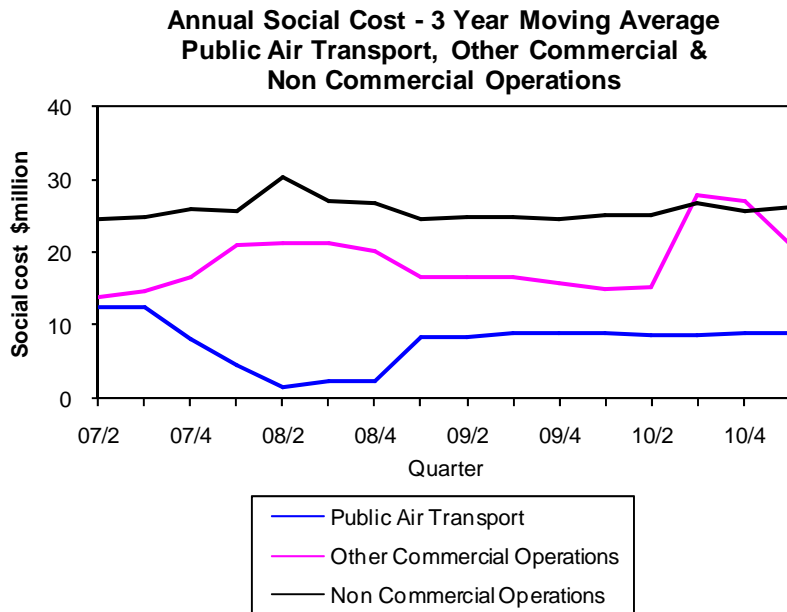


# Aviation Safety Summary Report

1 January to 31 March 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.

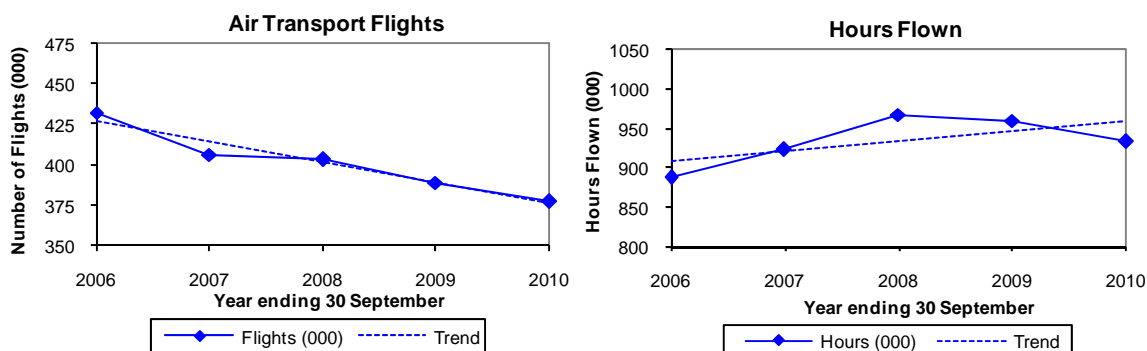
## Overview

### 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 October 2005 to 30 September 2010 (includes the aircraft classes aeroplane, helicopter and balloon only).



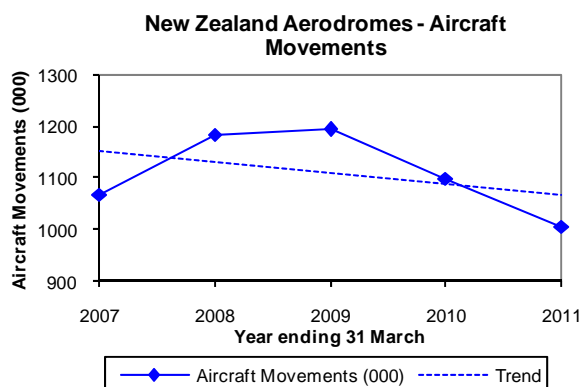
Note that the scales on these graphs do not start at zero.

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 30 September 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 April 2006 to 31 March 2011.



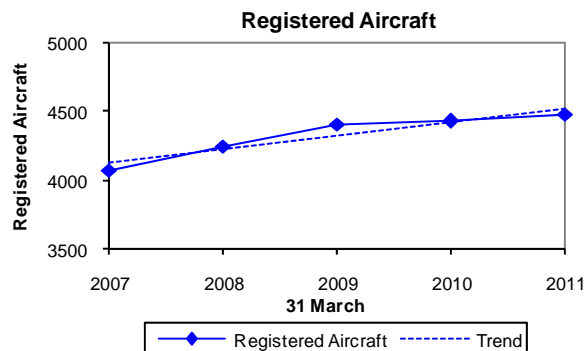
Note that the scale on this graph does not start at zero.

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, Whangarei (certificated from May 2006) and Wigram (certificated until Sep 2006).

## Registered Aircraft

### Trends

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



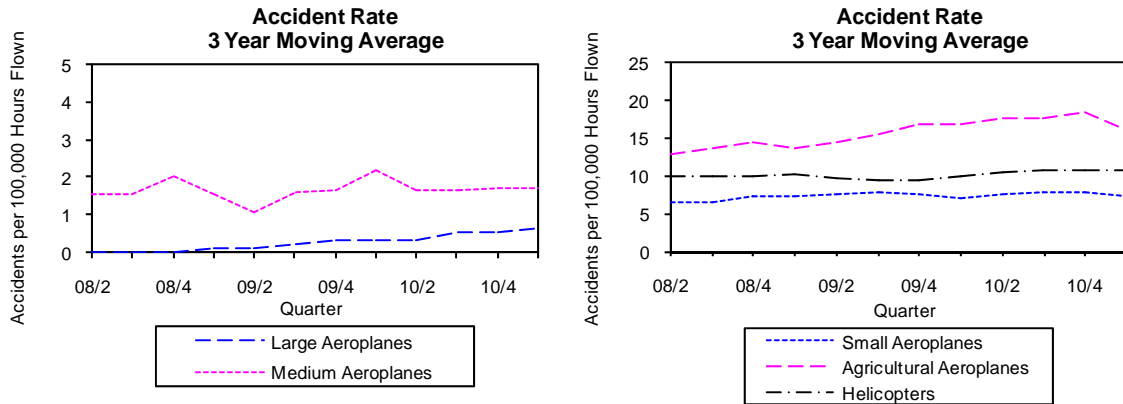
Note that the scale on this graph does not start at zero.

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

## Accidents

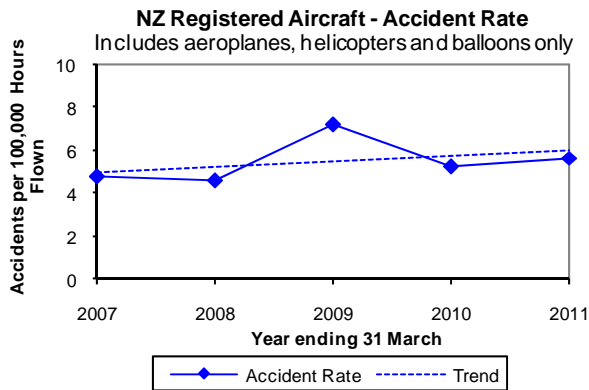
### Trends

The following graphs show the aircraft accident rates (3 year moving average) for the three-year period 1 April 2008 to 31 March 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 April 2006 to 31 March 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 January to 31 March 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 Jan to 31 Mar	1 Jan to 31 Mar	Change
	2010	2011	
	\$m	\$m	
Airline Operations - Large Aeroplanes	0.00	0.00	0.00
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	0.02	+ 0.02
Sport Transport	0.78	0.41	- 0.37
Other Commercial Operations - Aeroplanes	0.00	0.00	0.00
Other Commercial Operations - Helicopters	0.00	1.55	+ 1.55
Agricultural Operations - Aeroplanes	0.00	0.00	0.00
Agricultural Operations - Helicopters	0.00	1.19	+ 1.19
Agricultural Operations - Sport	0.00	0.00	0.00
Private Operations - Aeroplanes	3.74	0.00	- 3.74
Private Operations - Helicopters	1.50	0.29	- 1.21
Private Operations - Sport	0.95	9.18	+ 8.23
<b>Total</b>	<b>6.97</b>	<b>12.64</b>	<b>+ 5.67</b>

