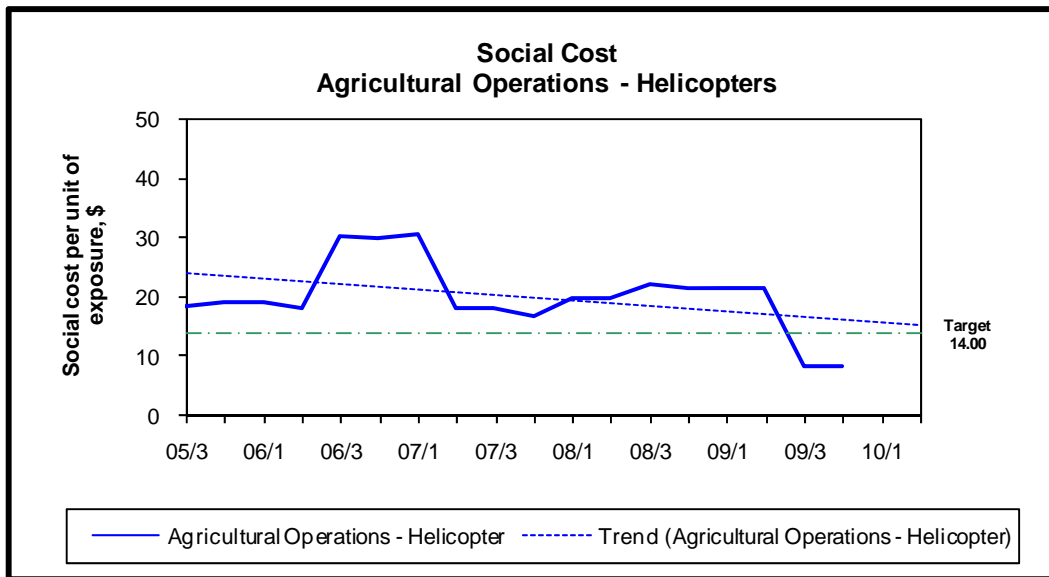


# Aviation Safety Summary Report

**1 October to 31 December 2009**





## 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.

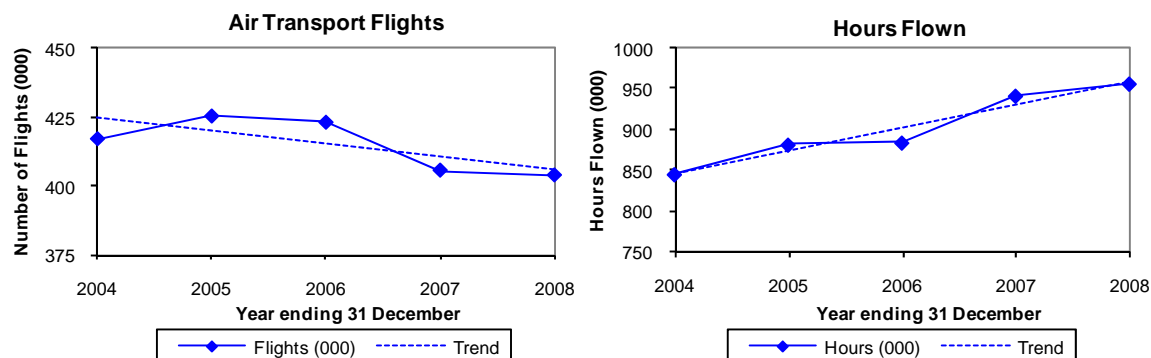
## Overview

### 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 2004 to 31 December 2008 (includes the aircraft classes aeroplane, helicopter and balloon only).



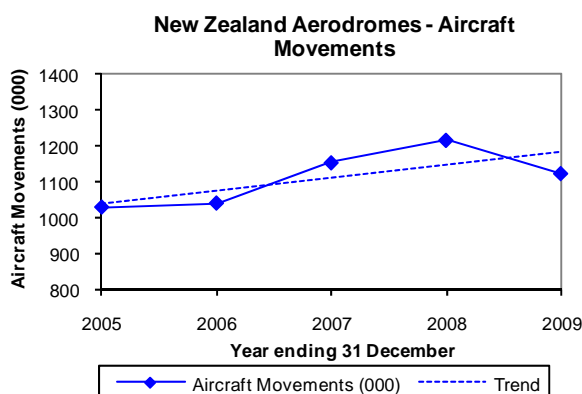
Note that the scales on these graphs do not start at zero.

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 2008 (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 2005 to 31 December 2009.



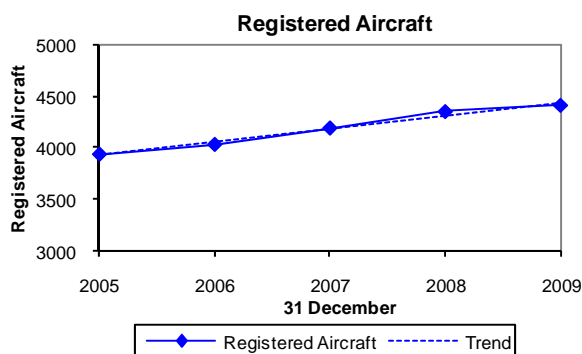
Note that the scale on this graph does not start at zero.

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, Kerikeri/Bay of Islands, Manapouri, Mount Cook, Paraparaumu, Timaru, Wanganui, Westport, Whangarei and Wigram.

## Registered Aircraft

### Trends

The following graph shows the number of registered aircraft at 31 December for each of the five-years 2005 to 2009.



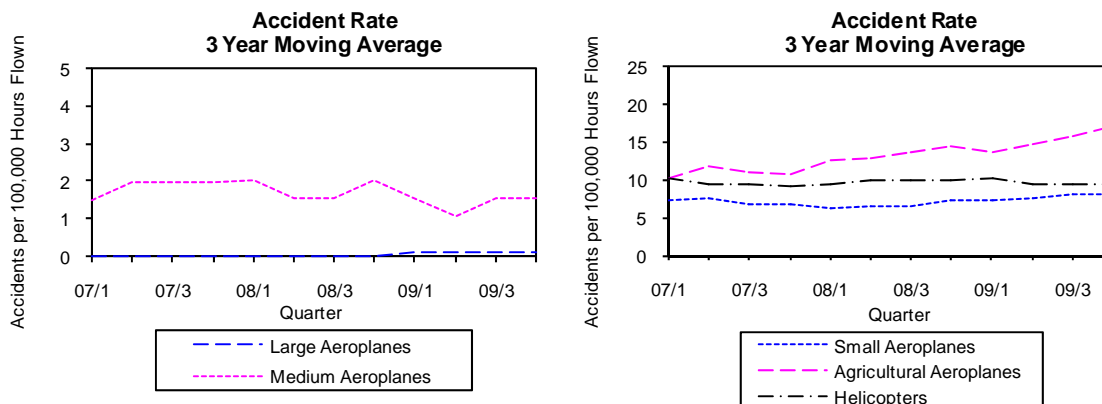
Note that the scale on this graph does not start at zero.

