

Aviation Industry Safety Summary

Intelligence, Safety and Risk Analysis Unit

1 July 2012 to 30 June 2013



CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Te Mana Rererangi Tūmatanui o Aotearoa

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Introduction and Executive Summary

Introduction

This safety report is produced using data from the Civil Aviation Authority Management Information System. It primarily covers the one year period ending 30 June 2013.¹ Note this is the second Safety Summary Report that covers the previous 12 months. The intention is to provide a better comparison between 12 month periods than the previous 6 monthly summary. Incidentally this report's period also coincides with the 2013 financial year.

Key Indicators

- Measures of industry activity such as numbers of aircraft, air transport flights, seat hours and total hours flown have all continued to increase.
 - Aircraft on the Register increased by 1%,
 - Air transport flights increased by 1.7% (excluding 135,347 Part 115 flights of which approximately 60% were parachute jumps),
 - Seat hours increased by 5.5% and,
 - Total hours flown by 11%.
- The number of certified organisations has increased by 2.3 % to 1015 certificates.
- The number of aircraft movements at principal aerodromes has decreased by 4% in this period and the trend over three years reflects a downward trend in number of air transport flights from principal aerodromes. This indicates that growth in Air Transport flights is occurring within the Part 135 sector, particularly helicopters.
- The number of accidents in the period was 108 up from 89 in the last period, but the trend is downward relative to the average of the last three years (116 accidents/pa).
- There were 8 fatalities, an improvement on 22 in the previous period but more significantly a 38% improvement on the average of the last three years (13/pa).
- The accident, fatalities and social cost statistics continue to be led by private sport aircraft, private aircraft and private helicopters, but several accidents, fatal and non-fatal, have seen airline helicopters (part 135), overtake agricultural aeroplanes and helicopters as the commercial sector with the highest estimated social cost.

Comment on Report Period

To reflect the increasing number of Part 115 Air Transport Flights, the Air Transport flight data is now reported by sector see page 23. We hope you find this helpful and invite comments.

J.D. Stanton

Manager Intelligence Safety and Risk Analysis

¹ This report uses calendar years; where quarters are referred to the first quarter is 1 January to 31 March. Data in tables may not sum exactly to the total shown due to rounding

Executive Summary - Status as at 30 June 2013

This section is organised into three parts: Industry Size, Industry Activity and Safety Outcomes

Part 1 - Industry Size (See here for more information)	
<i>Measure</i>	<i>Current Contributors</i>
<p>Registered Aircraft as at 30 Jun 2013 4,579</p> <p>1 Year prior 4,532</p> <p>30 Jun average for 3 prior years 4,445.3</p>	<p>0% 20% 40% 60% 80% 100%</p> <p>■ Sport Aircraft ■ Small Aeroplanes ■ Helicopters ■ Large Aeroplanes ■ Agricultural Aeroplanes ■ Medium Aeroplanes</p>
<p>Licences on Issue as at 30 Jun 2013 13,277</p> <p>1 Year prior 13,434</p> <p>30 Jun average for 3 prior years 13,126.3</p>	<p>0% 20% 40% 60% 80% 100%</p> <p>■ CPL ■ PPL ■ LAME ■ ATPL ■ ATCL ■ RPL</p>
<p>Certificates Current as at 30 Jun 2013 1015</p> <p>1 Year prior 992</p> <p>30 Jun average for 3 prior years 975.0</p>	<p>0% 20% 40% 60% 80% 100%</p> <p>■ Part 119 Air Operator ■ Part 135 Helicopters and Small Aeroplanes ■ Part 137 Agricultural Aircraft Operator ■ Part 145 Aircraft Maintenance Organisation ■ Part 109 Regulated Air Cargo Agent ■ Part 19 Supply Organisation Certificate of Approval ■ Part 141 Aviation Training Organisation ■ Part 92 Dangerous Goods Packaging Approval ■ Part 129 Foreign Air Operator ■ Part 115 Adventure Aviation Operator ■ Synthetic Training Device (General Aviation) ■ Other Certificates</p>

Part 2 - Industry Activity
(See [here](#) for more information)

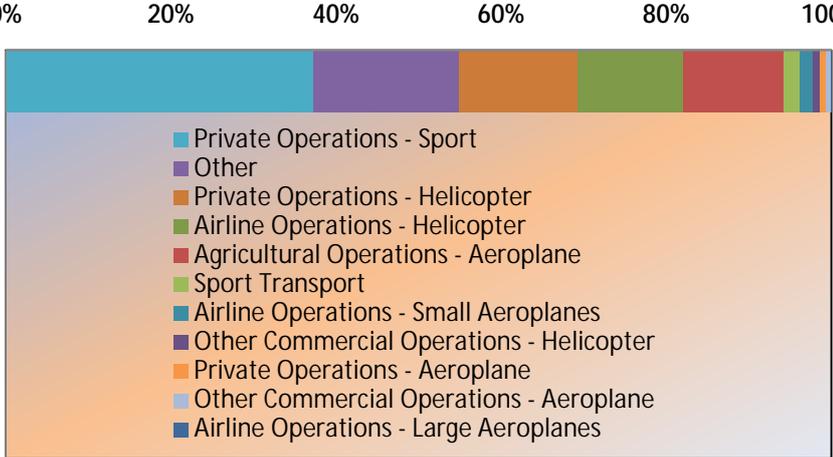
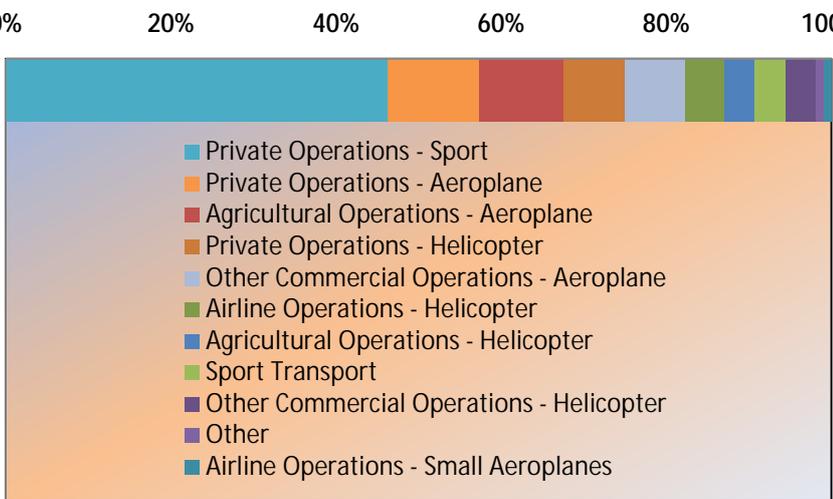
Measure	Current Contributors
<p>Aircraft Movements at Aerodromes</p> <p>Year ending 30 Jun 2013 1,001,200</p> <p>Previous year 1,043,600</p> <p>Average for 3 prior years 1,107,600</p>	<p style="text-align: center;">Aircraft Movements from Aerodromes Year ending Jun 2013, Percentages by Aerodrome</p>
<p>Air Transport Flights</p> <p>Year ending 30 Jun 2013 523,600 (includes 135,347 Part 115 flights of which approximately 60% were parachute jumps)</p> <p>Previous year 381,900</p> <p>Average for 3 prior years 381,600</p>	<p style="text-align: center;">Air Transport Flights Year ending Jun 2013 Percentages by Operation Type</p>
<p>Hours Flown (all operations)</p> <p>Year ending 30 Jun 2013 1,075,900</p> <p>Previous year 964,800</p> <p>Average for 3 prior years 952,000</p>	<p style="text-align: center;">Hours Flown Year ending Jun 2013 Percentages by Aircraft Type</p>

Part 2 - Industry Activity
(See [here](#) for more information)

<i>Measure</i>	<i>Current Contributors</i>
<p>Seat Hours (Millions)</p> <p>Year ending 30 Jun 2013 26.6</p> <p>Previous year 25.2</p> <p>Average for 3 prior years 22.7</p>	<p>Seat Hours Occupied for year ending Jun 2013 Percentages by Safety Outcome Target Group</p> <p>(Note the False Zero on the percentage scale, The Airline Operations – Large Aeroplanes group contributes 96.75% to the seat-hour total)</p> <ul style="list-style-type: none"> ■ Airline Operations - Large Aeroplanes ■ Airline Operations - Medium Aeroplanes ■ Other Commercial Operations - Aeroplane ■ Private Operations - Sport ■ Airline Operations - Helicopter ■ Sport Transport ■ Other Commercial Operations - Helicopter ■ Airline Operations - Small Aeroplanes ■ Agricultural Operations - Helicopter ■ Agricultural Operations - Aeroplane ■ Private Operations - Helicopter ■ Private Operations - Aeroplane ■ Other (0) ■ Unrecorded (0)

Part 3 - Safety Outcomes

(See [here](#) for more information)

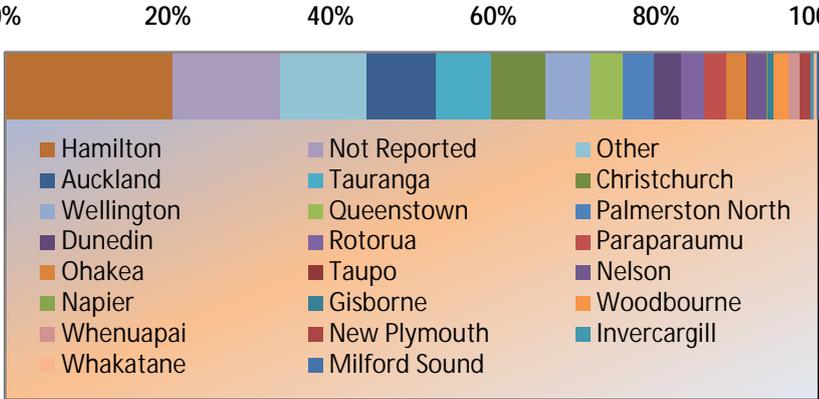
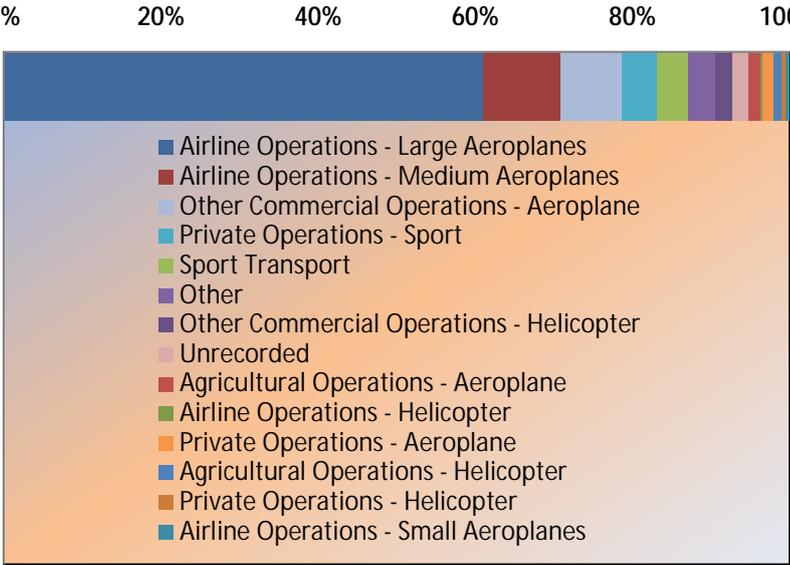
<i>Measure</i>	<i>Current Contributors</i>
<p>Social Cost (2012 dollars)</p> <p>Year ending 30 Jun 2013 \$M 44.4</p> <p>Previous year \$M 97.8</p> <p>Average for 3 prior years \$M 64.5</p>	 <p style="text-align: center;">Social Cost for year ending Jun 2013 Percentages by Safety Outcome Target Group</p>
<p>Accidents</p> <p>Year ending 30 Jun 2013 108</p> <p>Previous year 89</p> <p>Average for 3 prior years 116.7</p>	 <p style="text-align: center;">Accidents for year ending Jun 2013 Percentages by Safety Outcome Target Group</p>

Part 3 - Safety Outcomes
(See [here](#) for more information)

<i>Measure</i>	<i>Current Contributors</i>
<p>Fatalities</p> <p>Year ending 30 Jun 2013 8</p> <p>Previous year 22</p> <p>Average for 3 prior years 13.3</p>	<p>Fatalities for year ending Jun 2013 Percentages by Safety Outcome Target Group</p>
<p>Serious Injuries</p> <p>Year ending 30 Jun 2013 20</p> <p>Previous year 19</p> <p>Average for 3 prior years 19.0</p>	<p>Serious Injuries for year ending Jun 2013 Percentages by Safety Outcome Target Group</p>
<p>Fatal Accidents</p> <p>Year ending 30 Jun 2013 6</p> <p>Previous year 9</p> <p>Average for 3 prior years 8.3</p>	<p>Fatal Accidents for year ending Jun 2013 Percentages by Safety Outcome Target Group</p>

Part 3 - Safety Outcomes

(See [here](#) for more information)

Measure	Current Contributors
<p>Airspace Incidents Reported</p> <p>Year ending 30 Jun 2013 1356 (9 Critical)</p> <p>Previous year 1173 (17 Critical)</p> <p>Average for 3 prior years 919.7 (15.0 Critical)</p>	 <p style="text-align: center;">Airspace Incidents for year ending Jun 2013 Percentages by Nearest Reporting Point</p>
<p>Operational Incidents Reported</p> <p>Year ending 30 Jun 2013 759 (11 Critical)</p> <p>Previous year 677 (5 Critical)</p> <p>Average for 3 prior years 768.7 (3.0 Critical)</p>	 <p style="text-align: center;">Operational Incidents for year ending Jun 2013 Percentages by Safety Outcome Target Group</p>

Part 3 - Safety Outcomes (See here for more information)																	
<i>Measure</i>	<i>Current Contributors</i>																
<p><i>Defect Incidents Reported</i></p> <p>Year ending 30 Jun 2013 1688 (1 Critical)</p> <p>Previous year 1363 (3 Critical)</p> <p>Average for 3 prior years 1322.7 (1.0 Critical)</p>	<p>Defect Incidents for year ending Jun 2013 Percentages by Aircraft Type</p> <table border="1"> <caption>Approximate Data from Chart</caption> <thead> <tr> <th>Aircraft Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Large Aeroplanes</td> <td>68%</td> </tr> <tr> <td>Small Aeroplanes</td> <td>12%</td> </tr> <tr> <td>Helicopters</td> <td>8%</td> </tr> <tr> <td>Medium Aeroplanes</td> <td>6%</td> </tr> <tr> <td>Sport Aircraft</td> <td>3%</td> </tr> <tr> <td>Other</td> <td>2%</td> </tr> <tr> <td>Agricultural Aeroplanes</td> <td>1%</td> </tr> </tbody> </table>	Aircraft Type	Percentage	Large Aeroplanes	68%	Small Aeroplanes	12%	Helicopters	8%	Medium Aeroplanes	6%	Sport Aircraft	3%	Other	2%	Agricultural Aeroplanes	1%
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Part 3 - Safety Outcomes

(See [here](#) for more information)

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<p>Aerodrome Incidents Reported</p> <p>Year ending 30 Jun 2013 211 (3 Critical)</p> <p>Previous year 206 (2 Critical)</p> <p>Average for 3 prior years 126.3 (0.3 Critical)</p>	<div data-bbox="507 465 1343 963"> <p>Aerodrome Incidents for year ending Jun 2013 Percentages by Safety Outcome Target Group</p> <table border="1"> <caption>Approximate Data for Aerodrome Incidents (Year ending Jun 2013)</caption> <thead> <tr> <th>Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Other</td><td>15%</td></tr> <tr><td>Other Commercial Operations - Aeroplane</td><td>25%</td></tr> <tr><td>Private Operations - Aeroplane</td><td>10%</td></tr> <tr><td>Airline Operations - Large Aeroplanes</td><td>10%</td></tr> <tr><td>Unrecorded</td><td>5%</td></tr> <tr><td>Airline Operations - Medium Aeroplanes</td><td>5%</td></tr> <tr><td>Private Operations - Sport</td><td>3%</td></tr> <tr><td>Airline Operations - Small Aeroplanes</td><td>3%</td></tr> <tr><td>Other Commercial Operations - Helicopter</td><td>2%</td></tr> <tr><td>Private Operations - Helicopter</td><td>2%</td></tr> <tr><td>Agricultural Operations - Helicopter</td><td>2%</td></tr> <tr><td>Sport Transport</td><td>1%</td></tr> </tbody> </table> </div> <div data-bbox="507 1115 1343 1460"> <p>Aerodrome Incidents for year ending Dec 2012 Percentages by Nearest Reporting Point</p> <table border="1"> <caption>Approximate Data for Aerodrome Incidents (Year ending Dec 2012)</caption> <thead> <tr> <th>Reporting Point</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Hamilton</td><td>15%</td></tr> <tr><td>Tauranga</td><td>10%</td></tr> <tr><td>Christchurch</td><td>10%</td></tr> <tr><td>Wellington</td><td>10%</td></tr> <tr><td>Other</td><td>10%</td></tr> <tr><td>Queenstown</td><td>5%</td></tr> <tr><td>Dunedin</td><td>5%</td></tr> <tr><td>Auckland</td><td>5%</td></tr> <tr><td>Rotorua</td><td>5%</td></tr> <tr><td>New Plymouth</td><td>5%</td></tr> <tr><td>Ohakea</td><td>5%</td></tr> <tr><td>Napier</td><td>5%</td></tr> <tr><td>Taupo</td><td>5%</td></tr> <tr><td>Palmerston North</td><td>5%</td></tr> <tr><td>Invercargill</td><td>5%</td></tr> <tr><td>Woodbourne</td><td>5%</td></tr> <tr><td>Whenuapai</td><td>5%</td></tr> <tr><td>Gisborne</td><td>5%</td></tr> <tr><td>Paraparaumu</td><td>5%</td></tr> </tbody> </table> </div>	Category	Percentage	Other	15%	Other Commercial Operations - Aeroplane	25%	Private Operations - Aeroplane	10%	Airline Operations - Large Aeroplanes	10%	Unrecorded	5%	Airline Operations - Medium Aeroplanes	5%	Private Operations - Sport	3%	Airline Operations - Small Aeroplanes	3%	Other Commercial Operations - Helicopter	2%	Private Operations - Helicopter	2%	Agricultural Operations - Helicopter	2%	Sport Transport	1%	Reporting Point	Percentage	Hamilton	15%	Tauranga	10%	Christchurch	10%	Wellington	10%	Other	10%	Queenstown	5%	Dunedin	5%	Auckland	5%	Rotorua	5%	New Plymouth	5%	Ohakea	5%	Napier	5%	Taupo	5%	Palmerston North	5%	Invercargill	5%	Woodbourne	5%	Whenuapai	5%	Gisborne	5%	Paraparaumu	5%
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Part 3 - Safety Outcomes

(See [here](#) for more information)

<i>Measure</i>	<i>Current Contributors</i>
<p><i>Runway Incursions Reported</i></p> <p>Year ending 30 Jun 2013 141 (3 Critical)</p> <p>Previous year 139 (1 Critical)</p> <p>Average for 3 prior years 65.3 (0.3 Critical)</p>	<div data-bbox="507 488 1391 1057"> <p>0% 20% 40% 60% 80% 100%</p> <p>Aerodrome Incidents for year ending Jun 2013 Percentages by Safety Outcome Target Group</p> <ul style="list-style-type: none"> Other Other Commercial Operations - Aeroplane Private Operations - Aeroplane Airline Operations - Large Aeroplanes Unrecorded Airline Operations - Medium Aeroplanes Private Operations - Sport Airline Operations - Small Aeroplanes Other Commercial Operations - Helicopter Private Operations - Helicopter Agricultural Operations - Helicopter Sport Transport Agricultural Operations - Aeroplane (0) Airline Operations - Helicopter (0) </div> <div data-bbox="507 1227 1391 1608"> <p>0% 20% 40% 60% 80% 100%</p> <p>Runway Incursions for year ending Jun 2013 Percentages by Nearest Reporting Point</p> <ul style="list-style-type: none"> Hamilton Dunedin Ohakea Other Auckland Woodbourne Invercargill Tauranga Christchurch Queenstown Rotorua Whenuapai Napier Taupo Gisborne Paraparaumu Nelson Wellington Palmerston North New Plymouth </div>

Part 3 - Safety Outcomes

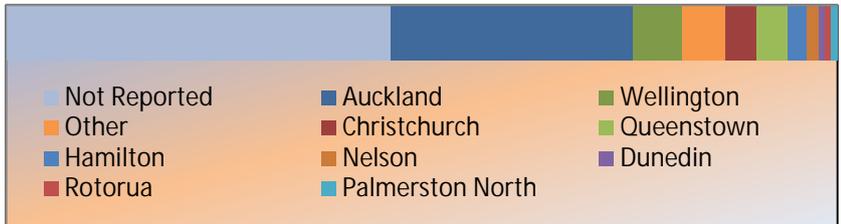
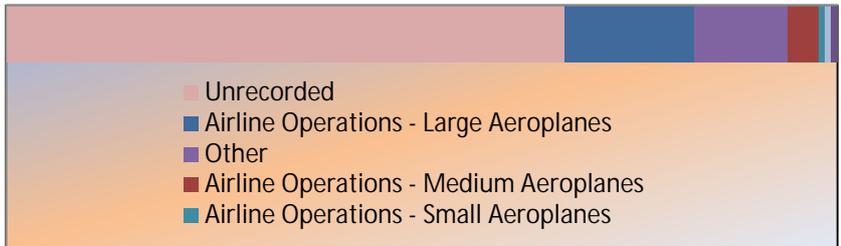
(See [here](#) for more information)

Measure	Current Contributors
<p>Bird Hazard Incidents Reported Year ending 31 Dec 2012 1369 (544 Strikes)</p> <p>Previous year 1279 (481 Strikes)</p> <p>Average for 3 prior years 1328.7 (488.3 Strikes)</p> <p>(No Bird Hazard incident reported during the period covered by this report was Critical)</p>	<div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p> <p>Bird Hazard Incidents for year ending Jun 2013 Percentages by Nearest Reporting Point</p> </div> <div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p> <p>Bird Hazard Incidents for year ending Dec 2012 Percentages by Nearest Reporting Point</p> </div>

Part 3 - Safety Outcomes (See here for more information)	
<i>Measure</i>	<i>Current Contributors</i>
<p>Security Incidents Reported</p> <p>Year ending 30 Jun 2013 19 (0 Critical)</p> <p>Previous year 42 (0 Critical)</p> <p>Average for 3 prior years 81.7 (0.0 Critical)</p>	<div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p> <p>■ Not Aircraft Related ■ Large Aeroplanes ■ Medium Aeroplanes ■ Small Aeroplanes</p> <p>Security Incidents for year ending Jun 2013 Percentages by Aircraft Type</p> </div> <div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p> <p>■ Not Reported ■ Auckland ■ Wellington ■ Other</p> <p>Security Incidents for year ending Jun 2013 Percentages by NRP</p> </div>
<p>Aviation Related Concerns Reported</p> <p>Year ending 30 Jun 2013 760 (1 Critical)</p> <p>Previous year 913 (1 Critical)</p> <p>Average for 3 prior years 511.7 (0.7 Critical)</p>	<ul style="list-style-type: none"> · The coding of ARCs is such that no useful analysis is currently possible · Approximately 33% of ARCs received are actually Section 13A notifications that are treated as ARCs because there is no other procedure defined for processing them.

