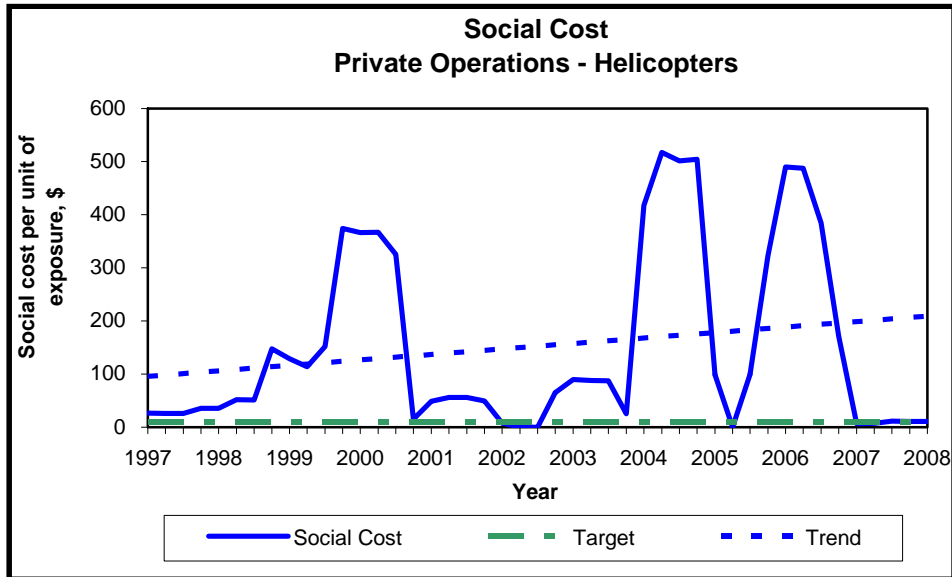


# Aviation Safety Summary Report

1 January to 31 March 2008



The graph above shows the social cost per unit of person exposure for the Private Operations – Helicopters Safety Target Group.



## 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.

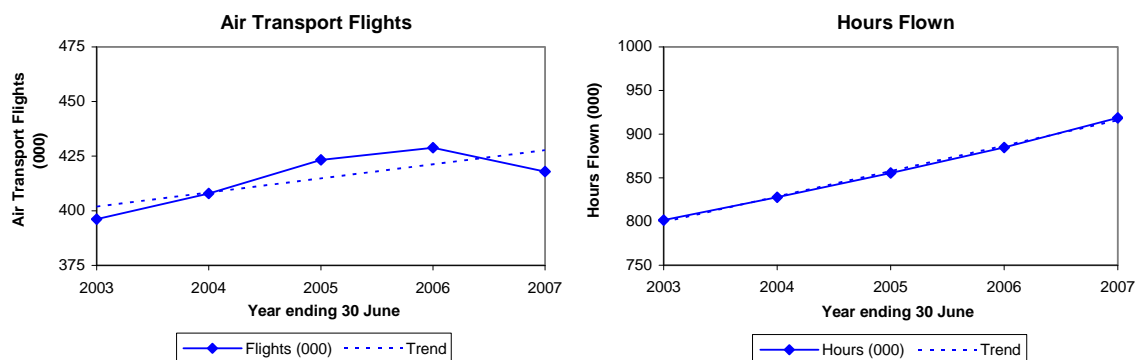
## Overview

### 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 July 2002 to 30 June 2007 (includes the aircraft classes aeroplane, helicopter and balloon only).



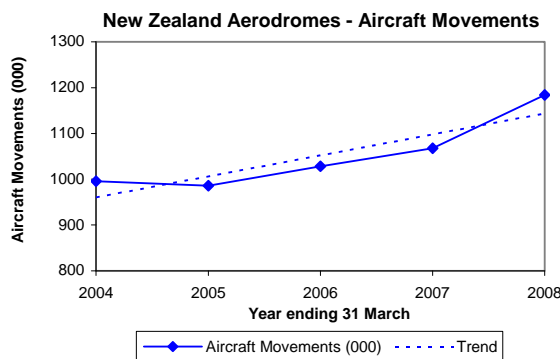
Note that the scales on these graphs do not start at zero.

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 June 2007 (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 2003 to 31 March 2008.



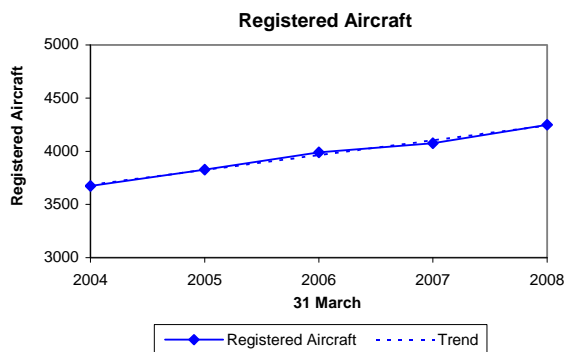
Note that the scale on this graph does not start at zero.

Note that this covers certificated aerodromes only. Includes Auckland, Christchurch, Dunedin, Gisborne (from December 2004), 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, Timaru, Wanganui, Westport, Whangarei and Wigram.

## Registered Aircraft

### Trends

The following graph shows the number of registered aircraft at 31 March for each of the five-years 2004 to 2008.



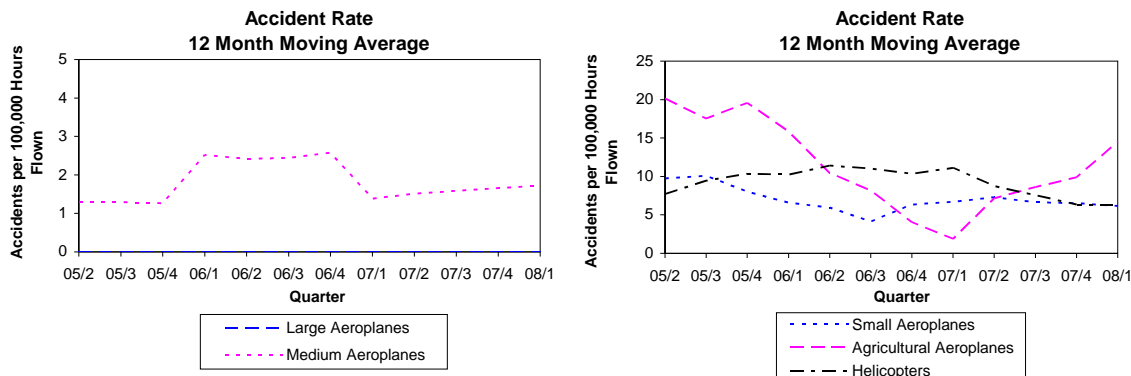
Note that the scale on this graph does not start at zero.

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

## Accidents

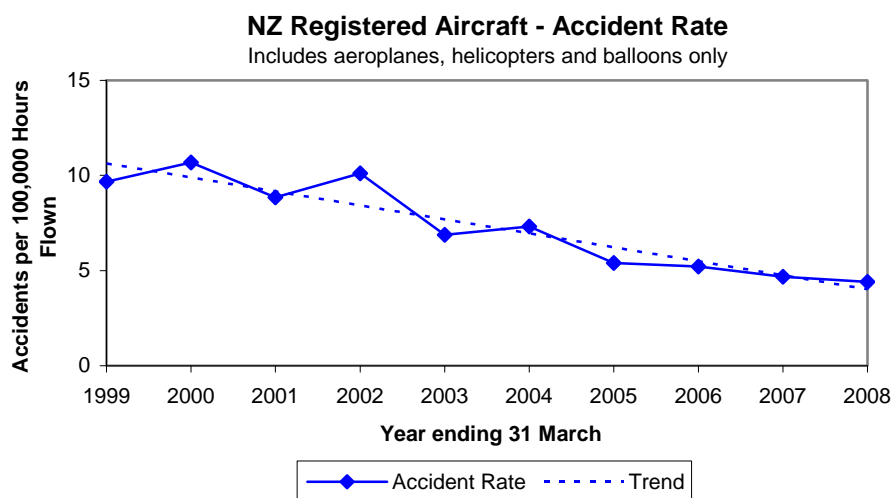
### Trends

The following graphs show the aircraft accident rates (12 month moving average) for the three-year period 1 April 2005 to 31 March 2008 (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 April 1998 to 31 March 2008.



