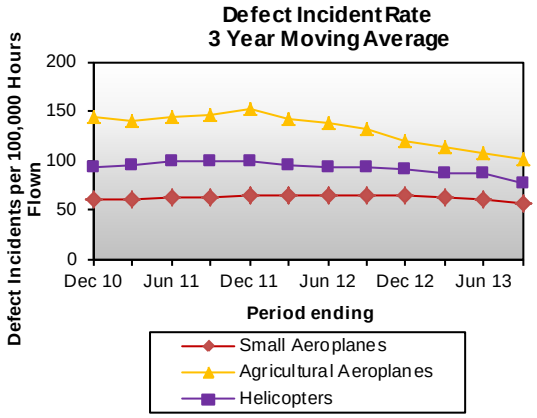
Section 2 - Incidents

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 2010 to 30 September 2013 (excluding the Sport Aircraft statistics category).





Quarterly Comparison

Number of Reported Defect Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2013	Same Quarter Last Year
Large Aeroplanes	303	261
Medium Aeroplanes	18	43
Small Aeroplanes	44	53
Agricultural Aeroplanes	6	5
Helicopters	31	29
Sport Aircraft	4	3
Unknown Aircraft	27	16
Total	**433**	**410**

Severity of Reported Defect Incidents

Severity	1 Jul to 30 Sep 2013	Same Quarter Last Year
Critical	0	1
Major	60	76
Minor	373	333

Rate Monitoring

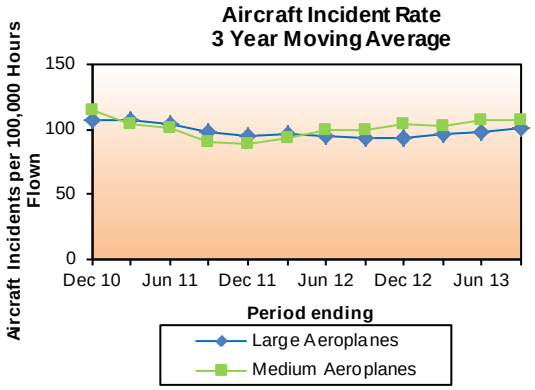
Defect incident rate monitoring of individual types of large and medium air transport aeroplanes has been estimated for the period ended 30 September 2013, due to a shortage of returned Aircraft Operations Statistics for some of these aircraft. Despite this, large aeroplanes are continuing to show an 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. Medium and large aeroplane categories include all aircraft with more than 10 passenger seats operated under CAR Part 125 or 121.

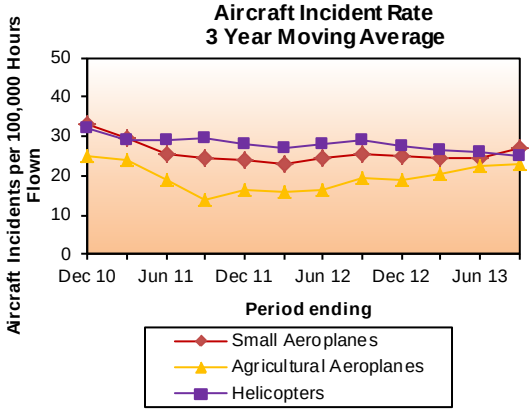
Section 2

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 October 2010 to 30 September 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 Jul to 30 Sep 2013	Same Quarter Last Year
Large Aeroplanes	110	97
Medium Aeroplanes	16	18
Small Aeroplanes	37	23
Agricultural Aeroplanes	2	3
Helicopters	17	17
Sport Aircraft	2	5
Unknown Aircraft	45	30
Total	**229**	**193**