Part 3 - Safety Outcomes

(See [here](#) for more information)

<i>Measure</i>	<i>Current Contributors</i>
<p>All Other Incidents Reported (Dangerous Goods, Facility Malfunction, Cargo Security, Promulgated Information)</p> <p>Year ending 31 Dec 2012 134 (0 Critical)</p> <p>Previous year 89 (0 Critical)</p> <p>Average for 3 prior years 127.0 (0.3 Critical).</p>	<div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p>  <p>All Other Incidents for year ending Jun 2013 Percentages by Aircraft Type</p> </div> <div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p>  <p>All Other Incidents for year ending Jun 2013 Percentages by NRP</p> </div> <div style="text-align: center;"> <p>0% 20% 40% 60% 80% 100%</p>  <p>All Other Incidents for year ending Jun 2013 Percentages by Safety Outcome Target Group</p> </div>

Part 3 - Safety Outcomes

(See [here](#) for more information)

<i>Measure</i>	<i>Current Contributors</i>																										
<p>Median Non-Compliance Index</p> <p>Year ending 31 Dec 2012 20.0</p> <p>Previous year 28.6</p> <p>Average for 3 prior years 30.8</p>	<div data-bbox="491 465 1401 1173"> <p style="text-align: center;">Non Compliance Index (Weighted Findings / Audit Hours) (358 Clients with zero NCI and zero audit hours have been omitted)</p> <table border="1"> <caption>Non Compliance Index Distribution</caption> <thead> <tr> <th>Index Range</th> <th>Number of Clients</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td><=10</td><td>28</td></tr> <tr><td>>10, <=20</td><td>55</td></tr> <tr><td>>20, <=30</td><td>25</td></tr> <tr><td>>30, <=40</td><td>27</td></tr> <tr><td>>40, <=50</td><td>15</td></tr> <tr><td>>50, <=60</td><td>8</td></tr> <tr><td>>60, <=70</td><td>3</td></tr> <tr><td>>70, <=80</td><td>5</td></tr> <tr><td>>80, <=90</td><td>1</td></tr> <tr><td>>90, <=100</td><td>4</td></tr> <tr><td>>100</td><td>2</td></tr> </tbody> </table> </div>	Index Range	Number of Clients	0	0	<=10	28	>10, <=20	55	>20, <=30	25	>30, <=40	27	>40, <=50	15	>50, <=60	8	>60, <=70	3	>70, <=80	5	>80, <=90	1	>90, <=100	4	>100	2
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>90, <=100	4																										
>100	2																										
<p>Number of Clients with Risk Score of 'Very High'</p> <p>Year ending 30 Jun 2013 22 (Pt 115 Operations in their infancy)</p> <p>Previous year 4</p> <p>Average for 3 prior years 4.7</p>	<div data-bbox="507 1234 1390 1547"> <table border="1"> <caption>Clients with Very High Risk Scores by Certificate Type</caption> <thead> <tr> <th>Certificate Type</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>Part 115 Adventure Aviation Operator Certificate</td><td>~73%</td></tr> <tr><td>Part 19F Supply Organisation</td><td>~10%</td></tr> <tr><td>Part 109 Regulated Air Cargo Agent</td><td>~5%</td></tr> <tr><td>Part 141 Aviation Training Organisation</td><td>~5%</td></tr> <tr><td>Part 129 Foreign Air Transport Operator</td><td>~5%</td></tr> <tr><td>Part 145 Maintenance Organisation</td><td>~2%</td></tr> </tbody> </table> </div> <p style="text-align: center;">Clients with Very High Risk Scores Year Ending 30 June 2013 Percentages by Certificate Held</p>	Certificate Type	Percentage	Part 115 Adventure Aviation Operator Certificate	~73%	Part 19F Supply Organisation	~10%	Part 109 Regulated Air Cargo Agent	~5%	Part 141 Aviation Training Organisation	~5%	Part 129 Foreign Air Transport Operator	~5%	Part 145 Maintenance Organisation	~2%												
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Part 129 Foreign Air Transport Operator	~5%																										
Part 145 Maintenance Organisation	~2%																										

Part 3 - Safety Outcomes (See here for more information)	
<i>Measure</i>	<i>Current Contributors</i>
<p>Number of Clients with Risk Score of 'High'</p> <p>Year ending 30 Jun 2013</p> <p style="text-align: right;">8</p> <p>Previous year</p> <p style="text-align: right;">5</p> <p>Average for 3 prior years</p> <p style="text-align: right;">7.3</p>	<p style="text-align: center;">Clients with High Risk Scores Year Ending 30 June 2013 Percentages by Certificate Held</p>

All values quoted are based on data as reported to the CAA

Reporting rates vary widely depending on the nature and severity of incidents, generally the more serious the event the higher the rate of reporting, All fatalities reported, defects perhaps 50% of actual are reported.

Activity data reporting varies widely between sectors in both accuracy and completeness

Air Transport Flights and All Hours Flown values have been adjusted to allow for the probable activity levels of aircraft for which an expected Aircraft Operations Statistics return has not been received

Industry Size and Activity Data

Registered Aircraft

The following table summarises the number of aircraft on the register by Aircraft Category at 30 Jun 2013, 30 Jun 2012 and the average of the numbers at the end of each of the three prior years.

Aircraft Category	30 Jun 2013	30 Jun 2012	Average 3 Prior Yrs
Large Aeroplanes	128	126	122.3
Medium Aeroplanes	85	85	83.7
Small Aeroplanes	1,528	1,522	1,516.7
Helicopters	787	770	761.3
Sport Aircraft	1,945	1,920	1,851.3
Agricultural Aeroplanes	106	109	110.0
Total	4,579	4,532	4,445.3

Licences

The following table summarises the number of airline transport, commercial, private and recreational pilot, air traffic controller, and aircraft maintenance engineer licences on the register at 30 Jun 2013, 30 Jun 2012 and the average of the numbers at the end of each of the three prior years.

Licences	30 Jun 2013	30 Jun 2012	Average 3 Prior Yrs
RPL	199	221	138.3
ATCL	372	374	356.3
ATPL	2,161	2,090	2,063.0
LAME	2,641	2,575	2,453.3
PPL	3,151	3,458	3,719.7
CPL	4,753	4,716	4,395.7
Total	13,277	13,434	13,126.3

Note — the statistics above for pilot licences count only those with active class 1 or active class 2 medical certificates or, for RPL holders, a certificate, issued in accordance with the NZTA medical fitness standards that are applicable for a Class 2, 3, 4 or 5 driver licence with passenger endorsement. 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). The statistics for ATCL holders count only those with an active class 3 medical certificate.

These statistics do not show the number of licence holders as each holder may hold more than one licence.

Certificated Operators

The following tables show the number of Civil Aviation Rule Part certificate holders at 30 Jun 2013, 30 Jun 2012 and the average of the numbers at the end of each of the three prior years.

Rule Part	30Jun2013	30Jun2012	Average3Prior Yrs
Part 109 Regulated Air Cargo Agent	67	63	63.0
Part 115 Adventure Aviation Operator	33	20	-
Part 119 Air Operator	183	181	183.7
Part 129 Foreign Air Operator	32	28	36.7
Part 137 Agricultural Aircraft Operator	102	99	106.7
Part 139 Aerodromes	27	26	26.0
Part 140 Aviation Security Service	1	1	1.0
Part 141 Aviation Training Organisation	58	57	55.0
Part 145 Aircraft Maintenance Organisation	64	67	56.7
Part 146 Aircraft Design Organisation	14	15	12.3
Part 148 Aircraft Manufacturing Organisation	20	23	21.3
Part 149 Aviation Recreation Organisation	8	9	9.0
Part 171 Aeronautical Telecommunication Service Organisation	2	2	2.0
Part 172 Air Traffic Service	1	1	1.0
Part 173 Instrument Flight Procedure Service Organisation	3	3	2.3
Part 174 Meteorological Service Organisation	2	2	2.0
Part 175 Aeronautical Information Service Organisation	1	1	1.7
Part 19 Supply Organisation Certificate of Approval	58	60	60.0
Part 92 Dangerous Goods Packaging Approval	59	57	55.7
Australian AOC Operating with ANZA Privileges	2	1	2.0
Total	737	716	695.3

* Notes:

- For organisations with Part 92 and for those with Part 172 certificates the figures show the total number of approvals held.
- Part 109 Certificate holder data is not available prior to 2009 so the prior period averaging for this certificate has been done over two years

Part 119 Air Operator	30 Jun 2013	30 Jun 2012	Average 3 Prior Yrs
Part 108 Security Programme	19	18	18.0
Part 121 Large Aeroplanes	9	9	9.7
Part 125 Medium Aeroplanes	16	15	15.0
Part 135 Helicopters and Small Aeroplanes	171	171	173.0

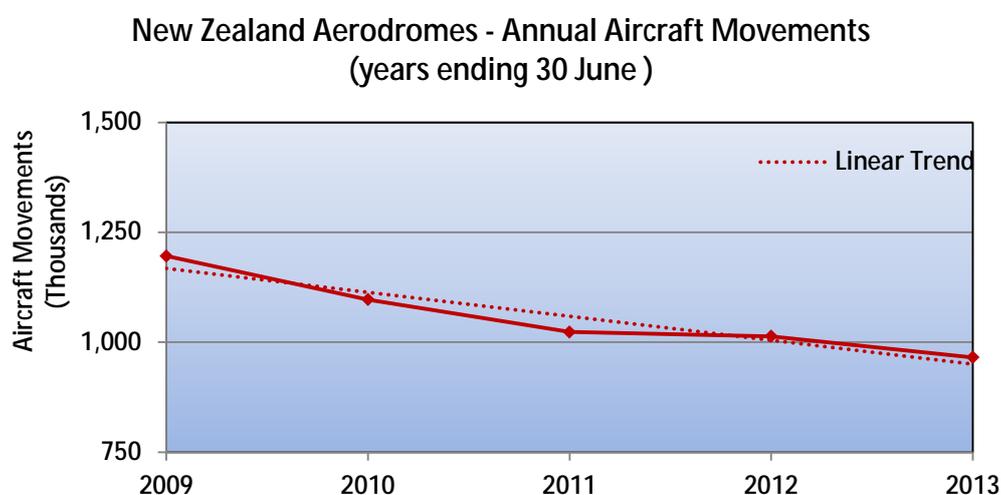
Part 129 Air Operator	30 Jun 2013	30 Jun 2012	Average 3 Prior Yrs
Part 108 Security Programme	23	21	27.0

Aircraft Movements

The following graph and table show the number of aircraft movements at the following aerodromes: Auckland, Christchurch, Dunedin, Gisborne, Hamilton, Invercargill, Milford Sound, Napier, Nelson, New Plymouth, Ohakea, Palmerston North, Kapiti Coast, Queenstown, Rotorua, Taupo, Tauranga, Wellington, Whenuapai and Woodbourne. These figures are as reported to CAA by Airways Corporation and Taupo Airport.

Long-Term Change in Aircraft Movements

The following graph shows the annual number of aircraft movements for the five-year period ending 30 June 2013. Kapiti Coast Airport has been omitted from this long term analysis because the available data is incomplete because there has only been a flight information service available since October 2011.



The average annual decrease in the number of aircraft movements was 5.2% from the year ended 30 June 2009 until the year ended 30 June 2013 during which 965605 movements were recorded.

Yearly Comparison

The following table shows the number of Aerodrome movements in the period 1 January to 30 June 2013, the previous year and the average of the movement numbers during the prior 3 years. For consistence Kapiti Coast Airport movements have also been omitted from this table

Activity	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Aircraft Movements	965605	1013482	1108004.7

Aircraft Movements at Aerodromes

The aerodromes are shown in descending order of the number of aircraft movements for the year ending 30 June 2013. The figures all relate to years ending 30 June 2013.

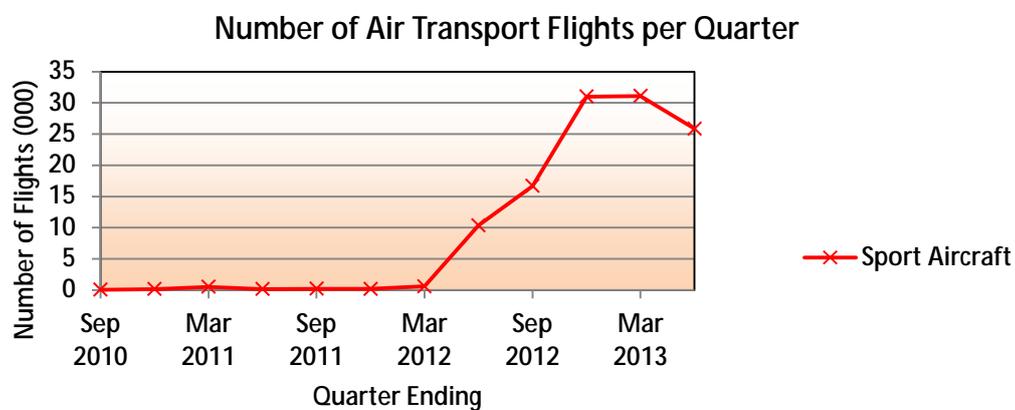
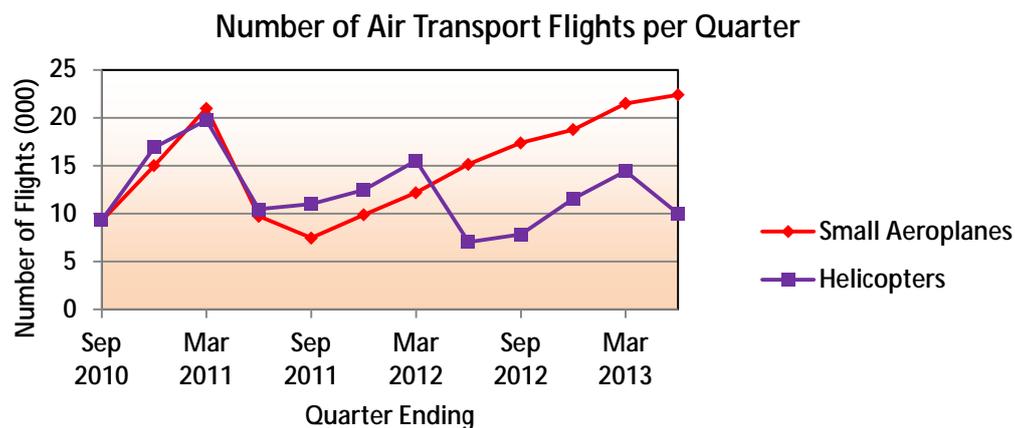
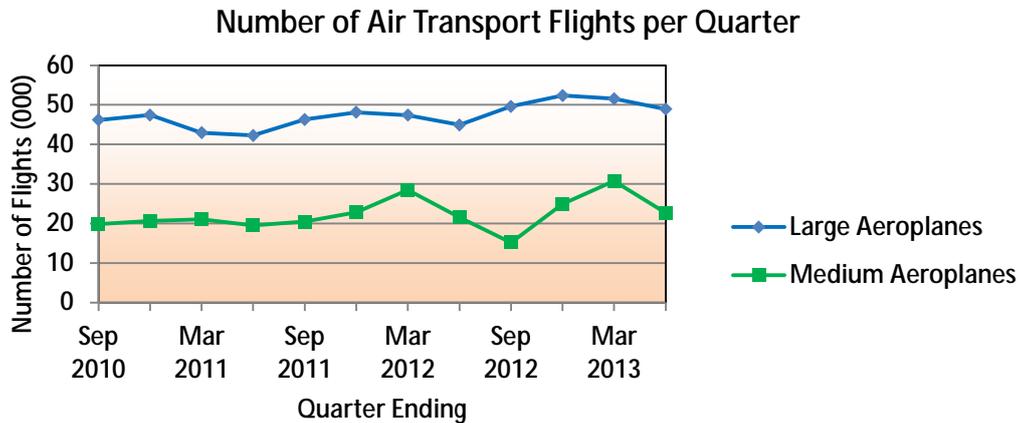
Aerodrome	2009	2010	2011	2012	2013
Auckland	159,157	157,032	155,609	157,365	156,405
Hamilton	152,062	122,086	103,408	117,870	131,795
Christchurch	142,434	128,984	122,352	116,007	108,259
Wellington	114,440	110,817	106,426	105,323	101,279
Tauranga	101,664	93,360	76,784	72,158	73,193
Palmerston North	67,646	55,504	59,476	68,073	62,881
Nelson	48,653	49,813	50,610	50,295	46,531
Queenstown	46,471	44,831	41,406	43,943	42,070
Paraparaumu	0	6,305	0	30,151	35,639
New Plymouth	43,775	40,578	34,590	31,687	27,797
Ohakea	75,263	68,597	56,850	44,154	27,459
Invercargill	25,841	26,251	29,483	31,268	25,230
Taupo	32,024	29,370	27,224	26,558	24,146
Napier	25,965	25,661	27,725	25,720	23,963
Dunedin	60,995	46,661	35,213	28,236	23,300
Rotorua	24,135	23,331	22,089	23,100	22,103
Woodbourne	24,317	22,887	23,703	23,124	22,077
Gisborne	24,083	23,279	22,295	21,563	18,054
Whenuapai	12,918	13,642	14,981	14,107	15,145
Milford Sound	14,185	14,426	13,094	12,931	13,918

The 2010 figure for Paraparaumu is an estimate provided by that airport for that year. Data for Paraparaumu from 2012 onwards has been supplied by Airways Corporation. The value for 2012 relates only to the portion of the year when the Information Service was active.

Air Transport Flights

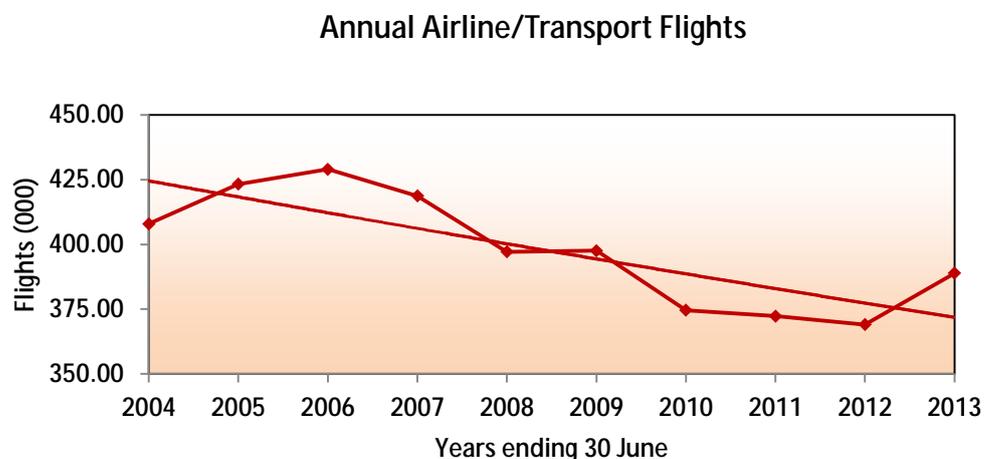
Note that these graphs exclude foreign registered aircraft that are operated in New Zealand.

The following graphs show the estimated number of air transport flights per quarter during the three year period ending 30 June 2013. The estimates are based on the reported numbers of flights with an allowance for aircraft for which reports were not received.



Long-Term Change in Airline/Transport Flights

The following graph shows the estimated number of airline/transport flights for the 10-year period ending 30 June 2013



The change in the estimated number of annual airline/transport flights across this period is equivalent to an annual decrease of 0.53%. The linear trend in these reported flights is equivalent to an annual decrease of 1.45%.

Yearly Comparison

Number of Airline/Transport Flights

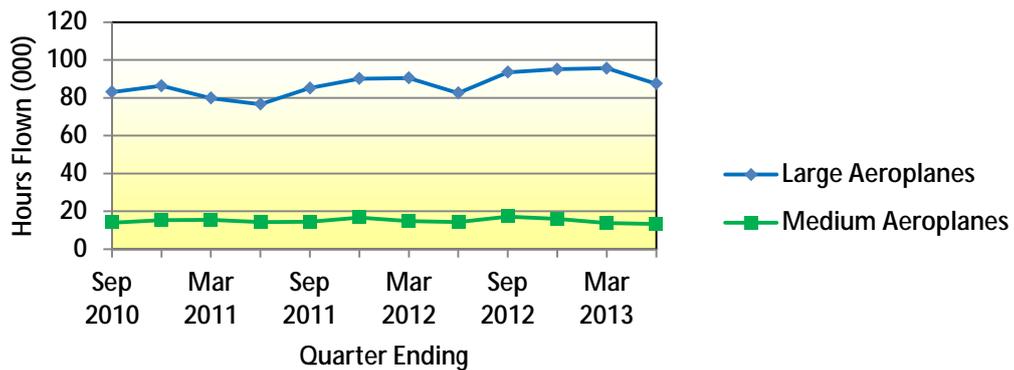
Aircraft Category	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Large Aeroplanes	202465	186759	181660.0
Medium Aeroplanes	86655	92350	84640.7
Small Aeroplanes	55584	42714	56200.3
Helicopters	43846	46054	58341.7
Sport Aircraft	327	1143	635.3
Total	388877	369020	381478.0

Hours Flown

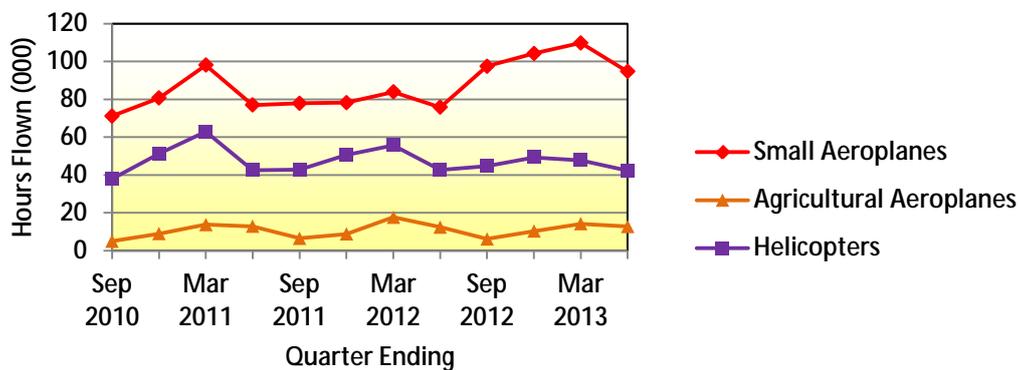
Note that these graphs exclude the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes, and foreign registered aircraft that are operated in New Zealand.