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

## Accidents

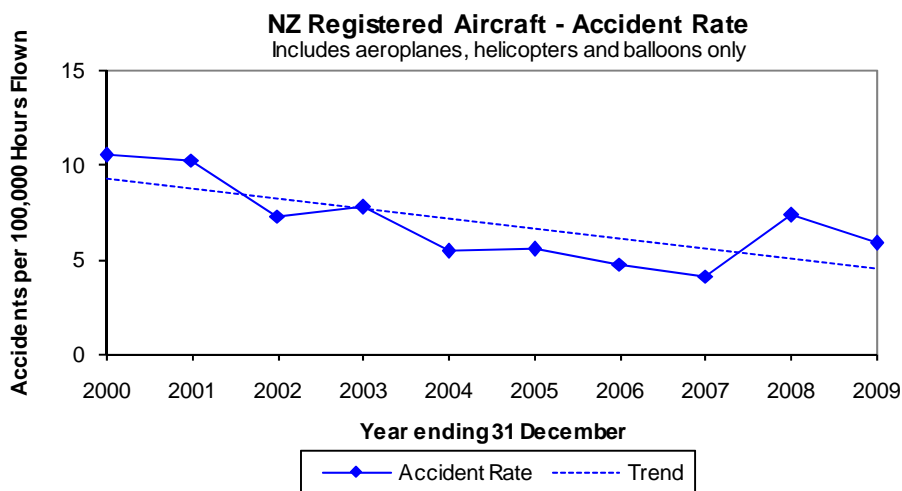
### Trends

The following graphs show the aircraft accident rates (3 year moving average) for the three-year period 1 January 2007 to 31 December 2009 (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 10-year period 1 January 2000 to 31 December 2009.



Note that this graph does not show a moving average.

## Safety Outcome Targets for 2010

### Safety Target Structure

The 2010 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 2008 and 2009. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2009 dollars.

Safety Target Group	1 Oct to 31 Dec	1 Oct to 31 Dec	Change
	2008	2009	
	\$m	\$m	
Airline Operations - Large Aeroplanes	0.03	0.00	- 0.03
Airline Operations - Medium Aeroplanes	0.00	0.00	0.00
Airline Operations - Small Aeroplanes	0.00	0.00	0.00
Airline Operations - Helicopter	0.29	0.00	- 0.29
Sport Transport	0.00	0.47	+ 0.47
Other Commercial Operations - Aeroplane	0.02	0.00	- 0.02
Other Commercial Operations - Helicopter	0.03	0.00	- 0.03
Agricultural Operations - Aeroplane	4.39	0.02	- 4.37
Agricultural Operations - Helicopter	0.02	0.00	- 0.02
Agricultural Operations - Sport	0.00	0.00	0.00
Private Operations - Aeroplane	0.52	3.69	+ 3.17
Private Operations - Helicopter	3.81	0.02	- 3.80
Private Operations - Sport	5.08	18.55	+ 13.47
<b>Total</b>	<b>14.19</b>	<b>22.75</b>	<b>+ 8.56</b>

Note that the individual values in the table may not sum exactly to the total shown due to rounding.

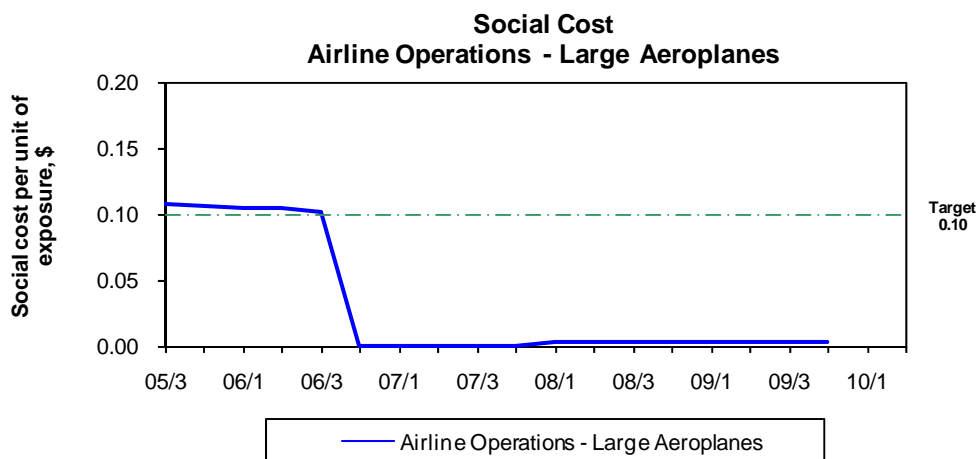
Note that the Sport groups include hang gliders and parachutes.

### Safety Target Graphs

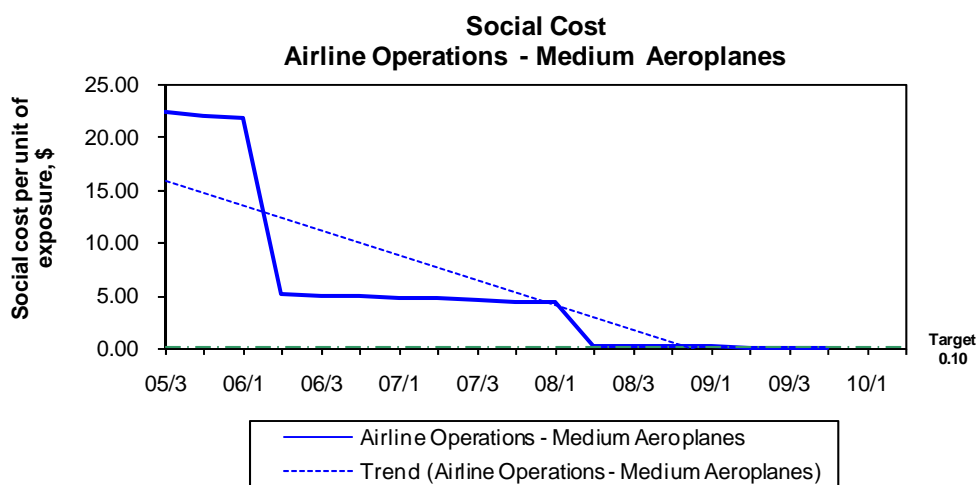
Each Safety Target Group has its own target level expressed as social cost per unit of person exposure, the unit being “one seat hour”. For Safety Target Groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of person exposure. These outcomes represent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