Severity of Reported Aircraft Incidents

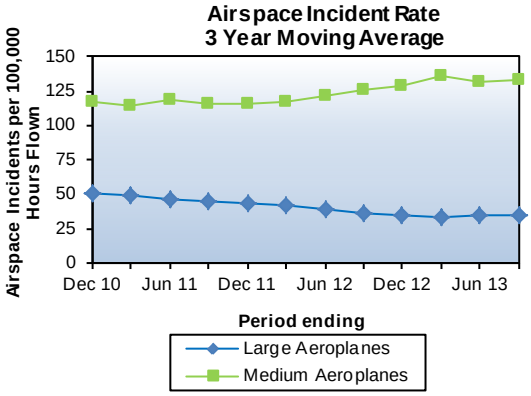
Severity	1 Jul to 30 Sep 2013	Same Quarter Last Year
Critical	2	4
Major	25	27
Minor	202	162

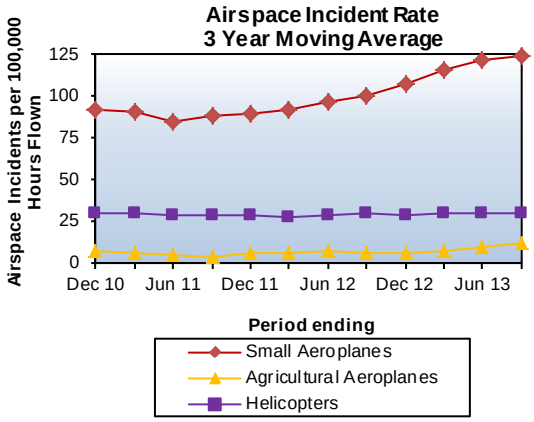
Of the two critical aircraft incidents reported in the 1 July to 30 September 2013 quarter, 1 was in the 'Helicopters' statistics category, and 1 was in the 'Sport Aircraft' (Hang Glider) statistics category.

Airspace Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported airspace incident rates (three year moving average) for the three-year period 1 October 2010 to 30 September 2013 (excluding the Sport Aircraft statistics category).





Quarterly Comparison

Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Jul to 30 Sep 2013	Same Quarter Last Year
Large Aeroplanes	39	28
Medium Aeroplanes	18	26
Small Aeroplanes	113	108
Agricultural Aeroplanes	5	0
Helicopters	11	20
Sport Aircraft	19	11
Unknown Aircraft	130	94
Total	**335**	**287**

Severity of Reported Airspace Incidents

Severity	1 Jul to 30 Sep 2013	Same Quarter Last Year
Critical	6	2
Major	29	30
Minor	300	255

Of the six critical airspace incidents reported in the 1 July to 30 September 2013 quarter, 1 was in the 'Medium Aeroplanes' statistics category, 2 were in the 'Small Aeroplanes' statistics category and 3 were in the 'Unknown Aircraft' statistics category.

Severity of Reported Airspace Incidents continues on next page

Severity of Reported Airspace Incidents continued

- A medium aeroplane had a near miss with an EC120 helicopter in the QN CTR/D while tracking to join downwind for runway 23. The aircraft were estimated to be within 50ft vertically and 200m horizontally of each other.
- A near miss occurred between two aircraft. Neither pilot heard the other on the radio. Both pilots were making radio calls on the correct frequency. After getting airborne, one of the pilots observed the other aircraft on short finals (reportedly around 200 ft.). Both aircraft turned away from each other.
- An unknown aircraft squawking 4226 was observed operating within M301, which was active up to FL150 with live firing.
- The pilot of a C172 had initially requested a touch and go but was instructed to make a full stop due to wake turbulence. After landing, aircraft was instructed to taxi left and to report at the holding point for grass 07. After the aircraft was observed clearing grass runway 07, a C180 on final was cleared to land on grass 07. As the C180 was in flare and crossing the threshold of grass runway 07, the taxiing C172 was observed to make a left turn at holding point 'B3' and stop in the middle of grass runway 07, short of holding point B4. The landing aircraft initiated an immediate go around and passed approximately 20 ft. above the C172.
- A Cessna 172 took off and made an early crosswind turn, conflicting with traffic making a standard overhead join. The two aircraft came into very close proximity on downwind, approximately 50 ft. vertically. Traffic making the overhead join took avoiding action and left the circuit.
- A CT4 aircraft had a near collision with a helicopter on a converging track and maintaining the same altitude. The CT4 had to take avoiding action (moderately aggressive manoeuvre) and passed beneath the helicopter by 30 feet. When communication was established, the helicopter pilot advised that he had not seen the CT4. The CT4 had made multiple position reports on the Taihape - Raetihi leg with no transmissions heard in response.