The following graphs show the estimated number of hours flown per quarter during the three year period ending 30 June 2013. The estimates are based on the reported hours with an allowance for aircraft for which reports were not received.

Number of Hours Flown per Quarter



Number of Hours Flown per Quarter



Comment on Estimated Activity Data

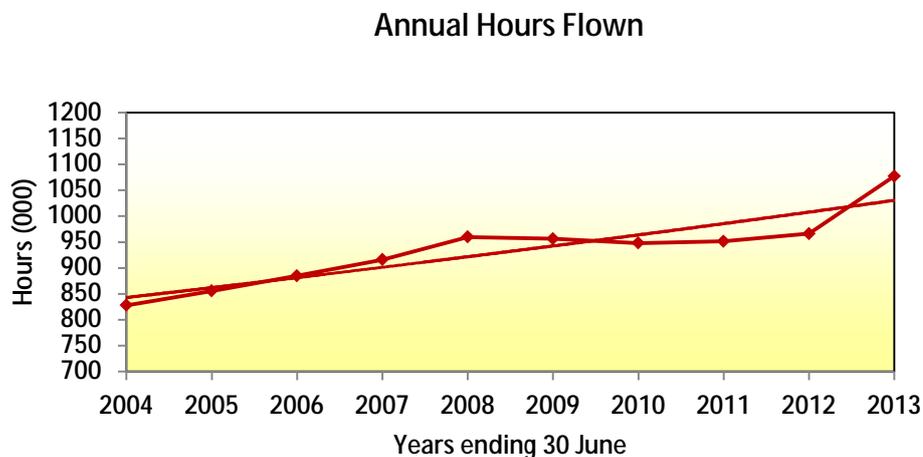
Not all operators comply with the requirements of CAR 12.151 to report hours and flights data. An allowance is made for the ‘missing’ data by applying a statistical estimating process to each quarter’s data. The following table shows the percentage of aircraft for which returns had been entered for the July 2012 to June 2013 period at the time of compilation, which is at least 6 weeks after most of the returns were due.

Aircraft Category	Percentage of Expected Returns Received
Large Aeroplanes	56.9%
Medium Aeroplanes	31.3%
Small Aeroplanes	12.6%
Helicopters	22.5%
Sport Aircraft – Aeroplanes	5.9%
Sport Aircraft – Free Balloons	4.7%
Sport Aircraft - Hang Gliders	50.0%
Sport Aircraft - Helicopters	0.0%
Sport Aircraft - Parachutes	33.3%
Sport Aircraft - Paragliders	47.6%
Agricultural Aeroplanes	35.2%

Helicopters, small and medium aircraft are struggling to achieve a return rate of 50%. Ways to increase compliance with the reporting requirements of CAR 12.151 are under consideration

Long-Term Change in Hours Flown

The following graph shows the annual hours flown (includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes) for the 10-year period ending 30 June 2013.



The change in the estimated number of annual hours flown across this period is equivalent to an annual increase of 2.97%. The linear trend in these reported hours is equivalent to an annual increase of 2.30%.

Yearly Comparison

Hours Flown

Aircraft Category	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Large Aeroplanes	371536.7	348260.0	320503.2
Medium Aeroplanes	60115.6	60296.1	58707.0
Small Aeroplanes	406144.2	315747.0	345663.1
Helicopters	184087.1	191709.9	185117.0
Sport Aircraft	11921.1	4930.4	4779.0
Agricultural Aeroplanes	43422.6	45283.7	37243.7
Total	1077227.2	966227.2	952013.1

Seat-Hours

The following table indicates the size of the aviation industry as determined from Aircraft Operating Statistics in the relevant 2010 Safety Target Group categories for the year ending 30 June 2013. A seat-hours measure is used as an indication of person exposure. For each Safety Target Group the total number of hours flown is multiplied by the average number of seats and an 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 seat hours. Values are millions of seat-hours.

Safety Outcome Target Group	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Airline Operations - Large Aeroplanes	54.02 (96.68%)	50.63 (96.57%)	46.57 (96.10%)
Airline Operations - Medium Aeroplanes	0.72 (1.29%)	0.74 (1.41%)	0.73 (1.50%)
Airline Operations - Small Aeroplanes	0.08 (0.14%)	0.09 (0.17%)	0.10 (0.22%)
Airline Operations - Helicopter	0.10 (0.19%)	0.12 (0.23%)	0.12 (0.26%)
Sport Transport	0.09 (0.17%)	0.05 (0.10%)	0.12 (0.25%)
Other Commercial Operations - Aeroplane	0.34 (0.61%)	0.24 (0.46%)	0.27 (0.55%)
Other Commercial Operations - Helicopter	0.09 (0.15%)	0.10 (0.19%)	0.10 (0.21%)
Agricultural Operations - Aeroplane	0.05 (0.09%)	0.05 (0.10%)	0.04 (0.08%)
Agricultural Operations - Helicopter	0.07 (0.13%)	0.07 (0.14%)	0.11 (0.22%)
Private Operations - Aeroplane	0.03 (0.05%)	0.04 (0.08%)	0.05 (0.11%)
Private Operations - Helicopter	0.02 (0.04%)	0.04 (0.07%)	0.05 (0.09%)
Private Operations - Sport	0.26 (0.46%)	0.25 (0.48%)	0.21 (0.42%)
Total	55.87 (100.00%)	52.42 (100.00%)	48.46 (100.00%)

* most sport aircraft do not report hours or seats, so a standard estimate of seat hours offered is used as well as reported data for such aircraft in these groups.

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

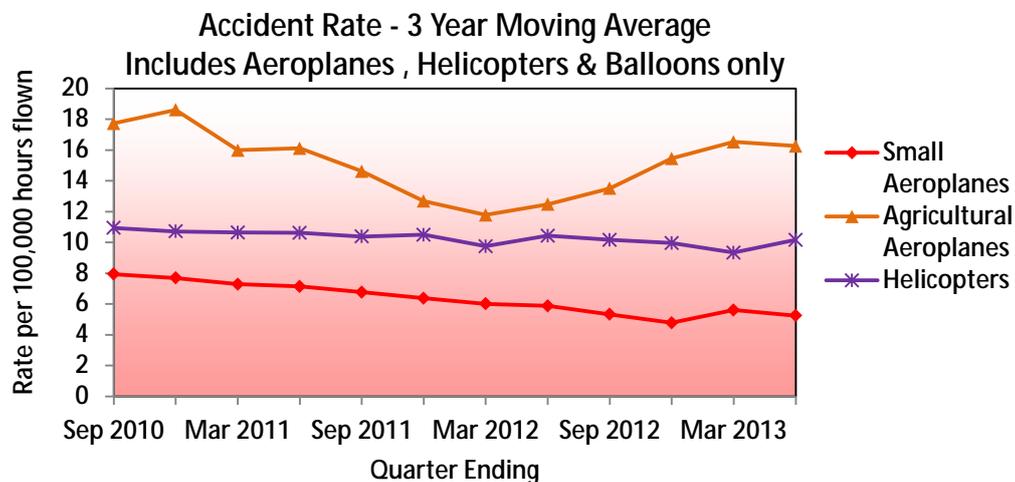
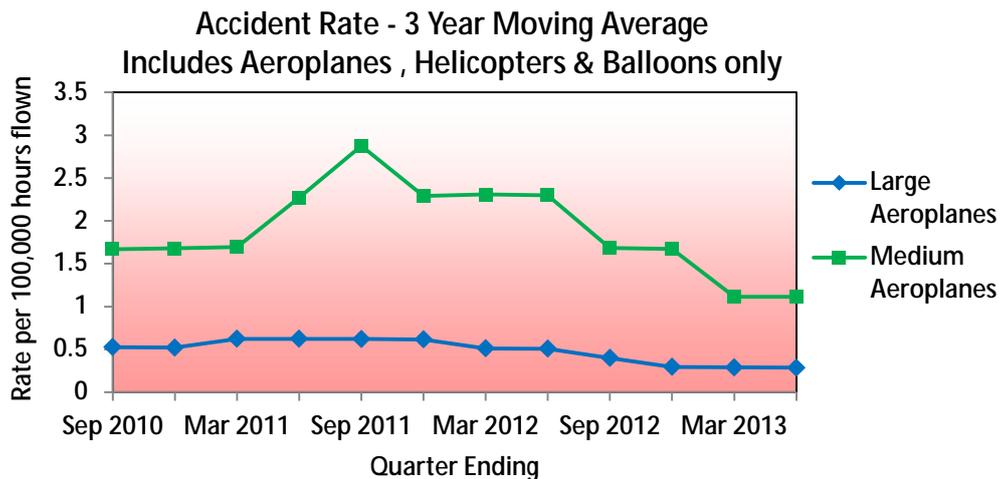
This table shows that approximately 96.7% of seat hours were offered by the Airline Operations – Large Aeroplanes group, around 1.3% by the Airline Operations – Medium Aeroplanes group, with the remaining 2.0% of seat hours offered being split between the other safety target groups.

Occurrence Analysis

Aircraft Accidents

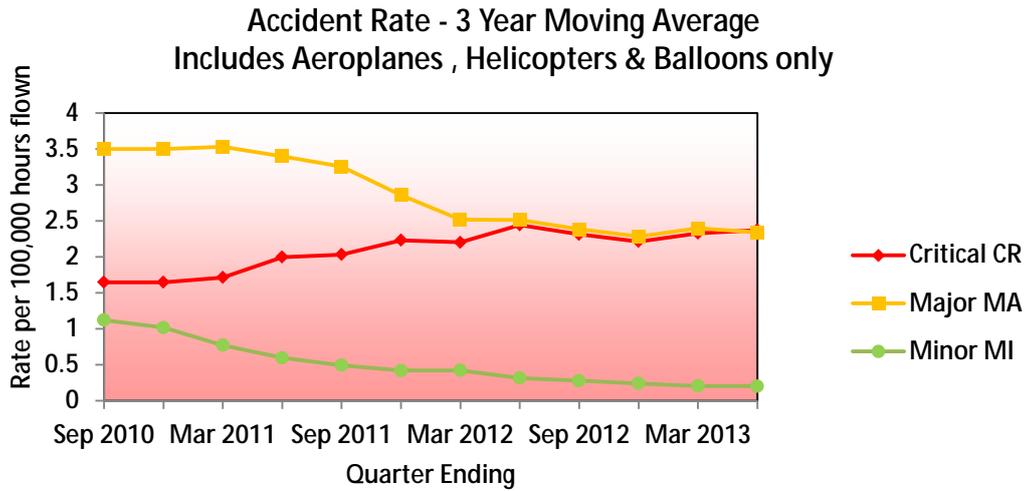
The following graphs show the aircraft accident rates (accidents per estimated 100,000 hours flown) three year moving average for the three-year period ending 30 June 2013 (excluding the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes). Trends for each group are shown immediately following the group

Breakdown by Aircraft Category



Aircraft Category	Straight Line Trend of 3 Year Moving Average
Large Aeroplanes	Trending Down
Medium Aeroplanes	Trending Down
Small Aeroplanes	Trending Down
Agricultural Aeroplanes	Constant
Helicopters	Constant

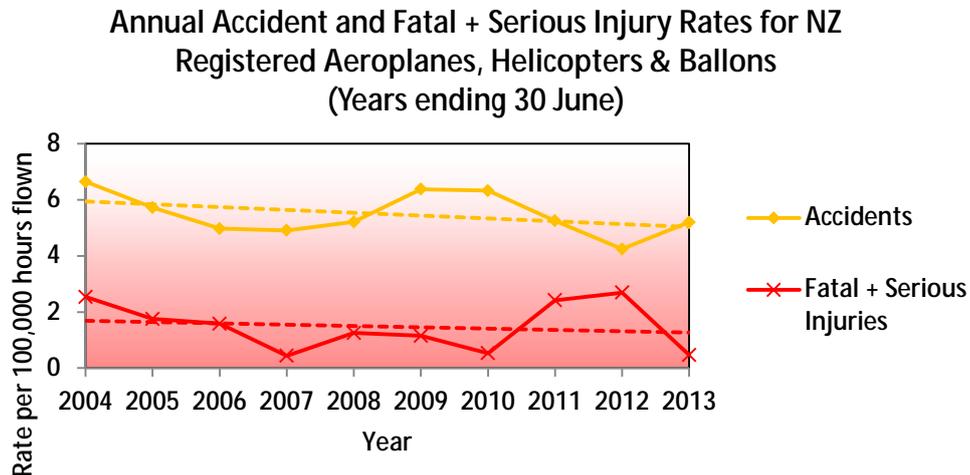
Breakdown by Severity



Severity	Straight Line Trend of 3 Year Moving Average
Critical	Trending Up
Major	Trending Down
Minor	Trending Down

Long-Term Accident Rate

The following graph shows the overall annual accident rate per 100,000 hours flown for the 10 year period ending 30 June 2013. Hang gliders and parachutes are excluded because no reliable hours data is available for those classes.



Note that this graph does not show a moving average and because it also includes some but not all sport aircraft it is not appropriate to compare it to the other accident rate graphs in the report.

Yearly Comparisons – counts, not rates

Aircraft Category		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Critical Accidents	Large Aeroplanes	0	0	0.0
	Medium Aeroplanes	0	0	0.3
	Small Aeroplanes	7	7	7.3
	Helicopters	9	14	9.0
	Sport Aircraft	11	17	14.0
	Agricultural Aeroplanes	3	1	2.0
	Hang Gliders	8	7	5.0
	Parachutes	3	4	1.7
	Unknown	1	0	0.0
	Total	42	50	39.3

Aircraft Category		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Major Accidents	Large Aeroplanes	0	0	0.7
	Medium Aeroplanes	0	1	0.7
	Small Aeroplanes	13	7	15.0
	Helicopters	12	5	10.3
	Sport Aircraft	15	11	21.0
	Agricultural Aeroplanes	8	2	2.7
	Hang Gliders	2	2	6.0
	Parachutes	4	7	2.7
	Unknown	0	0	0.0
	Total	54	35	59.0

Aircraft Category		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Minor Accidents	Large Aeroplanes	0	0	1.3
	Medium Aeroplanes	0	0	0.3
	Small Aeroplanes	2	1	2.3
	Helicopters	0	0	0.3
	Sport Aircraft	5	1	2.3
	Agricultural Aeroplanes	0	0	1.3
	Hang Gliders	3	0	7.3
	Parachutes	2	0	2.0
	Unknown	0	0	0.0
	Total	12	2	17.3

Aircraft Category		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
All Accidents	Large Aeroplanes	0	0	2.0
	Medium Aeroplanes	0	1	1.3
	Small Aeroplanes	22	15	24.7
	Helicopters	21	19	19.7
	Sport Aircraft	31	29	37.3
	Agricultural Aeroplanes	11	3	6.0
	Hang Gliders	13	9	18.3
	Parachutes	9	11	6.3
	Unknown	1	0	0.0
	Total	108	87	115.7

Safety Target Structure

The 2010 Safety Targets classify all New Zealand aviation 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.

Number of Accidents

The following table shows, for each safety target group, the number of accidents each year for the one year period ending 30 June 2013, the previous year and the annual average for the three prior years. All aircraft types are included

Safety Outcome Target Group	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Airline Operations - Large Aeroplanes	0	0.0	2.3
Airline Operations - Medium Aeroplanes	0	1.0	1.0
Airline Operations - Small Aeroplanes	1	1.0	2.7
Airline Operations - Helicopter	5	2.0	2.7
Sport Transport	4	8.0	11.0
Other Commercial Operations - Aeroplane	8	5.0	11.0
Other Commercial Operations - Helicopter	4	8.0	5.3
Agricultural Operations - Aeroplane	11	3.0	5.7
Agricultural Operations - Helicopter	4	7.0	5.0
Private Operations - Aeroplane	12	7.0	11.0
Private Operations - Helicopter	8	2.0	6.7
Private Operations - Sport	50	43.0	51.3
Other	1	2.0	1.0
Total	108	89.0	116.7

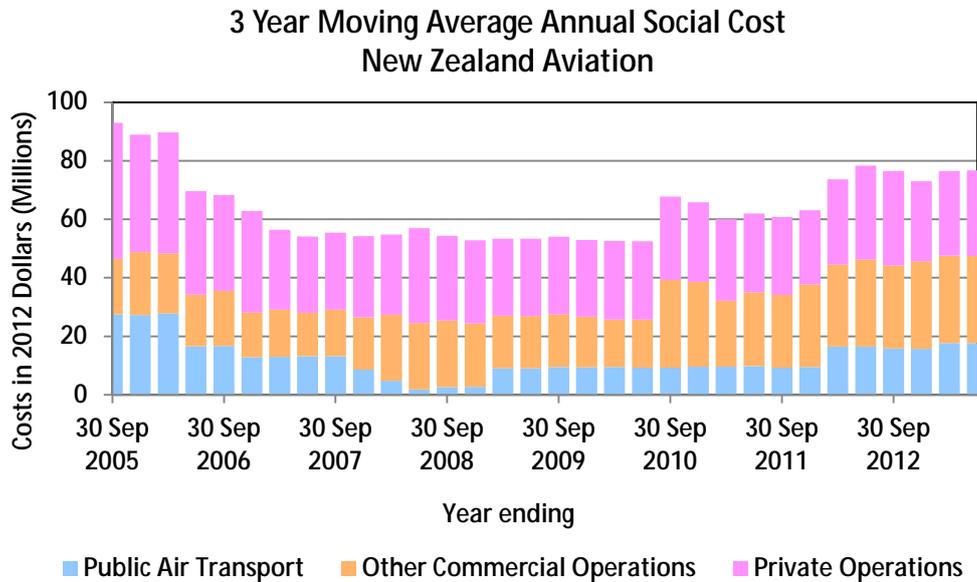
Social Cost

Social cost is the cost of fatal, serious and minor injuries and aircraft destroyed. The following table displays the social cost in millions of dollars (2012\$) for each safety target group for the year ending 30 June 2013, the previous year and the annual average for the three prior years.

Safety Outcome Target Group	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Airline Operations - Large Aeroplanes	0.05	0.07	0.03
Airline Operations - Medium Aeroplanes	0.00	0.00	0.02
Airline Operations - Small Aeroplanes	0.71	0.17	0.26
Airline Operations - Helicopter	5.67	0.40	1.34
Sport Transport	0.86	43.03	8.18
Other Commercial Operations - Aeroplane	0.22	0.17	16.07
Other Commercial Operations - Helicopter	0.35	15.24	6.17
Agricultural Operations - Aeroplane	5.45	0.00	2.14
Agricultural Operations - Helicopter	0.00	5.35	0.77
Private Operations - Aeroplane	0.35	6.11	3.16
Private Operations - Helicopter	6.35	0.00	4.51
Private Operations - Sport	16.54	27.25	19.31
Other	7.90	0.00	2.53
Total	44.44	97.8	64.49

The following charts show the annual social cost (3 year moving average) for each Safety Target Group for the period 1 October 2005 to 30 June 2013. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2012 dollars. Note that the Sport groups include hang gliders and parachutes.

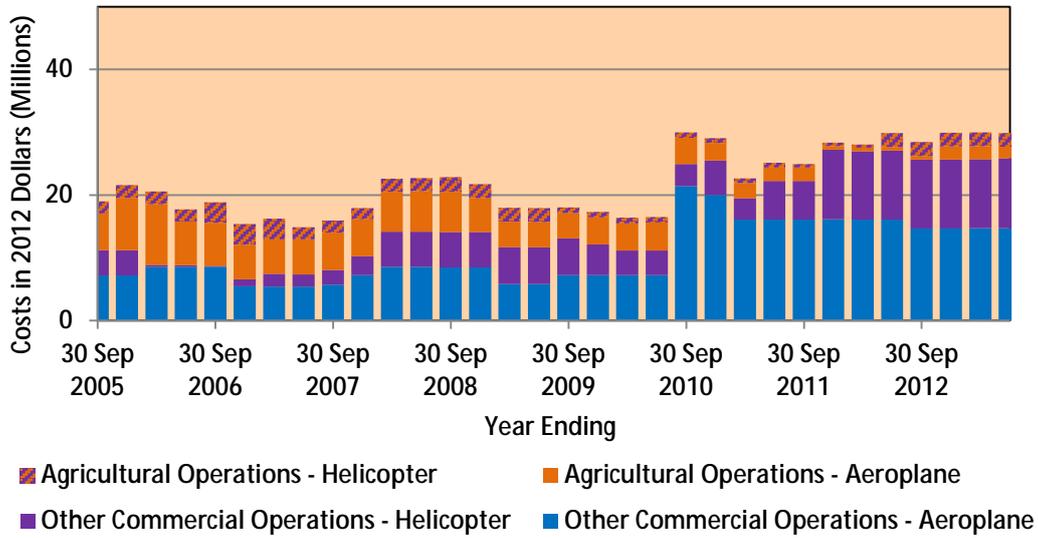
The first chart shows a breakdown into the three major groupings, Public Air Transport, Other Commercial and Private operational groupings.