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

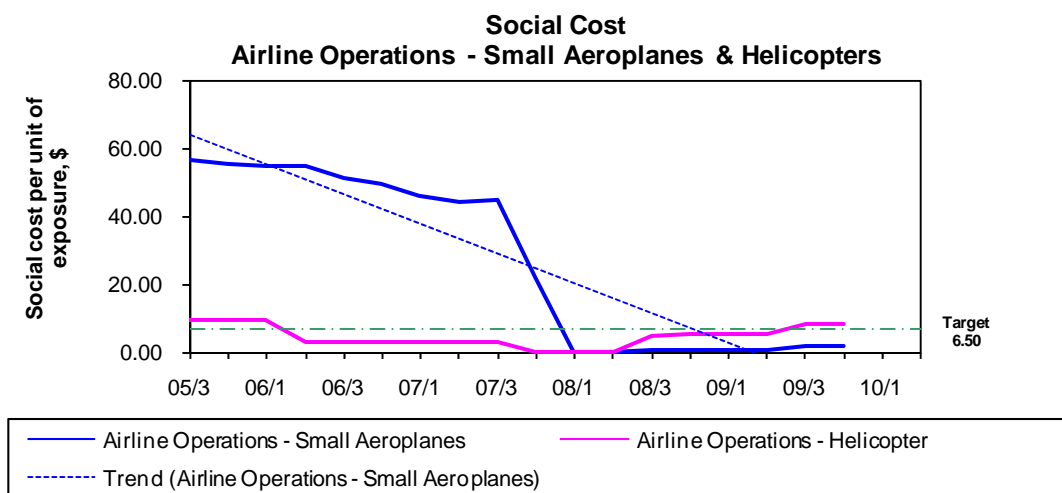
Graphs displaying the Safety Outcome Targets and the progress over each quarter are shown on the following pages.



The outcome for Airline Operations – Large Aeroplanes (96.2% of total seat hours) has been below the target level of \$0.10 per hour of exposure since late 2006.

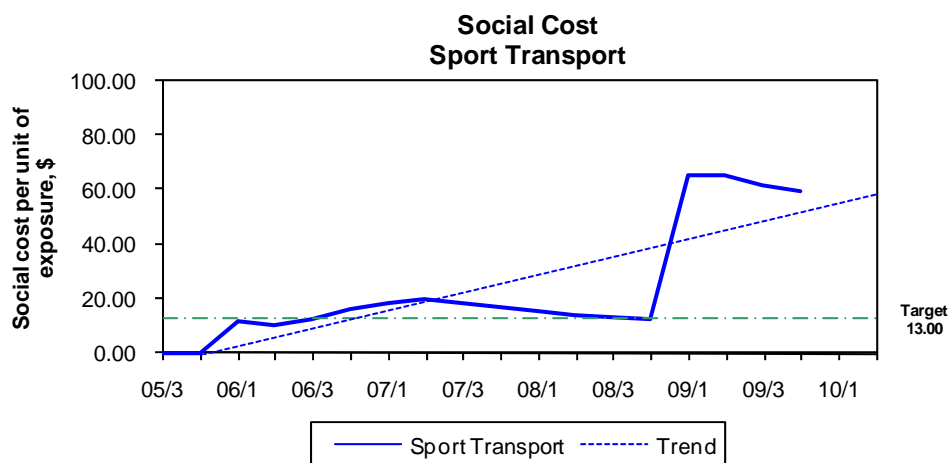


The outcome for Airline Operations – Medium Aeroplanes is trending down and has been below the target level since the quarter Apr to Jun 09 (the data point at 09/4 is \$0.02 per hour of exposure). The exposure (1.6% of total seat hours) associated with this sector is relatively small. There have been no fatal or serious injuries in this group during the period Jan 07 to Dec 09.



The outcome for Airline Operations – Small Aeroplanes (0.2% of total seat hours) shows a significant long term downward trend from the high starting point of \$56.50 per hour of exposure generated by 6 fatal and 2 serious injuries and 1 minor injury in the three years Oct 02 to Sep 05. There has been 1 serious injury and 3 minor injuries during the period Jan 07 to Dec 09. The safety outcome for this group has been below the target level since the quarter Jan to Mar 08.

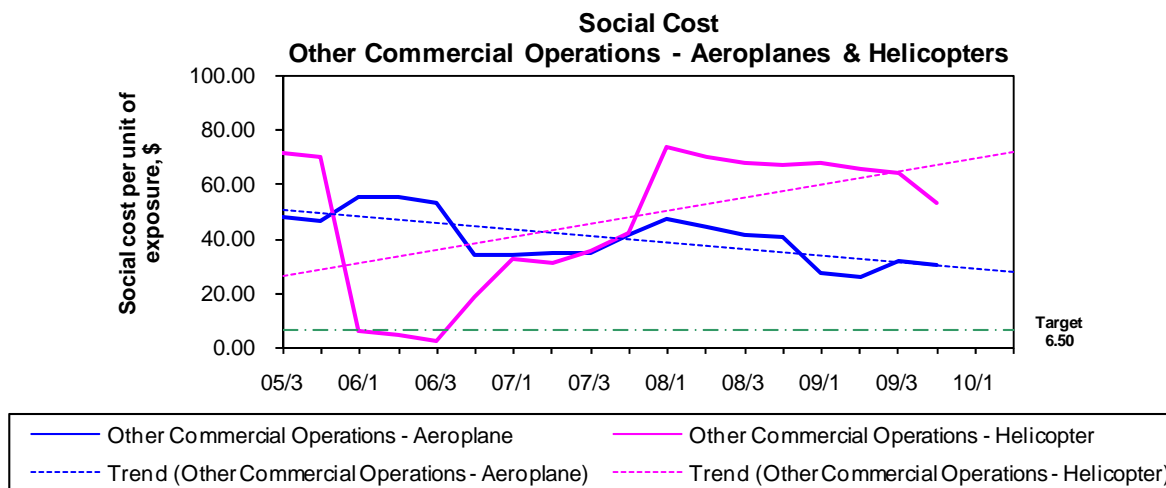
The outcome for Airline Operations – Helicopter is now above the target level. There have been 2 serious and 4 minor injuries in this group in the three years Jan 07 to Dec 09.



Three fatal accidents that occurred in the quarter Jan to Mar 09 have resulted in the highest outcomes for Sport Transport since the target regime was established in 2005. The previous peak in the second quarter of 2007 included 11 serious and 2 minor injuries in the three years Jul 04 to Jun 07 (a social cost of \$4.1 million including destroyed aircraft). The fatal accidents in the first quarter of 2009 are the first since the target regime was established; there have been 5 fatal, 10 serious and 8 minor injuries in the three years Jan 07 to Dec 09 (a social cost of \$21.6 million including destroyed aircraft).