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

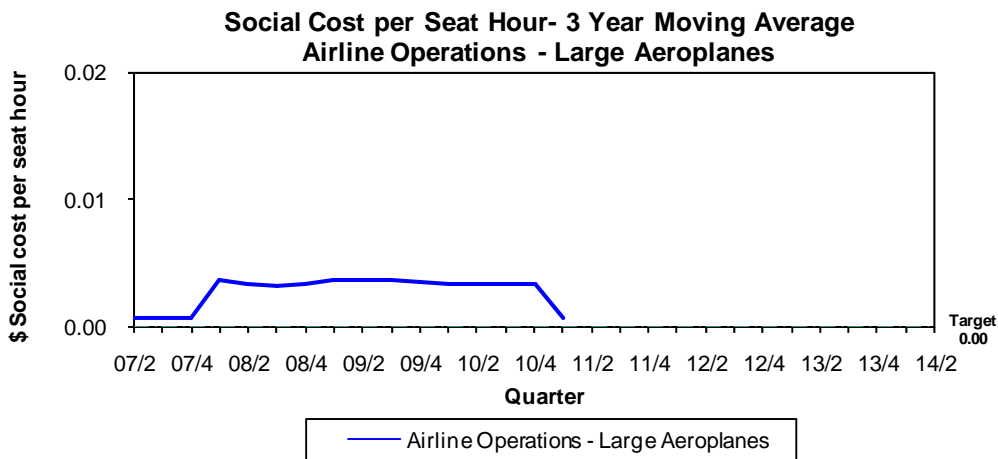
Note that the Sport groups include hang gliders and parachutes.

### Safety Target Graphs

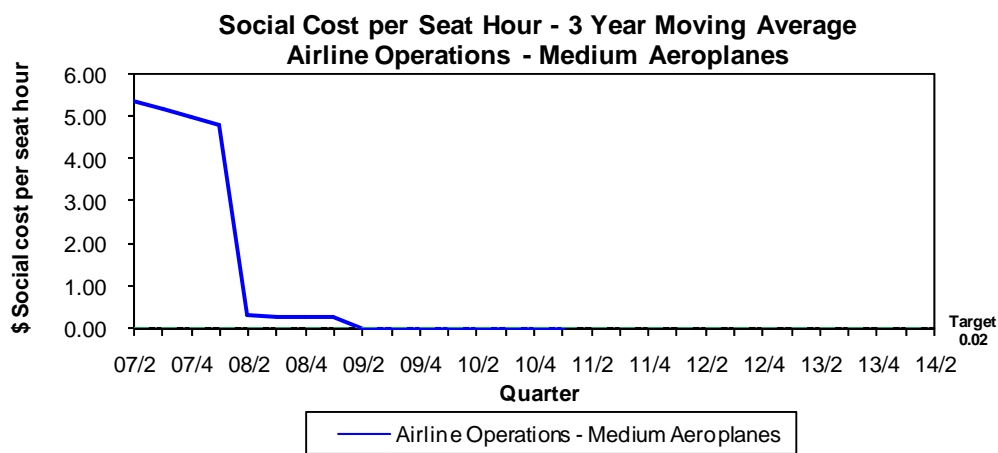
Each Safety Target Group has its own target level expressed as social cost per unit of person exposure, the unit being “one seat hour”. For Safety Target Groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of person exposure. These outcomes represent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

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

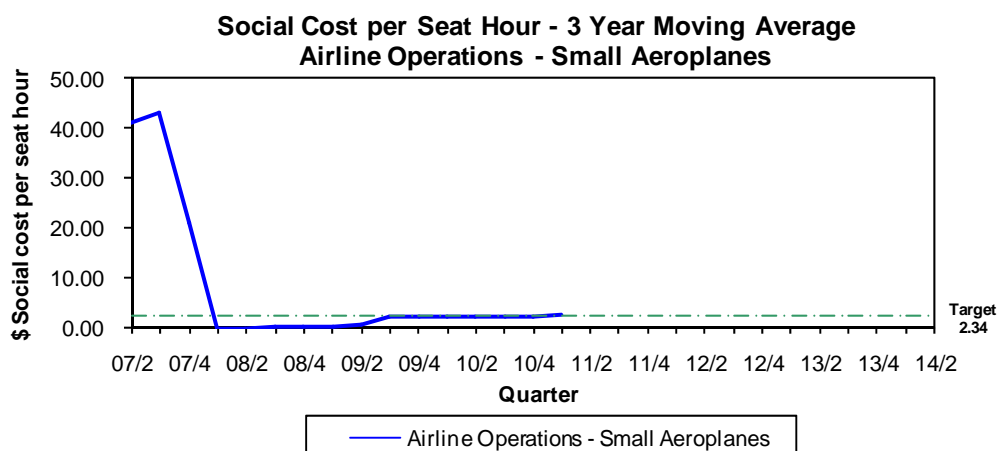
Graphs displaying the Safety Outcome Targets and the progress over each quarter are shown on the following pages.



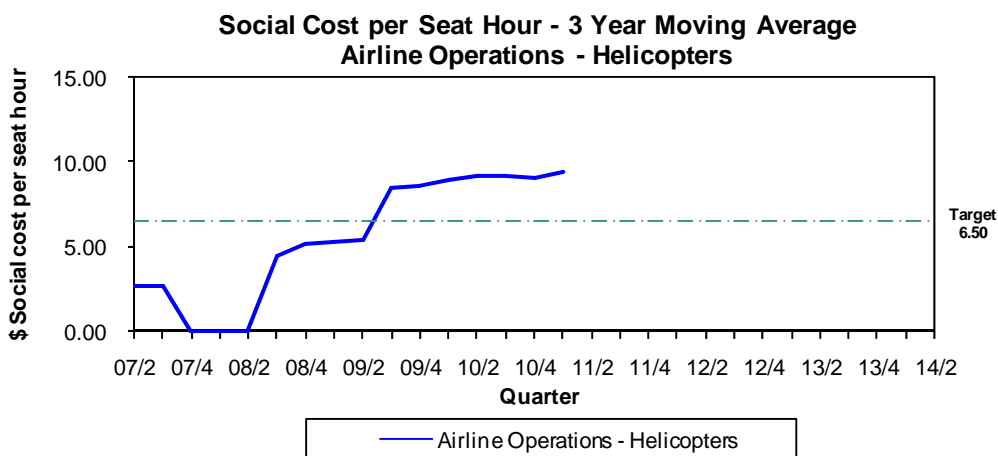
The outcome for Airline Operations – Large Aeroplanes (96.7% of total seat hours) has been just above the target level of \$0.00 per hour of exposure since the quarter Jan to Mar 11. There have been 6 minor injuries in this group in the three years Apr 08 to Mar 11.



