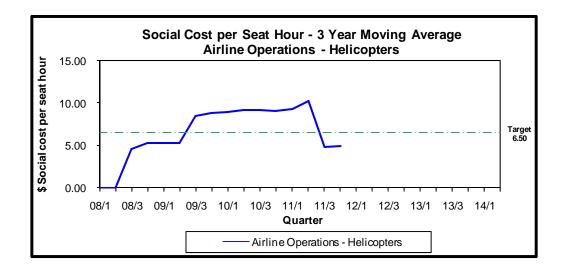


# **Aviation Safety Summary Report**

# 1 October to 31 December 2011



### Introduction

The purpose of this report is to provide readers with a quarterly snapshot of the aviation industry in terms of its size, shape, activity and safety performance. This complements the more detailed six-monthly "Aviation Industry Safety Update", which is available only on the CAA website.

This report uses calendar years; the first quarter is 1 January to 31 March.

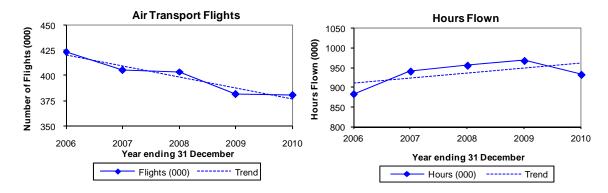
### **Overview**

### Activity

### Air Transport Flights, Total Hours

#### **Trends**

The following graphs show the number of air transport flights and the total number of hours flown (annual data) for the five-year period 1 January 2006 to 31 December 2010 (includes the aircraft classes aeroplane, helicopter and balloon only).



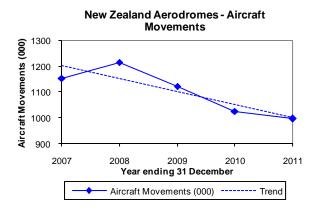
Note that the scales on these graphs do not start at zero.

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 Aircraft Operating Statistics for periods up to the quarter ended 31 December 2010 (the most recent quarter for which these data are available).

# Aircraft Movements

### **Trends**

The following graph shows the number of aircraft movements at certificated aerodromes (annual data) for the five-year period 1 January 2007 to 31 December 2011.



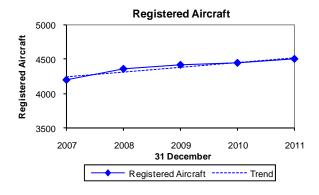
Note that the scale on this graph does not start at zero.

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

### Registered Aircraft

### **Trends**

The following graph shows the number of registered aircraft at 31 December for each of the five-years 2007 to 2011.



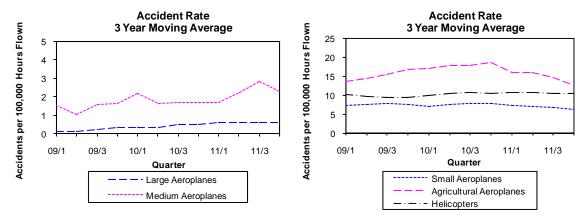
Note that the scale on this graph does not start at zero.

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

### **Accidents**

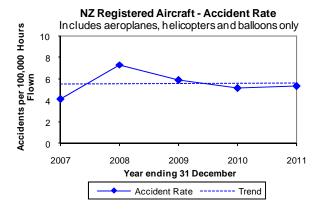
### **Trends**

The following graphs show the aircraft accident rates (3 year moving average) for the three-year period 1 January 2009 to 31 December 2011 (excluding the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes).



### **Overall Accident Rate**

The following graph shows the overall accident rate per 100,000 hours flown (includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes) for the five-year period 1 January 2007 to 31 December 2011.



Note that this graph does not show a moving average.

# **Safety Outcome Targets for 2014**

### Safety Target Structure

The 2014 Safety Targets have all New Zealand aviation classified under three broad group headings: Public Air Transport, Other Commercial Operations, and Non-Commercial Operations.

Thirteen further sub-groups enable differentiation between aeroplanes, helicopters, and sport aircraft, and also allow for different weight groups. A diagram of the grouping is shown in the Definitions section.

The following table displays the social cost for each Safety Target Group for the quarters 1 October to 31 December 2010 and 2011. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2010 dollars.