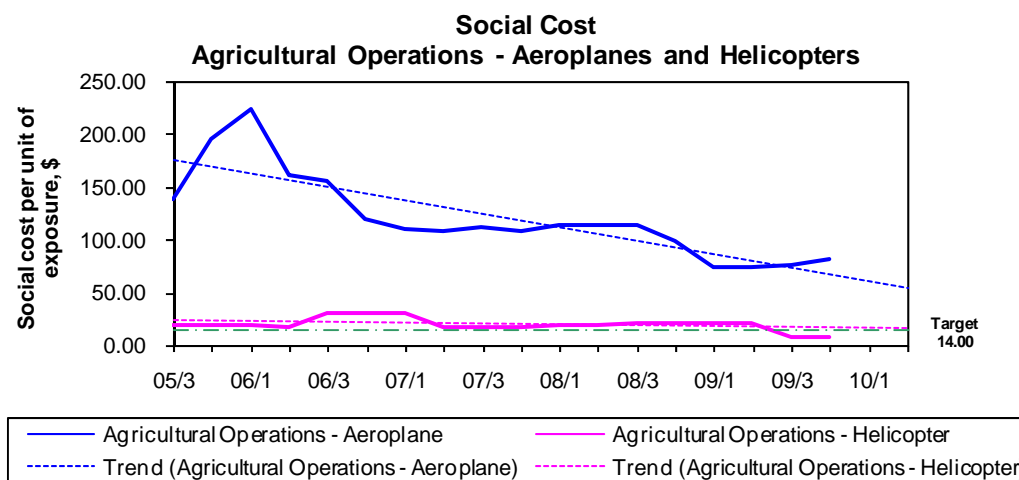
Note that this group includes hang gliders and parachutes used on transport operations.





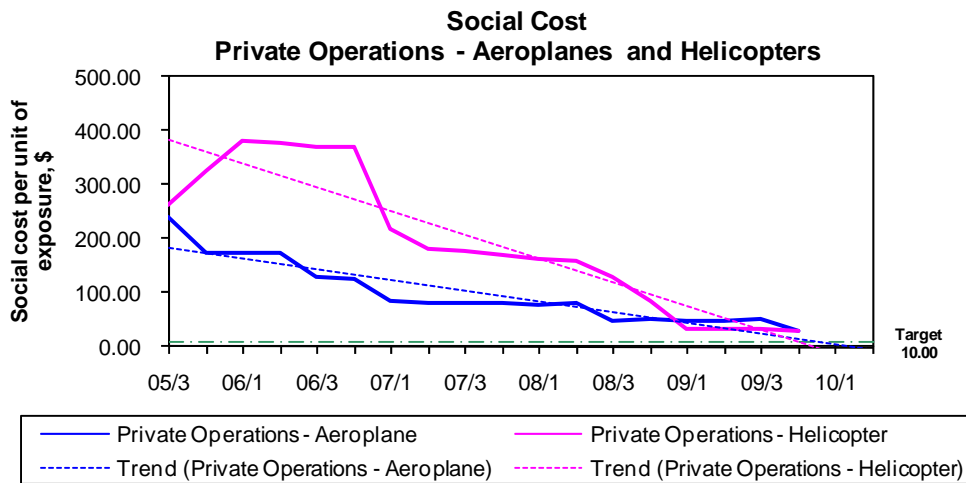
The outcome for Other Commercial Operations – Aeroplane is well above the target of \$6.50. During the three years Jan 07 to Dec 09 there have been 5 fatal, 3 serious and 2 minor injuries in this group.

The outcome for Other Commercial Operations – Helicopter turned sharply upwards during the fourth quarter of 2006 and is now well above the target level. There have been 2 fatal, 1 serious and 4 minor injuries in this group in the three years Jan 07 to Dec 09.

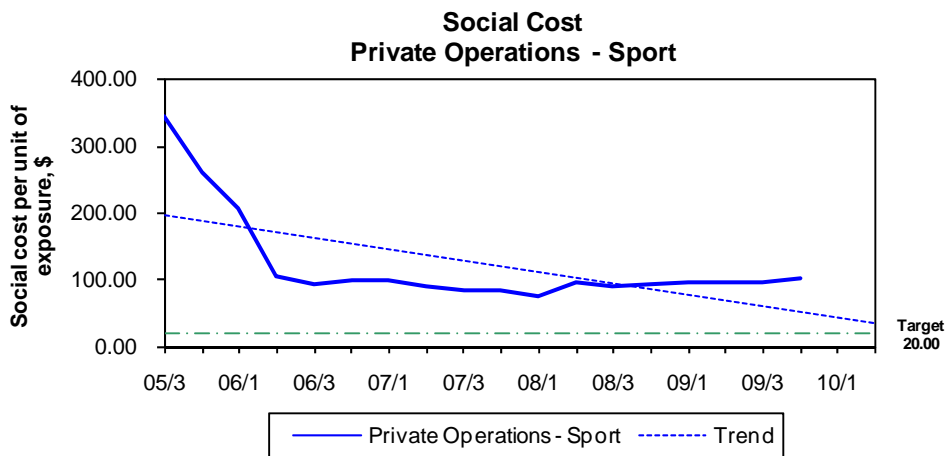


The outcome for Agricultural Operations – Aeroplanes is well above the target level of \$14.00. During the three years Jan 07 to Dec 09 there have been 2 fatal injuries, 1 serious and 1 minor injury in this group.

The outcome for Agricultural Operations – Helicopter is now below the target level. There have been 1 serious and 2 minor injuries in the three years Jan 07 to Dec 09.



The outcome for Private Operations – Aeroplanes has been trending down since late 2005. There have been 1 fatal, 3 serious and 4 minor injuries in the three years Jan 07 to Dec 09. The outcome for Private Operations – Helicopters has been trending down since early 2006. There have been 1 fatal and 7 minor injuries in the three years Jan 07 to Dec 09.



The outcome for Private Operations – Sport is well above the target of \$20.00. There have been 15 fatal, 23 serious and 19 minor injuries in the three years Jan 07 to Dec 09.

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

## Activity

### Air Transport Flights, Total Hours

#### Quarterly Comparison

Activity	1 Oct to 31 Dec	1 Oct to 31 Dec	Change	
	2007	2008	Number	Percentage
Air Transport Flights	104,008	104,711	+ 703	+ 0.7
Hours	243,975	232,412	- 11,563	- 4.7

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 2008 (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	Change	
	2008	2009	Number	Percentage
Aircraft Movements	295,075	261,753	- 33,322	- 11.3

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, Kerikeri/Bay of Islands, Manapouri, Mount Cook, Paraparaumu, Timaru, Wanganui, Westport, Whangarei and Wigram.