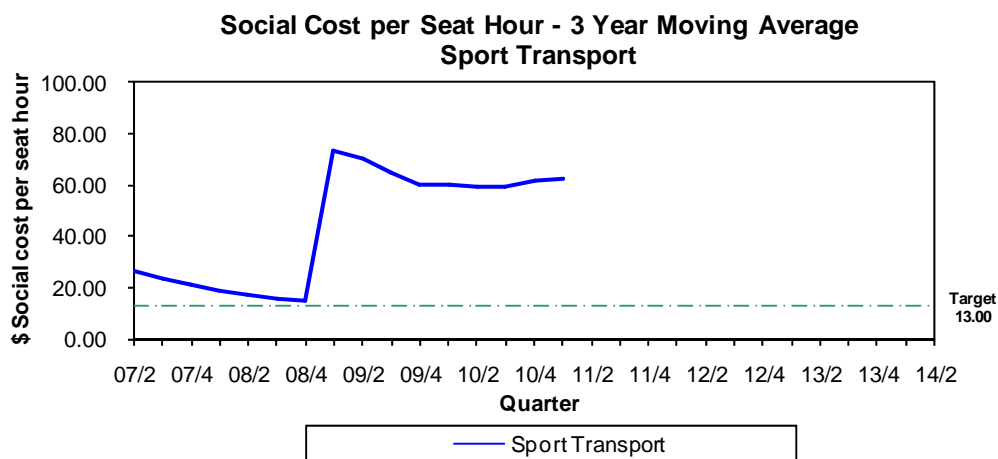
The outcome for Airline Operations – Medium Aeroplanes is trending down and has been at or below the target level since the quarter Apr to Jun 09 (the data point at 11/1 is \$0.02 per hour of exposure). The exposure (1.4% of total seat hours) associated with this sector is relatively small. There have been 3 minor injuries in this group during the period Apr 08 to Mar 11.



The outcome for Airline Operations – Small Aeroplanes (0.1% of total seat hours) shows a downward trend. There have been 1 serious and 2 minor injuries during the period Apr 08 to Mar 11. The safety outcome for this group has been just above the target level since the quarter Jul to Sep 10.

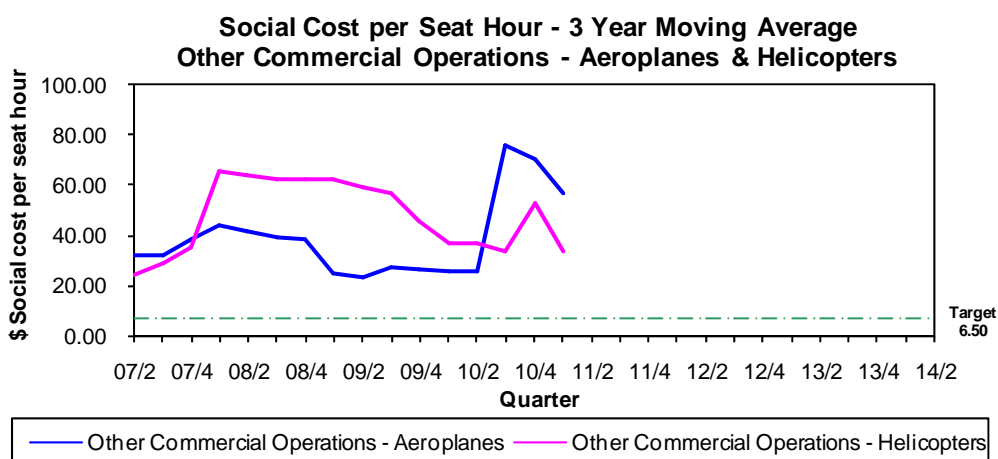


The outcome for Airline Operations – Helicopters has been above the target level since the quarter Jul to Sep 09. There have been 2 serious and 5 minor injuries in this group in the three years Apr 08 to Mar 11.



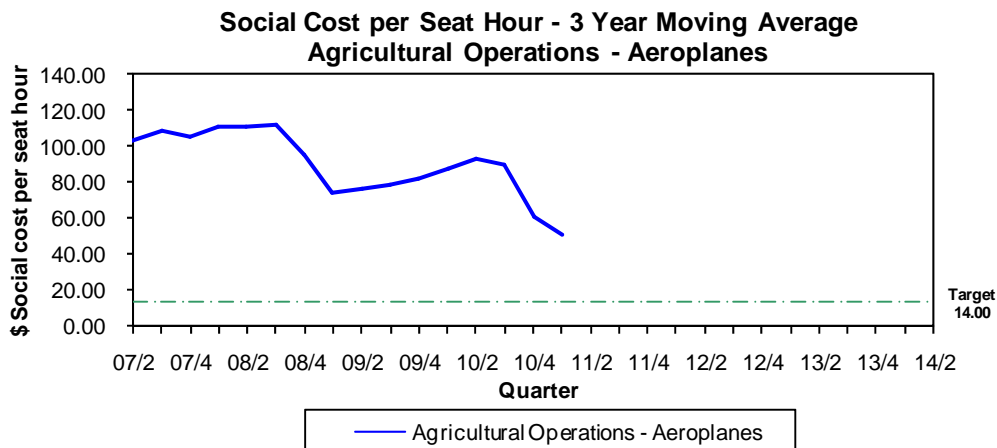
The outcome for Sport Transport is above the target level. There have been 5 fatal, 12 serious and 13 minor injuries in the three years Apr 08 to Mar 11.

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

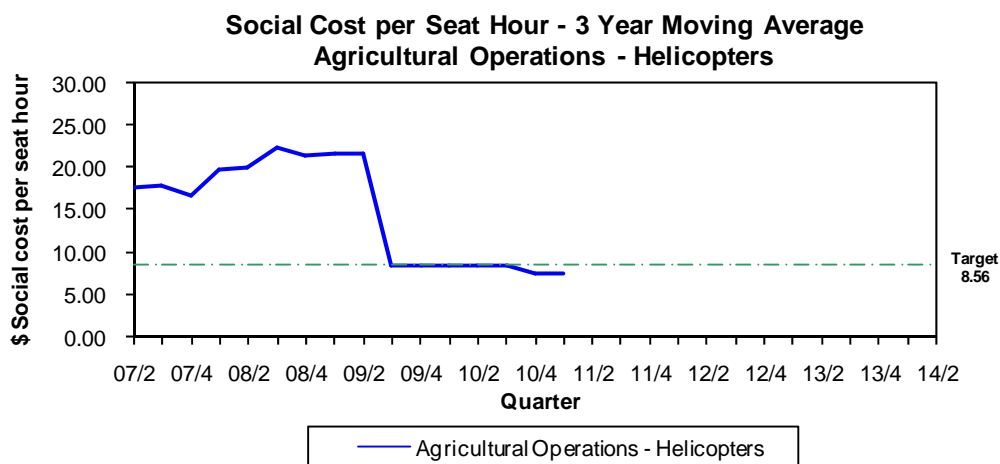


The outcome for Other Commercial Operations – Aeroplanes is well above the target of \$6.50. During the three years Apr 08 to Mar 11 there have been 12 fatal, 3 serious and 3 minor injuries in this group.

The outcome for Other Commercial Operations – Helicopters is also well above the target level. There have been 2 fatal, 2 serious and 3 minor injuries in this group in the three years Apr 08 to Mar 11.