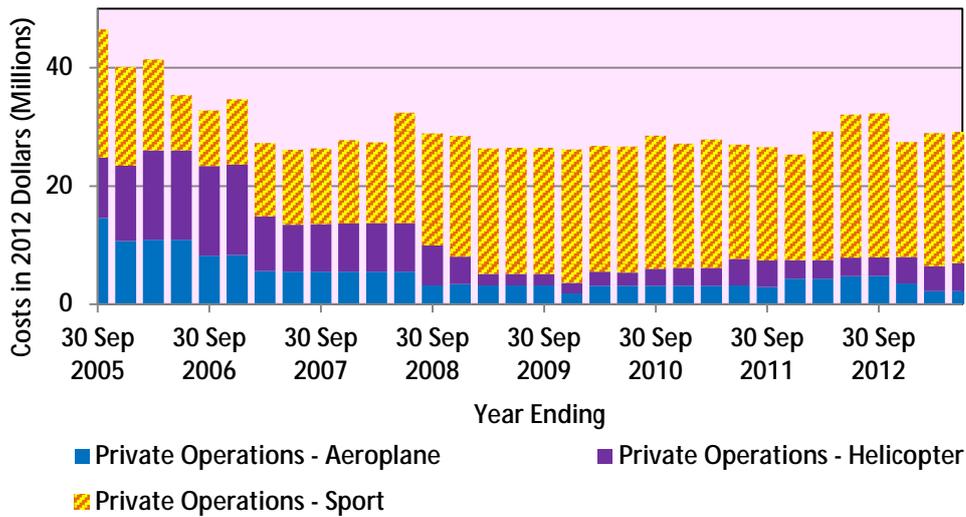
The next three charts show breakdowns of each of the major groupings into their individual Safety Outcome Target Groups



3 Year Moving Average Annual Social Cost Other Commercial Operations

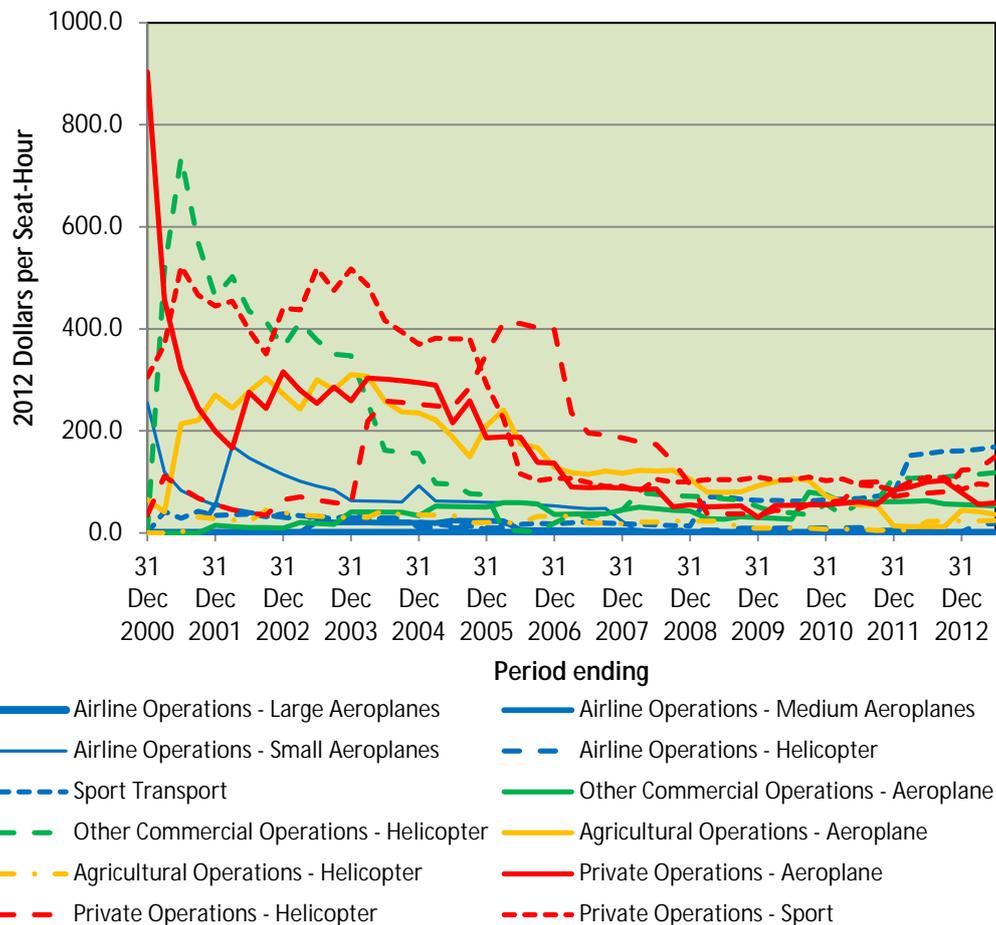


3 Year Moving Average Annual Social Cost Private Operations



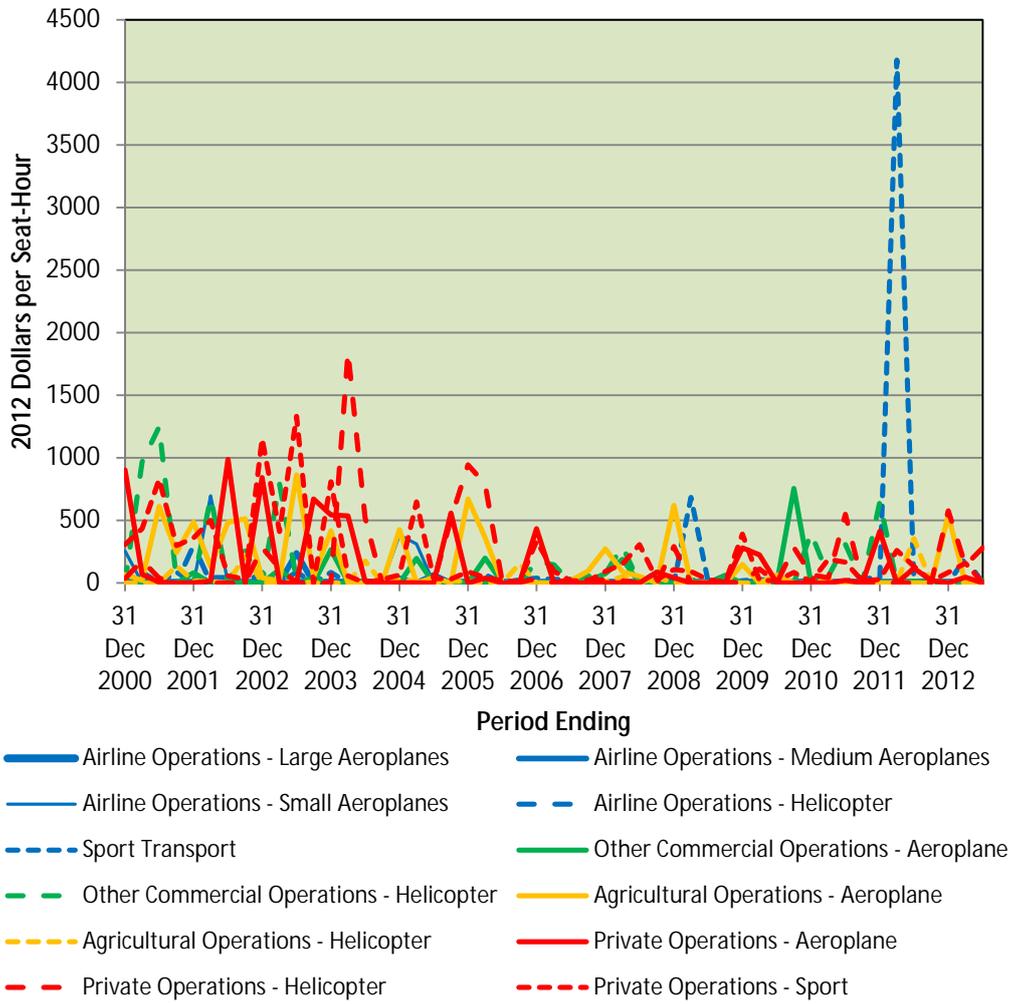
The following graph illustrates an apparent steady decline in the Social Cost **per Seat-Hour** (three year moving average) over the period since the 3rd quarter of 2000. Since the 4th quarter of 2008 the decline has become relatively indiscernible and it may be that social cost levels have reached or are approaching a practical minimum for the current intervention practices.

Social Cost per Seat Hour
3-year moving average, 2012 dollars



However the use of 3-year moving average smoothing to render the graphs more readable has the side effect of masking any abrupt changes in the data. The following graph of the same data with all the smoothing removed shows that major unexpected downturns can occur with no prior warning from this kind of analysis.

Social Cost per Seat Hour Quarterly - no smoothing, 2012 dollars



Safety Outcome Targets

Each target group had its own target level expressed as social cost per unit of passenger exposure, the unit being one seat hour. For target groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of passenger exposure. These outcome targets represent the maximum level of social cost considered acceptable for each group.

The table below shows the average Safety Outcomes in 2012 dollars per seat-hour (including the cost of aircraft destroyed) for the three year period ending 30 June 2013. Target groups highlighted in yellow are groups where major safety improvements need to be achieved. Red text has been used to draw attention to groups with significant recent safety failure.

Safety Target Group	Current Estimate	Target
Airline Operations - Large Aeroplanes	0.00	0.00
Airline Operations - Medium Aeroplanes	0.00	0.02
Airline Operations - Small Aeroplanes	3.10	2.34
Airline Operations - Helicopter	17.78	6.50
Sport Transport	168.93	13.00
Other Commercial Operations - Aeroplane	53.34	6.50
Other Commercial Operations - Helicopter	117.96	6.50
Agricultural Operations - Aeroplane	36.38	14.00
Agricultural Operations - Helicopter	24.51	8.56
Private Operations - Aeroplane	59.01	10.00
Private Operations - Helicopter	149.72	10.00
Private Operations - Sport	93.24	20.00

Current Estimate:

This is the estimated social cost of injuries and aircraft destroyed per seat hour for the three year period. Note: Aviation Safety reports prior to July to December 2008 used a 10 year averaging period for large and medium aeroplanes and a one year period for all others.

Safety Target Graphs

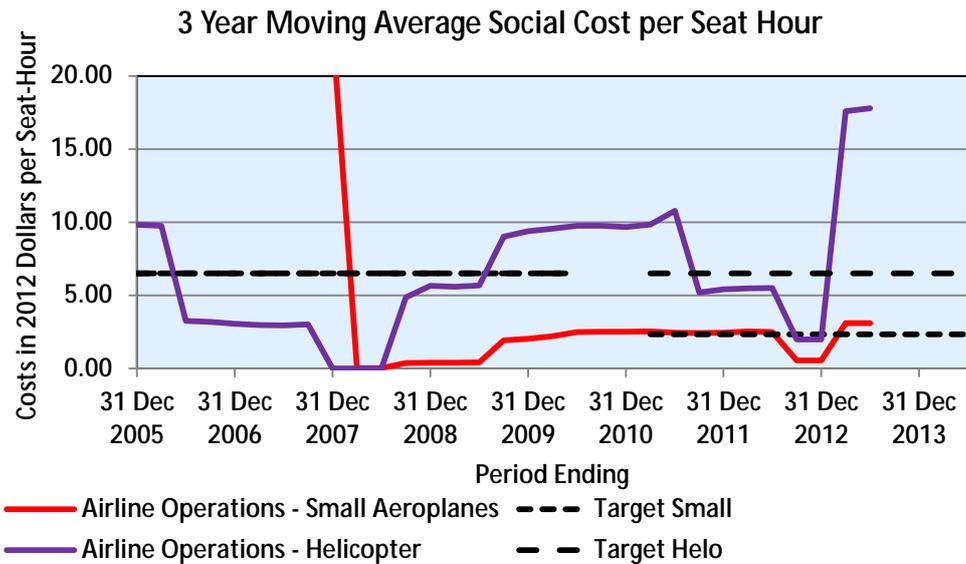
Graphs displaying the Safety Outcome Targets and the quarterly progress of Safety Outcomes derived using 3 year averages are shown on the following pages. These graphs span the period from 1 October 2005 when Social Cost targets were introduced to 30 June 2014 when the current targets are due for review.



The outcome for Airline Operations – Large Aeroplanes remained well below the initial target level of \$0.10 per seat hour of exposure from late 2006 until the targets were revised in 2011. The new target appears on the graph as 0 but is actually \$0.0034 and the current performance is significantly below the target. There is no significant recent trend either up or down. No fatal, no serious and 7 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

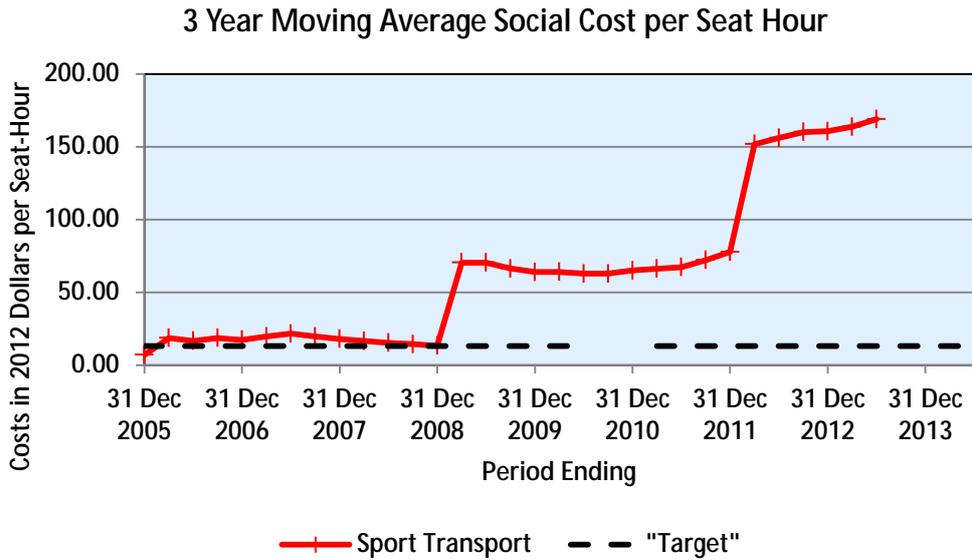


The outcome for Airline Operations – Medium Aeroplanes dropped below the initial target during the second quarter of 2009 and is trending down. The outcome is now below the new target of \$0.02 per seat hour. No fatal, no serious and no minor injuries were reported in this group during the 3 year period ending 30 June 2013.



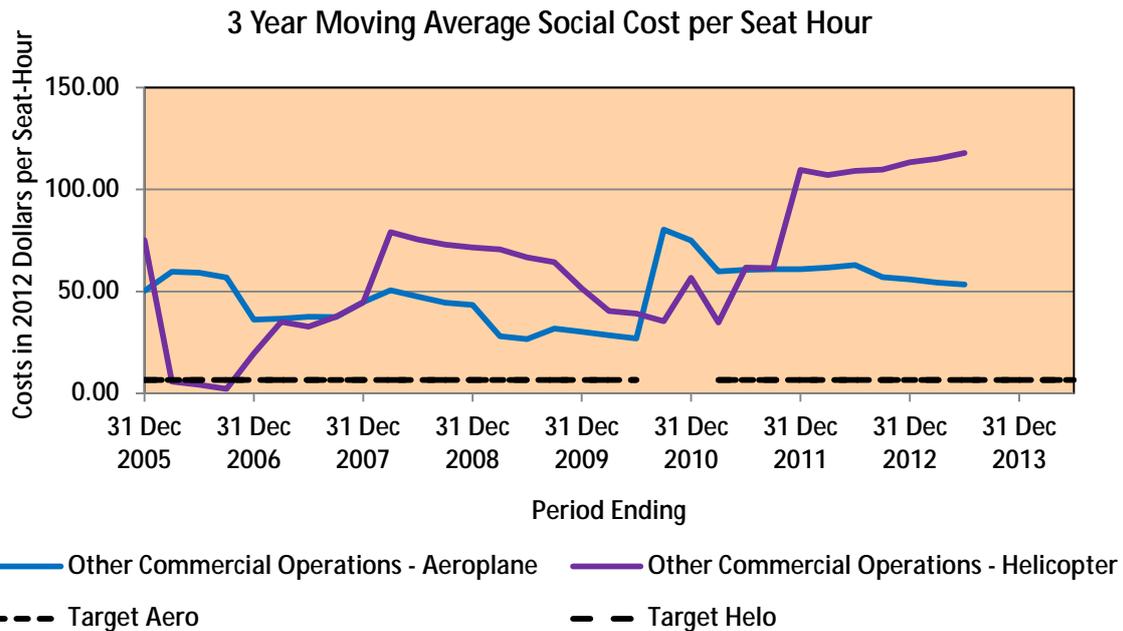
The outcome for Airline Operations – Small Aeroplanes shows a significant long term downward trend from the high starting point of \$45.64 per seat-hour of exposure in the three years to September 2007. The safety outcome for this group has been below the initial target level since the January to March 2008 quarter but exceeded the new target of \$2.34 by a very small amount until the July to August quarter of 2012 when it fell below the target where it remained until the January to March quarter of 2013. No fatal, 1 serious and no minor injuries were reported in this group during the 3 year period ending 30 June 2013.

The outcome for Airline Operations – Helicopter exceeded the target level until the second quarter of 2006 and it has done so again since the 3rd quarter of 2009. A small upward trend is evident. The new target of \$6.50 per seat hour is the same as the old value and was achieved again from the 3rd quarter of 2011 until the 1st quarter of 2013 when another fatal injury caused the target to be exceeded. 1 fatal, 1 serious and 2 minor injuries were reported in this group during the 3 year period ending 30 June 2013.



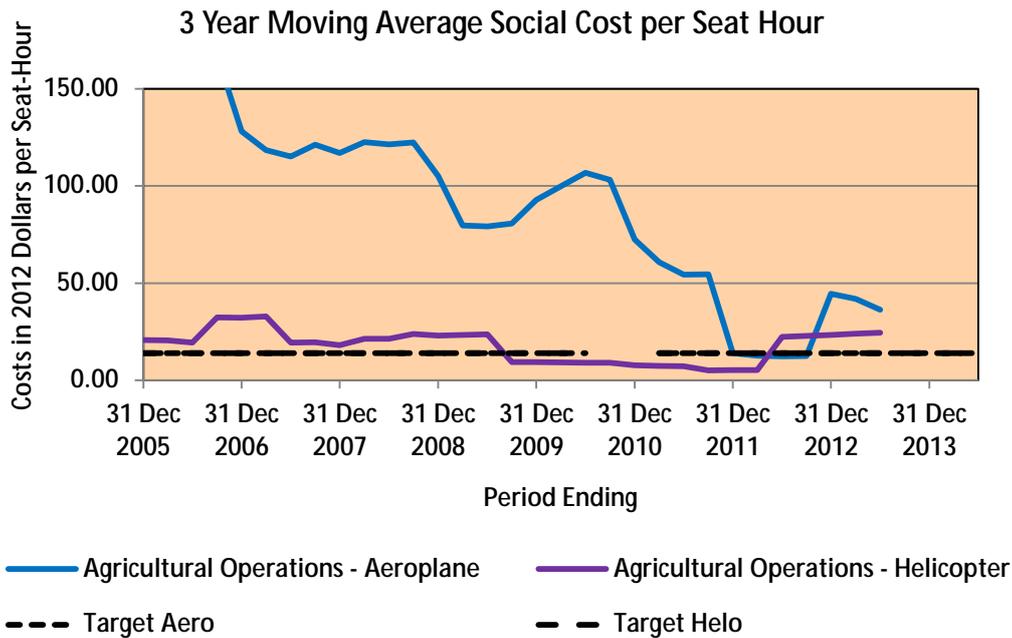
Two hang glider, two microlight and one glider fatalities during the first quarter of 2009 and 11 balloon fatalities in 2012 have contributed to a significant increase in the upward trend displayed by this group. The outcome exceeds the target of \$13.00 by a large margin. 11 fatal, 9 serious and 14 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

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



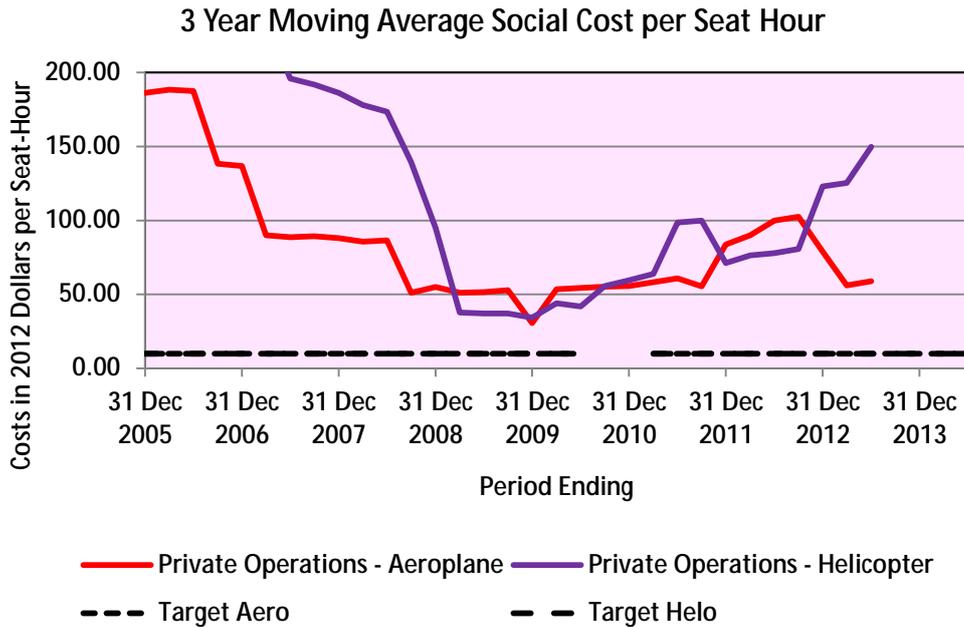
The outcome for Other Commercial Operations – Aeroplane remains well above the target of \$6.50 per seat hour. 11 fatal, 2 serious and 1 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

The outcome for Other Commercial Operations – Helicopter turned sharply upwards during the first quarter of 2008 and again in the 3rd quarter of 2011. It remains well above the target level of \$6.50 per seat hour. 7 fatal, 2 serious and 5 minor injuries were reported in this group during the 3 year period ending 30 June 2013.



The outcome for Agricultural Operations – Aeroplanes has been well above the target level of \$14.00 per seat hour but has been steadily trending down and this group achieved its target in the 4th quarter of 2011. A fatality in the 4th quarter of 2012 has again taken the outcome above the target. 1 fatal, 1 serious and 1 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

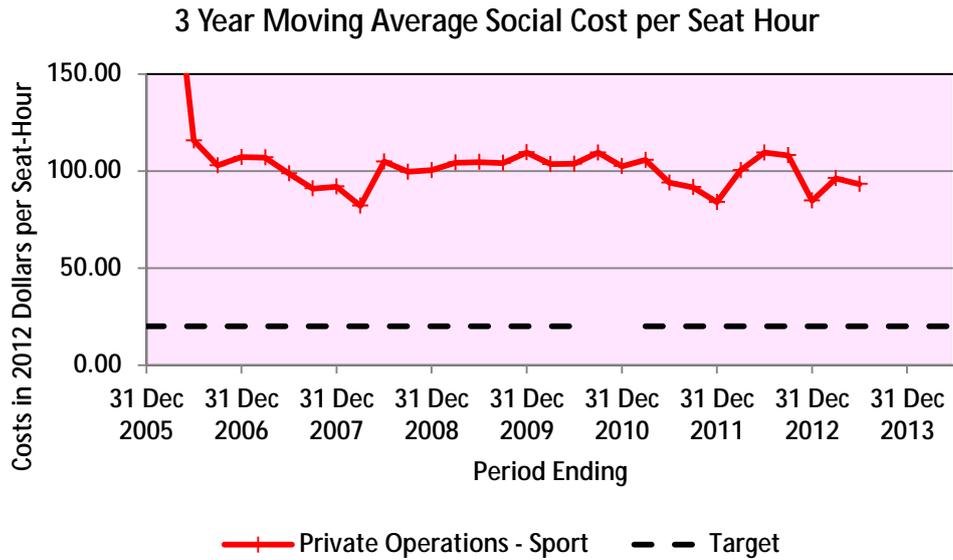
The outcome for Agricultural Operations – Helicopter was below the target level of \$8.56 per seat hour from the 3rd quarter of 2009 until the 2nd quarter of 2011 but a fatality during that quarter resulted in the target again being exceeded from the 2nd quarter of 2012. 1 fatal, no serious and 1 minor injuries were reported in this group during the 3 year period ending 30 June 2013.



The outcome for Private Operations – Aeroplanes had been slowly trending down since late 2005 but remained well above the target of \$10.00 per seat hour. The downward trend reversed in the first quarter of 2010. 1 fatal, 5 serious and 1 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

The outcome for Private Operations – Helicopters was trending down from early 2006 but remained above the target of \$10.00 per seat hour. From the first quarter of 2009 the downward trend has reversed. 2 fatal, 3 serious and 1 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

Note: Some earlier safety reports incorrectly charted the absolute quarterly social cost in millions of dollars for this group instead of the normalised measure (social cost per seat-hour in dollars). This led to incorrect descriptions being published.