Safety Target Group	1 Oct to 31 Dec 2010	1 Oct to 31 Dec 2011	Change
	\$m	\$m	\$m
Airline Operations - Large Aeroplanes	0.00	0.02	+ 0.02
Airline Operations - Medium Aeroplanes	0.00	0.00	0.00
Airline Operations - Small Aeroplanes	0.00	0.00	0.00
Airline Operations - Helicopters	0.00	0.37	+ 0.37
Sport Transport	0.78	0.41	- 0.37
Other Commercial Operations - Aeroplanes	0.16	0.16	0.00
Other Commercial Operations - Helicopters	7.47	12.22	+ 4.76
Agricultural Operations - Aeroplanes	0.00	0.00	0.00
Agricultural Operations - Helicopters	0.00	0.00	0.00
Agricultural Operations - Sport	0.00	0.00	0.00
Private Operations - Aeroplanes	0.00	4.49	+ 4.49
Private Operations - Helicopters	0.67	0.00	- 0.67
Private Operations - Sport	0.41	1.20	+ 0.79
Total	9.48	18.86	+ 9.38

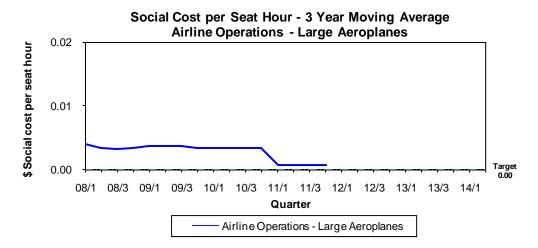
Note that the individual values in the table may not sum exactly to the total shown due to rounding. Note that the Sport groups include hang gliders and parachutes.

# Safety Target Graphs

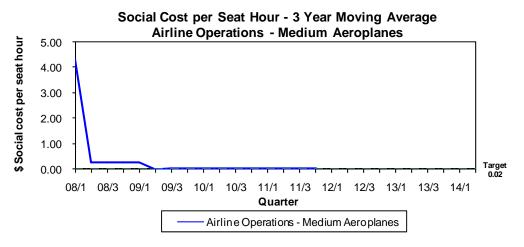
Each Safety Target Group has its own target level expressed as social cost per unit of person exposure, the unit being "one seat hour". For Safety Target Groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of person exposure. These outcomes represent the maximum level of social cost considered acceptable for each group.

The results for all groups are derived using 3 year averages.

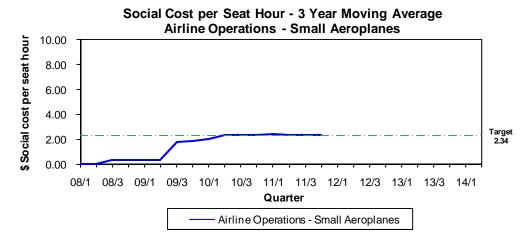
Graphs displaying the Safety Outcome Targets and the progress over each quarter are shown on the following pages.



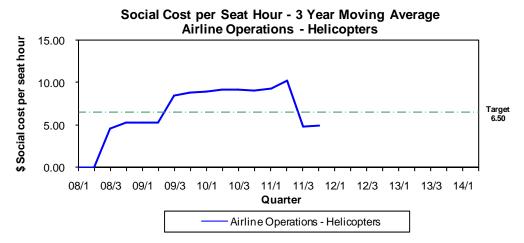
The outcome for Airline Operations – Large Aeroplanes (96.3% of total seat hours) has been just above the target level of \$0.00 per hour of exposure since the quarter Jan to Mar 11. There have been 6 minor injuries in this group in the three years Jan 09 to Dec 11.



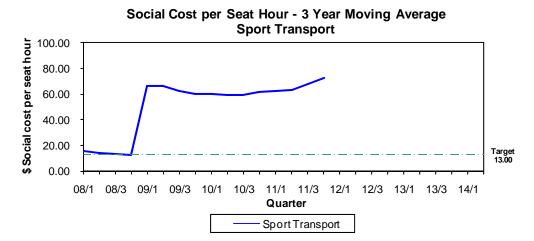
The outcome for Airline Operations – Medium Aeroplanes is trending down and has been at or below the target level since the quarter Apr to Jun 09 (the data point at 11/4 is \$0.02 per hour of exposure). The exposure (1.5% of total seat hours) associated with this sector is relatively small. There have been 3 minor injuries in this group during the period Jan 09 to Dec 11.



The outcome for Airline Operations – Small Aeroplanes (0.2% of total seat hours) shows an upward trend. There have been 1 serious injury and 2 minor injuries during the period Jan 09 to Dec 11. The safety outcome for this group is now at the target level.



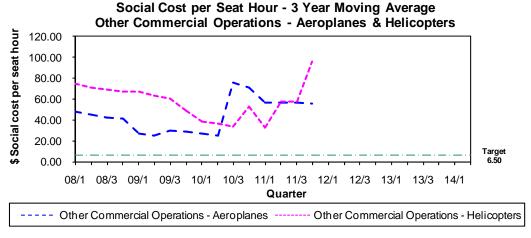
The outcome for Airline Operations – Helicopters is now below the target level. There have been 1 serious injury and 4 minor injuries in this group in the three years Jan 09 to Dec 11.