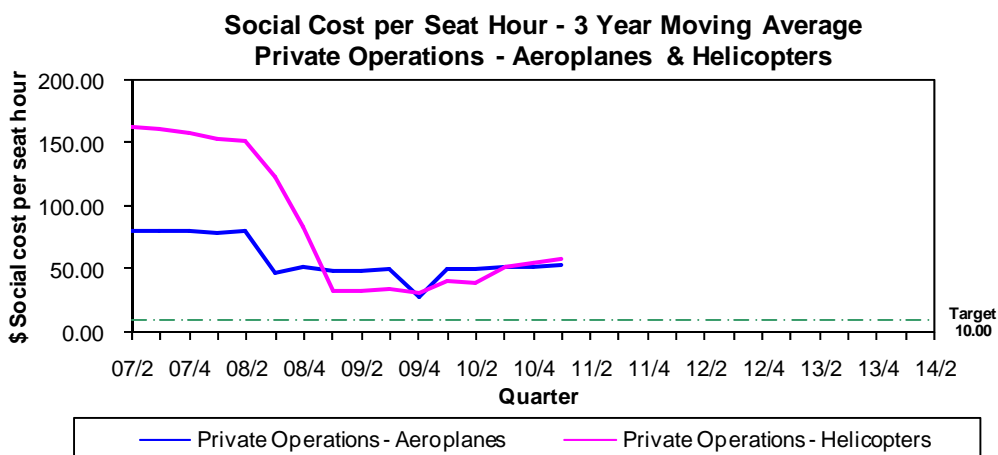


The outcome for Agricultural Operations – Aeroplanes is well above the target level of \$14.00. During the three years Apr 08 to Mar 11 there have been 1 fatal, 2 serious and 2 minor injuries in this group.

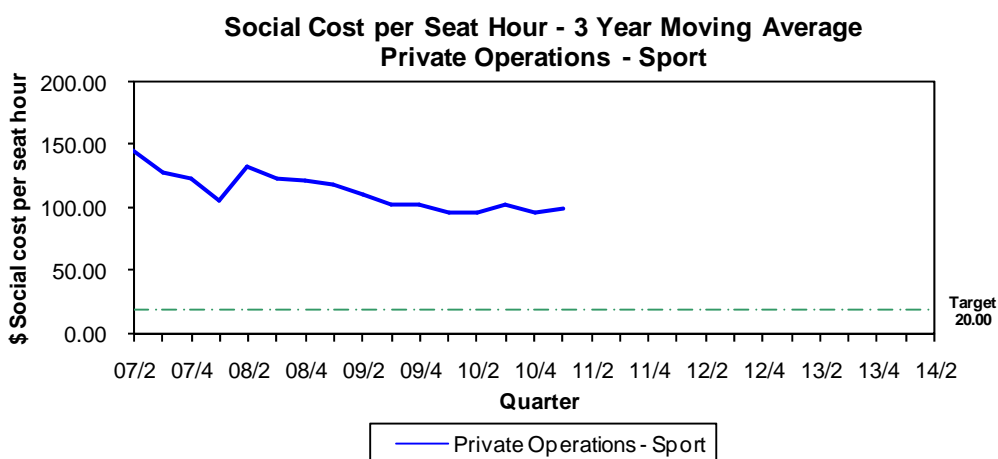


The outcome for Agricultural Operations – Helicopters has been below the target level since the quarter Jul to Sep 10. There have been 1 serious and 3 minor injuries in the three years Apr 08 to Mar 11.





The outcome for Private Operations – Aeroplanes is well above the target level of \$10.00. There have been 2 fatal, 3 serious and 2 minor injuries in the three years Apr 08 to Mar 11. The outcome for Private Operations – Helicopters shows a downward trend but is still well above the target level. There have been 1 fatal, 2 serious and 5 minor injuries in the three years Apr 08 to Mar 11.

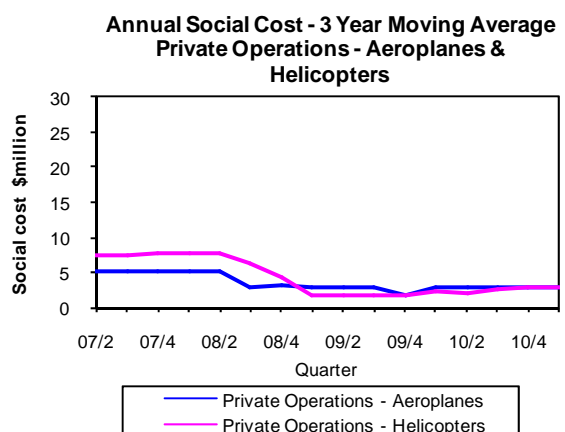
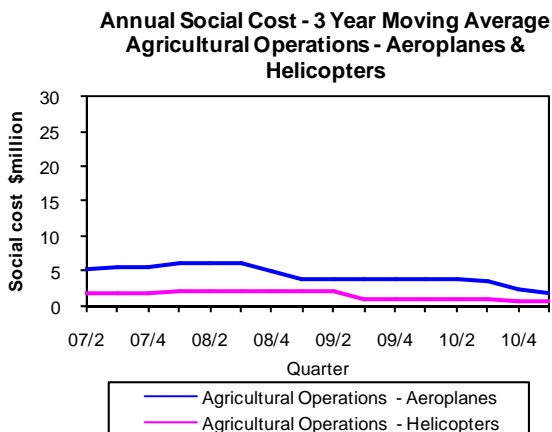
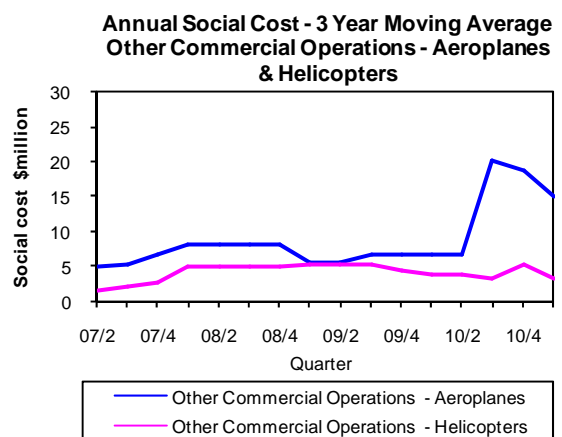
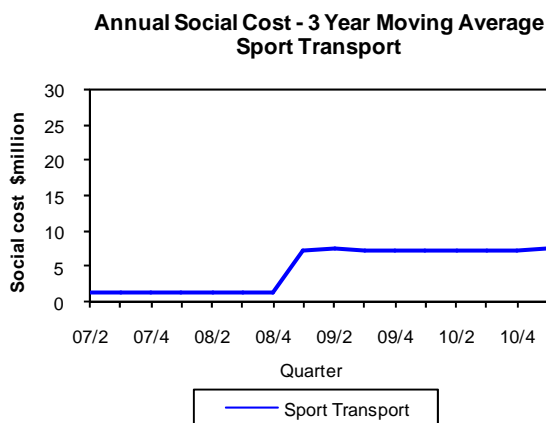
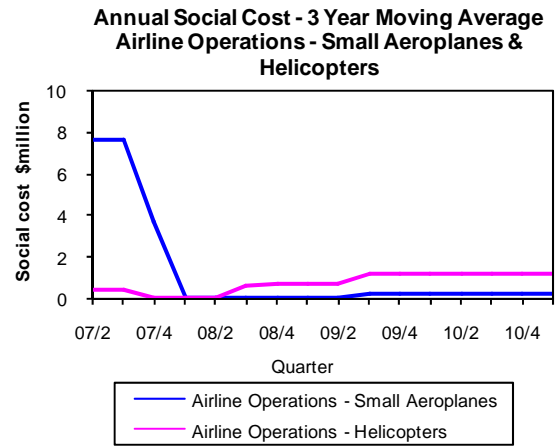
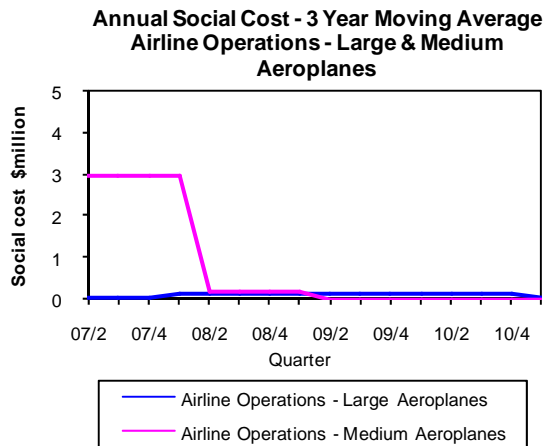


The outcome for Private Operations – Sport is well above the target of \$20.00. There have been 14 fatal, 27 serious and 29 minor injuries in the three years Apr 08 to Mar 11. Note that this group includes hang gliders and parachutes used on private operations.