### Registered Aircraft

#### Quarterly Comparison

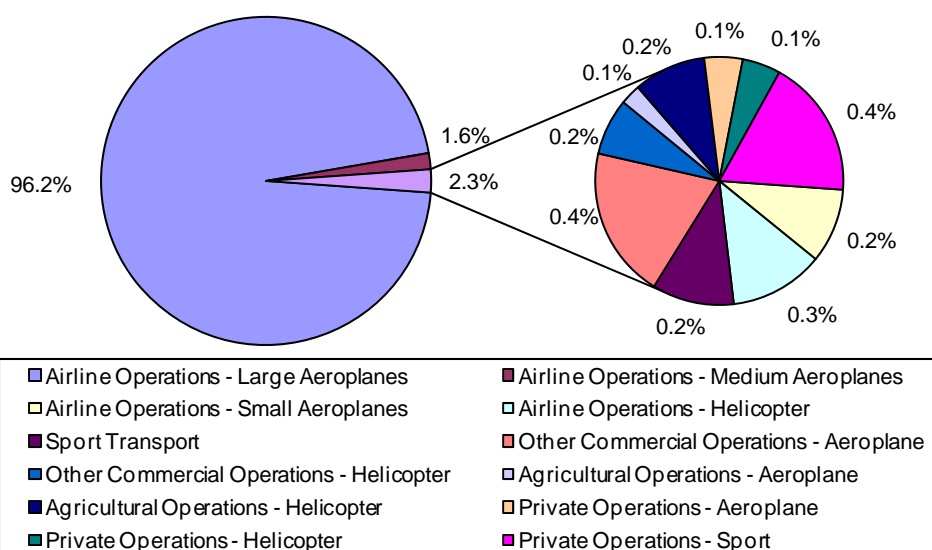
Aircraft Statistics Category	31 December	31 December	Change	
	2008	2009	Number	Percentage
Large Aeroplanes	121	118	- 3	- 2.5
Medium Aeroplanes	81	84	+ 3	+ 3.7
Small Aeroplanes	1,491	1,502	+ 11	+ 0.7
Agricultural Aeroplanes	120	118	- 2	- 1.7
Helicopters	747	760	+ 13	+ 1.7
Sport Aircraft	1,794	1,833	+ 39	+ 2.2
<b>Total</b>	<b>4,354</b>	<b>4,415</b>	<b>+ 61</b>	<b>+ 1.4</b>

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 2010 Safety Target Group categories for the period 1 October to 31 December 2008 (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	96.2
Airline Operations - Medium Aeroplanes	1.6
Airline Operations - Small Aeroplanes	0.2
Airline Operations - Helicopter	0.3
Sport Transport	0.2
Other Commercial Operations - Aeroplane	0.4
Other Commercial Operations - Helicopter	0.2
Agricultural Operations - Aeroplane	0.1
Agricultural Operations - Helicopter	0.2
Agricultural Operations - Sport	-
Private Operations - Aeroplane	0.1
Private Operations - Helicopter	0.1
Private Operations - Sport	0.4

Note that the percentages may not sum exactly to 100.0% due to rounding.

## Accidents

### Quarterly Comparison

#### *Number of Accidents*

Aircraft Statistics Category	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	1	0	- 1
Small Aeroplanes	9	7	- 2
Agricultural Aeroplanes	3	1	- 2
Helicopters	7	6	- 1
Sport Aircraft	14	16	+ 2
Hang Gliders	2	6	+ 4
Parachutes	1	2	+ 1
Unknown Aircraft	1	0	- 1
<b>Total</b>	<b>38</b>	<b>38</b>	<b>0</b>

#### *Severity of Accidents*

Severity	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Critical	5	18	+ 13
Major	28	14	- 14
Minor	5	6	+ 1

No accidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

No accidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 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 2009.

#### **Small Aeroplanes**

##### **Private Operations – Aeroplanes**

- An aeroplane crashed. The pilot was killed.

#### **Sport Aircraft**

##### **Private Operations – Sport**

- A gyrocopter crashed into a paddock. Both occupants were killed. The aircraft was substantially damaged and written off.
- A glider crashed on a cross country flight. The pilot was killed. The aircraft was destroyed.
- A glider struck power lines and crashed. The pilot was killed.
- A hang glider on a solo training flight crashed into a hill. The pilot was killed.

### **Significant Non-Injury Accidents**

There were no significant non-injury accidents during the period 1 October to 31 December 2009.

### **Other Injury Accidents**

This section describes other injury accidents that occurred during the period 1 October to 31 December 2009.

#### **Small Aeroplanes**

##### **Private Operations - Aeroplane**

- A PA-22 flipped after landing on a grass airstrip. A passenger received minor injuries. The aircraft was substantially damaged and written off.

#### **Agricultural Aeroplanes**

##### **Agricultural Operations - Aeroplane**

- A Cresco 08-600 struck an object shortly after takeoff and crashed upside down. The pilot received minor injuries.

#### **Helicopters**

##### **Private Operations - Helicopter**

- An R22 Beta on a ferry/positioning flight made a heavy landing immediately after takeoff. The pilot received minor injuries.

## **Sport Aircraft**

### **Sport Transport**

- A parachutist filming skydiving entered a spin when the main chute opened, and again when that was cut away and the reserve opened. The pilot suffered serious injuries.
- A glider on a passenger transport A to A flight struck trees short of the runway as it came in to land. The passenger suffered minor injuries. The aircraft was destroyed.
- A paraglider on a passenger transport A to B flight collapsed on takeoff and the pilot and passenger both received minor injuries.

### **Private Operations - Sport**

- A glider crashed on approach. The pilot suffered serious injuries.
- A hang glider pilot suffered serious injuries after falling 6 m to the ground when control was lost on landing.
- An amateur built aeroplane flipped after landing. The pilot suffered minor injuries.
- A paraglider stalled on takeoff when it failed to inflate fully. The pilot suffered minor injuries.

**Injuries*****Number of Fatal Accidents and Number of Fatal Injuries***

Aircraft Statistics Category	1 Oct to 31 Dec 2008		1 Oct to 31 Dec 2009		Change	
	Fatal Accidents	Fatal Injuries	Fatal Accidents	Fatal Injuries	Fatal Accidents	Fatal 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	1	1	0	0	- 1	- 1
Helicopters	1	1	0	0	- 1	- 1
Sport Aircraft	0	0	3	4	+ 3	+ 4
Hang Gliders	1	1	1	1	0	0
Parachutes	0	0	0	0	0	0
Unknown Aircraft	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>+ 2</b>	<b>+ 3</b>

***Number of Serious Injuries***

Aircraft Statistics Category	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	1	0	- 1
Agricultural Aeroplanes	0	0	0
Helicopters	0	0	0
Sport Aircraft	3	1	- 2
Hang Gliders	0	1	+ 1
Parachutes	1	1	0
Unknown Aircraft	0	0	0
<b>Total</b>	<b>5</b>	<b>3</b>	<b>- 2</b>

***Number of Minor Injuries***

Aircraft Statistics Category	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	1	1	0
Agricultural Aeroplanes	0	1	+ 1
Helicopters	3	1	- 2
Sport Aircraft	1	2	+ 1
Hang Gliders	1	3	+ 2
Parachutes	0	0	0
Unknown Aircraft	0	0	0
<b>Total</b>	<b>6</b>	<b>8</b>	<b>+ 2</b>