Attributability

Of the 295 reported airspace incidents in the 1 April to 30 June 2013 quarter, 17% are Air Traffic Service (ATS) attributable, 79% are pilot attributable, 4% are ATS and pilot attributable, and 0% 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 September 2013.

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), 2 having long-term upward trends, 0 having long-term constant trends and 0 having long-term downward trends.

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, 1 having long-term constant trends and 4 having long-term downward trends.

14 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 5 having long-term downward trends.

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Considering 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?

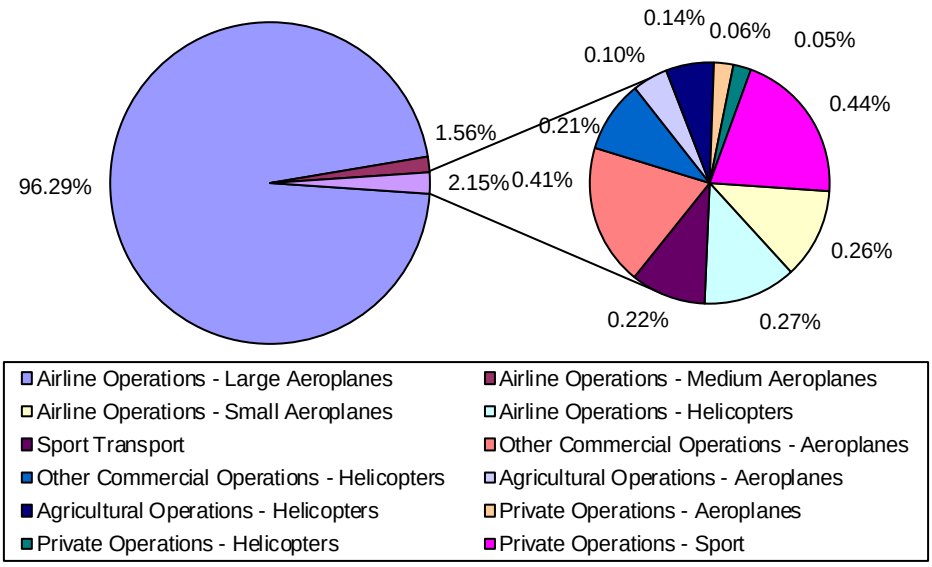
Comments welcome

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 July to 30 September 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	1.48
Airline Operations - Small Aeroplanes	0.16
Airline Operations - Helicopters	0.22
Sport Transport	0.23
Other Commercial Operations - Aeroplanes	0.44
Other Commercial Operations - Helicopters	0.22
Agricultural Operations - Aeroplanes	0.05
Agricultural Operations - Helicopters	0.14
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.08
Private Operations - Helicopters	0.03
Private Operations - Sport	0.44

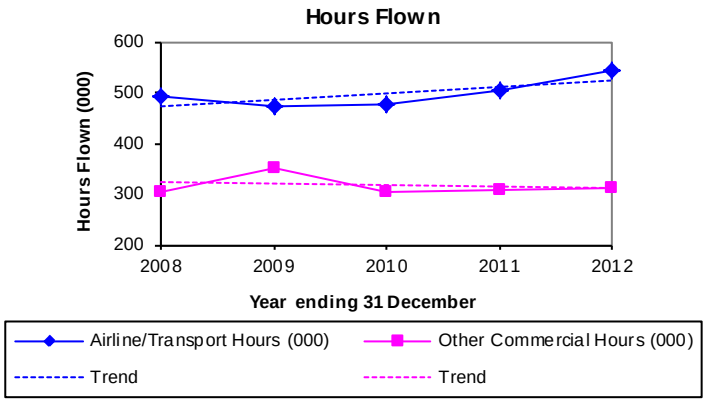
Note that the percentages may not sum exactly to 100.00% due to rounding.