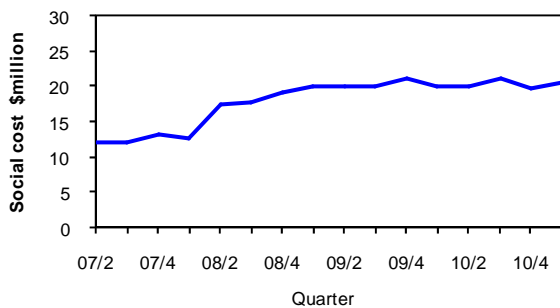
## Social Cost

### Trends

The following graphs show the annual social cost (3 year moving average) for each Safety Target Group for the four-year period 1 April 2007 to 31 March 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.

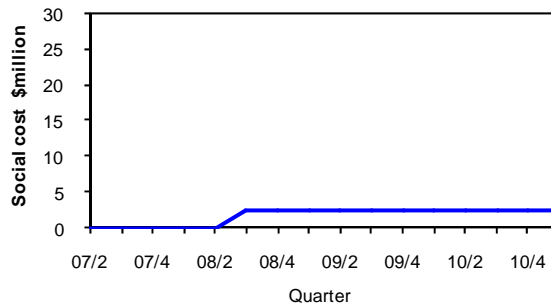


**Annual Social Cost - 3 Year Moving Average  
Private Operations - Sport**



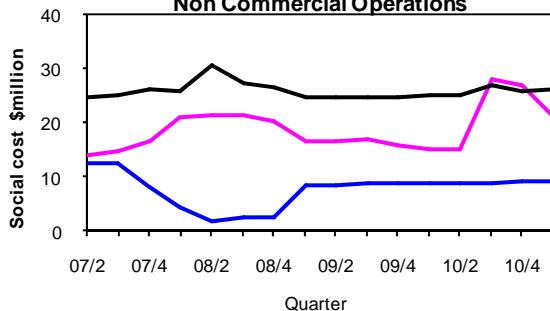
Private Operations - Sport

**Annual Social Cost - 3 Year Moving Average  
Other**



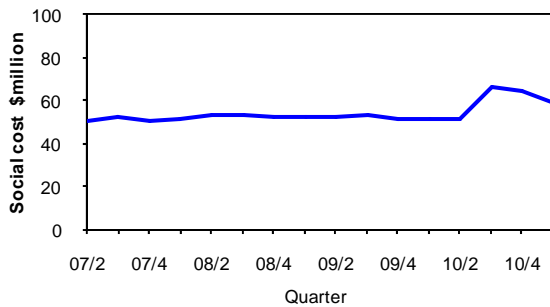
Other

**Annual Social Cost - 3 Year Moving Average  
Public Air Transport, Other Commercial &  
Non Commercial Operations**



Public Air Transport  
Other Commercial Operations  
Non Commercial Operations

**Annual Social Cost - 3 Year Moving Average  
Total**



Total

## Activity

### Air Transport Flights, Total Hours

#### Quarterly Comparison

Activity	1 Jul to 30 Sep	1 Jul to 30 Sep	Change	
	2009	2010	Number	Percentage
Air Transport Flights	83,353	86,148	+ 2,795	+ 3.4
Hours	229,894	214,013	- 15,881	- 6.9

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 30 September 2010 (the most recent quarter for which these data are available).

### Aircraft Movements

#### Quarterly Comparison

Activity	1 Jan to 31 Mar	1 Jan to 31 Mar	Change	
	2010	2011	Number	Percentage
Aircraft Movements	276,062	256,398	- 19,664	- 7.1

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, Paraparaumu, Te Anau/Manapouri, Timaru, Wanganui, Westport and Whangarei.

### Registered Aircraft

#### Quarterly Comparison

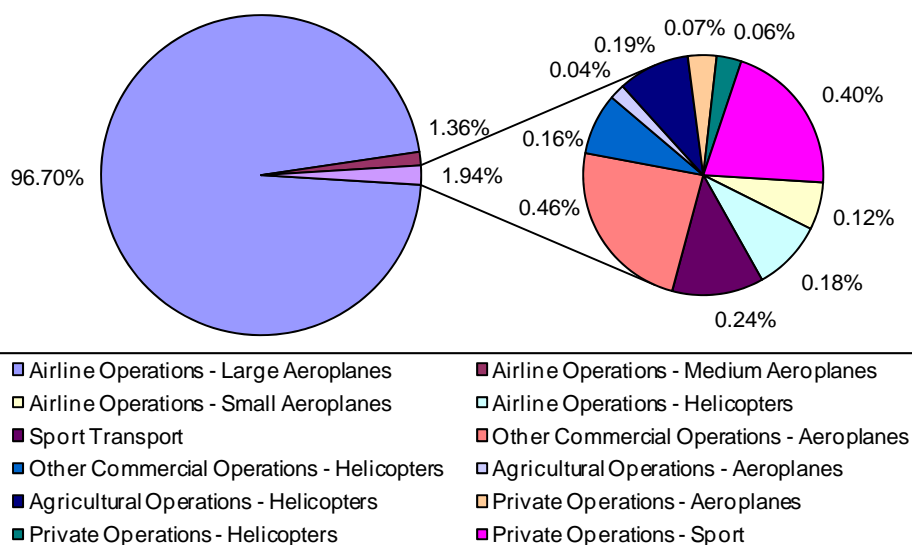
Aircraft Statistics Category	31 March	31 March	Change	
	2010	2011	Number	Percentage
Large Aeroplanes	119	126	+ 7	+ 5.9
Medium Aeroplanes	85	86	+ 1	+ 1.2
Small Aeroplanes	1,512	1,510	- 2	- 0.1
Agricultural Aeroplanes	109	112	+ 3	+ 2.8
Helicopters	764	770	+ 6	+ 0.8
Sport Aircraft	1,839	1,876	+ 37	+ 2.0
<b>Total</b>	<b>4,428</b>	<b>4,480</b>	<b>+ 52</b>	<b>+ 1.2</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 July to 30 September 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	96.70
Airline Operations - Medium Aeroplanes	1.36
Airline Operations - Small Aeroplanes	0.12
Airline Operations - Helicopters	0.18
Sport Transport	0.24
Other Commercial Operations - Aeroplanes	0.46
Other Commercial Operations - Helicopters	0.16
Agricultural Operations - Aeroplanes	0.04
Agricultural Operations - Helicopters	0.19
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.07
Private Operations - Helicopters	0.06
Private Operations - Sport	0.40

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

## Accidents

### Quarterly Comparison

#### Number of Accidents

Aircraft Statistics Category	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Large Aeroplanes	0	1	+ 1
Medium Aeroplanes	1	0	- 1
Small Aeroplanes	2	4	+ 2
Agricultural Aeroplanes	0	3	+ 3
Helicopters	8	5	- 3
Sport Aircraft	9	17	+ 8
Unknown Aircraft	0	1	+ 1
Hang Gliders	10	6	- 4
Parachutes	2	1	- 1
<b>Total</b>	<b>32</b>	<b>38</b>	<b>+ 6</b>

The accident in the 'Unknown Aircraft' statistics category in the 1 January to 31 March 2011 quarter involved a foreign registered sport aircraft on a private flight.

#### Severity of Accidents

Severity	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Critical	12	14	+ 2
Major	11	22	+ 11
Minor	9	2	- 7

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

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

### Significant Accidents and Other Injury Accidents

#### Significant Injury Accidents

This section describes significant injury accidents during the period 1 January to 31 March 2011.