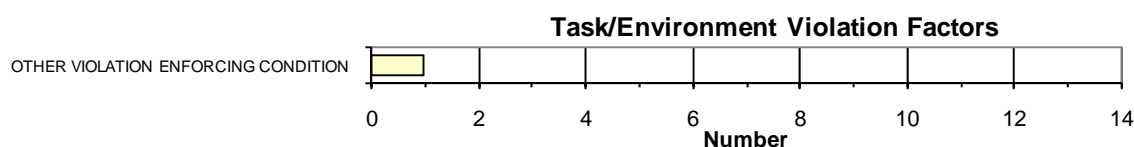
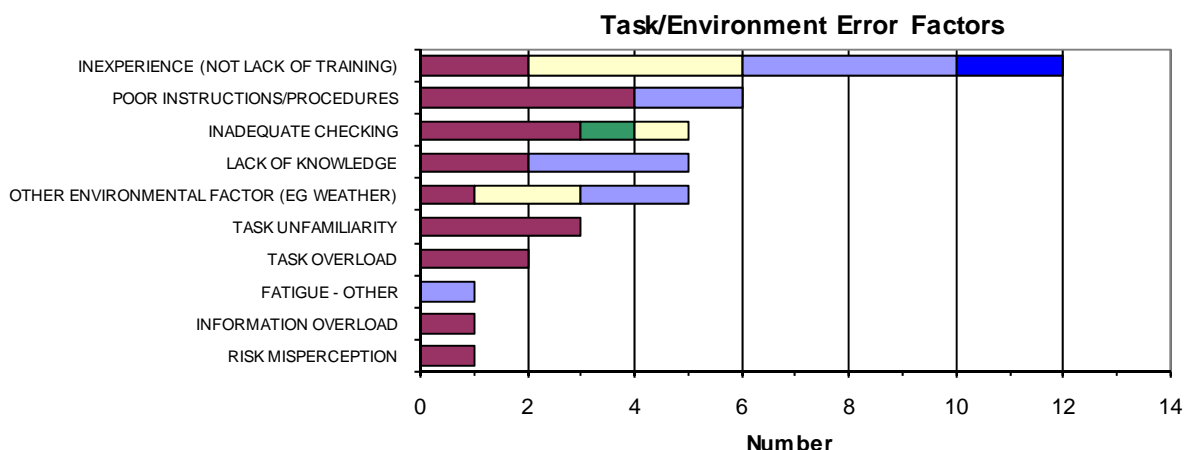
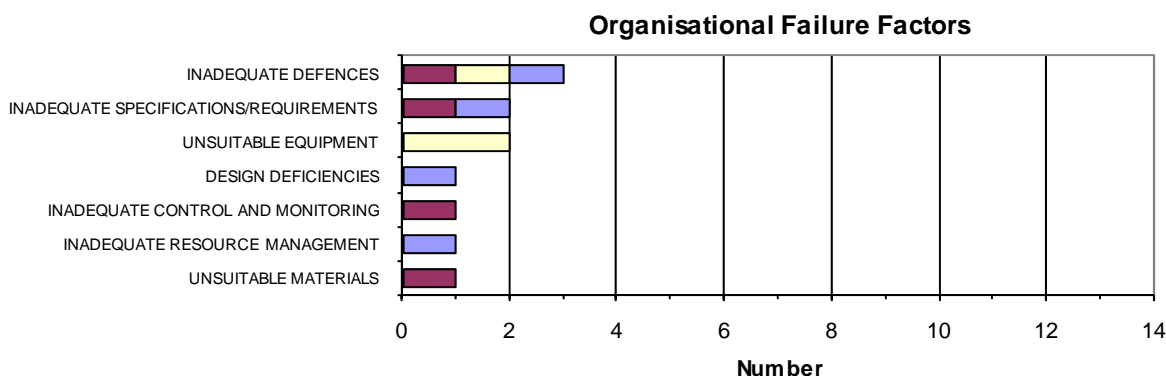
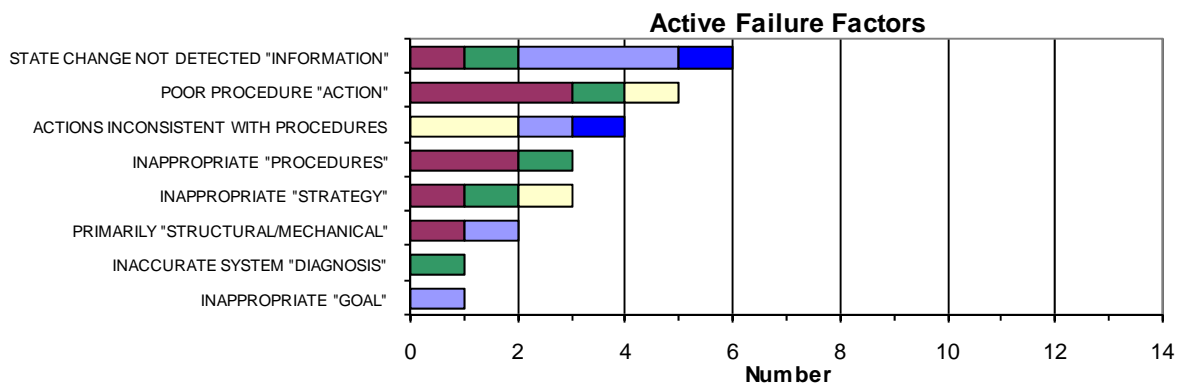


### Accident Causal Factors by Aircraft Statistics Category

The following graphs show the number of causal factors recorded for accidents that occurred during the 12-month period 1 October 2008 to 30 September 2009 for the various aircraft statistics categories.

Causal factors have been assigned to 47 (40%) of the 118 accidents.

Note that causes are not yet available for all accidents that occurred in the 1 October to 31 December 2009 period.