The outcome for Sport Transport is above the target level. There have been 5 fatal, 15 serious and 16 minor injuries in the three years Jan 09 to Dec 11.

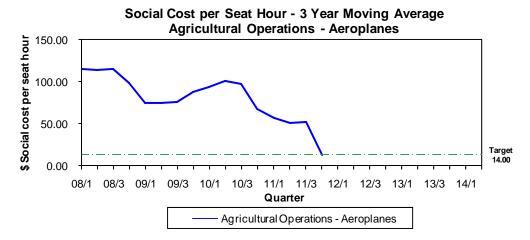
Note that this group includes hang gliders and parachutes used on transport operations.

For quarters from Jul to Sep 11 the method for calculating the seat hours for this group has been amended, hence reducing the number of seat hours used in the calculation of social cost per seat hour. This means that if the social cost for this group remains the same in future quarters, the social cost per seat hour will gradually increase.

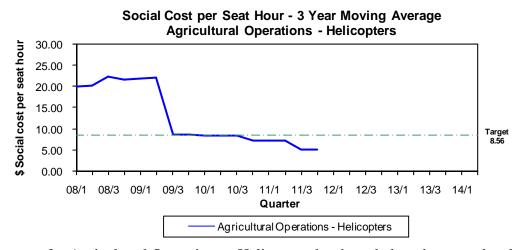


The outcome for Other Commercial Operations – Aeroplanes is well above the target of \$6.50. During the three years Jan 09 to Dec 11 there have been 12 fatal and 3 serious injuries in this group.

The outcome for Other Commercial Operations – Helicopters is also well above the target level. There have been 7 fatal, 2 serious and 3 minor injuries in this group in the three years Jan 09 to Dec 11.

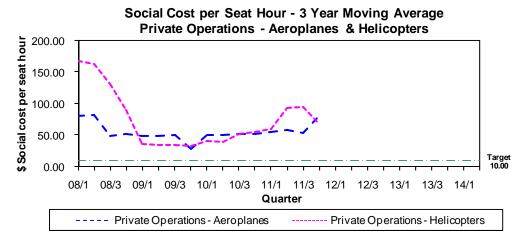


The outcome for Agricultural Operations – Aeroplanes is now just below the target level of \$14.00. During the three years Jan 09 to Dec 11 there have been 1 serious injury and 2 minor injuries in this group.



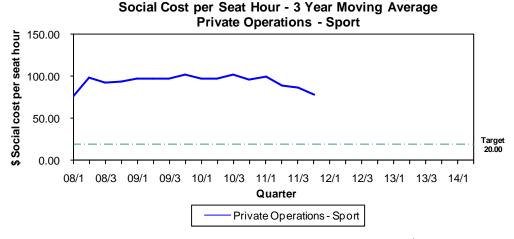
The outcome for Agricultural Operations – Helicopters has been below the target level since the quarter Jul to Sep 10. There have been 2 minor injuries in the three years Jan 09 to Dec 11.

For quarters from Jul to Sep 11 the value for the 'load factor' used in the calculation of seat hours for this group has been reduced, hence reducing the number of seat hours used in the calculation of social cost per seat hour (seat hours are calculated using hours flown multiplied by the average number of seats multiplied by the load factor). This means that if the social cost for this group remains the same in future quarters, the social cost per seat hour will gradually increase.



The outcome for Private Operations – Aeroplanes is well above the target level of \$10.00. There have been 3 fatal injuries, 2 serious injuries and 1 minor injury in the three years Jan 09 to Dec 11.

The outcome for Private Operations – Helicopters is also well above the target level. There have been 1 fatal injury, 3 serious injuries and 5 minor injuries in the three years Jan 09 to Dec 11.



The outcome for Private Operations – Sport is well above the target of \$20.00. There have been 11 fatal, 26 serious and 24 minor injuries in the three years Jan 09 to Dec 11.