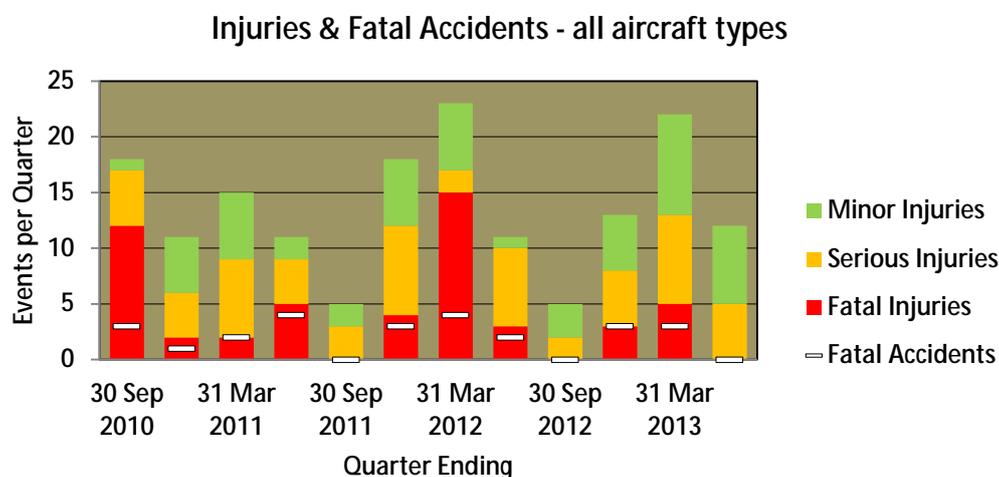


The outcome for Private Operations – Sport is well above the target level of \$20.00 per seat hour and shows no significant trend. 14 fatal, 36 serious and 20 minor injuries were reported in this group during the 3 year period ending 30 June 2013.

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

Injury Accidents

The following chart shows the number of injuries, broken down by severity (fatal, serious or minor) in each quarter of the 3-year period ending 30 June 2013. All aircraft types are included. The chart also shows the number of fatal accidents.



A breakdown of the same three years' data by Safety Outcome Target Group is shown in the table below.

Safety Target Group	Injuries			Fatal Accidents
	Fatal	Serious	Minor	
Airline Operations - Large Aeroplanes	0	0	7	0
Airline Operations - Medium Aeroplanes	0	0	0	0
Airline Operations - Small Aeroplanes	0	1	0	0
Airline Operations - Helicopter	1	1	2	1
Sport Transport	11	9	14	1
Other Commercial Operations - Aeroplane	11	2	1	2
Other Commercial Operations - Helicopter	7	2	5	4
Agricultural Operations - Aeroplane	1	1	1	1
Agricultural Operations - Helicopter	1	0	1	1
Private Operations - Aeroplane	1	5	1	1
Private Operations - Helicopter	2	3	1	2
Private Operations - Sport	14	36	20	11
Other	2	0	0	1

Yearly Comparison

The following table displays the number of fatalities for each safety target group for the year ending 30 June 2013, the previous year and the average of the three prior years

Safety Outcome Target Group	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Airline Operations - Large Aeroplanes	0	0	0.00
Airline Operations - Medium Aeroplanes	0	0	0.00
Airline Operations - Small Aeroplanes	0	0	0.00
Airline Operations - Helicopter	1	0	0.00
Sport Transport	0	11	1.67
Other Commercial Operations - Aeroplane	0	0	4.00
Other Commercial Operations - Helicopter	0	3	1.33
Agricultural Operations - Aeroplane	1	0	0.33
Agricultural Operations - Helicopter	0	1	0.00
Private Operations - Aeroplane	0	1	0.67
Private Operations - Helicopter	1	0	0.67
Private Operations - Sport	3	6	4.00
Other	2	0	3.00
Total	8	22	15.67

Flight Phase

The following table shows the flight phase recorded for accidents for the year ending 30 June 2013, the previous year and the average of the three prior years. The figures include all aircraft types.

Flight Phase	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Aerobatics	0	1	0.0
Agricultural Manoeuvres	3	2	3.0
Approach	6	6	5.7
Circuit	0	1	0.7
Climb	5	3	8.0
Cruise	12	10	12.3
Descent	6	1	3.7
Holding	0	0	0.0
Hover	2	5	3.0
Hover Taxi	2	0	0.0
Landing	44	31	41.0
Parked	8	4	3.3
Takeoff	9	13	23.3
Taxiing	3	3	4.3
Unknown	8	9	8.3
Total	108	89	116.7

The most common phase of flight during which accidents occurred in the year ending 30 June 2013 was the Landing phase (41%)

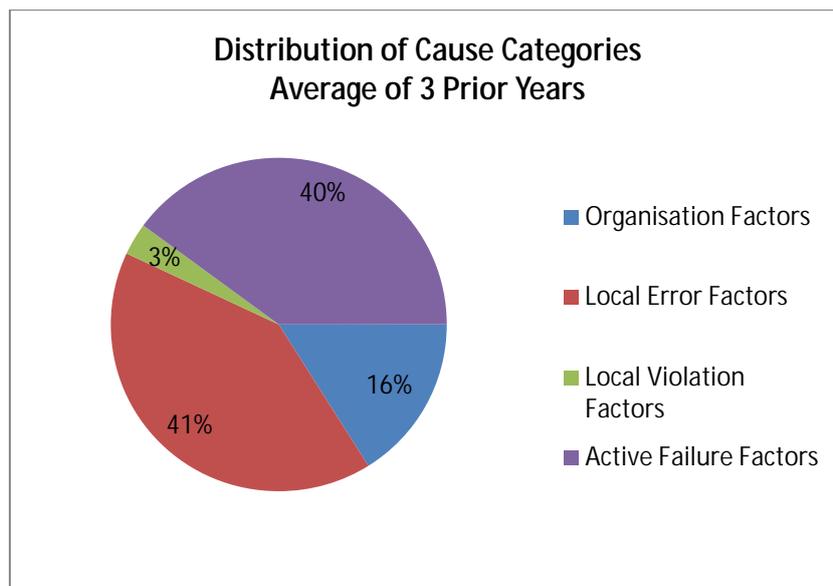
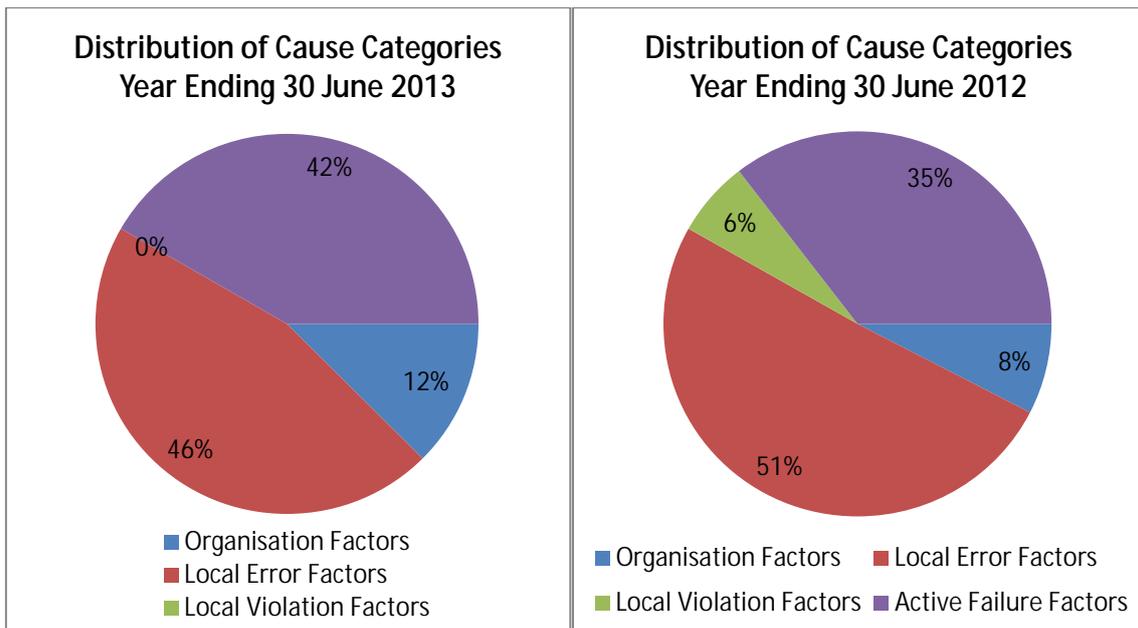
The most common descriptor associated with Landing phase accidents during the year ending 30 June 2013 was 'Hard Landing' (50%)

The most common cause (at 15.2%) recorded for Landing phase accidents during the year ending 30 June 2013 was 'Active Failure Factors - POOR PROCEDURE "ACTION"'

Accident Causal Factors

Causal factors have been assigned to 31 (29%) of the 108 accidents that were reported as occurring during the year ending 30 June 2013. This compares with 58% for the same period in the previous year and an average of 60% over the last three years. In making this comparison it is important to remember that the assignment of causal factors is an outcome of an investigation and for the current period may not be completed in time for inclusion in this report

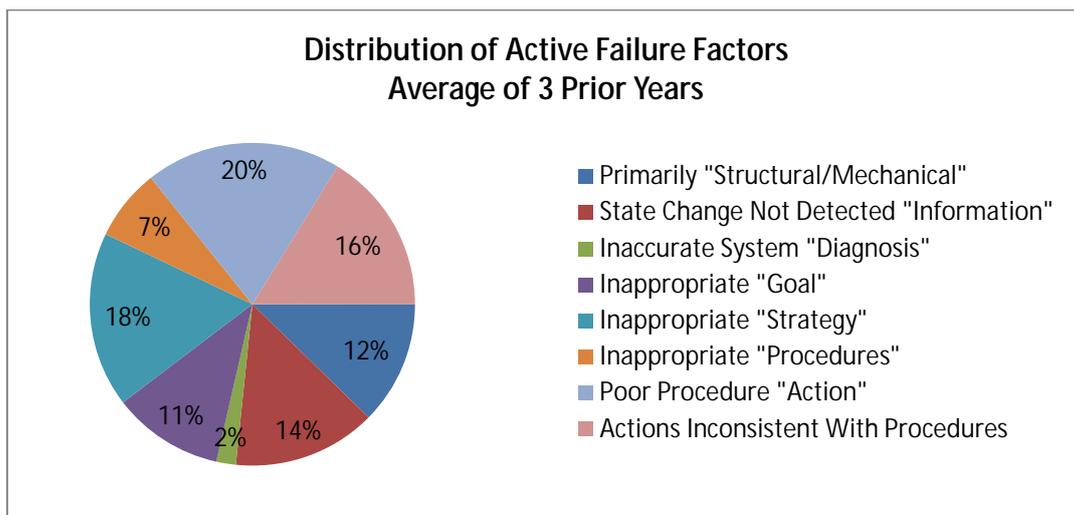
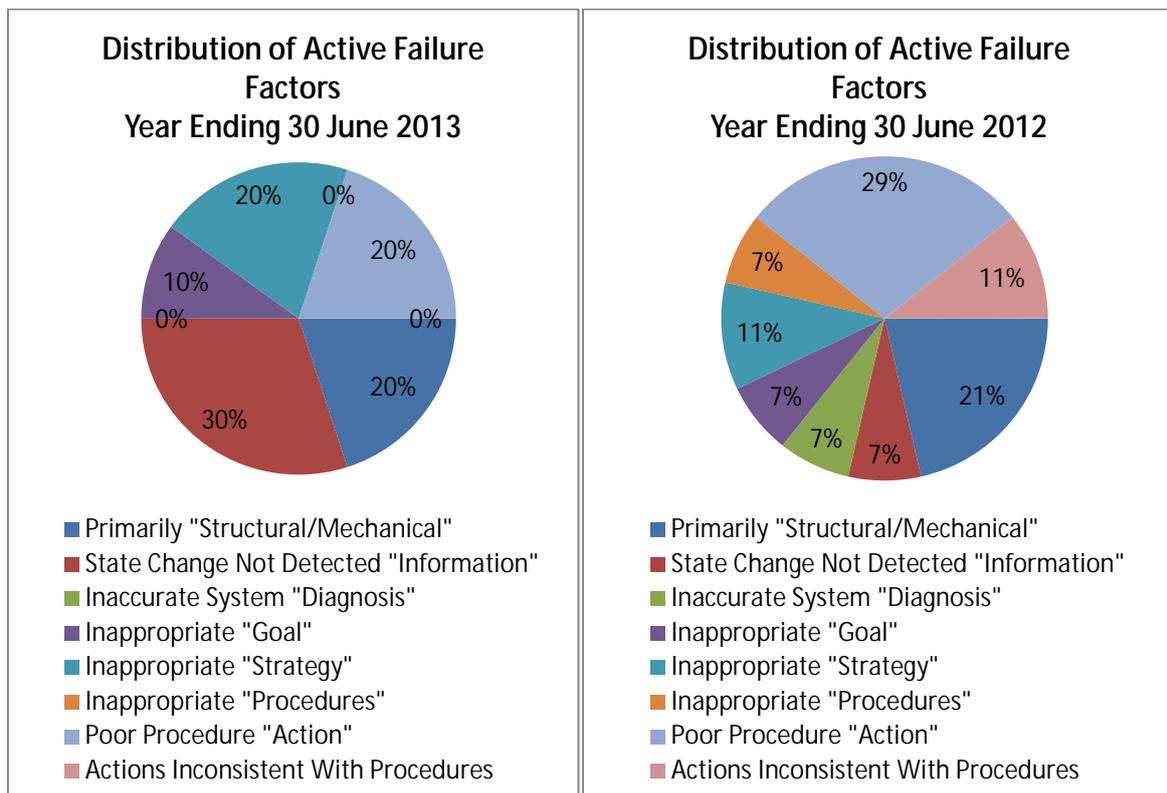
The following charts show the distribution of cause categories (groupings of causal factors) recorded for accidents that occurred during the year ending 30 June 2013, the same period for the previous year and the average for the last three years.



Active Failure Factors

The Active Failure cause category has been further analysed on the grounds that whatever precursor latent failures may exist and be discovered during a subsequent investigation, at least one 'Unsafe Act' (e.g. Omitted checklist item, Exceeded ability etc.) must occur for an accident to result. These unsafe acts are collectively grouped as Active Failure Factors.

The following charts show the distribution of Active Failure causes during the same periods as above.

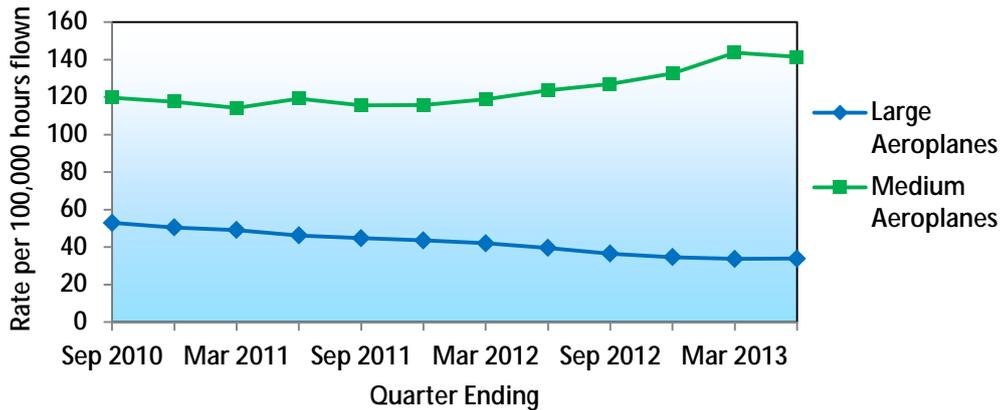


Airspace Incidents

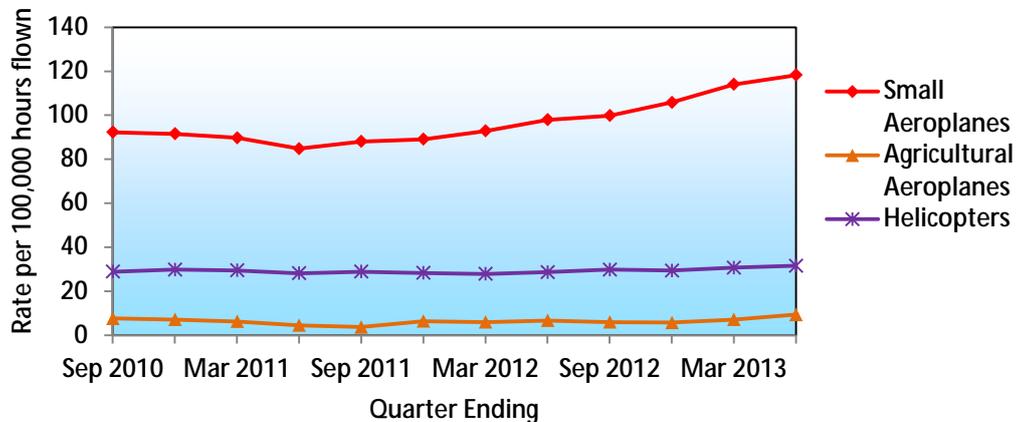
The following graphs show the airspace incident reporting rates (incidents per 100,000 hours flown) three year moving average for the three-year period ending 30 June 2013 (excluding the Sport Aircraft category). The graphs do not differentiate between incidents that are pilot or ATS attributable.

Breakdown by Aircraft Category

Airspace Incident Rate - 3 Year Moving Average



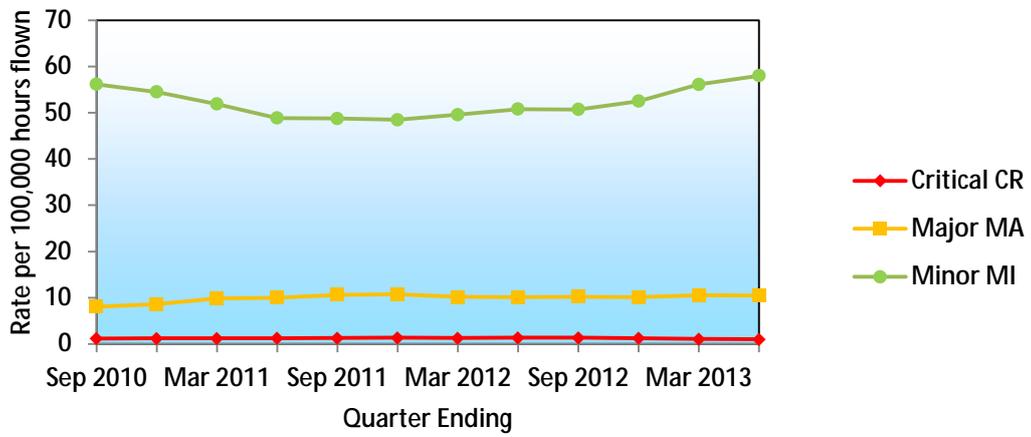
Airspace Incident Rate - 3 Year Moving Average



Aircraft Category	Straight Line Trend of 3 Year Moving Average
Large Aeroplanes	Trending Down
Medium Aeroplanes	Trending Up
Small Aeroplanes	Trending Up
Agricultural Aeroplanes	Trending Up
Helicopters	Constant

Breakdown by Severity

Airspace Incident Rate - 3 Year Moving Average



Severity	Straight Line Trend of 3 Year Moving Average
Critical	Constant
Major	Constant
Minor	Constant

Yearly Comparisons

By Aircraft Category

	Aircraft Category	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Critical Airspace Incidents	Large Aeroplanes	0	0	1.0
	Medium Aeroplanes	1	0	0.3
	Small Aeroplanes	6	10	7.3
	Helicopters	1	2	3.0
	Sport Aircraft	1	1	2.0
	Agricultural Aeroplanes	0	1	0.0
	Not Recorded	0	3	1.3
	Total	9	17	15.0
Major Airspace Incidents	Aircraft Category	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
	Large Aeroplanes	14	12	15.3
	Medium Aeroplanes	5	13	11.0
	Small Aeroplanes	80	66	57.0
	Helicopters	18	5	9.7
	Sport Aircraft	9	12	8.0
	Agricultural Aeroplanes	1	0	0.3
	Not Recorded	42	56	35.0
Total	169	164	136.3	
Minor Airspace Incidents	Aircraft Category	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
	Large Aeroplanes	123	117	131.7
	Medium Aeroplanes	99	72	58.7
	Small Aeroplanes	447	360	228.7
	Helicopters	59	52	39.3
	Sport Aircraft	69	48	35.7
	Agricultural Aeroplanes	5	3	1.3
	Not Recorded	376	340	273.0
Total	1178	992	768.3	
All Airspace Incidents	Aircraft Category	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
	Large Aeroplanes	137	129	148.0
	Medium Aeroplanes	105	85	70.0
	Small Aeroplanes	533	436	293.0
	Helicopters	78	59	52.0
	Sport Aircraft	79	61	45.7
	Agricultural Aeroplanes	6	4	1.7
	Not Recorded	418	399	309.3
Total	1356	1173	919.7	

By Nearest Airways Monitored Aerodrome

All Airspace Incidents	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Auckland	110	92	107.3
Taupo	33	20	20.7
Christchurch	86	81	82.0
Dunedin	43	20	15.3
Gisborne	24	4	11.0
Hamilton	263	192	97.0
Milford Sound	3	2	0.3
New Plymouth	16	26	17.7
Napier	31	15	17.0
Nelson	31	38	37.7
Invercargill	6	3	8.0
Ohakea	33	38	26.3
Palmerston North	48	35	50.3
Paraparaumu	34	42	7.7
Queenstown	51	54	32.7
Rotorua	36	43	28.0
Tauranga	86	65	38.0
Woodbourne	23	11	27.3
Whakatane	4	2	2.3
Wellington	71	75	72.0
Whenuapai	19	11	7.0
Other	135	161	124.7
Not Reported	170	143	89.3
Total	1356	1173	919.7

Note Hamilton is the single largest source of airspace incidents. Furthermore incidents at Hamilton have increased rapidly from the annual average of previous years 2009,2010, 2011. As result of this the CAA has undertaken extensive work with the Hamilton area operators, aerodrome management and Airways NZ.

There are also possibly significant increases in airspace occurrence reports from the following aerodromes, ranked by order of occurrence count:

	% increase on average of 3 prior years
Tauranga	126%
Queenstown	54%
Dunedin	186%
Gisborne	181%

Air Traffic Service (ATS) and Pilot Attributable Airspace Incidents

Introduction

Airspace incidents are categorised as ATS, pilot, or ATS and pilot attributable. For the purposes of this analysis airspace incidents have been divided into those that have been identified to have an ATS attributable element and those that have a pilot attributable element. Accordingly there is some overlap in the number of occurrences reported where both ATS and pilot elements are involved. The following pages of this section report on apparent trends in ATS and pilot attributable occurrences.