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 quarter 1 January to 31 March 2008. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2006 dollars.

| Safety Target Group                      | Social Cost<br>\$m |
|--|--------------------|
| Airline Operations - Large Aeroplanes    | 0.31               |
| Airline Operations - Medium Aeroplanes   | -                  |
| Airline Operations - Small Aeroplanes    | -                  |
| Airline Operations - Helicopter          | -                  |
| Sport Transport                          | 0.01               |
| Other Commercial Operations - Aeroplane  | 9.56               |
| Other Commercial Operations - Helicopter | 6.37               |
| Agricultural Operations - Aeroplane      | 0.27               |
| Agricultural Operations - Helicopter     | -                  |
| Agricultural Operations - Sport Aircraft | -                  |
| Private Operations - Aeroplane           | -                  |
| Private Operations - Helicopter          | -                  |
| Private Operations - Sport               | 6.24               |
| <b>Total</b>                             | <b>22.76</b>       |

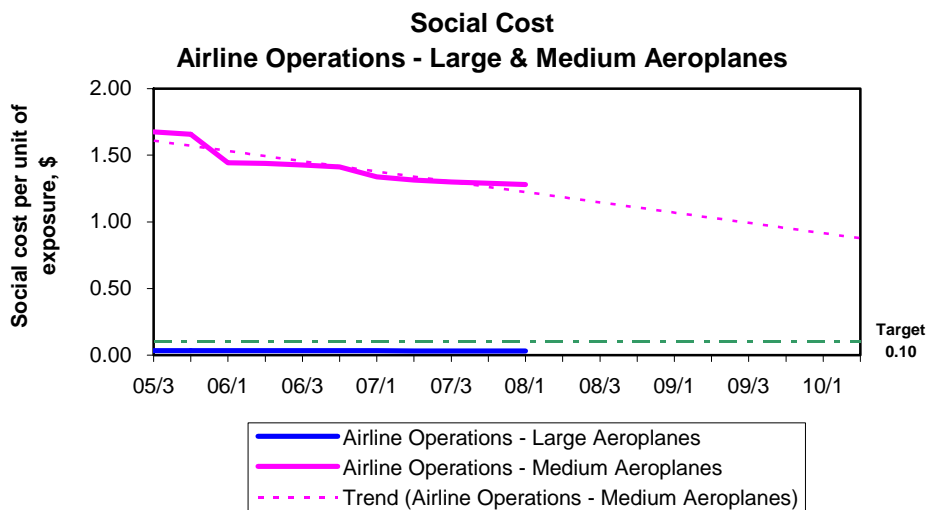
Note that the individual values in the table may not sum exactly to the total shown due to rounding.

### 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.

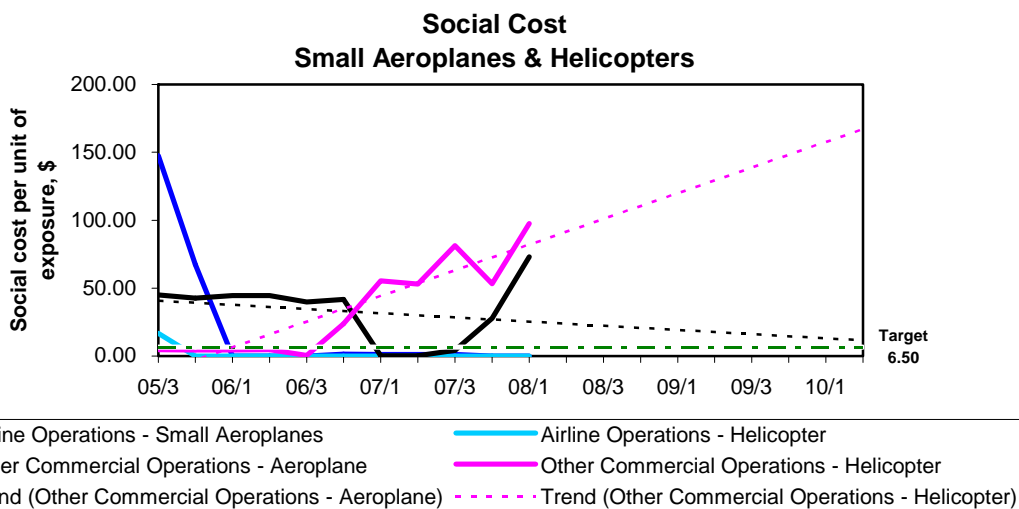
The results for the Airline Operations – Large Aeroplanes and Medium Aeroplanes groups are derived using 10 year averages; all other groups use 12 month averages.

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 (95.7% of total seat hours) has remained well below the target level of \$0.10 per hour of exposure since the target regime was established in 2005. There is no discernable trend either up or down.

The outcome for Airline Operations – Medium Aeroplanes exceeds the target by a significant margin and although trending down the target will not be achieved until after 2010. This is because of the relatively small exposure (1.3% of total seat hours) associated with this sector.

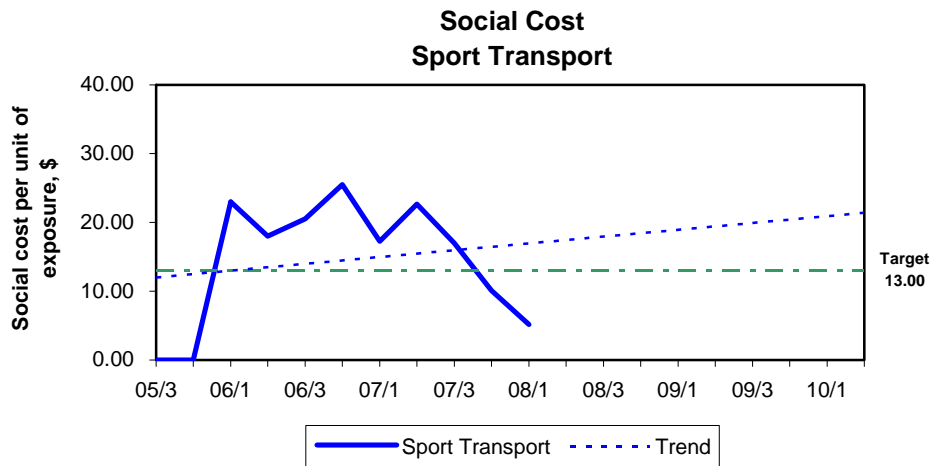


The outcome for Airline Operations – Small Aeroplanes (0.3% of total seat hours) shows a significant long term downward trend from the high starting point of \$147.38 per hour of exposure generated by 6 fatalities and 2 serious injuries in the two quarters Oct 04 to Mar 05. The safety outcome for this group has been below the target level since 2006. The outcome for this group is now near the level being achieved by Airline Operations – Large Aeroplanes.