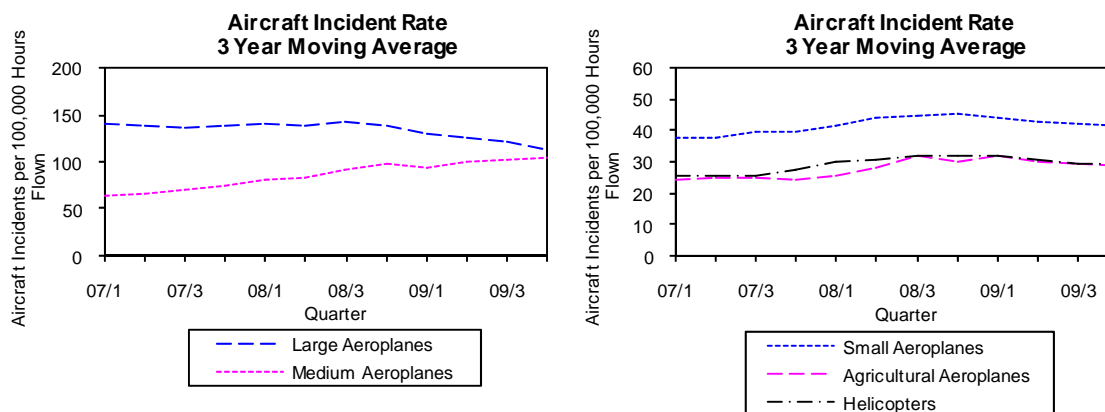


Large Aeroplanes	Medium Aeroplanes	Small Aeroplanes	Agricultural Aeroplanes
Helicopters	Sport Aircraft	Hang Gliders and Parachutes	

## Aircraft Incidents

### Trends

The following graphs show the aircraft incident rates (3 year moving average) for the three-year period 1 January 2007 to 31 December 2009 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Aircraft Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Large Aeroplanes	82	80	- 2
Medium Aeroplanes	18	6	- 12
Small Aeroplanes	32	25	- 7
Agricultural Aeroplanes	1	1	0
Helicopters	20	14	- 6
Sport Aircraft	2	10	+ 8
Unknown Aircraft	20	10	- 10
<b>Total</b>	<b>175</b>	<b>146</b>	<b>- 29</b>

#### Severity of Aircraft Incidents

Severity	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Critical	0	0	0
Major	20	16	- 4
Minor	155	130	- 25

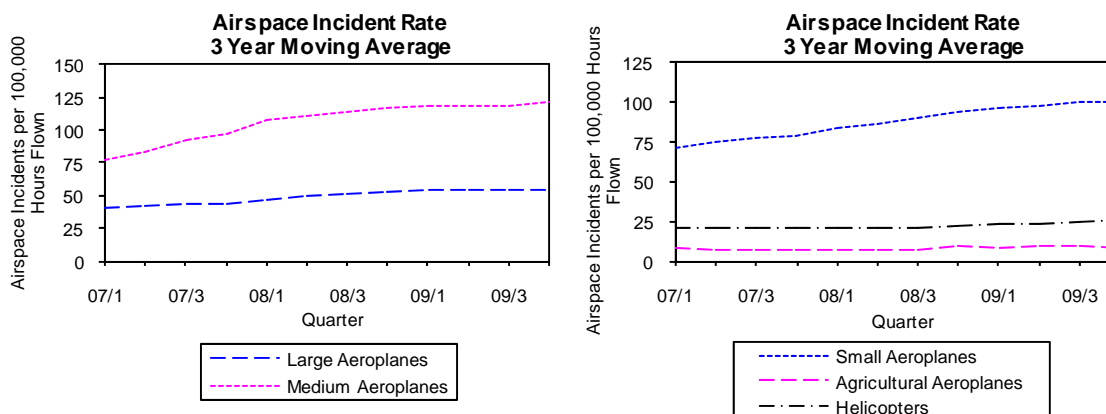
No aircraft incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

No aircraft incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

## Airspace Incidents

### Trends

The following graphs show the airspace incident rates (3 year moving average) for the three-year period 1 January 2007 to 31 December 2009 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Airspace Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Large Aeroplanes	40	40	0
Medium Aeroplanes	17	19	+ 2
Small Aeroplanes	81	64	- 17
Agricultural Aeroplanes	2	1	- 1
Helicopters	15	16	+ 1
Sport Aircraft	5	16	+ 11
Unknown Aircraft	98	71	- 27
<b>Total</b>	<b>258</b>	<b>227</b>	<b>- 31</b>

#### Severity of Airspace Incidents

Severity	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Critical	1	1	0
Major	36	36	0
Minor	221	190	- 31

No airspace incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

No airspace incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

### Attributability

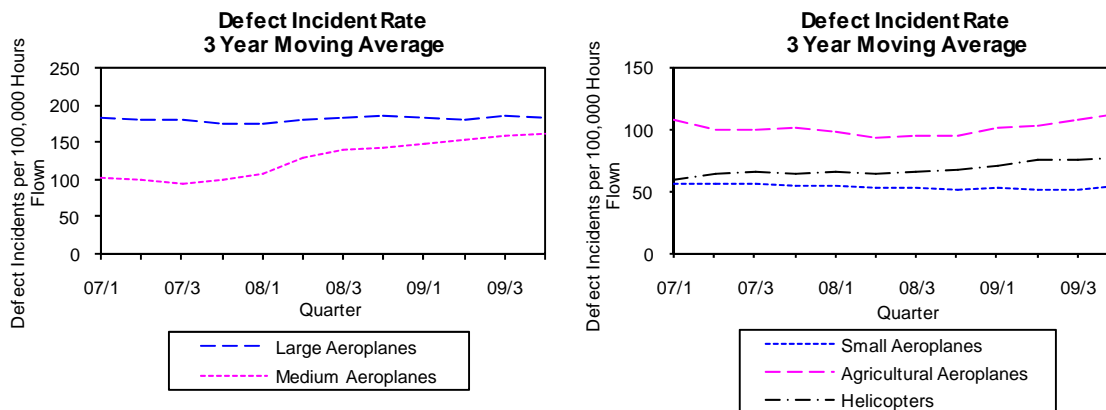
Of the 227 airspace incidents in the 1 October to 31 December 2009 quarter, 20% are Air Traffic Service (ATS) attributable, 69% are pilot attributable, 0% are ATS and pilot attributable, and 10% are unknown attributable. (Note that the percentages may not sum exactly to 100% due to rounding.)

Since January 2007 the long-term trend of the ATS attributable airspace occurrence rate is constant (the slope of the trend line is zero) and the long-term trend of the pilot attributable rate is upward (but the slope of the trend line is close to zero).

## Defect Incidents

### Trends

The following graphs show the defect incident rates (3 year moving average) for the three-year period 1 January 2007 to 31 December 2009 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Defect Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Large Aeroplanes	174	130	- 44
Medium Aeroplanes	24	21	- 3
Small Aeroplanes	25	50	+ 25
Agricultural Aeroplanes	6	10	+ 4
Helicopters	33	39	+ 6
Sport Aircraft	2	7	+ 5
Unknown Aircraft	6	11	+ 5
<b>Total</b>	<b>270</b>	<b>268</b>	<b>- 2</b>

#### Severity of Defect Incidents

Severity	1 Oct to 31 Dec 2008	1 Oct to 31 Dec 2009	Change
Critical	0	0	0
Major	49	61	+ 12
Minor	221	207	- 14

No defect incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

No defect incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 October to 31 December 2008 or 2009 quarters.

### 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 2009. Analysis shows that three of the 14 monitored aircraft types have defect rates above the "trigger level" for CAA action.