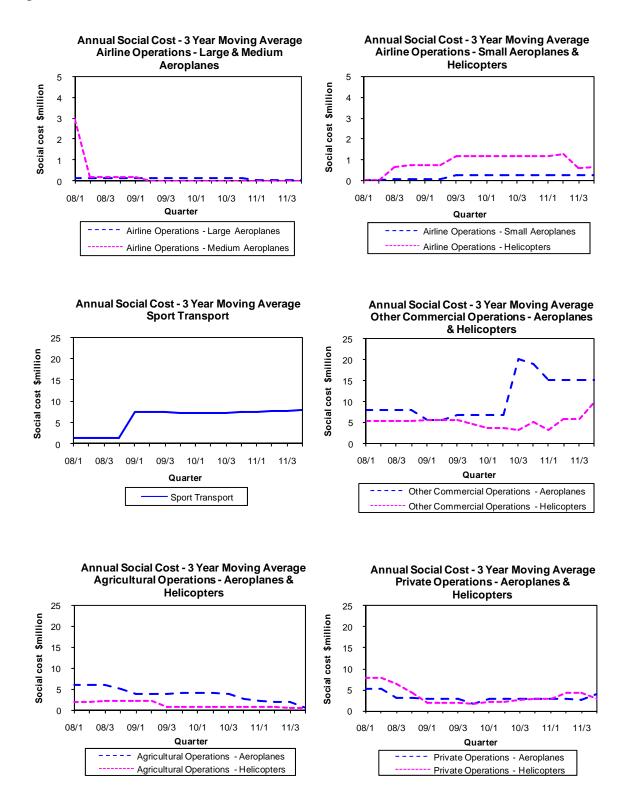
Note that this group includes hang gliders and parachutes used on private operations.

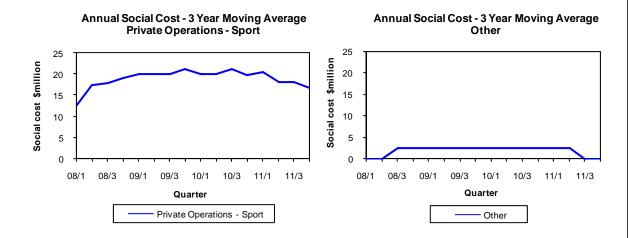
For quarters from Jul to Sep 11 the method for calculating the seat hours for this group has been amended, hence increasing the number of seat hours used in the calculation of social cost per seat hour. This means that if the social cost for this group remains the same in future quarters, the social cost per seat hour will gradually decrease.

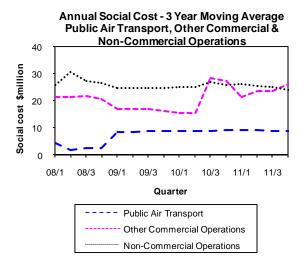
### **Social Cost**

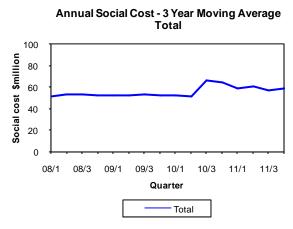
### **Trends**

The following graphs show the annual social cost (3 year moving average) for each Safety Target Group for the four-year period 1 January 2008 to 31 December 2011. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2010 dollars. Note that the Sport groups include hang gliders and parachutes.









# **Activity**

# Air Transport Flights, Total Hours

# Quarterly Comparison

Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2009	2010	Number	Percentage
Air Transport Flights	97,144	100,683	+ 3,539	+ 3.6
Hours	240,179	242,651	+ 2,472	+ 1.0

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 Aircraft Operating Statistics for periods up to the quarter ended 31 December 2010 (the most recent quarter for which these data are available).

### Aircraft Movements

### Quarterly Comparison

Activity	1 Oct to 31 Dec 1 Oct to 31 Dec		Ch	nange
	2010	2011	Number	Percentage
Aircraft Movements	256,474	242,744	- 13,730	- 5.4

Note that this covers certificated aerodromes only. 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, Paraparaumu, Te Anau/Manapouri, Timaru, Wanganui, Westport and Whangarei.

### Registered Aircraft

### Quarterly Comparison

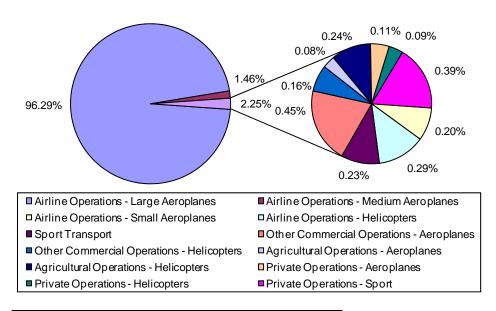
Aircraft Statistics Category	31 December	31 December	Change	
	2010	2011	Number	Percentage
Large Aeroplanes	119	127	+ 8	+ 6.7
Medium Aeroplanes	84	84	0	0
Small Aeroplanes	1,515	1,518	+ 3	+ 0.2
Agricultural Aeroplanes	110	109	- 1	- 0.9
Helicopters	761	767	+ 6	+ 0.8
Sport Aircraft	1,853	1,894	+ 41	+ 2.2
Total	4,442	4,499	+ 57	+ 1.3

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

### Industry Size and Shape

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 2010 (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	96.29
Airline Operations - Medium Aeroplanes	1.46
Airline Operations - Small Aeroplanes	0.20
Airline Operations - Helicopters	0.29
Sport Transport	0.23
Other Commercial Operations - Aeroplanes	0.45
Other Commercial Operations - Helicopters	0.16
Agricultural Operations - Aeroplanes	0.08
Agricultural Operations - Helicopters	0.24
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.11
Private Operations - Helicopters	0.09
Private Operations - Sport	0.39