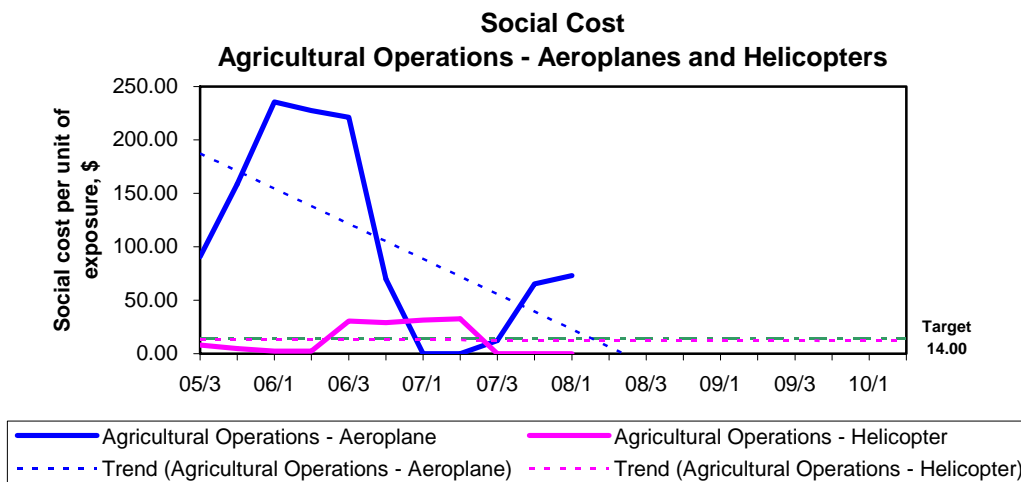
The outcome for Airline Operations – Helicopter remains level on zero as there have been no fatal or serious injuries in this group since 2003.

The outcome for Other Commercial Operations – Aeroplane is above the target of \$6.50 and has increased significantly due to 3 fatal injuries in the most recent quarter Jan to Mar 08. During the four quarters Apr 07 to Mar 08 there have been 4 fatal, 2 serious and 1 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. It has reached a new high in the first quarter of 2008 due to 2 fatal injuries in this quarter.



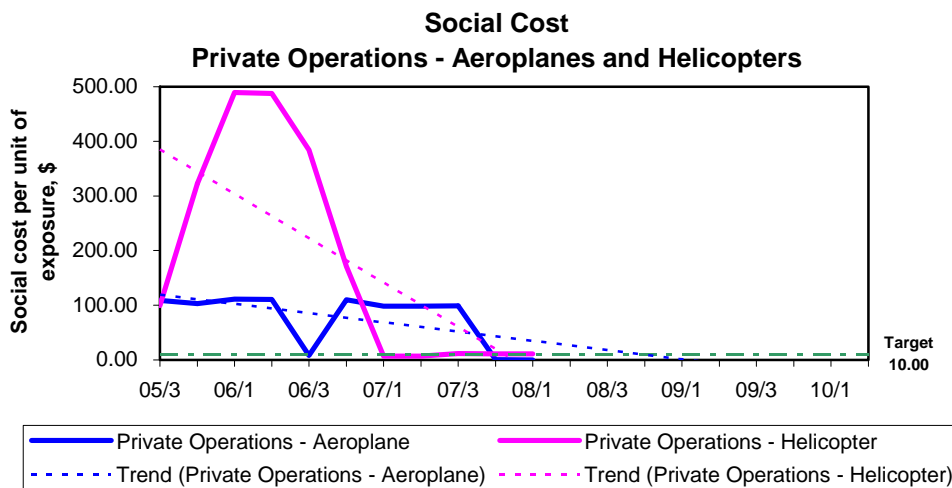
The outcome for Sport Transport peaked in the fourth quarter of 2006 and should trend downwards in subsequent quarters. There have been 2 serious injuries and 1 minor injury in this group during the four quarters Apr 07 to Mar 08.



The outcome for Agricultural Operations – Aeroplanes now exceeds the desired target level as a result of 1 fatal injury in the Oct to Dec 07 quarter. It is expected that the long term trend line will fall below the required target in 2008.

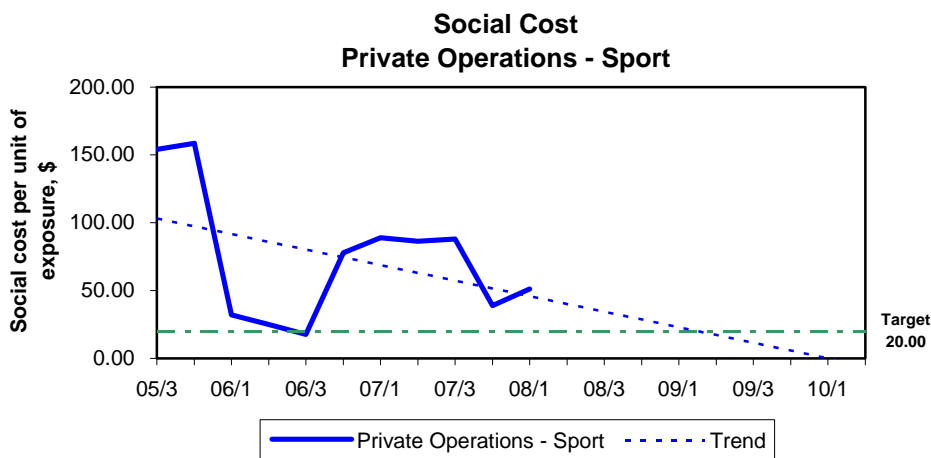
The outcome for Agricultural Operations – Helicopter turned sharply upwards during the third quarter of 2006 and remained above the target level for four quarters. There has been no social cost generated in this group during the four quarters Apr 07 to Mar 08 and the outcome is now well below the required target.





The outcome for Private Operations – Aeroplane remained around \$100.00 for the first four quarters of the new regime and settled down below the required \$10.00 target in the Jul to Sep 06 quarter. However, a double fatality accident towards the end of the Oct to Dec 06 quarter drove the outcome back to the \$100.00 level again. Following five fatality free quarters (Jan 07 to Mar 08) the outcome is now well below the required target.

The outcome for Private Operations – Helicopters, having rapidly trended up in the last half of 2005 and down since mid 2006, is now just above the required target level. The long term trend line for the group is below the target line in the first quarter of 2008.



The outcome for Private Operations – Sport, which had been trending down since late 2005, reversed significantly in the Oct to Dec 06 quarter. This reversal was driven by accidents in which there were 4 fatal, 3 serious and 1 minor injuries. There were 3 fatal, 5 serious and 6 minor injuries in the four quarters Apr 07 to Mar 08. The long term (10 year) trend for this group is downward and if the downward swing in the fourth quarter of 2007 is maintained the required target level could be reached by 2010.

## Activity

### Air Transport Flights, Total Hours

#### Quarterly Comparison

| Activity              | 1 Apr to 30 Jun<br>2006 | 1 Apr to 30 Jun<br>2007 | Change   |            |
|-----------------------|-------------------------|-------------------------|----------|------------|
|                       |                         |                         | Number   | Percentage |
| Air Transport Flights | 102,847                 | 100,592                 | - 2,255  | - 2.2      |
| Total Hours           | 210,259                 | 230,422                 | + 20,163 | + 9.6      |

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 June 2007 (the most recent quarter for which these data are available).

### Aircraft Movements

#### Quarterly Comparison

| Activity           | 1 Jan to 31 Mar<br>2007 | 1 Jan to 31 Mar<br>2008 | Change   |            |
|--------------------|-------------------------|-------------------------|----------|------------|
|                    |                         |                         | Number   | Percentage |
| Aircraft Movements | 290,284                 | 321,583                 | + 31,299 | + 10.8     |

Note that this covers certificated aerodromes only. Includes Auckland, Christchurch, Dunedin, Gisborne (from December 2004), 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, Timaru, Wanganui, Westport, Whangarei and Wigram.