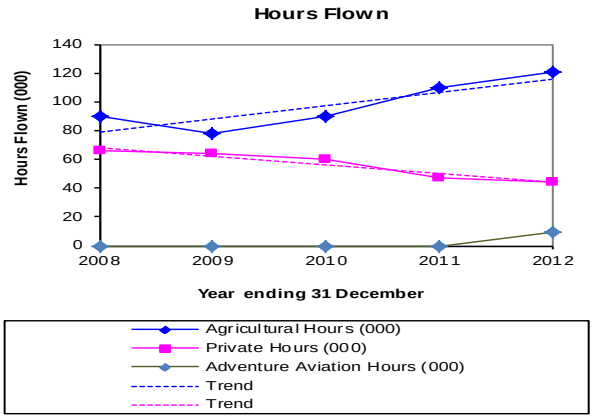
Section 3

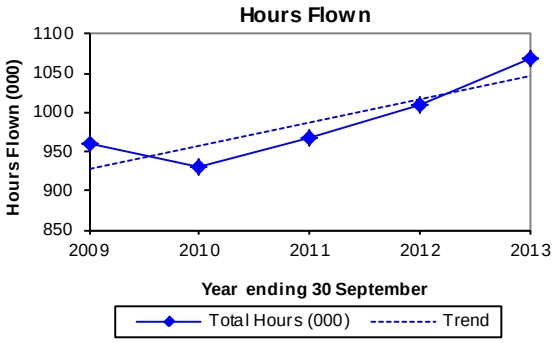
Hours by Operation Type

Trends

The following graphs show the number of hours flown (annual data) for the five-year period 1 January 2008 to 31 December 2012 (for the aircraft classes aeroplane, helicopter and balloon only).







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

Quarterly Comparison

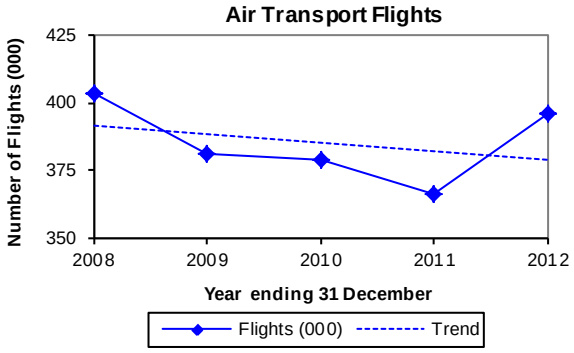
Activity	1 Oct to 31 Dec 2011	1 Oct to 31 Dec 2012	Change	
			Number	Percentage
Airline/Transport Hours	134,782	147,192	+ 12,411	+ 9.2
Adventure Aviation Hours	3	4,819	+ 4,816	+ 147,402.0
Other Commercial Hours	71,505	75,646	+ 4,141	+ 5.8
Agricultural Hours	25,995	31,782	+ 5,787	+ 22.3
Private Hours	13,178	8,986	- 4,192	- 31.8
Total Hours	**245,462**	**268,425**	**+ 22,963**	**+ 9.4**

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 2012 (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 2008 to 31 December 2012 (for the aircraft classes aeroplane, helicopter and balloon only).