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

# **Accidents**

# **Quarterly Comparison**

# Number of Accidents

Aircraft Statistics Category	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	4	6	+ 2
Agricultural Aeroplanes	1	1	0
Helicopters	3	8	+ 5
Sport Aircraft	13	6	- 7
Unknown Aircraft	0	0	0
Hang Gliders	2	1	- 1
Parachutes	2	3	+ 1
Total	25	25	0

# Severity of Accidents

Severity	1 Oct to 31 Dec	Dec 1 Oct to 31 Dec	
	2010	2011	
Critical	11	14	+ 3
Major	13	10	- 3
Minor	1	1	0

No accidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 or 2011 quarters.

No accidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 or 2011 quarters.

### Significant Accidents and Other Injury Accidents

### Significant Injury Accidents

This section describes significant injury accidents that occurred during the period 1 October to 31 December 2011.

### **Small Aeroplanes**

### **Private Operations - Aeroplane**

 A Cessna 172 crashed into the Arrowtown golf course. The pilot was killed and 2 passengers received serious injuries. The aircraft was destroyed.

### **Helicopters**

# **Other Commercial Operations - Helicopter**

- An AS 350BA on a search and rescue flight crashed off the beach on the KariKari Peninsular. The pilot and passenger were both killed. The aircraft was destroyed.
- An R44 on an aerial work flight from a tuna boat crashed into the sea. One of the crew was killed. The aircraft was destroyed.
- An AS 350B2 on an aerial work flight crashed when its rotor blades struck a support wire. The pilot received minor injuries and the aircraft was substantially damaged.

### Significant Non-Injury Accidents

There were no significant non-injury accidents during the period 1 October to 31 December 2011.

#### Other Injury Accidents

This section describes other injury accidents that occurred during the period 1 October to 31 December 2011.

### **Helicopters**

# **Airline Operations - Helicopter**

 A passenger disembarked from an AS 350B on a passenger transport A to A operation prior to the aircraft landing. The passenger fell approximately 2.5 metres and suffered serious injuries.

### **Sport Aircraft**

### **Sport Transport**

• A passenger from a tandem parachute flight suffered serious injuries after disconnecting, when struck by another landing parachute.

### **Private Operations - Sport**

- The pilot of a hang glider on a solo training flight suffered serious injuries on landing.
- A skydiver turned too close to the ground and made a hard landing, suffering serious injuries as a result.
- A power glider made a hard landing during an outlanding. The pilot suffered minor injuries.

Injuries

Number of Fatal Accidents and Number of Fatal Injuries

Aircraft Statistics Category	1 Oct to 31	Dec 2010	2010 1 Oct to 31 Dec 2011		Chan	ige
	Fatal	Fatal	Fatal	Fatal	Fatal	Fatal
	Accidents	Injuries	Accidents	Injuries	Accidents	Injuries
Large Aeroplanes	0	0	0	0	0	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	0	0	1	1	+ 1	+ 1
Agricultural Aeroplanes	0	0	0	0	0	0
Helicopters	1	2	2	3	+ 1	+ 1
Sport Aircraft	0	0	0	0	0	0
Unknown Aircraft	0	0	0	0	0	0
Hang Gliders	0	0	0	0	0	0
Parachutes	0	0	0	0	0	0
Total	1	2	3	4	+ 2	+ 2

# Number of Serious Injuries

Aircraft Statistics Category	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	0	2	+ 2
Agricultural Aeroplanes	0	0	0
Helicopters	1	1	0
Sport Aircraft	1	0	- 1
Unknown Aircraft	0	0	0
Hang Gliders	0	1	+ 1
Parachutes	2	2	0
Total	4	6	+ 2