#### Sport Aircraft

##### Private Operations - Sport

- An amateur built aeroplane crashed 200 m offshore. The pilot was killed and the aircraft destroyed.
- A hang glider pilot was fatally injured during an accident.

#### Significant Non-Injury Accidents

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

### ***Other Injury Accidents***

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

#### **Helicopters**

##### **Agricultural Operations - Helicopters**

- A Bell 206 experienced engine surging followed by a loss of power, with the aircraft ditching shortly afterwards. The pilot suffered minor injuries and the aircraft was destroyed.

##### **Other Commercial Operations – Helicopters**

- A helicopter on a ferry/positioning flight suffered fluctuating engine oil pressure, then engine failure during a precautionary landing. The pilot suffered serious injuries and the aircraft was substantially damaged and written off.

#### **Sport Aircraft**

##### **Sport Transport**

- A hang glider passenger leapt forward on takeoff when instructed to run. The passenger suffered serious injuries.
- A tandem parachute passenger slid on grass during landing and suffered minor injuries.

##### **Private Operations - Sport**

- A class 2 microlight crashed shortly after takeoff. The pilot suffered minor injuries and the passenger serious injuries. The aircraft was destroyed.
- A hang glider on a solo training flight turned 180 degrees immediately after takeoff, and flew back into the hill it had taken off from. The pilot suffered serious injuries.
- The pilot of a paraglider on a solo training flight manoeuvred at too low an altitude while coming in to land and crashed into water. The pilot suffered serious injuries.
- A paraglider pilot on a solo training flight suffered serious injuries when he did not gain sufficient speed during takeoff.
- A paraglider crashed when the pilot attempted to avoid another paraglider in the area. The pilot suffered serious injuries.
- A gyrocopter (class 1 microlight) lost power shortly after takeoff and crashed attempting to turn back to the airfield. The pilot suffered minor injuries.

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

Aircraft Statistics Category	1 Jan to 31 Mar 2010		1 Jan to 31 Mar 2011		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	1	1	0	0	- 1	- 1
Agricultural Aeroplanes	0	0	0	0	0	0
Helicopters	0	0	0	0	0	0
Sport Aircraft	0	0	1	1	+ 1	+ 1
Unknown Aircraft	0	0	0	0	0	0
Hang Gliders	0	0	1	1	+ 1	+ 1
Parachutes	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>+ 1</b>	<b>+ 1</b>

***Number of Serious Injuries***

Aircraft Statistics Category	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	0	0	0
Agricultural Aeroplanes	0	0	0
Helicopters	0	1	+ 1
Sport Aircraft	0	1	+ 1
Unknown Aircraft	0	0	0
Hang Gliders	2	5	+ 3
Parachutes	2	0	- 2
<b>Total</b>	<b>4</b>	<b>7</b>	<b>+ 3</b>

***Number of Minor Injuries***

Aircraft Statistics Category	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	0	0	0
Agricultural Aeroplanes	0	0	0
Helicopters	2	1	- 1
Sport Aircraft	5	2	- 3
Unknown Aircraft	0	0	0
Hang Gliders	5	0	- 5
Parachutes	0	1	+ 1
<b>Total</b>	<b>12</b>	<b>4</b>	<b>- 8</b>

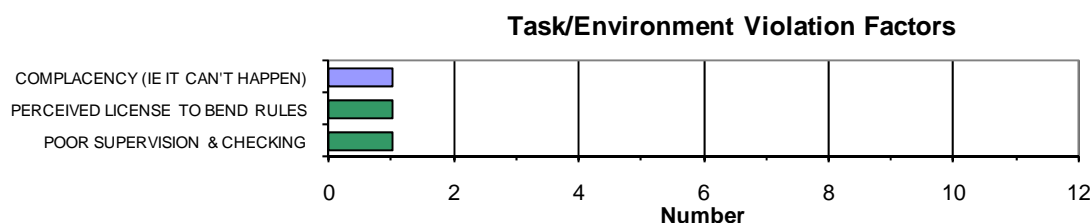
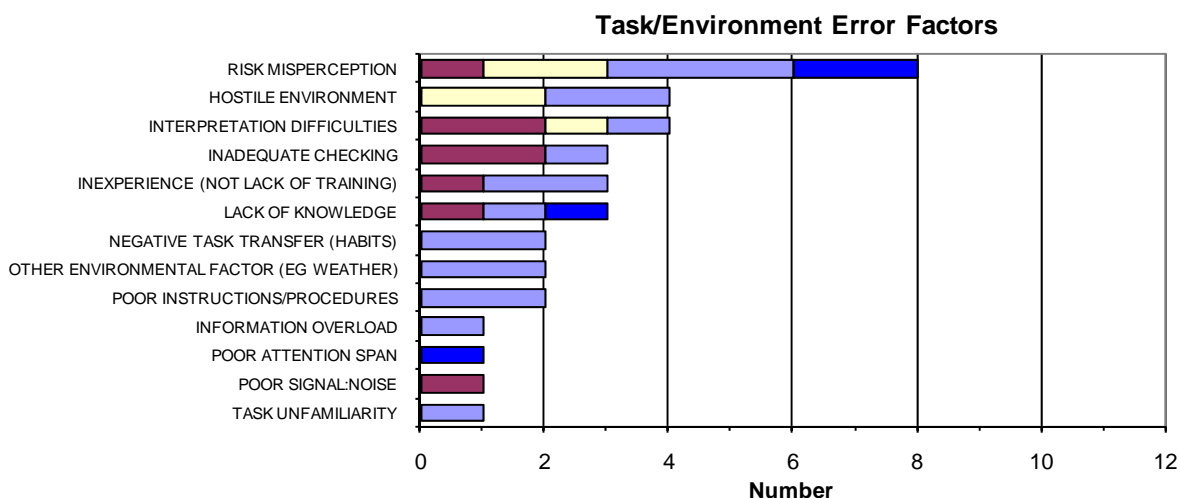
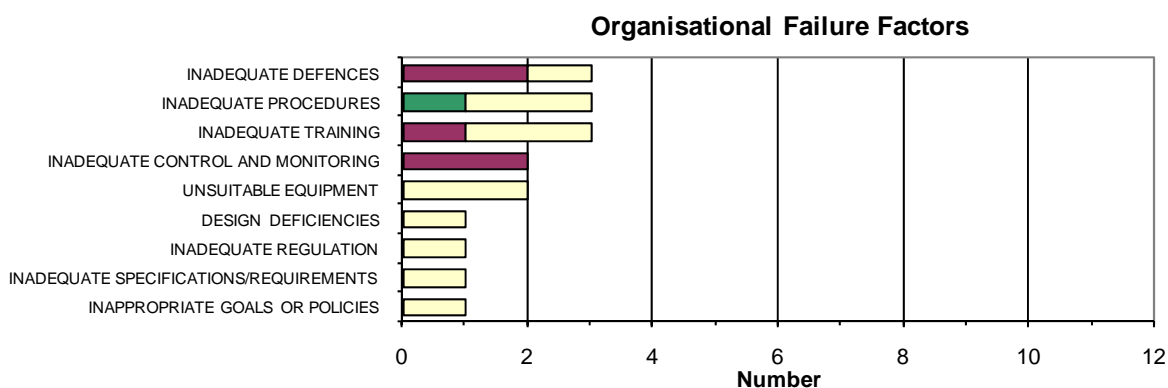
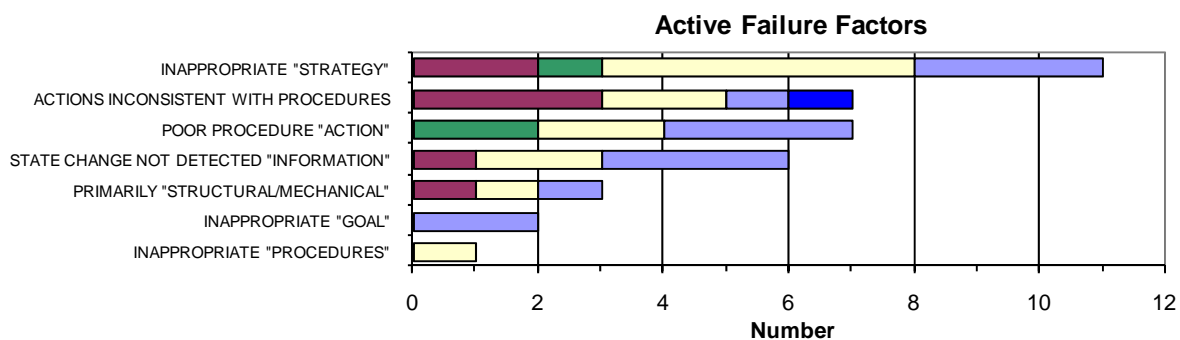