### Registered Aircraft

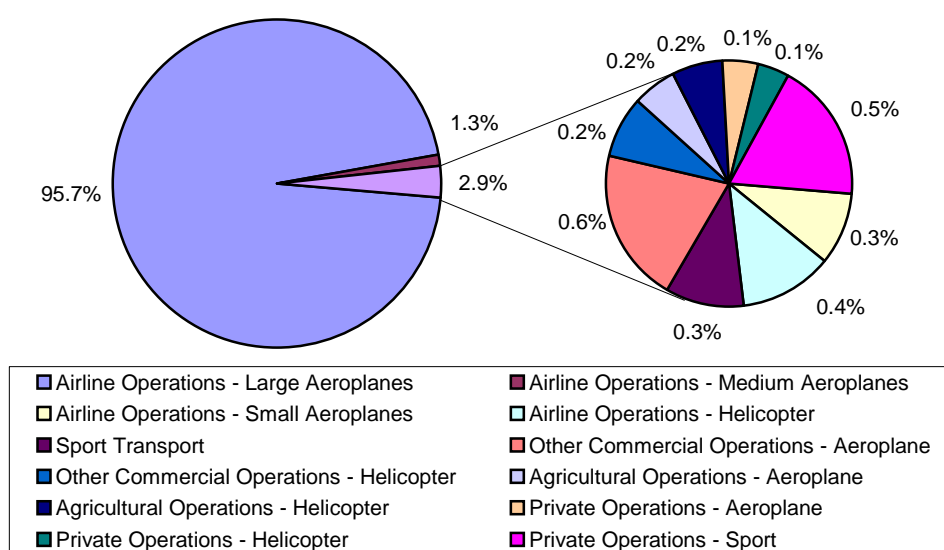
#### Quarterly Comparison

| Aircraft Statistics Category | 31 March<br>2007 | 31 March<br>2008 | Change       |              |
|------------------------------|------------------|------------------|--------------|--------------|
|                              |                  |                  | Number       | Percentage   |
| Large Aeroplanes             | 115              | 116              | + 1          | + 0.9        |
| Medium Aeroplanes            | 80               | 81               | + 1          | + 1.3        |
| Small Aeroplanes             | 1,432            | 1,454            | + 22         | + 1.5        |
| Agricultural Aeroplanes      | 127              | 124              | - 3          | - 2.4        |
| Helicopters                  | 658              | 713              | + 55         | + 8.4        |
| Sport Aircraft               | 1,663            | 1,762            | + 99         | + 6.0        |
| <b>Total</b>                 | <b>4,075</b>     | <b>4,250</b>     | <b>+ 175</b> | <b>+ 4.3</b> |

## 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 April to 30 June 2007. 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    | 95.7                         |
| Airline Operations - Medium Aeroplanes   | 1.3                          |
| Airline Operations - Small Aeroplanes    | 0.3                          |
| Airline Operations - Helicopter          | 0.4                          |
| Sport Transport                          | 0.3                          |
| Other Commercial Operations - Aeroplane  | 0.6                          |
| Other Commercial Operations - Helicopter | 0.2                          |
| Agricultural Operations - Aeroplane      | 0.2                          |
| Agricultural Operations - Helicopter     | 0.2                          |
| Agricultural Operations - Sport Aircraft | -                            |
| Private Operations - Aeroplane           | 0.1                          |
| Private Operations - Helicopter          | 0.1                          |
| Private Operations - Sport               | 0.5                          |

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<br>2007 | 1 Jan to 31 Mar<br>2008 | Change   |
|------------------------------|-------------------------|-------------------------|----------|
| Large Aeroplanes             | 0                       | 0                       | 0        |
| Medium Aeroplanes            | 0                       | 0                       | 0        |
| Small Aeroplanes             | 8                       | 7                       | - 1      |
| Agricultural Aeroplanes      | 1                       | 4                       | + 3      |
| Helicopters                  | 5                       | 5                       | 0        |
| Sport Aircraft               | 8                       | 13                      | + 5      |
| Hang Gliders                 | 4                       | 1                       | - 3      |
| Parachutes                   | 4                       | 0                       | - 4      |
| <b>Total</b>                 | <b>30</b>               | <b>30</b>               | <b>0</b> |

#### *Severity of Accidents*

| Severity | 1 Jan to 31 Mar<br>2007 | 1 Jan to 31 Mar<br>2008 | Change |
|----------|-------------------------|-------------------------|--------|
| Critical | 4                       | 5                       | + 1    |
| Major    | 18                      | 9                       | - 9    |
| Minor    | 8                       | 16                      | + 8    |

No accidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 or 2008 quarters.

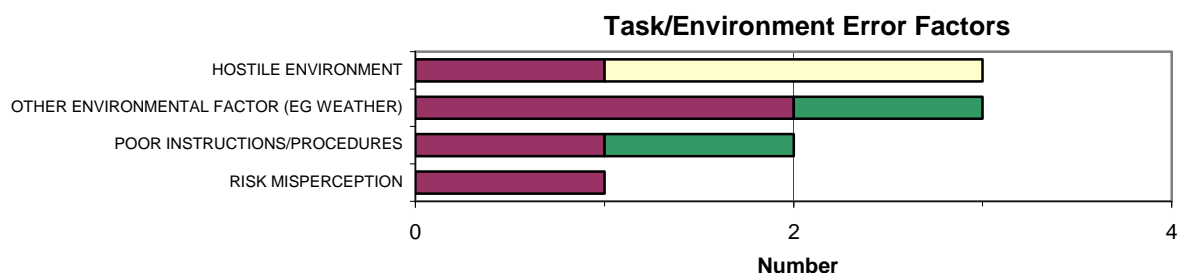
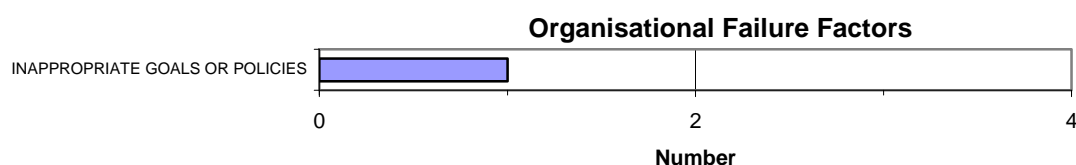
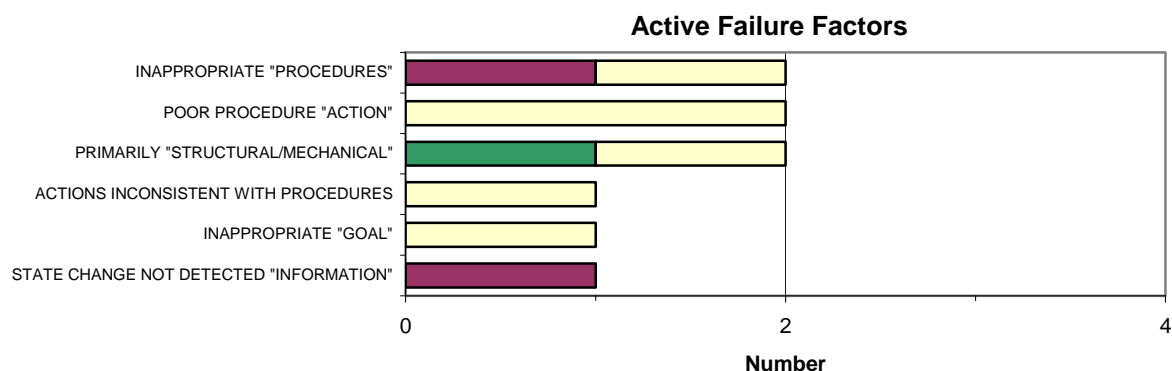
No accidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 or 2008 quarters.

### 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 to 31 December 2007 for the various aircraft statistics categories.

Causal factors have been assigned to 17 (20%) of the 85 accidents.