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

Quarterly Comparison

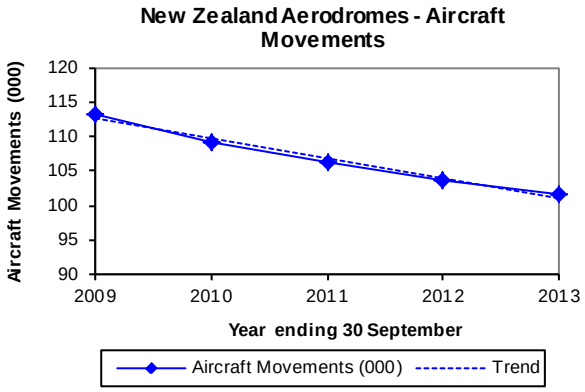
Activity	1 Oct to 31 Dec 2011	1 Oct to 31 Dec 2012	Change	
			Number	Percentage
Air Transport Flights	93,488	108,285	+ 14,797	+ 15.8

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 2012 (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 2008 to 30 September 2013.



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

Quarterly Comparison

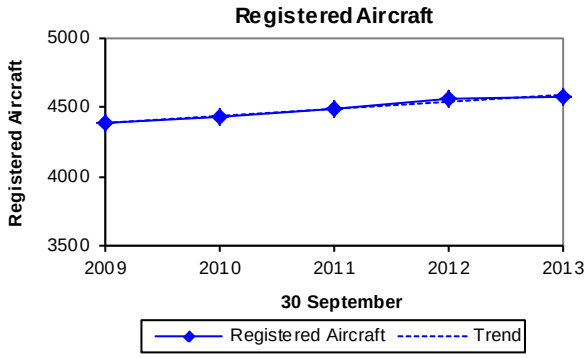
Activity	1 Jul to 30 Sep 2012	1 Jul to 30 Sep 2013	Change	
			Number	Percentage
Aircraft Movements	24,944	25,281	+ 337	+ 1.4

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	30 September 2012	30 September 2013	Change	
			Number	Percentage
Large Aeroplanes	125	127	+ 2	+ 1.6
Medium Aeroplanes	86	84	- 2	- 2.3
Small Aeroplanes	1,520	1,516	- 4	- 0.3
Agricultural Aeroplanes	108	107	- 1	- 0.9
Helicopters	787	793	+ 6	+ 0.8
Sport Aircraft	1,932	1,950	+ 18	+ 0.9
Total	**4,558**	**4,577**	**+ 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	2010/4	2011/1	2011/2	2011/3	2011/4	2012/1
Social Cost $ million1	10.05	13.40	22.12	1.77	22.28	58.11
Number of Fatal Accidents2	1	2	4	0	3	4
Number of Fatal Injuries2	2	2	5	0	4	15
Number of Serious + Minor Injuries2	7	11	6	3	9	3
Number of Aircraft Accidents2						
Large Aeroplanes	0	1	0	0	0	0
Medium Aeroplanes	0	0	1	1	0	0
Small Aeroplanes	4	4	4	4	5	3
Agricultural Aeroplanes	1	3	3	0	1	0
Helicopters	3	5	6	4	8	2
Sport Aircraft	13	17	5	5	6	9
Unknown Aircraft	0	1	1	1	0	1
Hang Gliders	2	6	3	0	2	6
Parachutes	2	1	3	2	2	4
Number of Incidents3	1,171	1,230	1,239	1,230	1,119	1,297
Number of Aviation Related Concerns4	203	245	155	271	230	219
Number of Hours Flown5	243,883	271,462	224,597	227,585	245,462	280,483
Number of Air Transport Flights5	100,133	105,261	82,173	85,482	93,488	108,101
Number of Aircraft Movements6	27,567	26,674	25,429	26,662	27,223	26,311
Number of Aircraft on the Register7	4,442	4,480	4,490	4,495	4,499	4,516
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	10	9	9	9	9	9
Air Operator – Medium Aeroplanes	16	15	15	15	15	15
Air Operator – Helicopters and Small Aeroplanes	175	173	174	174	175	176
Number of Part 115 Adventure Aviation Operators	0	0	0	0	1	1
Number of Part 137 Agricultural Aircraft Operators	108	107	104	106	105	101
Number of Part 141 Training Organisations	56	55	54	55	57	58
Number of Part 149 Recreation Organisations	8	9	9	9	8	9
Number of Licences (Type of Medical Certificate)[8]						
Recreational Pilot Licence (RPL Medical)	146	162	180	189	205	222
Private Pilot Licence (Class 1 & 2)	3,655	3,611	3,603	3,577	3,513	3,479
Commercial Pilot Licence (Class 2 only)	2,083	2,131	2,229	2,236	2,284	2,325
Commercial Pilot Licence (Class 1)	2,385	2,372	2,339	2,380	2,362	2,350
Airline Transport Pilot Licence (Class 2 only)	981	928	909	965	962	925
Airline Transport Pilot Licence (Class 1)	1,096	1,155	1,188	1,118	1,124	1,166
Air Traffic Controller Licence (Class 3)	362	363	361	361	362	370
Aircraft Maintenance Engineer Licence (N/A)	2,496	2,511	2,519	2,540	2,549	2,563