ATS attributable airspace occurrences include those that are attributable to both New Zealand and external ATS organisations. External ATS organisations are included where information coordination problems have arisen or where a New Zealand registered aircraft has reported a conflict in non-NZ airspace.

Descriptors

Occurrence descriptors have been established for 1349 of the 1356 reported airspace incidents in the period Year Ending 30 June 2013

Note: each airspace incident may have more than one airspace occurrence descriptor.

Yearly Comparison

The following table shows the assignment of airspace occurrence descriptors that are associated with ATS attributable occurrences.

Descriptor	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
ATS clearance/instruction deficiency	131	77	50.3
ATS coordination deficiency	131	88	74.0
ATS flight information deficiency	17	19	8.7
ATS flight planning system deficiency	29	27	14.0
Total	308	211	147

The following table shows the assignment of airspace occurrence descriptors that are associated with pilot attributable occurrences.

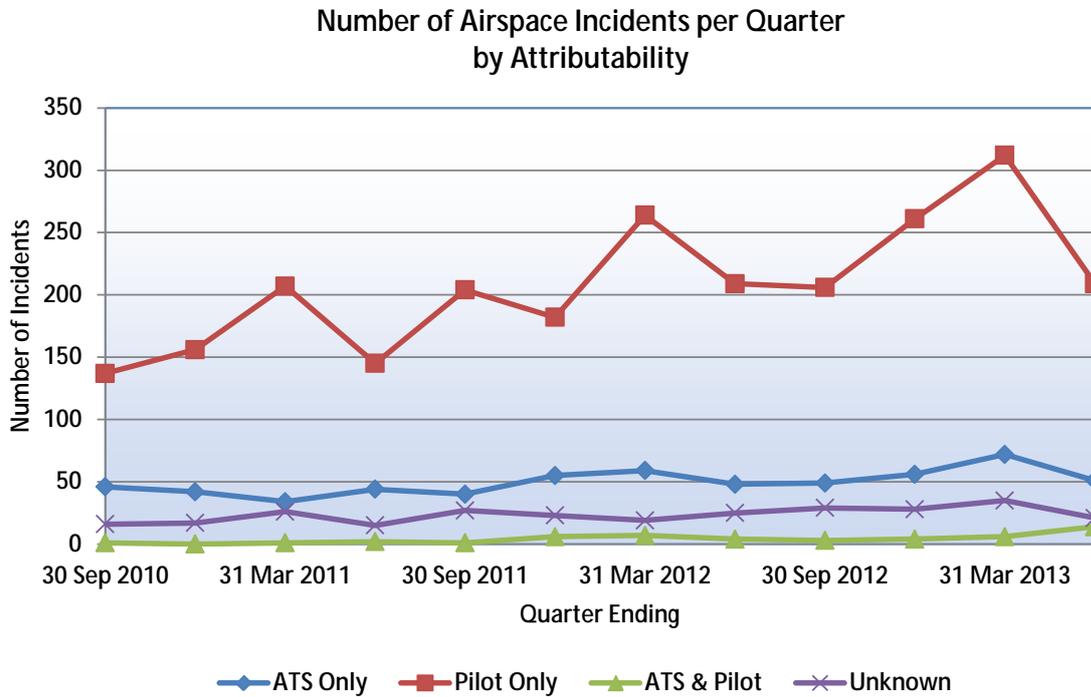
Descriptor	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Breach of other clearance	390	262	140.3
Flight assist	4	3	6.0
Pilot flight planning deficiency	32	22	19.7
Pilot position reporting deficiency	112	82	44.7
Pilot readback deficiency	7	7	4.0
Unauth airspace incursion	458	335	266.0
Unauth altitude penetration	223	103	83.0
Total	1226	814	398

The following table shows the assignment of airspace occurrence descriptors that could be associated with either ATS or pilot attributable occurrences.

Descriptor	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Controller/pilot datalink communications	2	0	1.0
Loss of separation	72	59	43.7
Near collision	15	25	36.3
Other	42	33	39.7
Reduced vertical separation minima	2	4	2.0
Short term conflict alert	5	5	2.3
Traffic collision avoidance system	91	109	112.0
Total	229	235	156

Trend

The following graph shows the quarterly numbers of airspace incident reports and their attributability for the three year period ending 30 June 2013.



Quarterly ASP incident report numbers show an upward trend for all attributabilities.

The number of “unknown” attributable airspace incidents reflects difficulties with coding of reports received by the CAA. Note that there is often a time delay between incidents occurring, being investigated, and attributability being assigned to either ATS or Pilot.

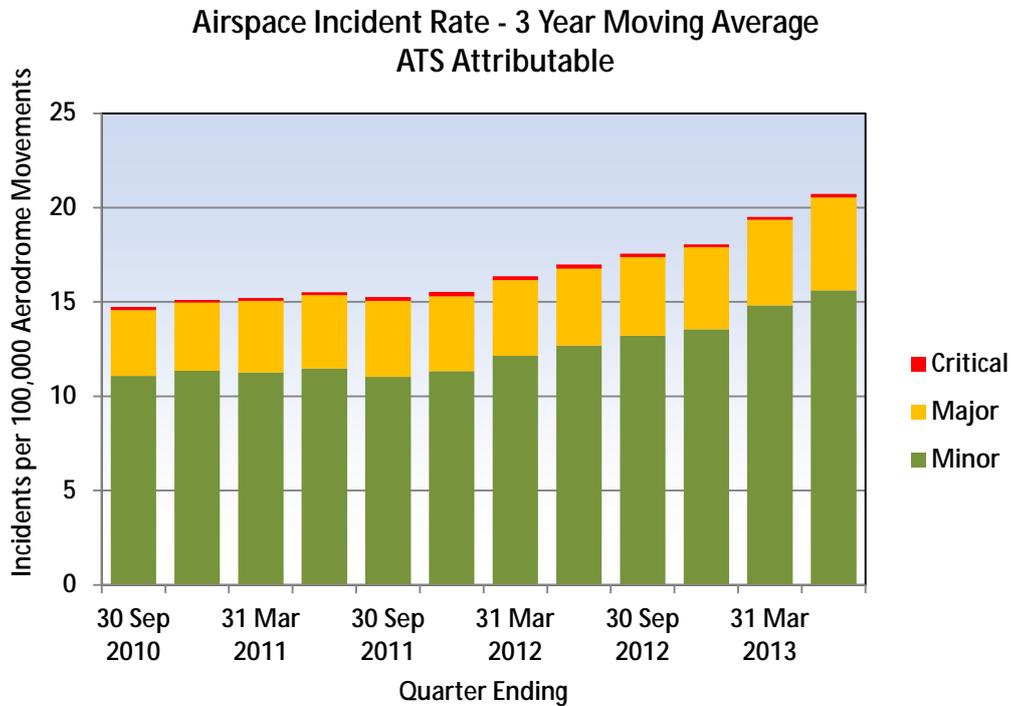
The following table shows the attributability of airspace incidents.

Attributability	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
ATS Only	228	202	169.3
Pilot Only	988	859	654.7
ATS & Pilot	27	18	4.3
Unknown	113	94	91.3
Total	1356	1173	920

ATS Attributable ASP Incidents

Occurrence Trend

The following chart shows the airspace incident reporting rate for Air Traffic Service (ATS) attributable incidents. The values are incidents per 100,000 reported aircraft movements, 12 month moving average for the 3 year period ending 30 June 2013.



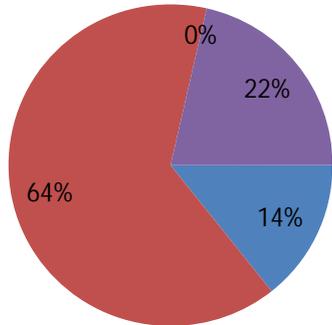
The ATS attributable airspace incident rate over the three year period is trending upwards.

Causal Factors

Causal factors have been assigned to 99 (7%) of the 1356 airspace incidents that were reported as occurring during the year ending 30 June 2013. This compares with 9% for the previous year and an average of 11% over the three prior years. In making this comparison it is important to remember that the assignment of causal factors is an outcome of an investigation and for the current period may not be completed in time for inclusion in this report

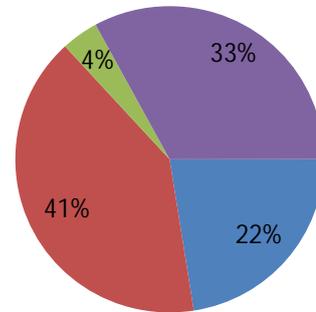
The following charts show the distribution of cause categories (groupings of causal factors) recorded for ATS attributable airspace incidents that occurred during the year ending 30 June 2013, the same period for the previous year and the average for the last three years.

**Airspace Incidents
Ats-Attributable:
Distribution of Cause Categories
Year ending 30 June 2013**



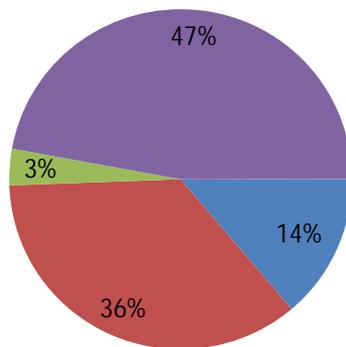
■ Organisation Factors ■ Local Error Factors
■ Local Violation Factors ■ Active Failure Factors

**Airspace Incidents
Ats-Attributable:
Distribution of Cause Categories
Year ending 30 June 2012**



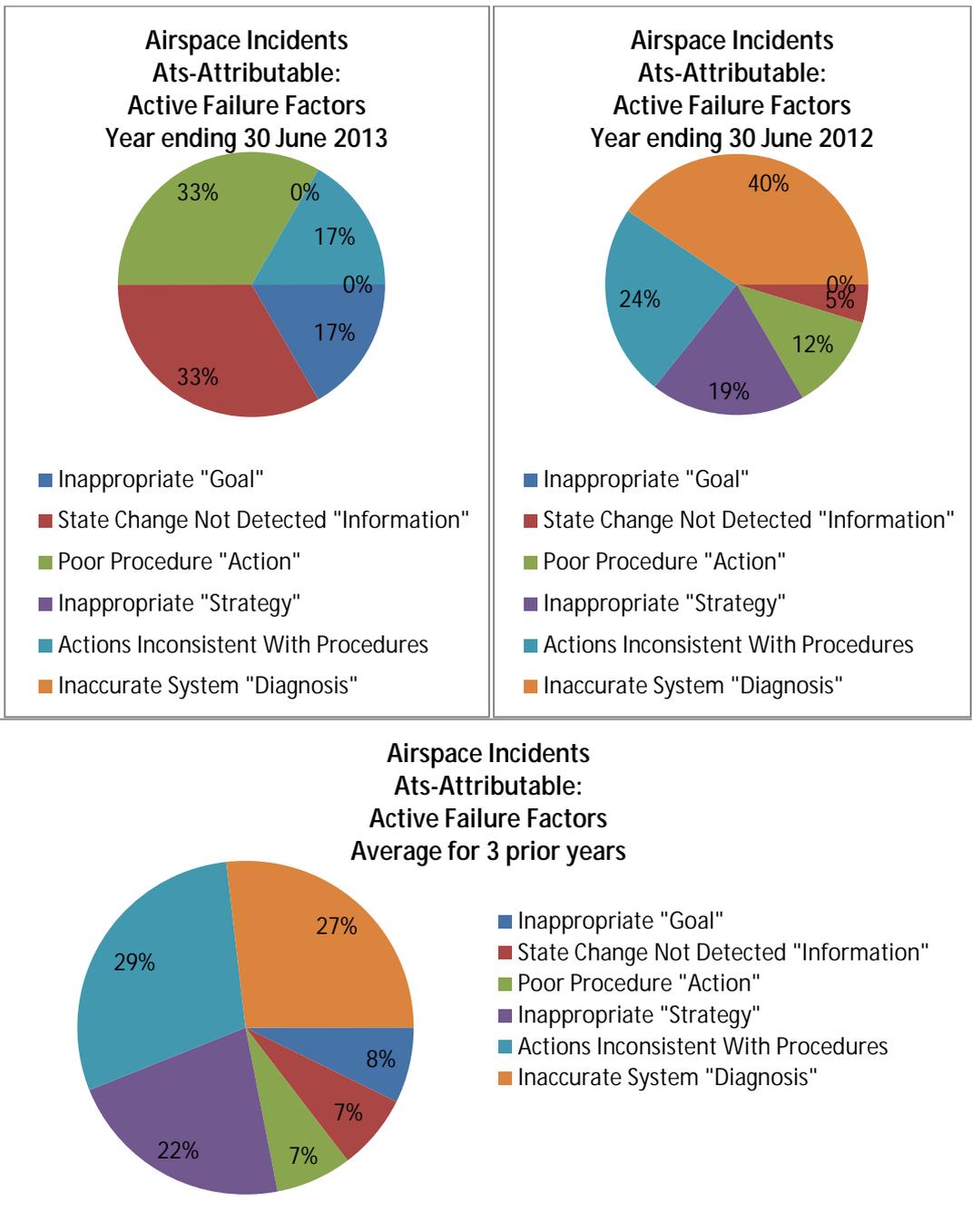
■ Organisation Factors ■ Local Error Factors
■ Local Violation Factors ■ Active Failure Factors

**Airspace Incidents
Ats-Attributable:
Distribution of Cause Categories
Average of 3 prior years**



■ Organisation Factors
■ Local Error Factors
■ Local Violation Factors
■ Active Failure Factors

Active Failure Factors



Pilot Attributable ASP Incidents

Occurrence Trend

The following graph shows the airspace incident reporting rate for pilot attributable incidents. The values are incidents per 100,000 reported aircraft movements, 12 month moving average for the three-year period ending 30 June 2013.

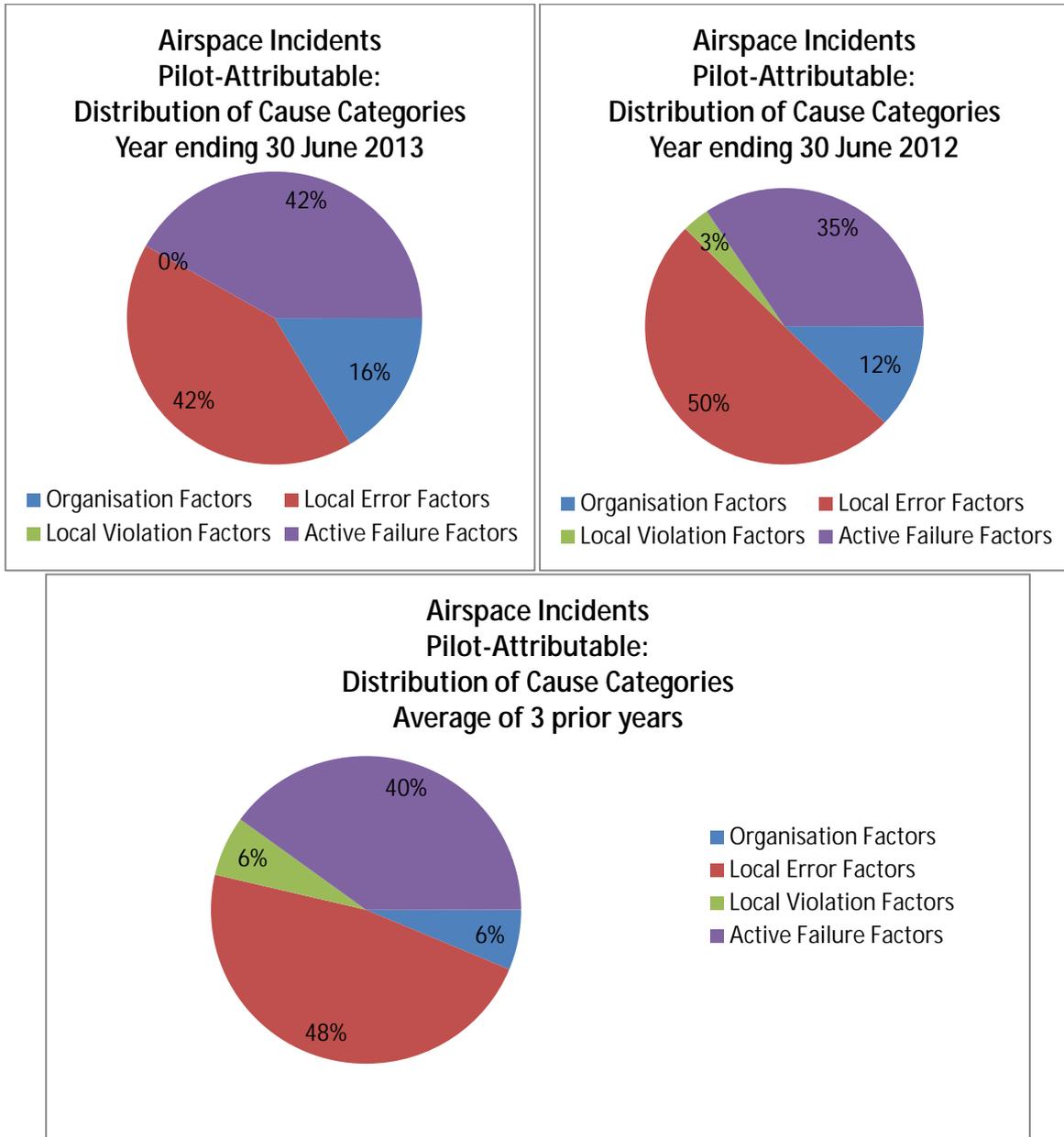


The Pilot attributable airspace incident rate over the three year period is trending upwards.

In early 2011 a system of follow-up letters was introduced for operators of aircraft who didn't report Airspace incidents that were reported by the ATS provider. Since the introduction of this system there has been a noticeable increase in the number of Airspace incidents that are reported by both parties.

Causal Factors

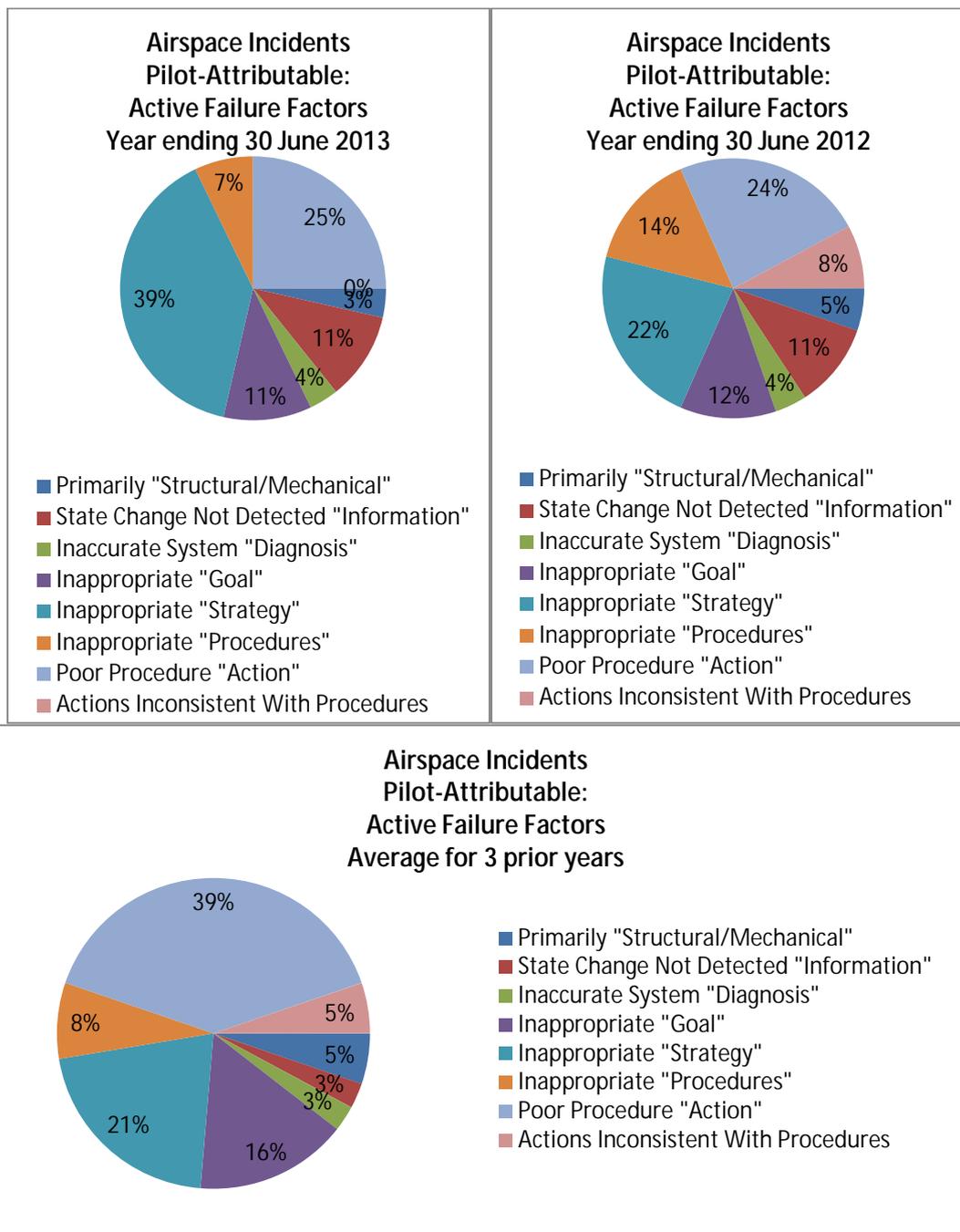
The following charts show the distribution of cause categories (groupings of causal factors) recorded for Pilot attributable airspace incidents that occurred during the year ending 30 June 2013, the same period for the previous year and the average for the last three years.



Active Failure Factors

The Active Failure cause category has been further analysed on the grounds that whatever precursor latent failures may exist and be discovered during a subsequent investigation, at least one 'Unsafe Act' (e.g. Omitted checklist item, Exceeded ability etc.) must occur for an incident to result. These unsafe acts are collectively grouped as Active Failure Factors.

The following charts show the distribution of Active Failure causes during the same periods as above.