Note that causes are not yet available for all accidents that occurred in the 1 January to 31 March 2008 period.



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

Note that Task/Environment Violation Factors have not been recorded for any accidents that occurred during the period 1 January to 31 December 2007.

**Injuries*****Number of Fatal Accidents (and Number of Fatal Injuries)***

| <b>Aircraft Statistics Category</b> | <b>1 Jan to 31 Mar 2007</b> | <b>1 Jan to 31 Mar 2008</b> | <b>Change</b>    |
|-------------------------------------|-----------------------------|-----------------------------|------------------|
| Large Aeroplanes                    | 0                           | 0                           | 0                |
| Medium Aeroplanes                   | 0                           | 0                           | 0                |
| Small Aeroplanes                    | 0                           | 2 (3)                       | + 2 (+ 3)        |
| Agricultural Aeroplanes             | 0                           | 0                           | 0                |
| Helicopters                         | 0                           | 1 (2)                       | + 1 (+ 2)        |
| Sport Aircraft                      | 0                           | 2 (2)                       | + 2 (+ 2)        |
| Hang Gliders                        | 0                           | 0                           | 0                |
| Parachutes                          | 1 (1)                       | 0                           | - 1 (- 1)        |
| <b>Total</b>                        | <b>1 (1)</b>                | <b>5 (7)</b>                | <b>+ 4 (+ 6)</b> |

***Number of Serious Injuries***

| <b>Aircraft Statistics Category</b> | <b>1 Jan to 31 Mar 2007</b> | <b>1 Jan to 31 Mar 2008</b> | <b>Change</b> |
|-------------------------------------|-----------------------------|-----------------------------|---------------|
| Large Aeroplanes                    | 0                           | 0                           | 0             |
| Medium Aeroplanes                   | 0                           | 0                           | 0             |
| Small Aeroplanes                    | 0                           | 0                           | 0             |
| Agricultural Aeroplanes             | 0                           | 0                           | 0             |
| Helicopters                         | 0                           | 0                           | 0             |
| Sport Aircraft                      | 0                           | 0                           | 0             |
| Hang Gliders                        | 3                           | 0                           | - 3           |
| Parachutes                          | 1                           | 0                           | - 1           |
| <b>Total</b>                        | <b>4</b>                    | <b>0</b>                    | <b>- 4</b>    |

***Number of Minor Injuries***

| <b>Aircraft Statistics Category</b> | <b>1 Jan to 31 Mar 2007</b> | <b>1 Jan to 31 Mar 2008</b> | <b>Change</b> |
|-------------------------------------|-----------------------------|-----------------------------|---------------|
| Large Aeroplanes                    | 0                           | 0                           | 0             |
| Medium Aeroplanes                   | 0                           | 0                           | 0             |
| Small Aeroplanes                    | 1                           | 0                           | - 1           |
| Agricultural Aeroplanes             | 0                           | 0                           | 0             |
| Helicopters                         | 1                           | 0                           | - 1           |
| Sport Aircraft                      | 2                           | 1                           | - 1           |
| Hang Gliders                        | 1                           | 1                           | 0             |
| Parachutes                          | 0                           | 0                           | 0             |
| <b>Total</b>                        | <b>5</b>                    | <b>2</b>                    | <b>- 3</b>    |

## **Significant Accidents and Other Injury Accidents**

### ***Significant Injury Accidents***

This section describes significant injury accidents that occurred during the period 1 January to 31 March 2008.

#### **Small Aeroplanes**

##### **Other Commercial Operations - Aeroplane**

- A PA-28 on an other aerial work flight was found burnt out in hills. Both occupants were killed.
- A Cessna 152 on a training solo flight collided with an R22 helicopter in the Paraparaumu circuit area. The pilot of the Cessna 152 and both occupants of the R22 were killed.

#### **Helicopters**

##### **Other Commercial Operations - Helicopters**

- An R22 on a flight test collided with a Cessna 152 in the Paraparaumu circuit area. Both occupants of the R22 and the pilot of the Cessna 152 were killed.

#### **Sport Aircraft**

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

- A microlight on a private flight was seen to pull up sharply and enter a tail slide before hitting the ground. The pilot died later of injuries.
- A PW-5 glider on a private flight was seen to make a steep turn at low altitude before descending out of sight. It was found crashed and the pilot dead.

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

This section describes significant non-injury accidents that occurred during the period 1 January to 31 March 2008.

#### **Small Aeroplanes**

##### **Other Commercial Operations – Aeroplane**

- A PA-38 failed to get airborne for a training solo flight and suffered major damage.

#### **Sport Aircraft**

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

- A Jodel D-11 amateur built aeroplane on a private flight suffered a propeller strike when upset by a wind gust on landing.

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

This section describes other injury accidents that occurred during the period 1 January to 31 March 2008.

#### **Sport Aircraft**

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

- An amateur built aeroplane on a private flight struck a fence on landing and crashed. The pilot received minor injuries.
- A paraglider stalled on landing. The pilot received minor injuries.

### **Bird Incident Rates**

Bird hazard monitoring has been carried out against the CAA standard for the period ended 31 December 2007. Analysis shows that six of the 18 monitored aerodromes have bird strike rates above the “trigger level” for CAA action.

One aerodrome exhibited a strike rate in the high risk category of the CAA standard (above 10.0 bird strikes per 10,000 aircraft movements).

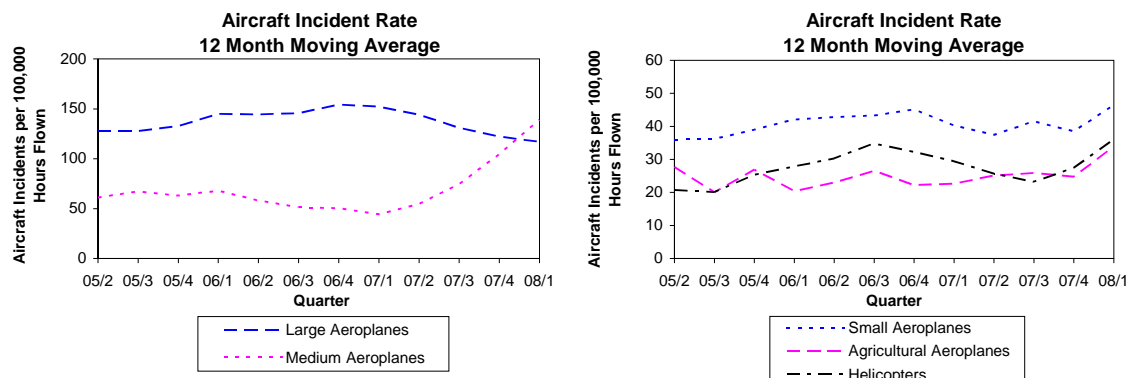
Four aerodromes exhibited a strike rate in the medium risk category (5.0 to 10.0 per 10,000 movements) and three of these aerodromes displayed a long-term upward or constant trend. Thirteen aerodromes exhibited a strike rate in the low risk category (below 5.0 per 10,000 movements) and two of these aerodromes displayed a long-term upward trend.