# Number of Minor Injuries

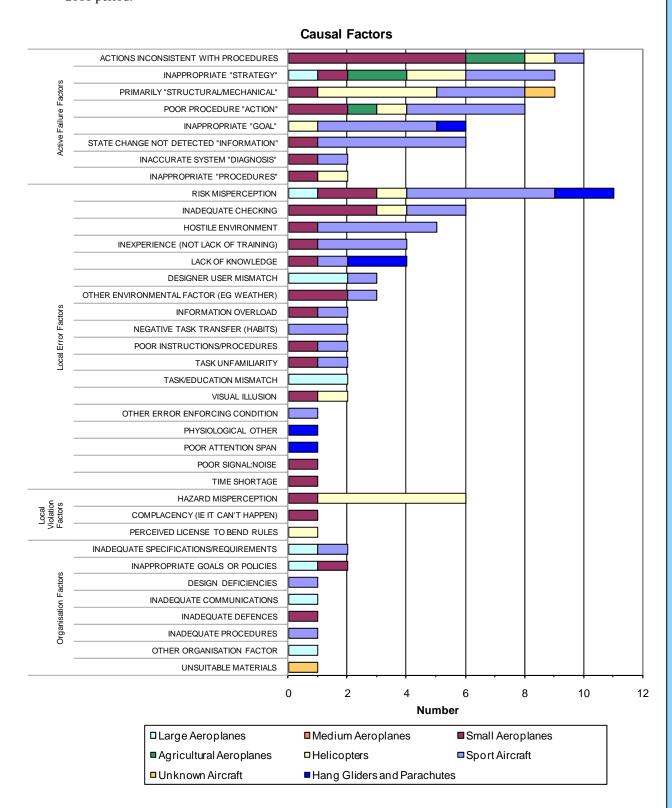
Aircraft Statistics Category	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	0	0	0
Agricultural Aeroplanes	0	0	0
Helicopters	1	1	0
Sport Aircraft	2	1	- 1
Unknown Aircraft	0	0	0
Hang Gliders	0	0	0
Parachutes	0	0	0
Total	3	2	- 1

# Accident Causal Factors by Aircraft Statistics Category

The following graph shows the number of causal factors recorded for accidents that occurred during the 12-month period 1 October 2010 to 30 September 2011 for the various aircraft statistics categories.

Causal factors have been assigned to 66 (62%) of the 106 accidents.

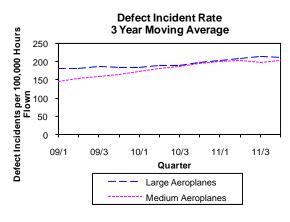
Note that causes are not yet available for all accidents that occurred in the 1 October to 31 December 2011 period.

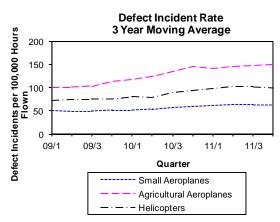


# **Defect Incidents**

#### **Trends**

The following graphs show the defect incident rates (3 year moving average) for the three-year period 1 January 2009 to 31 December 2011 (excluding the Sport Aircraft statistics category).





### **Quarterly Comparison**

### Number of Defect Incidents

Aircraft Statistics Category	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Large Aeroplanes	175	161	- 14
Medium Aeroplanes	38	37	- 1
Small Aeroplanes	49	37	- 12
Agricultural Aeroplanes	17	12	- 5
Helicopters	56	30	- 26
Sport Aircraft	6	10	+ 4
Unknown Aircraft	22	7	- 15
Total	363	294	- 69

### Severity of Defect Incidents

Severity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Critical	0	2	+ 2
Major	64	46	- 18
Minor	299	246	- 53

No defect incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 or 2011 quarters.

No defect incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 quarter. One defect incident in the 'Medium Aeroplanes' statistics category was classified as Critical in the 1 October to 31 December 2011 quarter. An aircraft on a passenger transport A to B flight declared an emergency due to smoke in the cabin.

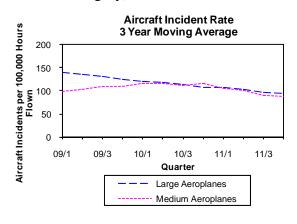
### Rate Monitoring

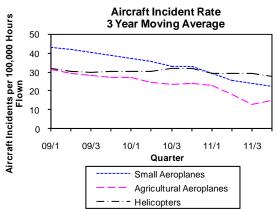
Defect incident rate monitoring of individual types of large and medium air transport aircraft has been carried out against the CAA standard for the period ended 30 September 2011. Analysis shows that four of the 15 monitored aircraft types have defect rates above the "trigger level" for CAA action.

### **Aircraft Incidents**

### **Trends**

The following graphs show the aircraft incident rates (3 year moving average) for the three-year period 1 January 2009 to 31 December 2011 (excluding the Sport Aircraft statistics category).





# **Quarterly Comparison**

### Number of Aircraft Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 1 Oct to 31 Dec		Change
	2010	2011	
Large Aeroplanes	67	73	+ 6
Medium Aeroplanes	21	17	- 4
Small Aeroplanes	28	19	- 9
Agricultural Aeroplanes	1	4	+ 3
Helicopters	18	13	- 5
Sport Aircraft	5	6	+ 1
Unknown Aircraft	77	25	- 52
Total	217	157	- 60

### Severity of Aircraft Incidents

Severity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Critical	0	3	+ 3
Major	27	31	+ 4
Minor	190	123	- 67

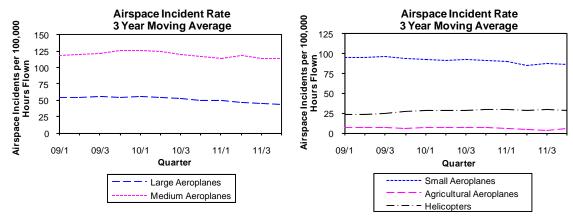
No aircraft incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 quarter. One aircraft incident in the 'Large Aeroplanes' statistics category was classified as Critical in the 1 October to 31 December 2011 quarter. An aircraft on a passenger transport A to B flight descended below decision altitude in IMC, with visual conditions achieved 130 ft below decision altitude.