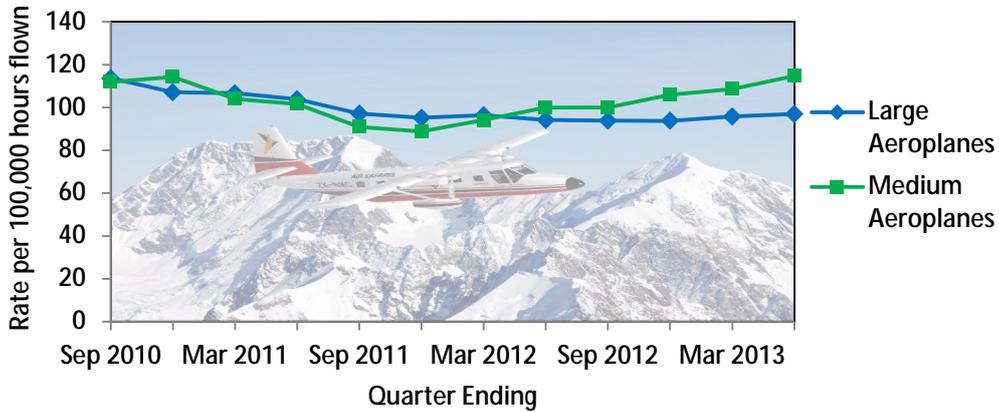


Operational (Aircraft) Incidents

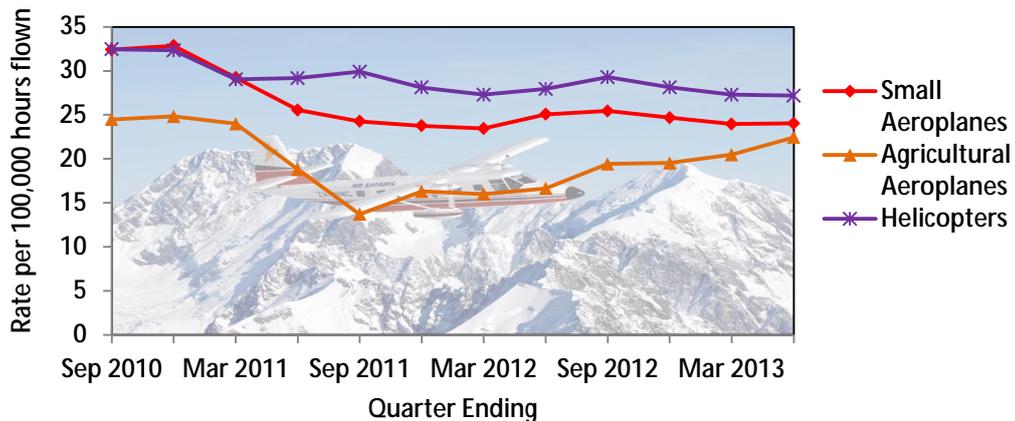
The following graphs show the reported operational incident rates (incidents per 100,000 hours flown) three year moving average for the three-year period ending 30 June 2013.

Breakdown by Aircraft Category

Aircraft Incident Rate - 3 Year Moving Average



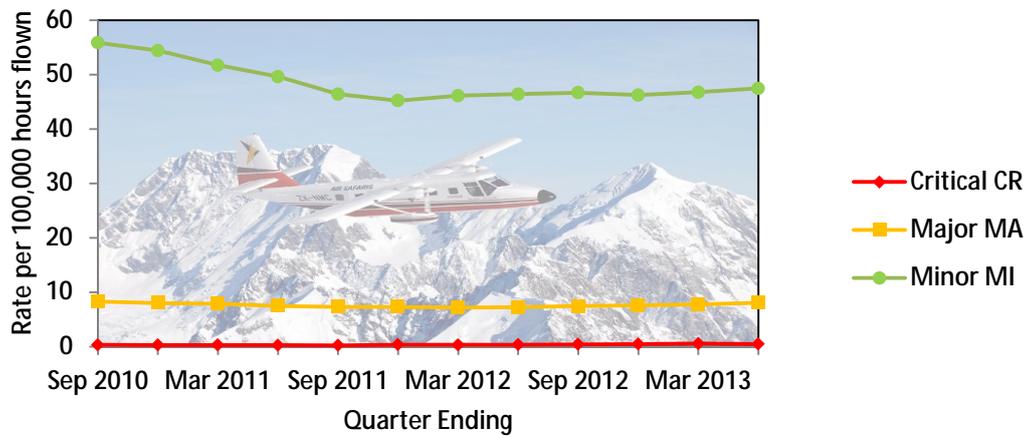
Aircraft Incident Rate - 3 Year Moving Average



Aircraft Category	Straight Line Trend of 3 Year Moving Average
Large Aeroplanes	Constant
Medium Aeroplanes	Constant
Small Aeroplanes	Trending Down
Agricultural Aeroplanes	Constant
Helicopters	Constant

Breakdown by Severity

Aircraft Incident Rate - 3 Year Moving Average



Severity	Straight Line Trend of 3 Year Moving Average
Critical	Trending Up
Major	Constant
Minor	Constant

Yearly Comparisons

Critical Operational Incidents		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Aircraft Category				
Large Aeroplanes		0	1	0.3
Medium Aeroplanes		0	1	0.3
Small Aeroplanes		1	0	1.0
Helicopters		4	2	0.7
Sport Aircraft		0	0	0.0
Agricultural Aeroplanes		3	0	0.0
Not Recorded		3	1	0.0
Total		11	5	2.3

Major Operational Incidents		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Aircraft Category				
Large Aeroplanes		36	24	28.7
Medium Aeroplanes		10	5	8.3
Small Aeroplanes		27	27	17.0
Helicopters		18	21	13.0
Sport Aircraft		11	10	7.0
Agricultural Aeroplanes		1	2	2.7
Not Recorded		15	14	0.0
Total		118	103	76.7

Minor Operational Incidents		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Aircraft Category				
Large Aeroplanes		379	278	303.7
Medium Aeroplanes		69	69	51.0
Small Aeroplanes		44	83	70.3
Helicopters		18	30	40.3
Sport Aircraft		32	14	11.7
Agricultural Aeroplanes		8	6	4.3
Not Recorded		80	89	0.0
Total		630	569	481.3

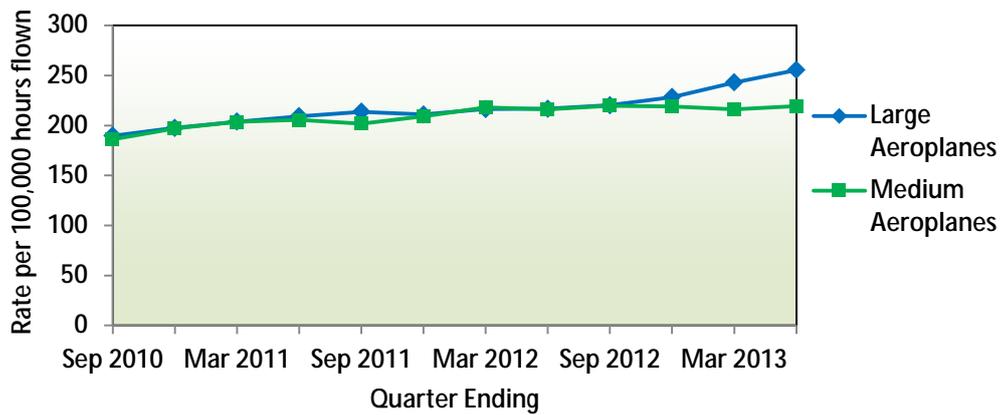
All Operational Incidents		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Aircraft Category				
Large Aeroplanes		415	303	332.7
Medium Aeroplanes		79	75	59.7
Small Aeroplanes		72	110	88.3
Helicopters		40	53	54.0
Sport Aircraft		43	24	18.7
Agricultural Aeroplanes		12	8	7.0
Not Recorded		98	104	0.0
Total		759	677	560.3

Defect Incidents

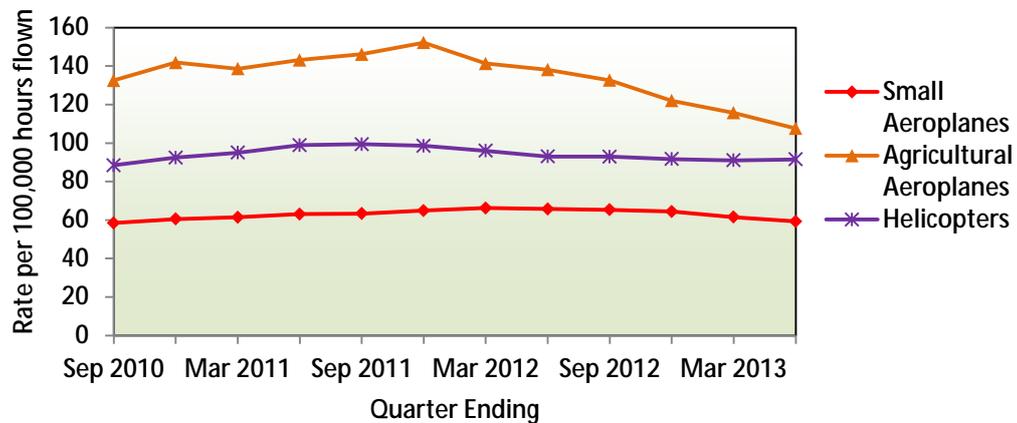
The following graphs show the aircraft defect incident reporting rates (incidents reported per 100,000 hours flown) three year moving average for the three-year period ending 30 June 2013.

Breakdown by Aircraft Category

Defect Rate - 3 Year Moving Average



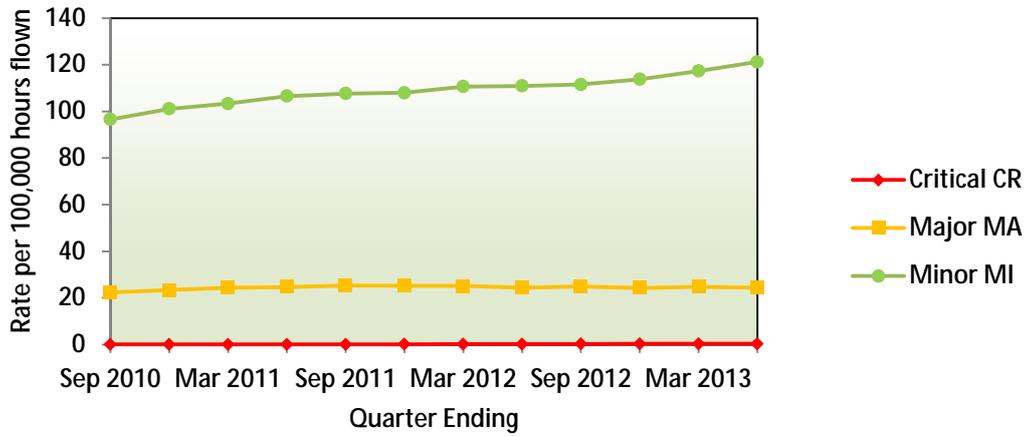
Defect Rate - 3 Year Moving Average



Aircraft Category	Straight Line Trend of 3 Year Moving Average
Large Aeroplanes	Trending Up
Medium Aeroplanes	Constant
Small Aeroplanes	Constant
Agricultural Aeroplanes	Trending Down
Helicopters	Constant

Breakdown by Severity

Defect Rate - 3 Year Moving Average



Severity	Straight Line Trend of 3 Year Moving Average
Critical	Trending Up
Major	Constant
Minor	Trending Up

Yearly Comparisons

		Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Critical Defect Incidents	Aircraft Category			
	Large Aeroplanes	0	1	0.0
	Medium Aeroplanes	0	1	0.3
	Small Aeroplanes	1	1	0.0
	Helicopters	0	1	0.0
	Sport Aircraft	1	0	0.0
	Agricultural Aeroplanes	2	1	0.0
	Not Recorded	0	0	0.0
Total	4	5	0.3	
Major Defect Incidents	Aircraft Category			
	Large Aeroplanes	88	86	108.3
	Medium Aeroplanes	40	25	20.3
	Small Aeroplanes	62	59	55.3
	Helicopters	57	36	34.3
	Sport Aircraft	8	19	9.7
	Agricultural Aeroplanes	8	19	15.3
	Not Recorded	13	5	0.0
Total	276	249	243.3	
Minor Defect Incidents	Aircraft Category			
	Large Aeroplanes	1075	715	562.0
	Medium Aeroplanes	70	101	100.0
	Small Aeroplanes	130	118	162.7
	Helicopters	85	101	148.7
	Sport Aircraft	11	22	15.3
	Agricultural Aeroplanes	16	28	38.0
	Not Recorded	21	24	0.0
Total	1408	1109	1026.7	
All Defect Incidents	Aircraft Category			
	Large Aeroplanes	1163	802	670.3
	Medium Aeroplanes	110	127	120.7
	Small Aeroplanes	193	178	218.0
	Helicopters	142	138	183.0
	Sport Aircraft	20	41	25.0
	Agricultural Aeroplanes	26	48	53.3
	Not Recorded	34	29	0.0
Total	1688	1363	1270.3	

ATA Chapters

Defect Incidents reported as occurring during the year ending 30 June 2013 were associated with the following ATA component code chapters.

Large Aeroplanes

Chapter 21 (AIR CONDITIONING - GENERAL) was the most common with 98 defects, up from 82 in the previous period.

The next most common chapter was Chapter 49 (AUXILIARY POWER - GENERAL) with 83 defects, down from 93 in the previous period.

Medium Aeroplanes

Chapter 27 (AEROPLANE FLIGHT CONTROL - GENERAL) was the most common with 24 defects, up from 15 in the previous period.

The next most common chapter was Chapter 32 (LANDING GEAR (LG) - GENERAL) with 19 defects, up from 14 in the previous period.

Small Aeroplanes

Chapter 32 (LANDING GEAR (LG) - GENERAL) was the most common with 34 defects, up from 22 in the previous period.

The next most common chapter was Chapter 25 (AIRCRAFT FURNISHING - GENERAL) with 23 defects, up from 18 in the previous period.

Agricultural Aeroplanes

Chapter 32 (LANDING GEAR (LG) - GENERAL) was the most common with 8 defects, down from 10 in the previous period.

The next most common chapter was Chapter 25 (AIRCRAFT FURNISHING - GENERAL) with 6 defects, down from 7 in the previous period.

Helicopters

Chapter 63 (MAIN ROTOR DRIVE - GENERAL) was the most common with 20 defects, up from 15 in the previous period.

The next most common chapter was Chapter 25 (AIRCRAFT FURNISHING - GENERAL) with 14 defects, down from 16 in the previous period.

Sport Aircraft

ATA Chapter unrecorded was the most common with 7 defects, up from 5 in the previous period.

The next most common chapter was Chapter 85 (ENGINE (RECIPROCATING) - GENERAL) with 5 defects, the same as in the previous period.

Defect Incident Rates

Summary of Defect Rate Standard

Three levels have been defined for categorising quarterly defect rates. The current levels are:

Normal – less than 4.25 defect incidents per 1,000 hours flown.

Alert – between 4.25 and 6 defect incidents per 1,000 hours flown.

High – above 6 defect incidents per 1,000 hours flown.

The current levels were set in July 2002. They are based on data from the three years to 30 June 2002, excluding B747-200 aircraft since that type was removed from service during the quarter 1 July to 30 September 1999.

CAA Actions

The following table shows how the current values of defect rates will be used to determine CAA action.

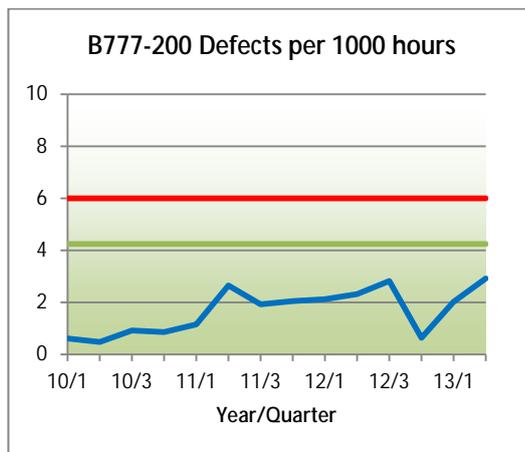
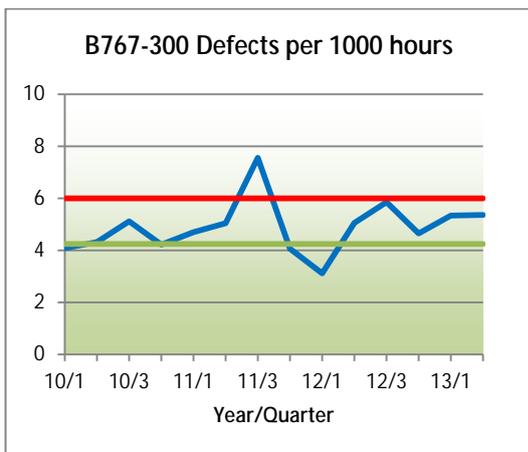
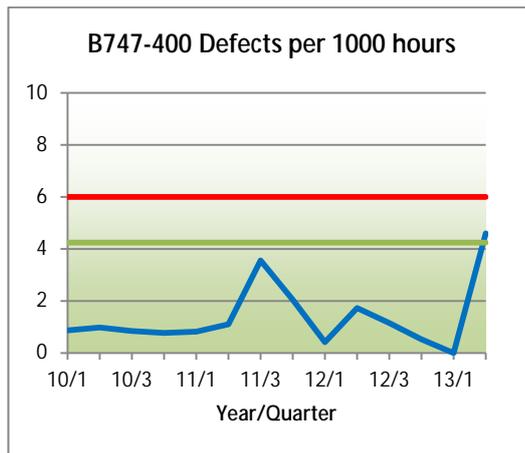
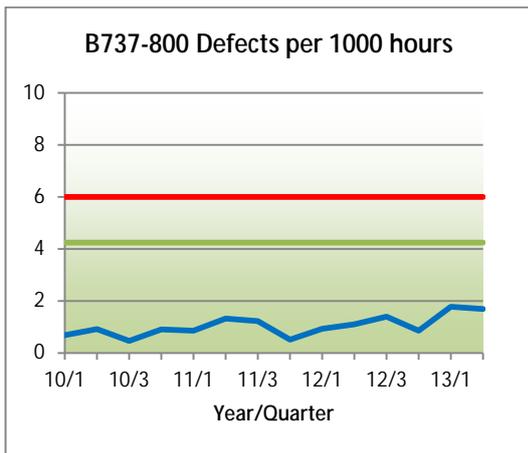
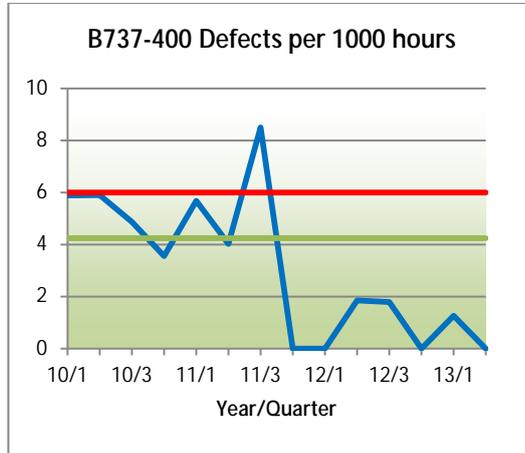
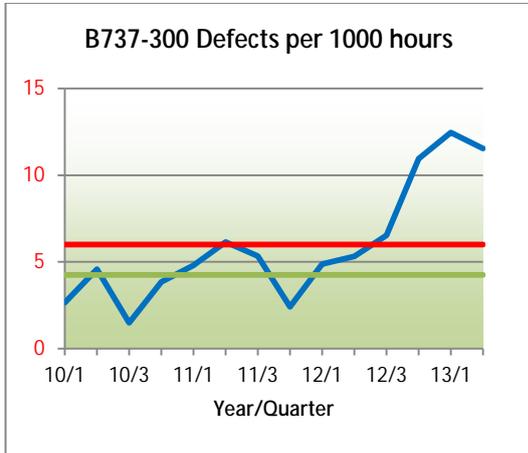
Defect Rate	CAA Action
Normal	Monitor
Alert	Notify appropriate General Manager
High	Notify appropriate General Manager

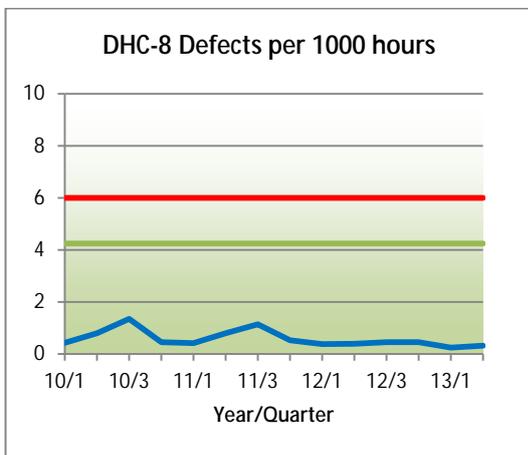
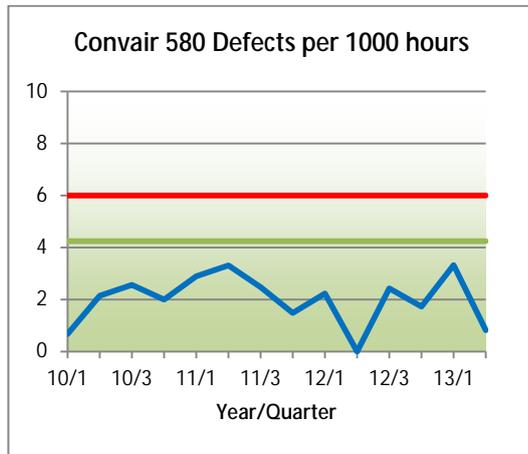
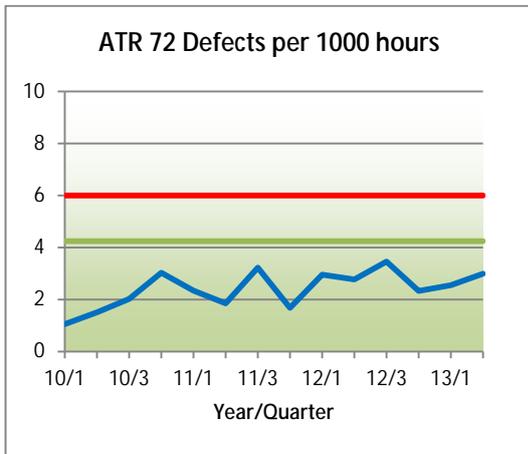
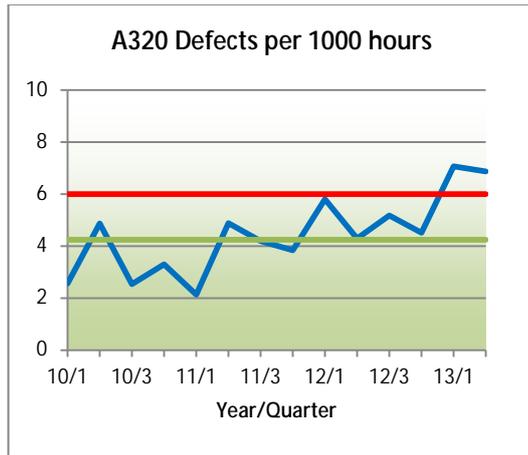
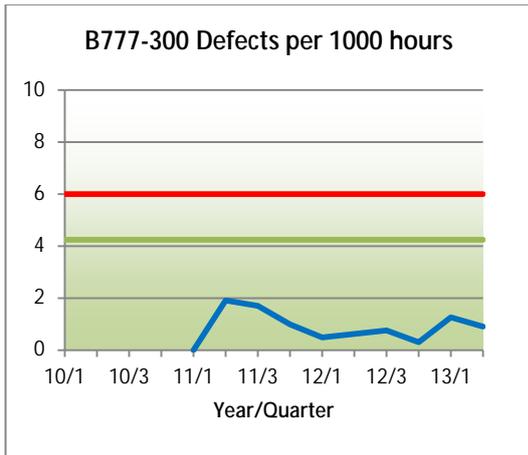
The timing of defect reports is often considerably later than what is mandated by Rule Part 12 and likewise a small number of operators of large and medium aeroplanes are persistently late with their hours and flights data returns. As a result the last two quarters of following defect rate graphs are based on forecasts of hours flown and must be interpreted with caution.