## Aircraft Incidents

### Trends

The following graphs show the aircraft incident rates (12 month moving average) for the three-year period 1 April 2005 to 31 March 2008 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Aircraft Incidents

| Aircraft Statistics Category | 1 Jan to 31 Mar 2007 | 1 Jan to 31 Mar 2008 | Change      |
|------------------------------|----------------------|----------------------|-------------|
| Large Aeroplanes             | 95                   | 84                   | - 11        |
| Medium Aeroplanes            | 10                   | 28                   | + 18        |
| Small Aeroplanes             | 29                   | 56                   | + 27        |
| Agricultural Aeroplanes      | 3                    | 9                    | + 6         |
| Helicopters                  | 10                   | 26                   | + 16        |
| Sport Aircraft               | 10                   | 19                   | + 9         |
| Unknown Aircraft             | 16                   | 25                   | + 9         |
| <b>Total</b>                 | <b>173</b>           | <b>247</b>           | <b>+ 74</b> |

#### Severity of Aircraft Incidents

| Severity | 1 Jan to 31 Mar 2007 | 1 Jan to 31 Mar 2008 | Change |
|----------|----------------------|----------------------|--------|
| Critical | 0                    | 1                    | + 1    |
| Major    | 19                   | 13                   | - 6    |
| Minor    | 154                  | 233                  | + 79   |

No aircraft incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 quarter.

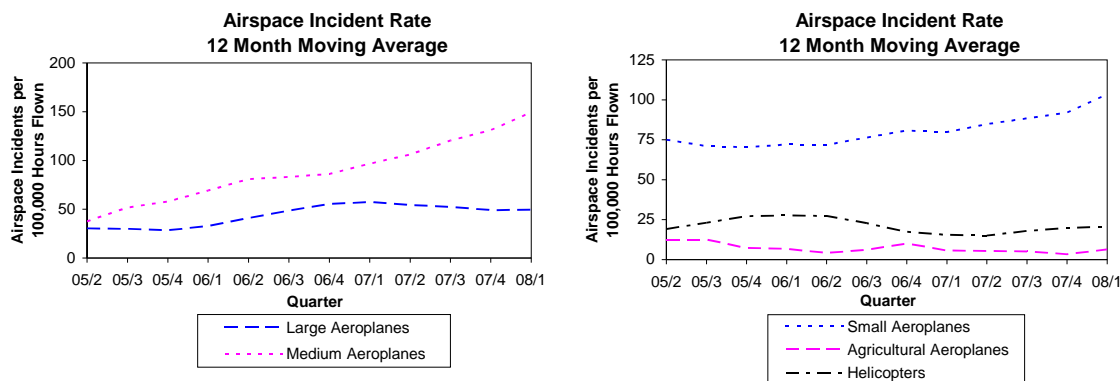
One aircraft incident in the 'Large Aeroplanes' statistics category was classified as Critical in the 1 January to 31 March 2008 quarter. A B737-400 aircraft on a Transport Passenger A to B flight descended below cleared altitude during approach.

No aircraft incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 or 2008 quarters.

## Airspace Incidents

### Trends

The following graphs show the airspace incident rates (12 month moving average) for the three-year period 1 April 2005 to 31 March 2008 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Airspace Incidents

| Aircraft Statistics Category | 1 Jan to 31 Mar 2007 | 1 Jan to 31 Mar 2008 | Change      |
|------------------------------|----------------------|----------------------|-------------|
| Large Aeroplanes             | 35                   | 39                   | + 4         |
| Medium Aeroplanes            | 22                   | 30                   | + 8         |
| Small Aeroplanes             | 63                   | 103                  | + 40        |
| Agricultural Aeroplanes      | 0                    | 2                    | + 2         |
| Helicopters                  | 9                    | 14                   | + 5         |
| Sport Aircraft               | 14                   | 11                   | - 3         |
| Unknown Aircraft             | 88                   | 73                   | - 15        |
| <b>Total</b>                 | <b>231</b>           | <b>272</b>           | <b>+ 41</b> |

#### Severity of Airspace Incidents

| Severity | 1 Jan to 31 Mar 2007 | 1 Jan to 31 Mar 2008 | Change |
|----------|----------------------|----------------------|--------|
| Critical | 0                    | 0                    | 0      |
| Major    | 18                   | 10                   | - 8    |
| Minor    | 213                  | 262                  | + 49   |

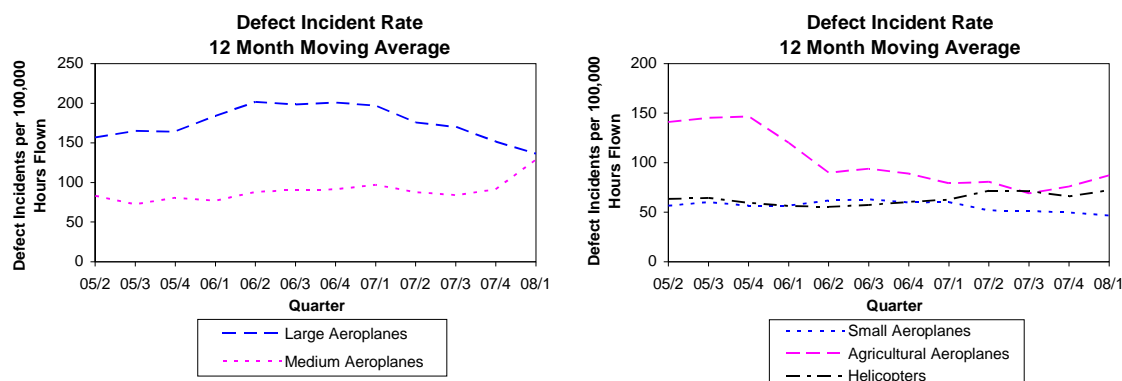
No airspace incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 or 2008 quarters.

No airspace incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 or 2008 quarters.

## Defect Incidents

### Trends

The following graphs show the defect incident rates (12 month moving average) for the three-year period 1 April 2005 to 31 March 2008 (excluding the Sport Aircraft statistics category).



### Quarterly Comparison

#### Number of Defect Incidents

| Aircraft Statistics Category | 1 Jan to 31 Mar 2007 | 1 Jan to 31 Mar 2008 | Change     |
|------------------------------|----------------------|----------------------|------------|
| Large Aeroplanes             | 143                  | 103                  | - 40       |
| Medium Aeroplanes            | 11                   | 31                   | + 20       |
| Small Aeroplanes             | 50                   | 42                   | - 8        |
| Agricultural Aeroplanes      | 12                   | 20                   | + 8        |
| Helicopters                  | 27                   | 38                   | + 11       |
| Sport Aircraft               | 4                    | 4                    | 0          |
| Unknown Aircraft             | 5                    | 10                   | + 5        |
| <b>Total</b>                 | <b>252</b>           | <b>248</b>           | <b>- 4</b> |

#### Severity of Defect Incidents

| Severity | 1 Jan to 31 Mar 2007 | 1 Jan to 31 Mar 2008 | Change |
|----------|----------------------|----------------------|--------|
| Critical | 0                    | 1                    | + 1    |
| Major    | 26                   | 31                   | + 5    |
| Minor    | 226                  | 216                  | - 10   |

No defect incidents in the 'Large Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 quarter.

One defect incident in the 'Large Aeroplanes' statistics category was classified as Critical in the 1 January to 31 March 2008 quarter. A B737-400 aircraft on a Transport Passenger A to B flight obtained 3 green AND 3 red indications when gear was selected down. Recycling the gear produced 3 green indications only.

No defect incidents in the 'Medium Aeroplanes' statistics category were classified as Critical in the 1 January to 31 March 2007 or 2008 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 31 December 2007. Analysis shows that one of the fifteen monitored aircraft types has a defect rate above the "trigger level" for CAA action.