No aircraft incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 quarter. One aircraft incident in the 'Medium Aeroplanes' statistics category was classified as Critical in the 1 October to 31 December 2011 quarter. An aircraft on a parachuting flight was struck by a bullet during descent.

# **Airspace Incidents**

### **Trends**

The following graphs show the airspace incident rates (3 year moving average) for the three-year period 1 January 2009 to 31 December 2011 (excluding the Sport Aircraft statistics category).



# **Quarterly Comparison**

# Number of Airspace Incidents

Aircraft Statistics Category	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2010	2011	
Large Aeroplanes	19	32	+ 13
Medium Aeroplanes	11	18	+ 7
Small Aeroplanes	67	95	+ 28
Agricultural Aeroplanes	0	3	+ 3
Helicopters	15	12	- 3
Sport Aircraft	10	10	0
Unknown Aircraft	94	93	- 1
Total	216	263	+ 47

### Severity of Airspace Incidents

Severity	1 Oct to 31 Dec	Oct to 31 Dec 1 Oct to 31 Dec	
	2010	2011	
Critical	4	7	+ 3
Major	41	45	+ 4
Minor	171	211	+ 40

No airspace incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 or 2011 quarters.

No airspace incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2010 or 2011 quarters.

### Attributability

Of the 263 airspace incidents in the 1 October to 31 December 2011 quarter, 18% are Air Traffic Service (ATS) attributable, 68% are pilot attributable, 2% are ATS and pilot attributable, and 12% are unknown attributable. (Note that the percentages may not sum exactly to 100% due to rounding.)

Since January 2009 the long-term trend of the ATS attributable airspace occurrence rate is upward (but the slope of the trend line is close to zero) and the long-term trend of the pilot attributable rate is upward.

### **Bird Incident Rates**

Bird hazard monitoring has been carried out against the CAA standard for the period ended 31 December 2011.

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), both having long-term upward trends. Five aerodromes had strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), four having long-term upward trends and one having a long-term downward trend. 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.

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# **Quarterly Statistics**

Quarter	2009/1	2009/2	2009/3	2009/4	2010/1	2010/2
Number of Air Transport Flights <sup>1</sup>	115,409	85,482	83,353	97,144	108,240	86,320
Number of Hours Flown <sup>1</sup>	271,270	226,574	229,894	240,179	255,874	222,023
Number of Aircraft Movements <sup>2</sup>	299,289	282,900	278,588	261,753	276,062	252,639
Number of Aircraft on the Register <sup>3</sup>	4,400	4,406	4,393	4,415	4,428	4,440
Number of Licences (Type of Medical Certificate) 4						
Recreational Pilot Licence (RPL Medical)	80	103	120	133	141	132
Private Pilot Licence (Class 1 & 2)	3,787	3,799	3,850	3,829	3,795	3,757
Commercial Pilot Licence (Class 2 only)	1,794	1,909	1,919	1,969	1,990	2,066
Commercial Pilot Licence (Class 1)	2,322	2,300	2,344	2,359	2,403	2,344
Airline Transport Pilot Licence (Class 2 only)	903	893	975	976	922	913
Airline Transport Pilot Licence (Class 1)	1,130	1,152	1,069	1,068	1,135	1,134
Air Traffic Controller Licence (Class 3)	342	345	363	363	366	363
Aircraft Maintenance Engineer Licence (N/A)	2,352	2,378	2,402	2,424	2,445	2,463
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	10	10	10	10	10	10
Air Operator – Medium Aeroplanes	15	15	15	15	15	15
Air Operator – Helicopters and Small Aeroplanes	166	171	170	173	172	174
Number of Aircraft Accidents <sup>5</sup>						
Large Aeroplanes	1	0	1	1	0	0
Medium Aeroplanes	0	0	1	0	1	0
Small Aeroplanes	8	5	8	7	2	9
Agricultural Aeroplanes	0	1	1	1	0	3
Helicopters	6	1	4	6	8	3
Sport Aircraft	11	6	5	16	9	6
Unknown Aircraft	0	0	0	0	0	0
Hang Gliders	12	2	4	6	10	5
Parachutes	1	3	1	2	2	1
Number of Fatal Accidents <sup>5</sup>	4	0	1	5	1	0
Number of Fatal Injuries <sup>5</sup>	6	0	1	6	1	0
Number of Serious + Minor Injuries <sup>5</sup>	10	7	12	11	16	10
Social Cost \$ million <sup>6</sup>	24.83	1.56	6.27	24.06	6.97	1.89
Number of Incidents <sup>7</sup>	1,176	1,130	1,120	1,083	1,119	1,154
Number of Aviation Related Concerns	89	83	105	97	124	153