### Accident Causal Factors by Aircraft Statistics Category

The following graphs show the number of causal factors recorded for accidents that occurred during the 12-month period 1 January 2010 to 31 December 2010 for the various aircraft statistics categories.

Causal factors have been assigned to 53 (51%) of the 104 accidents.

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

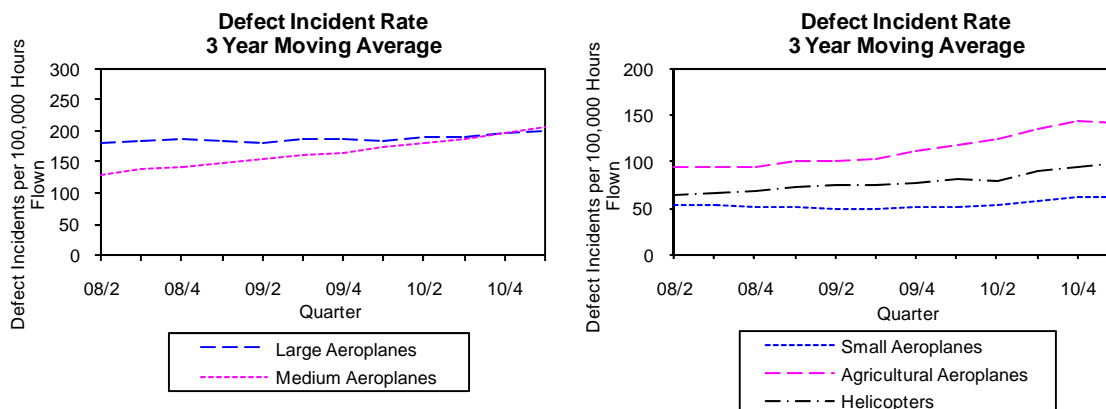


Large Aeroplanes	Medium Aeroplanes	Small Aeroplanes	Agricultural Aeroplanes
Helicopters	Sport Aircraft	Hang Gliders and Parachutes	

## Defect Incidents

### Trends

The following graphs show the defect incident rates (3 year moving average) for the three-year period 1 April 2008 to 31 March 2011 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Defect Incidents

Aircraft Statistics Category	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Large Aeroplanes	131	167	+ 36
Medium Aeroplanes	23	40	+ 17
Small Aeroplanes	68	58	- 10
Agricultural Aeroplanes	11	15	+ 4
Helicopters	46	60	+ 14
Sport Aircraft	10	8	- 2
Unknown Aircraft	14	15	+ 1
<b>Total</b>	<b>303</b>	<b>363</b>	<b>+ 60</b>

#### Severity of Defect Incidents

Severity	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Critical	1	0	- 1
Major	56	80	+ 24
Minor	246	283	+ 37

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

One defect incident in the 'Medium Aeroplanes' statistics category was classified as Critical in the 1 January to 31 March 2010 quarter. No defect incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2011 quarter.

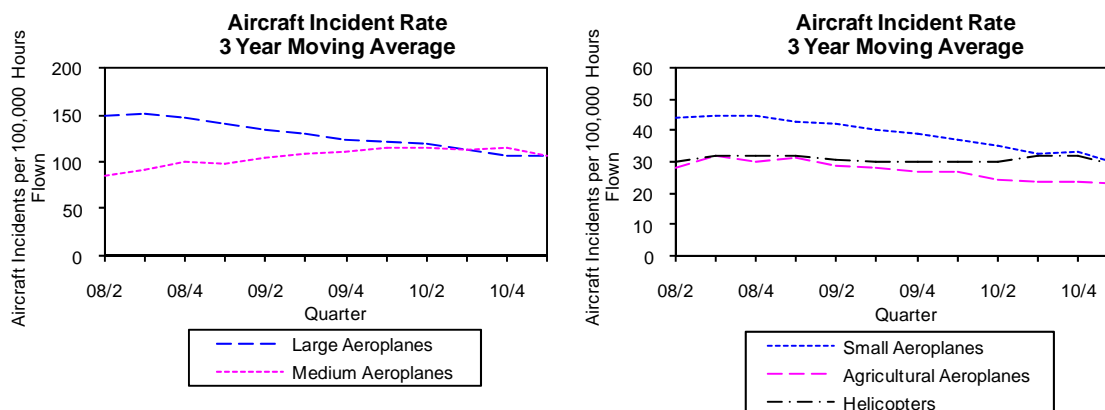
### Rate Monitoring

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 31 December 2010. Analysis shows that two of the 14 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 April 2008 to 31 March 2011 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Aircraft Incidents

Aircraft Statistics Category	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Large Aeroplanes	74	87	+ 13
Medium Aeroplanes	17	7	- 10
Small Aeroplanes	19	13	- 6
Agricultural Aeroplanes	1	6	+ 5
Helicopters	10	8	- 2
Sport Aircraft	5	3	- 2
Unknown Aircraft	48	75	+ 27
<b>Total</b>	<b>174</b>	<b>199</b>	<b>+ 25</b>

#### Severity of Aircraft Incidents

Severity	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Critical	0	1	+ 1
Major	23	15	- 8
Minor	151	183	+ 32

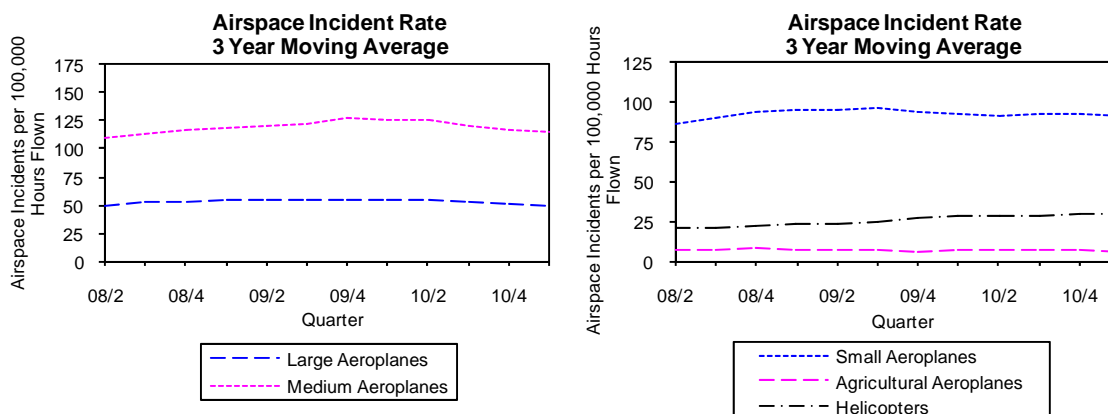
No aircraft incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2010 or 2011 quarters.