[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 2012 with an allowance for aircraft for which reports were not received. Estimated for 2013/1, 2013/2 and 2013/3.

Quarter	2012/2	2012/3	2012/4	2013/1	2013/2	2013/3
Social Cost $ million1	15.65	1.08	15.00	25.81	2.96	2.24
Number of Fatal Accidents2	2	0	3	3	0	0
Number of Fatal Injuries2	3	0	3	5	0	0
Number of Serious + Minor Injuries2	7	4	7	12	9	6
Number of Aircraft Accidents2						
Large Aeroplanes	0	0	0	0	0	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	3	3	2	11	6	3
Agricultural Aeroplanes	2	2	4	2	3	1
Helicopters	5	3	5	5	8	0
Sport Aircraft	9	5	7	11	8	6
Unknown Aircraft	0	0	0	1	0	0
Hang Gliders	1	2	3	4	4	3
Parachutes	3	2	3	3	1	0
Number of Incidents3	1,184	1,270	1,320	1,511	1,454	1,336
Number of Aviation Related Concerns4	194	220	156	206	179	201
Number of Hours Flown5	235,289	248,599	268,425	294,954	245,134	261,563
Number of Air Transport Flights5	86,630	92,865	108,285	127,501	108,217	108,217
Number of Aircraft Movements6	25,127	24,944	26,106	25,687	24,542	25,281
Number of Aircraft on the Register7	4,532	4,558	4,581	4,587	4,579	4,577
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	9	9	9	9	9
Air Operator – Medium Aeroplanes	15	14	15	16	16	16
Air Operator – Helicopters and Small Aeroplanes	171	166	168	174	171	168
Number of Part 115 Adventure Aviation Operators	20	28	33	33	33	34
Number of Part 137 Agricultural Aircraft Operators	99	99	104	103	102	98
Number of Part 141 Training Organisations	57	58	59	59	58	57
Number of Part 149 Recreation Organisations	9	7	7	7	8	8
Number of Licences (Type of Medical Certificate)[8]						
Recreational Pilot Licence (RPL Medical)	221	224	240	248	199	174
Private Pilot Licence (Class 1 & 2)	3,458	3,451	3,361	3,298	3,151	3,108
Commercial Pilot Licence (Class 2 only)	2,379	2,428	2,420	2,561	2,562	2,573
Commercial Pilot Licence (Class 1)	2,337	2,316	2,366	2,225	2,191	2,167
Airline Transport Pilot Licence (Class 2 only)	915	953	993	1,053	986	1,060
Airline Transport Pilot Licence (Class 1)	1,175	1,140	1,119	1,078	1,175	1,121
Air Traffic Controller Licence (Class 3)	374	374	363	363	372	375
Aircraft Maintenance Engineer Licence (N/A)	2,575	2,595	2,611	2,626	2,641	2,647

[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 $3.8 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.

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