<sup>&</sup>lt;sup>1</sup> New Zealand registered aircraft. Includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes. Estimated for 2011/1, 2011/2, 2011/3 and 2011/4.

<sup>&</sup>lt;sup>2</sup> Certificated aerodromes. Includes Auckland, Christchurch, Dunedin, Gisborne, Hamilton, Invercargill, Napier, Nelson, New Plymouth, Ohakea, Palmerston North, Queenstown, Rotorua, Taupo, Tauranga, Wellington and Woodbourne. Excludes Chatham Islands/Tuuta Airport, Hokitika (certificated from Apr 2010), Kerikeri/Bay of Islands, Mount Cook (certificated until Sep 2009), Paraparaumu (certificated from Apr 2009), Te Anau/Manapouri, Timaru, Wanganui, Westport and Whangarei.

<sup>&</sup>lt;sup>3</sup> As at the last day of the quarter. Includes the sport aircraft statistics category. Excludes hang gliders and parachutes.

Quarter	2010/3	2010/4	2011/1	2011/2	2011/3	2011/4
Number of Air Transport Flights <sup>1</sup>	85,216	100,683	110,443	83,215	88,637	104,202
Number of Hours Flown <sup>1</sup>	212,124	242,651	261,730	228,759	237,457	264,588
Number of Aircraft Movements <sup>2</sup>	240,033	256,474	256,398	242,338	256,117	242,744
Number of Aircraft on the Register <sup>3</sup>	4,438	4,442	4,480	4,490	4,495	4,499
Number of Licences (Type of Medical Certificate) <sup>4</sup>						
Recreational Pilot Licence (RPL Medical)	128	146	162	180	189	205
Private Pilot Licence (Class 1 & 2)	3,750	3,655	3,611	3,603	3,577	3,513
Commercial Pilot Licence (Class 2 only)	2,027	2,083	2,131	2,229	2,236	2,284
Commercial Pilot Licence (Class 1)	2,397	2,385	2,372	2,339	2,380	2,362
Airline Transport Pilot Licence (Class 2 only)	986	981	928	909	965	962
Airline Transport Pilot Licence (Class 1)	1,075	1,096	1,155	1,188	1,118	1,124
Air Traffic Controller Licence (Class 3)	358	362	363	361	361	362
Aircraft Maintenance Engineer Licence (N/A)	2,479	2,496	2,511	2,519	2,540	2,549
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	10	10	9	9	9	9
Air Operator – Medium Aeroplanes	15	16	15	15	15	15
Air Operator – Helicopters and Small Aeroplanes	175	175	173	174	174	175
Number of Aircraft Accidents <sup>5</sup>						
Large Aeroplanes	2	0	1	0	0	0
Medium Aeroplanes	0	0	0	1	1	0
Small Aeroplanes	6	4	4	4	4	6
Agricultural Aeroplanes	0	1	3	3	0	1
Helicopters	4	3	5	6	4	8
Sport Aircraft	5	13	17	5	5	6
Unknown Aircraft	0	0	1	1	1	0
Hang Gliders	2	2	6	3	0	1
Parachutes	1	2	1	3	2	3
Number of Fatal Accidents <sup>5</sup>	3	1	2	4	0	3
Number of Fatal Injuries <sup>5</sup>	12	2	2	5	0	4
Number of Serious + Minor Injuries <sup>5</sup>	6	7	11	6	3	8
Social Cost \$ million <sup>6</sup>	47.35	9.48	12.64	20.87	1.67	18.86
Number of Incidents <sup>7</sup>	1,166	1,173	1,230	1,238	1,219	1,095
Number of Aviation Related Concerns	153	203	243	155	271	224

<sup>&</sup>lt;sup>4</sup> 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.

<sup>&</sup>lt;sup>5</sup> All accidents. All aircraft statistics categories. Includes hang gliders and parachutes.

<sup>&</sup>lt;sup>6</sup> All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2010 dollars.

All incident sub-types.

### **Definitions**

#### Accident

Means 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

Means any incident, not otherwise classified, associated with the operation of an aircraft.

# 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

Means 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**

Means 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

Means 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**

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

### Fatal Injury

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

#### Incident

Means 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