No aircraft incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2010 or 2011 quarters.

## Airspace Incidents

### Trends

The following graphs show the airspace incident rates (3 year moving average) for the three-year period 1 April 2008 to 31 March 2011 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Airspace Incidents

Aircraft Statistics Category	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Large Aeroplanes	42	28	- 14
Medium Aeroplanes	18	22	+ 4
Small Aeroplanes	65	91	+ 26
Agricultural Aeroplanes	1	1	0
Helicopters	21	13	- 8
Sport Aircraft	16	20	+ 4
Unknown Aircraft	64	96	+ 32
<b>Total</b>	<b>227</b>	<b>271</b>	<b>+ 44</b>

#### Severity of Airspace Incidents

Severity	1 Jan to 31 Mar 2010	1 Jan to 31 Mar 2011	Change
Critical	8	0	- 8
Major	34	66	+ 32
Minor	185	205	+ 20

One airspace incident in the 'Large Aeroplanes' statistics category was classified as Critical in the 1 January to 31 March 2010 quarter. No airspace incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2011 quarter.

One airspace incident in the 'Medium Aeroplanes' statistics category was classified as Critical in the 1 January to 31 March 2010 quarter. No airspace incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2011 quarter.

### **Attributability**

Of the 271 airspace incidents in the 1 January to 31 March 2011 quarter, 12% are Air Traffic Service (ATS) attributable, 76% are pilot attributable, 0% are ATS and pilot attributable, and 11% are unknown attributable. (Note that the percentages may not sum exactly to 100% due to rounding.)

Since April 2008 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.

### **Bird Incident Rates**

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

There were three aerodromes with strike rates in the high risk category of the CAA standard (10.0 and above bird strikes per 10,000 aircraft movements) with long-term upward trends. Six 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 two having long-term downward trends. 18 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), six having long-term upward trends, nine having long-term constant trends and three having long-term downward trends.

## Quarterly Statistics

Quarter	2008/2	2008/3	2008/4	2009/1	2009/2	2009/3
<b>Number of Air Transport Flights<sup>1</sup></b>	87,384	91,942	104,711	115,409	85,482	83,353
<b>Number of Hours Flown<sup>1</sup></b>	230,893	226,206	232,412	271,270	226,574	229,894
<b>Number of Aircraft Movements<sup>2</sup></b>	306,863	291,661	295,075	299,289	282,900	278,588
<b>Number of Aircraft on the Register<sup>3</sup></b>	4,301	4,315	4,354	4,405	4,406	4,396
<b>Number of Licences (Type of Medical Certificate)<sup>4</sup></b>						
Recreational Pilot Licence (RPL Medical)	0	32	68	80	103	120
Private Pilot Licence (Class 1 & 2)	3,856	3,849	3,733	3,787	3,799	3,850
Commercial Pilot Licence (Class 2 only)	1,763	1,792	1,761	1,794	1,909	1,919
Commercial Pilot Licence (Class 1)	2,162	2,199	2,295	2,322	2,300	2,344
Airline Transport Pilot Licence (Class 2 only)	847	947	991	903	893	975
Airline Transport Pilot Licence (Class 1)	1,152	1,073	1,048	1,130	1,152	1,069
Air Traffic Controller Licence (Class 3)	332	340	342	342	345	363
Aircraft Maintenance Engineer Licence (N/A)	2,276	2,311	2,342	2,352	2,378	2,402
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	11	10	9	10	10	10
Air Operator – Medium Aeroplanes	16	15	15	15	15	15
Air Operator – Helicopters and Small Aeroplanes	161	163	163	166	171	170
Air Operator – Pacific	3	3	2	2	1	1
<b>Number of Aircraft Accidents<sup>5</sup></b>						
Large Aeroplanes	0	0	0	1	0	1
Medium Aeroplanes	0	0	1	0	0	1
Small Aeroplanes	6	8	9	8	5	8
Agricultural Aeroplanes	3	2	3	0	1	1
Helicopters	6	5	7	6	1	4
Sport Aircraft	5	4	14	11	6	5
Unknown Aircraft	0	0	1	0	0	0
Hang Gliders	2	1	2	12	2	4
Parachutes	0	0	1	1	3	1
<b>Number of Fatal Accidents<sup>5</sup></b>	2	1	3	4	0	1
<b>Number of Fatal Injuries<sup>5</sup></b>	4	2	3	6	0	1
<b>Number of Serious + Minor Injuries<sup>5</sup></b>	4	12	11	10	7	12
<b>Social Cost \$ million<sup>6</sup></b>	15.51	12.21	14.42	24.83	1.56	6.27
<b>Number of Incidents<sup>7</sup></b>	1,271	1,294	1,147	1,176	1,130	1,120
<b>Number of Aviation Related Concerns</b>	82	69	56	89	83	105

<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 2010/4 and 2011/1.

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

Quarter	2009/4	2010/1	2010/2	2010/3	2010/4	2011/1
<b>Number of Air Transport Flights<sup>1</sup></b>	96,963	108,214	86,161	86,148	102,946	110,833
<b>Number of Hours Flown<sup>1</sup></b>	240,711	256,165	222,555	214,013	237,002	247,378
<b>Number of Aircraft Movements<sup>2</sup></b>	261,753	276,062	252,639	240,033	256,474	256,398
<b>Number of Aircraft on the Register<sup>3</sup></b>	4,415	4,428	4,453	4,447	4,442	4,480
<b>Number of Licences (Type of Medical Certificate)<sup>4</sup></b>						
Recreational Pilot Licence (RPL Medical)	133	141	132	128	146	162
Private Pilot Licence (Class 1 & 2)	3,829	3,795	3,757	3,750	3,655	3,611
Commercial Pilot Licence (Class 2 only)	1,969	1,990	2,066	2,027	2,083	2,131
Commercial Pilot Licence (Class 1)	2,359	2,403	2,344	2,397	2,385	2,372
Airline Transport Pilot Licence (Class 2 only)	976	922	913	986	981	928
Airline Transport Pilot Licence (Class 1)	1,068	1,135	1,134	1,075	1,096	1,155
Air Traffic Controller Licence (Class 3)	363	366	363	358	362	363
Aircraft Maintenance Engineer Licence (N/A)	2,424	2,445	2,463	2,479	2,496	2,511
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	10	10	10	10	10	9
Air Operator – Medium Aeroplanes	15	15	15	15	16	15
Air Operator – Helicopters and Small Aeroplanes	173	172	174	175	175	173
Air Operator – Pacific	1	1	0	0	0	0
<b>Number of Aircraft Accidents<sup>5</sup></b>						
Large Aeroplanes	1	0	0	2	0	1
Medium Aeroplanes	0	1	0	0	0	0
Small Aeroplanes	7	2	9	6	4	4
Agricultural Aeroplanes	1	0	3	0	1	3
Helicopters	6	8	3	4	3	5
Sport Aircraft	16	9	6	5	13	17
Unknown Aircraft	0	0	0	0	0	1
Hang Gliders	6	10	5	2	2	6
Parachutes	2	2	1	1	2	1
<b>Number of Fatal Accidents<sup>5</sup></b>	5	1	0	3	1	2
<b>Number of Fatal Injuries<sup>5</sup></b>	6	1	0	12	2	2
<b>Number of Serious + Minor Injuries<sup>5</sup></b>	11	16	10	6	9	11
<b>Social Cost \$ million<sup>6</sup></b>	23.18	6.97	1.89	47.35	9.35	12.64
<b>Number of Incidents<sup>7</sup></b>	1,083	1,119	1,154	1,156	1,157	1,224
<b>Number of Aviation Related Concerns</b>	97	124	153	153	203	242

<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 2010 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, 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