## **Bird Incident Rates**

Bird hazard monitoring has been carried out against the CAA standard for the period ended 31 December 2009. Analysis shows that seven of the 18 monitored aerodromes have bird strike rates above the “trigger level” for CAA action.

There was one aerodrome with a strike rate in the high risk category of the CAA standard (above 10.0 bird strikes per 10,000 aircraft movements). Five aerodromes had strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), one having a long-term upward trend, two having long-term constant trends and two having long-term downward trends. Twelve aerodromes had strike rates in the low risk category (below 5.0 per 10,000 movements), three having long-term upward trends, four having long-term constant trends and five having long-term downward trends.

## Quarterly Statistics

Quarter	2007/1	2007/2	2007/3	2007/4	2008/1	2008/2
<b>Number of Air Transport Flights<sup>1</sup></b>	115,226	100,420	85,937	104,008	119,796	87,384
<b>Number of Hours Flown<sup>1</sup></b>	250,670	227,923	218,463	243,975	266,321	230,893
<b>Number of Aircraft Movements<sup>2</sup></b>	290,284	272,719	289,005	300,512	321,583	306,863
<b>Number of Aircraft on the Register<sup>3</sup></b>	4,075	4,105	4,127	4,193	4,250	4,301
<b>Number of Licences (Type of Medical Certificate)<sup>4</sup></b>						
Recreational Pilot Licence (RPL Medical)	0	0	0	0	0	0
Private Pilot Licence (Class 1 & 2)	3,500	3,742	3,788	3,819	3,873	3,856
Commercial Pilot Licence (Class 2 only)	1,788	1,609	1,642	1,662	1,705	1,763
Commercial Pilot Licence (Class 1)	1,815	2,117	2,137	2,155	2,171	2,162
Airline Transport Pilot Licence (Class 2 only)	885	746	842	913	869	847
Airline Transport Pilot Licence (Class 1)	919	1,147	1,085	1,055	1,109	1,152
Air Traffic Controller Licence (Class 3)	299	326	330	325	325	332
Aircraft Maintenance Engineer Licence (N/A)	2,161	2,181	2,203	2,227	2,241	2,276
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	11	11	11	11	11	11
Air Operator – Medium Aeroplanes	14	13	15	16	16	16
Air Operator – Helicopters and Small Aeroplanes	161	159	161	164	163	161
Air Operator – Pacific	2	3	4	3	2	3
<b>Number of Aircraft Accidents<sup>5</sup></b>						
Large Aeroplanes	0	0	0	0	0	0
Medium Aeroplanes	0	1	0	0	0	0
Small Aeroplanes	8	4	1	7	8	6
Agricultural Aeroplanes	1	3	1	1	6	3
Helicopters	5	1	2	4	5	6
Sport Aircraft	8	10	3	5	13	5
Unknown Aircraft	0	0	0	1	0	0
Hang Gliders	4	1	4	2	1	2
Parachutes	4	1	0	1	0	0
<b>Number of Fatal Accidents<sup>5</sup></b>	1	0	0	3	5	2
<b>Number of Fatal Injuries<sup>5</sup></b>	1	0	0	3	7	4
<b>Number of Serious + Minor Injuries<sup>5</sup></b>	9	8	5	8	2	4
<b>Social Cost \$ million<sup>6</sup></b>	7.73	2.17	3.96	14.37	28.41	15.26
<b>Number of Incidents<sup>7</sup></b>	1,068	1,079	1,023	1,026	1,230	1,272
<b>Number of Aviation Related Concerns</b>	77	75	76	86	106	81

<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 2009/1, 2009/2, 2009/3 and 2009/4.

<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, Kerikeri/Bay of Islands, Manapouri, Mount Cook, Paraparaumu, Timaru, Wanganui, Westport, Whangarei and Wigram.

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

Quarter	2008/3	2008/4	2009/1	2009/2	2009/3	2009/4
<b>Number of Air Transport Flights<sup>1</sup></b>	91,942	104,711	119,420	89,494	93,797	106,210
<b>Number of Hours Flown<sup>1</sup></b>	226,206	232,412	254,288	222,590	219,191	224,319
<b>Number of Aircraft Movements<sup>2</sup></b>	291,661	295,075	299,289	282,900	278,588	261,753
<b>Number of Aircraft on the Register<sup>3</sup></b>	4,315	4,354	4,405	4,406	4,396	4,415
<b>Number of Licences (Type of Medical Certificate)<sup>4</sup></b>						
Recreational Pilot Licence (RPL Medical)	32	68	80	103	120	133
Private Pilot Licence (Class 1 & 2)	3,849	3,733	3,787	3,799	3,850	3,829
Commercial Pilot Licence (Class 2 only)	1,792	1,761	1,794	1,909	1,919	1,969
Commercial Pilot Licence (Class 1)	2,199	2,295	2,322	2,300	2,344	2,359
Airline Transport Pilot Licence (Class 2 only)	947	991	903	893	975	976
Airline Transport Pilot Licence (Class 1)	1,073	1,048	1,130	1,152	1,069	1,068
Air Traffic Controller Licence (Class 3)	340	342	342	345	363	363
Aircraft Maintenance Engineer Licence (N/A)	2,311	2,342	2,352	2,378	2,402	2,424
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	10	9	10	10	10	10
Air Operator – Medium Aeroplanes	15	15	15	15	15	15
Air Operator – Helicopters and Small Aeroplanes	163	163	166	171	170	173
Air Operator – Pacific	3	2	2	1	1	1
<b>Number of Aircraft Accidents<sup>5</sup></b>						
Large Aeroplanes	0	0	1	0	0	0
Medium Aeroplanes	0	1	0	0	1	0
Small Aeroplanes	8	9	8	4	8	7
Agricultural Aeroplanes	2	3	0	1	1	1
Helicopters	5	7	6	1	4	6
Sport Aircraft	4	14	11	6	5	16
Unknown Aircraft	0	1	0	0	0	0
Hang Gliders	1	2	12	2	4	6
Parachutes	0	1	1	3	1	2
<b>Number of Fatal Accidents<sup>5</sup></b>	1	3	4	0	1	5
<b>Number of Fatal Injuries<sup>5</sup></b>	2	3	6	0	1	6
<b>Number of Serious + Minor Injuries<sup>5</sup></b>	12	11	10	7	12	11
<b>Social Cost \$ million<sup>6</sup></b>	4.97	14.19	24.44	1.53	6.17	22.75
<b>Number of Incidents<sup>7</sup></b>	1,296	1,150	1,176	1,130	1,118	1,073
<b>Number of Aviation Related Concerns</b>	67	56	86	80	102	93

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

<sup>6</sup> All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2009 dollars.

<sup>7</sup> 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, rotors, 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.

<b>Aircraft Statistics Category</b>	<b>Definition</b>	<b>Aircraft Class</b>
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