## Quarterly Statistics

| Quarter   | 2005/2  | 2005/3  | 2005/4  | 2006/1  | 2006/2  | 2006/3  |
|---|---------|---------|---------|---------|---------|---------|
| <b>Number of Air Transport Flights<sup>1</sup></b>    | 98,333  | 94,778  | 113,306 | 117,941 | 102,847 | 97,764  |
| <b>Number of Hours Flown<sup>1</sup></b>              | 208,055 | 208,273 | 230,376 | 235,889 | 210,259 | 210,079 |
| <b>Number of Aircraft Movements<sup>2</sup></b>       | 249,893 | 260,951 | 254,085 | 263,245 | 258,378 | 263,142 |
| <b>Number of Aircraft on the Register<sup>3</sup></b> | 3,872   | 3,896   | 3,937   | 3,991   | 3,991   | 3,995   |
| <b>Number of Licences</b>                             |         |         |         |         |         |         |
| Private Pilot Licence                                 | 3,683   | 3,683   | 3,580   | 3,643   | 3,483   | 3,616   |
| Commercial Pilot Licence                              | 3,524   | 3,540   | 3,530   | 3,589   | 3,593   | 3,645   |
| Airline Transport Pilot Licence                       | 1,791   | 1,802   | 1,814   | 1,803   | 1,789   | 1,810   |
| Aircraft Maintenance Engineer Licence                 | 2,019   | 2,055   | 2,075   | 2,090   | 2,114   | 2,135   |
| Air Traffic Controller Licence                        | 306     | 312     | 299     | 306     | 296     | 308     |
| <b>Number of Part 119 Certificated Operators</b>      |         |         |         |         |         |         |
| Air Operator – Large Aeroplanes                       | 11      | 12      | 12      | 12      | 11      | 11      |
| Air Operator – Medium Aeroplanes                      | 11      | 12      | 13      | 12      | 13      | 13      |
| Air Operator – Helicopters and Small Aeroplanes       | 150     | 152     | 156     | 154     | 158     | 160     |
| Air Operator – Pacific                                | 2       | 2       | 2       | 2       | 3       | 3       |
| <b>Number of Aircraft Accidents<sup>4</sup></b>       |         |         |         |         |         |         |
| Large Aeroplanes                                      | 0       | 0       | 0       | 0       | 0       | 0       |
| Medium Aeroplanes                                     | 1       | 0       | 0       | 1       | 1       | 0       |
| Small Aeroplanes                                      | 3       | 7       | 2       | 6       | 1       | 2       |
| Agricultural Aeroplanes                               | 2       | 1       | 2       | 2       | 0       | 0       |
| Helicopters   | 3       | 5       | 7       | 3       | 5       | 4       |
| Sport Aircraft  | 6       | 3       | 5       | 11      | 7       | 4       |
| Unknown Aircraft                                      | 0       | 0       | 0       | 1       | 0       | 0       |
| Hang Gliders  | 0       | 1       | 1       | 7       | 2       | 3       |
| Parachutes  | 1       | 0       | 0       | 2       | 0       | 1       |
| <b>Number of Fatal Accidents<sup>4</sup></b>          | 1       | 2       | 2       | 4       | 0       | 0       |
| <b>Number of Fatal Injuries<sup>4</sup></b>           | 2       | 3       | 4       | 5       | 0       | 0       |
| <b>Number of Serious + Minor Injuries<sup>4</sup></b> | 6       | 9       | 6       | 18      | 6       | 4       |
| <b>Social Cost \$ million<sup>5</sup></b>             | 7.92    | 10.65   | 16.40   | 19.55   | 0.71    | 3.38    |
| <b>Number of Incidents<sup>6</sup></b>                | 979     | 883     | 1,026   | 1,088   | 1,167   | 995     |
| <b>Number of Aviation Related Concerns</b>            | 62      | 80      | 95      | 120     | 86      | 109     |

<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 2007/3, 2007/4, and 2008/1.

<sup>2</sup> Certificated aerodromes. Includes Auckland, Christchurch, Dunedin, Gisborne (from December 2004), 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, 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.

<sup>4</sup> All accidents. All aircraft statistics categories. Includes hang gliders and parachutes.

<sup>5</sup> All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2006 dollars.

<sup>6</sup> All incident sub-types.

| Quarter   | 2006/4  | 2007/1  | 2007/2  | 2007/3  | 2007/4  | 2008/1  |
|---|---------|---------|---------|---------|---------|---------|
| <b>Number of Air Transport Flights<sup>1</sup></b>    | 103,713 | 115,929 | 100,592 | 94,985  | 104,996 | 116,271 |
| <b>Number of Hours Flown<sup>1</sup></b>              | 226,541 | 251,784 | 230,422 | 226,493 | 238,388 | 258,855 |
| <b>Number of Aircraft Movements<sup>2</sup></b>       | 255,765 | 290,284 | 272,719 | 289,005 | 300,512 | 321,583 |
| <b>Number of Aircraft on the Register<sup>3</sup></b> | 4,033   | 4,075   | 4,105   | 4,127   | 4,193   | 4,250   |
| <b>Number of Licences</b>                             |         |         |         |         |         |         |
| Private Pilot Licence                                 | 3,465   | 3,500   | 3,742   | 3,788   | 3,819   | 3,873   |
| Commercial Pilot Licence                              | 3,620   | 3,603   | 3,726   | 3,779   | 3,817   | 3,876   |
| Airline Transport Pilot Licence                       | 1,818   | 1,804   | 1,893   | 1,927   | 1,968   | 1,978   |
| Aircraft Maintenance Engineer Licence                 | 2,151   | 2,161   | 2,181   | 2,203   | 2,227   | 2,241   |
| Air Traffic Controller Licence                        | 294     | 299     | 326     | 330     | 325     | 325     |
| <b>Number of Part 119 Certificated Operators</b>      |         |         |         |         |         |         |
| Air Operator – Large Aeroplanes                       | 11      | 11      | 11      | 11      | 11      | 11      |
| Air Operator – Medium Aeroplanes                      | 14      | 14      | 13      | 15      | 16      | 16      |
| Air Operator – Helicopters and Small Aeroplanes       | 163     | 161     | 159     | 161     | 164     | 163     |
| Air Operator – Pacific                                | 3       | 2       | 3       | 4       | 3       | 2       |
| <b>Number of Aircraft Accidents<sup>4</sup></b>       |         |         |         |         |         |         |
| Large Aeroplanes                                      | 0       | 0       | 0       | 0       | 0       | 0       |
| Medium Aeroplanes                                     | 0       | 0       | 1       | 0       | 0       | 0       |
| Small Aeroplanes                                      | 8       | 8       | 4       | 1       | 8       | 7       |
| Agricultural Aeroplanes                               | 0       | 1       | 3       | 1       | 1       | 4       |
| Helicopters   | 6       | 5       | 1       | 2       | 4       | 5       |
| Sport Aircraft  | 4       | 8       | 10      | 3       | 6       | 13      |
| Unknown Aircraft                                      | 2       | 0       | 0       | 0       | 1       | 0       |
| Hang Gliders  | 4       | 4       | 1       | 4       | 2       | 1       |
| Parachutes  | 1       | 4       | 1       | 0       | 1       | 0       |
| <b>Number of Fatal Accidents<sup>4</sup></b>          | 3       | 1       | 0       | 0       | 3       | 5       |
| <b>Number of Fatal Injuries<sup>4</sup></b>           | 6       | 1       | 0       | 0       | 3       | 7       |
| <b>Number of Serious + Minor Injuries<sup>4</sup></b> | 15      | 9       | 8       | 5       | 7       | 2       |
| <b>Social Cost \$ million<sup>5</sup></b>             | 22.67   | 6.47    | 0.96    | 4.29    | 10.60   | 22.76   |
| <b>Number of Incidents<sup>6</sup></b>                | 1,095   | 1,070   | 1,083   | 1,026   | 1,022   | 1,224   |
| <b>Number of Aviation Related Concerns</b>            | 84      | 75      | 72      | 72      | 71      | 97      |

## 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 the 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 |

### **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.

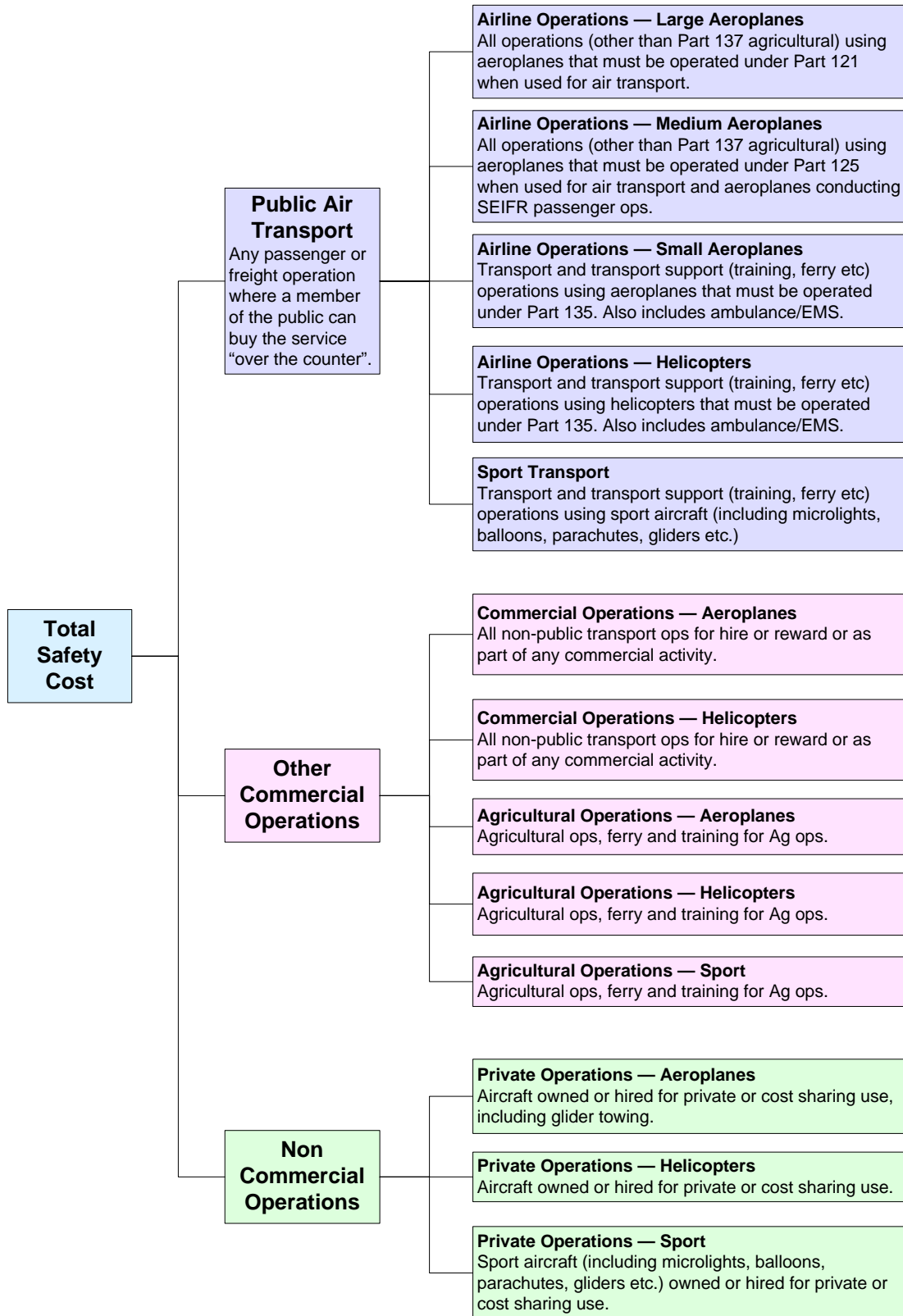
### **Incident**

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.

### **Occurrence**

Means an accident or incident.

## Safety Target Structure





### **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:

| <b>Severity</b> | <b>Definition</b>  |
|-----------------|--|
| 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.   |

## Errata for previous reports

### **Aviation Safety Summary Report for 1 October to 31 December 2007**

On pages 4 and 7 in the Safety Target Structure and Safety Target Graphs sections, page 12 in the Number of Serious Injuries and Number of Minor Injuries tables, page 13 in the Other Injury Accidents section, and page 19 in the Number of Serious + Minor Injuries and Social Cost rows of the Quarterly Statistics table, there are some errors. These errors were due to errors in the injury numbers recorded.

A corrected and updated safety target graph, and corrected values of quarterly Number of Serious + Minor Injuries and Social Cost are shown in the report for 1 January to 31 March 2008 on pages 7 and 19.

### **Safety Outcome Targets for 2010**

The correct data for page 4, Safety Target Structure, is shown below:

The following table displays the social cost for each Safety Target Group for the quarter 1 October to 31 December 2007. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2006 dollars.

| <b>Safety Target Group</b>               | <b>Social Cost<br/>\$m</b> |
|--|----------------------------|
| Airline Operations - Large Aeroplanes    | -                          |
| Airline Operations - Medium Aeroplanes   | -                          |
| Airline Operations - Small Aeroplanes    | 0.01                       |
| Airline Operations - Helicopter          | -                          |
| Sport Transport                          | -                          |
| Other Commercial Operations - Aeroplane  | 3.54                       |
| Other Commercial Operations - Helicopter | 0.01                       |
| Agricultural Operations - Aeroplane      | 3.32                       |
| Agricultural Operations - Helicopter     | -                          |
| Agricultural Operations - Sport Aircraft | -                          |
| Private Operations - Aeroplane           | 0.01                       |
| Private Operations - Helicopter          | 0.28                       |
| Private Operations - Sport               | 3.42                       |
| <b>Total</b>                             | <b>10.60</b>               |

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

## Accidents

The correct data for page 12, Injuries, is shown below:

### *Number of Serious Injuries*

| Aircraft Statistics Category | 1 Oct to 31 Dec 2006 | 1 Oct to 31 Dec 2007 | Change     |
|------------------------------|----------------------|----------------------|------------|
| Large Aeroplanes             | 0                    | 0                    | 0          |
| Medium Aeroplanes            | 0                    | 0                    | 0          |
| Small Aeroplanes             | 0                    | 1                    | + 1        |
| Agricultural Aeroplanes      | 0                    | 0                    | 0          |
| Helicopters                  | 1                    | 0                    | - 1        |
| Sport Aircraft               | 0                    | 0                    | 0          |
| Hang Gliders                 | 4                    | 1                    | - 3        |
| Parachutes                   | 1                    | 0                    | - 1        |
| <b>Total</b>                 | <b>6</b>             | <b>2</b>             | <b>- 4</b> |

### *Number of Minor Injuries*

| Aircraft Statistics Category | 1 Oct to 31 Dec 2006 | 1 Oct to 31 Dec 2007 | Change     |
|------------------------------|----------------------|----------------------|------------|
| Large Aeroplanes             | 0                    | 0                    | 0          |
| Medium Aeroplanes            | 0                    | 0                    | 0          |
| Small Aeroplanes             | 2                    | 2                    | 0          |
| Agricultural Aeroplanes      | 0                    | 0                    | 0          |
| Helicopters                  | 6                    | 2                    | - 4        |
| Sport Aircraft               | 1                    | 1                    | 0          |
| Hang Gliders                 | 0                    | 0                    | 0          |
| Parachutes                   | 0                    | 0                    | 0          |
| <b>Total</b>                 | <b>9</b>             | <b>5</b>             | <b>- 4</b> |

### *Significant Accidents and Other Injury Accidents*

The correct text for page 13, Other Injury Accidents during the period 1 October to 31 December 2007, is shown below:

#### **Small Aeroplanes**

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

- A passenger suffered minor injuries when an aeroplane on a private flight was blown off the airstrip while landing.