Analysis

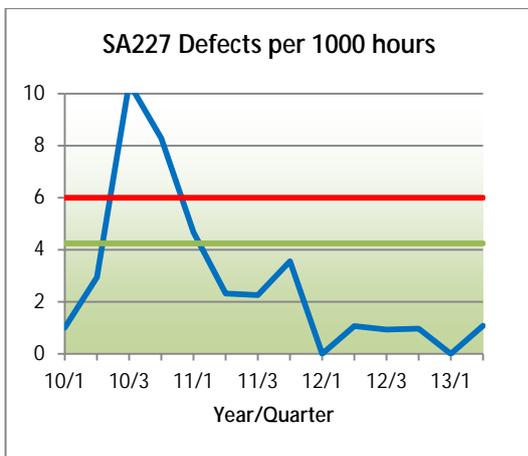
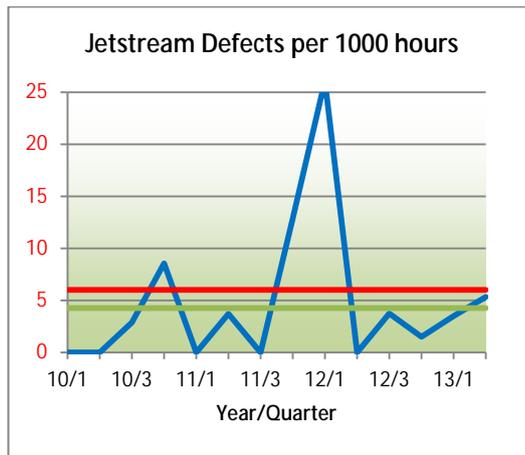
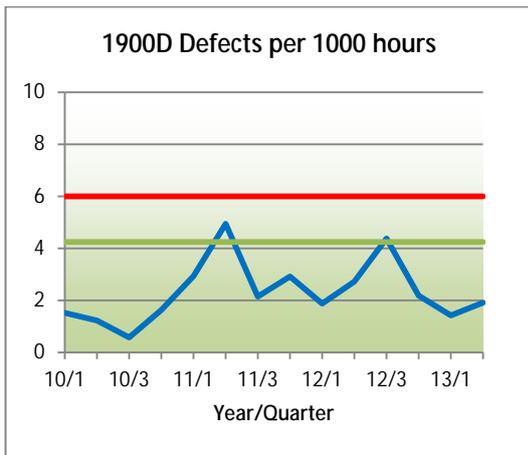
The top line on each graph shows the High defect rate. The next line shows the Alert defect rate. The Manager Airline Maintenance is notified of all high and alert rates on a quarterly basis.

Large Aeroplanes





Medium Aeroplanes



Bird Incident Rates

12-Month Moving Average Strike Rate

Bird occurrence reporting rates are measured quarterly by aerodrome. This is achieved by querying the database for the number of strikes reported at aerodromes by quarter. The results of this query are then divided by the aircraft movements at each aerodrome and multiplied by 10,000 to give strikes per 10,000 aircraft movements. Aircraft movements at aerodromes are obtained from the ACNZ, and, where available, from individual airport companies.

The following table shows the 12-month moving average strike rates for identified aerodromes for each quarter of the three year period ending 30 June 2013.

Aerodrome	Quarter											
	10/3	10/4	11/1	11/2	11/3	11/4	12/1	12/2	12/3	12/4	13/1	13/2
Auckland	3.1	3.1	3.1	2.7	2.9	3.4	3.4	3.2	3.0	2.4	2.7	3.5
Chatham Islands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Christchurch	3.0	3.0	3.4	3.4	3.2	3.3	3.2	3.9	4.1	3.7	3.7	3.4
Dunedin	5.5	4.1	4.8	5.1	4.9	6.2	5.4	5.3	4.4	5.1	4.1	6.0
Gisborne	2.7	4.1	4.2	5.8	5.7	5.8	7.1	7.4	7.4	7.1	6.9	6.6
Hamilton	2.6	2.6	1.9	1.9	1.5	1.4	1.3	1.2	1.2	1.4	1.4	1.2
Hokitika	3.8	7.5	3.7	3.7	3.6	0.0	3.6	3.6	3.6	3.6	0.0	0.0
Invercargill	8.2	7.2	5.8	6.4	7.2	6.8	5.9	3.8	1.9	2.5	3.8	3.6
Kerikeri	6.3	6.3	11.3	8.8	10.0	12.5	8.8	7.5	8.8	10.0	10.0	13.8
Manapouri	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Napier	11.7	10.7	11.4	7.2	6.2	9.1	7.5	9.7	12.3	9.1	12.2	11.7
Nelson	2.4	2.7	2.3	2.2	2.3	2.6	2.4	2.4	2.7	2.9	4.6	5.4
New Plymouth	5.2	5.7	5.3	5.8	4.7	3.7	4.4	3.5	3.6	4.2	5.3	6.8
Ohakea	2.6	2.7	1.9	2.5	2.9	3.1	3.3	2.9	2.5	2.6	3.7	2.2
Palmerston North	4.6	4.3	3.8	3.9	2.8	2.1	1.9	2.8	3.8	4.5	4.5	5.1
Paraparaumu	1.2	0.4	0.4	0.4	0.4	0.0	1.1	1.3	1.2	2.1	1.4	2.5
Queenstown	1.6	1.2	1.7	1.9	1.2	2.4	2.3	3.6	5.0	5.7	5.7	4.0
Rotorua	7.1	6.4	4.4	3.6	2.6	3.1	4.0	2.6	2.7	2.7	4.4	6.3
Taupo	2.1	2.8	5.6	5.9	5.7	4.5	2.7	2.3	2.3	2.7	1.2	1.7
Tauranga	1.2	1.8	2.5	2.6	2.2	1.2	1.4	1.9	2.2	2.5	2.3	1.9
Timaru	1.3	2.5	5.0	10.0	10.0	8.8	6.3	2.5	2.5	3.8	3.8	5.0
Wanganui	1.7	1.7	3.4	3.6	2.9	3.9	2.6	1.9	2.5	3.5	3.1	6.5
Wellington	1.8	1.7	1.8	1.4	1.2	2.1	2.5	3.0	3.7	3.3	3.2	3.0
Westport	19.6	19.5	10.0	4.8	4.8	4.8	14.5	14.5	14.5	14.5	4.8	4.8
Whakatane	10.0	8.3	5.0	5.8	5.0	4.2	3.3	3.3	2.5	2.5	4.2	3.3
Whangarei	5.3	5.3	6.8	7.5	7.5	8.3	8.3	6.8	5.3	4.5	2.3	3.8
Whenuapai	12.6	13.2	12.0	10.0	11.2	10.9	14.2	14.9	14.2	12.1	7.1	6.6
Woodbourne	5.7	5.7	4.8	4.2	4.6	4.6	3.8	4.3	4.4	5.3	7.2	10.4

Data with a pink background is based on CAA estimates of aircraft movements for the aerodrome because the CAA has either no data or incomplete data for that aerodrome.

Analysis

Each aerodrome is assigned a risk category based on the most recent 12 month average bird strike rate per 10,000 aircraft movements. These categories are:

- Low where the rate is less than 5 strikes per 10,000 movements
- Medium where the rate is not less than 5 strikes per 10,000 movements but less than 10 strikes per 10,000 movements
- High where the rate is not less than 10 strikes per 10,000 movements.

Each aerodrome is also assigned a trend category based on a straight line approximation to the 3 year history of bird strike rates. These categories are:

- Trending down where the 3 year decrease exceeds 20% of the average
- Constant where the 3 year change is between + and – 20% of the average
- Trending up where the 3 year increase exceeds 20% of the average

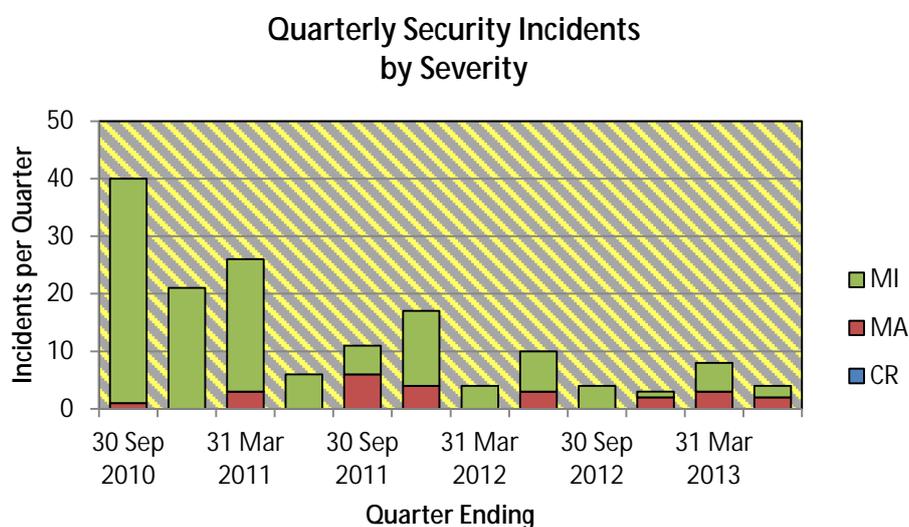
The CAA then determines what if any actions are required based on the combination of the above categories

Details as at 30 June 2013 for individual aerodromes are shown in the following table.

Aerodrome	Risk Category	Trend
Auckland	Low	Constant
Chatham Islands	Low	Constant
Christchurch	Low	Upward
Dunedin	Medium	Constant
Gisborne	Medium	Upward
Hamilton	Low	Downward
Hokitika	Low	Downward
Invercargill	Low	Downward
Kerikeri	High	Upward
Manapouri	Low	Constant
Napier	High	Upward
Nelson	Medium	Upward
New Plymouth	Medium	Constant
Ohakea	Low	Constant
Palmerston North	Medium	Constant
Paraparaumu	Low	Upward
Queenstown	Low	Upward
Rotorua	Medium	Downward
Taupo	Low	Downward
Tauranga	Low	Constant
Timaru	Medium	Downward
Wanganui	Medium	Upward
Wellington	Low	Upward
Westport	Low	Downward
Whakatane	Low	Downward
Whangarei	Low	Downward
Whenuapai	Medium	Downward
Woodbourne	High	Upward

Security Incidents

The following chart shows the reported security incidents by quarter over the three year period ending 30 June 2013



Note: none of the incidents reported as occurring during this period have been assessed as Critical.

Yearly Comparison

The following table shows a breakdown by location (nearest staffed aerodrome) of the security incidents reported as occurring during the year ending 30 June 2013, the previous year and the average for the three prior years.

Location (Aerodrome)	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Auckland	5	13	32.0
Christchurch	1	1	9.7
Wellington	2	10	6.3
Milford Sound	0	0	0.3
Gisborne	3	0	0.7
Nelson	1	0	1.7
Hamilton	0	3	1.0
Rotorua	0	0	0.7
Queenstown	0	1	2.0
Dunedin	0	0	1.0
Palmerston North	0	0	0.0
Other	2	3	4.0
Not Reported	5	11	22.3
Total	19	42	81.7

The following table shows a breakdown by Aircraft Statistics Category of the security incidents reported as occurring during the year ending 30 June 2013, the previous year and the average for the three prior years.

Aircraft Type	Year Ending Jun 2013	Year Ending Jun 2012	Average 3 Prior Yrs
Large Aeroplanes	5	14	11.00
Medium Aeroplanes	4	1	2.67
Small Aeroplanes	1	1	0.00
Helicopters	0	0	0.00
Sport Aircraft	0	0	0.00
Agricultural Aeroplanes	0	0	0.00
Parachutes	0	0	0.00
Hang Gliders	0	0	0.00
Other	9	26	68.00
Total	19	42	81.67

The large drop in the number of recorded security incidents is at least partly due to a correction in the way we interpret the definition of a security incident. No attempt has been made at this time to re-assess historic data.

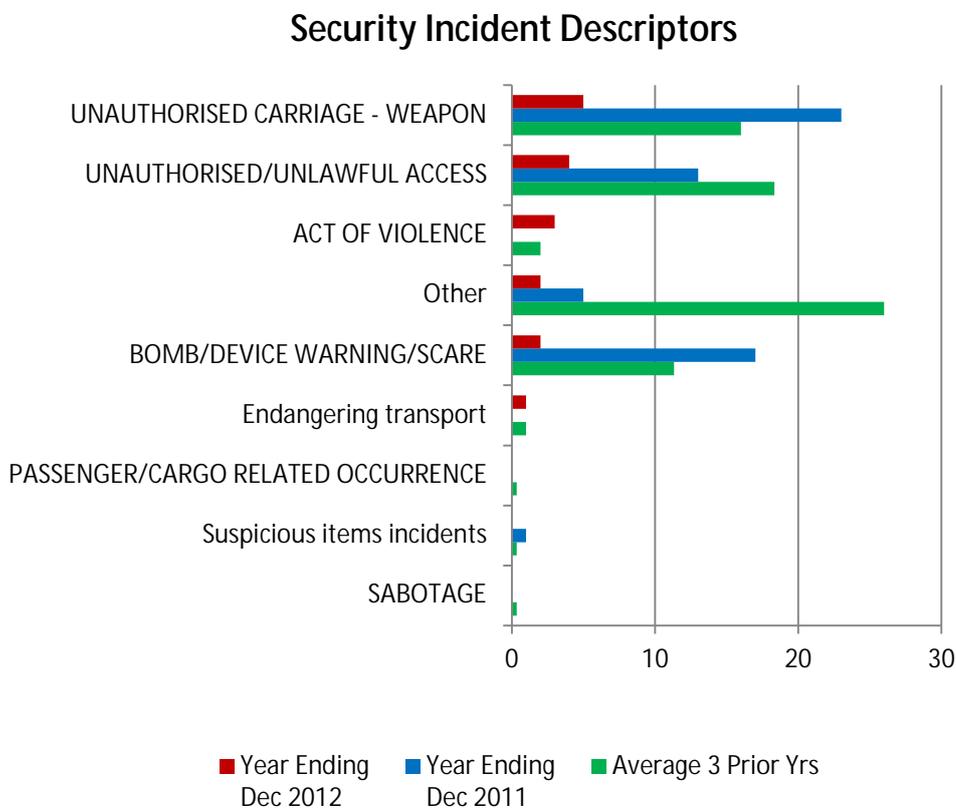
Descriptors and Causal Factors

The most common descriptor (5) recorded for Security Incidents during the year ending 30 June 2013 was 'UNAUTHORISED CARRIAGE - WEAPON'

No causal factors have been recorded for security incidents that occurred during the year ending 30 June 2013.

Descriptors

The following chart shows the numbers of each occurrence descriptor that has been recorded for security incidents reported as occurring during the year ending 30 June 2013, the previous year and the average for the three prior years.



Aerodrome Incidents

Runway Incursions

Runway incursion rates are calculated by dividing the total number of reported Aerodrome Incidents that have any of the five runway incursion descriptors by the total number of reported movements for the same aerodrome over the same period. The result is tabulated and graphed as runway incursions per 100,000 movements.

Usable data is available only from the 4th quarter of 2008 so the current report is limited to displaying 2 year moving average values. When enough data has been collected this table will be modified to show three year moving average values. When movement data becomes available from additional certificated aerodromes they will also be included.

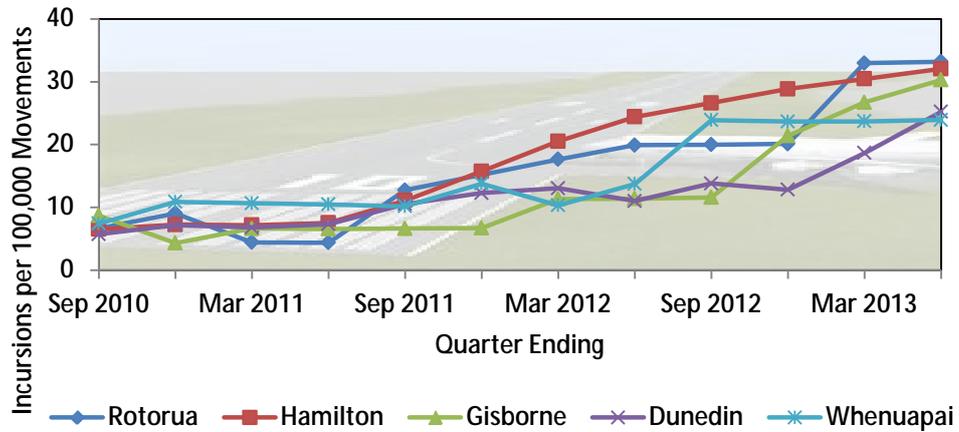
Clearly the number of runway incursions is low with many certificated aerodromes having no such incidents reported at all. With such low numbers caution needs to be exercised in drawing statistical conclusions..

The following table shows 2 year moving average values of reported quarterly runway incursion rates for all certificated aerodromes for which adequate movement data is available.

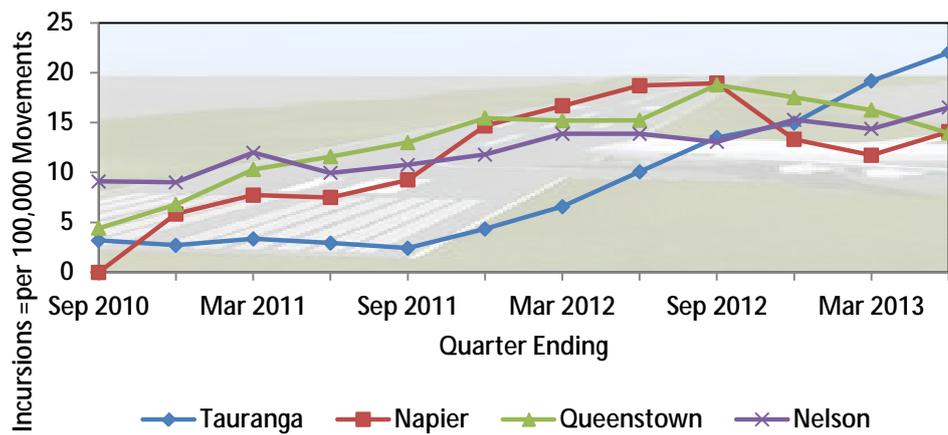
Aerodrome	10/3	10/4	11/1	11/2	11/3	11/4	12/1	12/2	12/3	12/4	13/1	13/2
Rotorua	6.7	9.1	4.5	4.4	12.8	15.2	17.7	19.9	20.0	20.1	33.0	33.2
Hamilton	6.5	7.3	7.2	7.5	11.1	15.7	20.5	24.4	26.6	28.9	30.5	32.0
Gisborne	8.7	4.3	6.7	6.6	6.6	6.7	11.4	11.4	11.6	21.4	26.7	30.3
Dunedin	5.7	7.2	6.8	7.3	10.5	12.3	13.1	11.0	13.8	12.8	18.7	25.2
Whenuapai	7.4	10.9	10.7	10.5	10.2	13.8	10.3	13.8	23.9	23.7	23.7	23.9
Tauranga	3.2	2.7	3.3	2.9	2.4	4.3	6.6	10.1	13.5	15.0	19.2	22.0
Napier	0.0	5.8	7.7	7.5	9.2	14.7	16.7	18.7	18.9	13.3	11.7	14.1
Queenstown	4.4	6.8	10.3	11.6	13.0	15.5	15.2	15.2	18.8	17.5	16.3	14.0
Nelson	9.1	9.0	12.0	10.0	10.8	11.8	13.9	13.9	13.1	15.3	14.4	16.5
Ohakea	1.4	1.5	1.5	4.0	4.1	3.4	2.7	3.0	4.2	5.8	8.9	9.8
Christchurch	6.0	6.9	7.0	7.6	8.4	8.1	9.1	7.6	7.3	6.9	7.5	7.6
Woodbourne	8.5	6.4	4.3	4.3	4.3	2.2	2.1	4.3	4.3	6.5	8.7	8.8
New Plymouth	0.0	0.0	0.0	0.0	1.4	1.4	4.4	4.5	4.6	4.7	6.5	6.7
Auckland	6.4	4.8	3.8	4.2	5.1	4.8	4.1	2.9	2.9	2.9	2.6	3.2
Palmerston North	5.1	5.2	1.8	2.6	2.5	2.5	4.8	3.9	3.8	4.5	6.0	4.6
Wellington	5.8	5.9	5.0	4.1	4.6	3.7	3.3	4.3	4.3	3.4	3.9	5.3
Taupo	1.7	1.7	3.5	3.5	3.5	1.8	1.8	1.9	1.9	3.9	1.9	2.0
Invercargill	0.0	0.0	1.8	1.8	1.7	1.7	1.6	1.6	3.3	3.4	1.7	1.8
Overall	6.3	6.9	7.3	6.6	8.4	9.2	11.3	13.8	14.3	14.6	15.3	14.8

By way of comparison, National Transportation Safety Board data puts the runway incursion rate in the United States at about 6 runway incursions per 100,000 tower operations during the 4 calendar years 2005 – 2008 with an improving outlook for 2009.

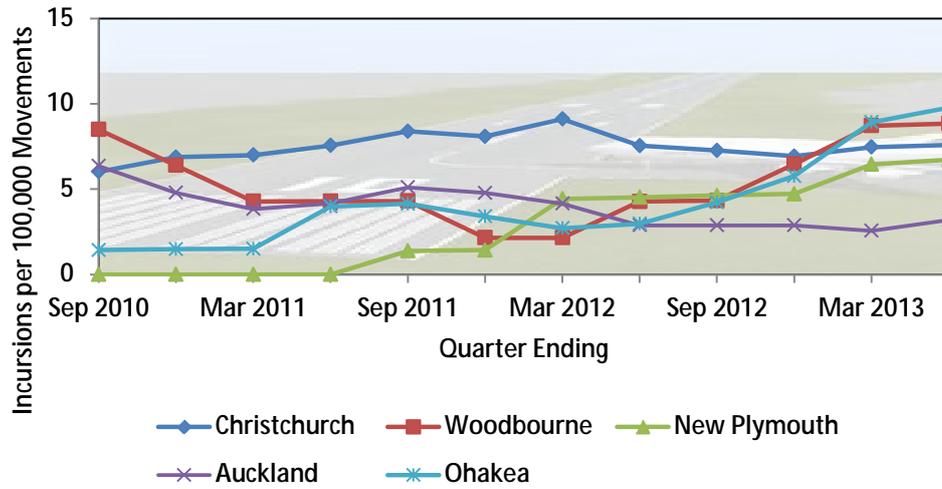
Runway Incursion Rates - Max > 23
TwoYear Moving Average values



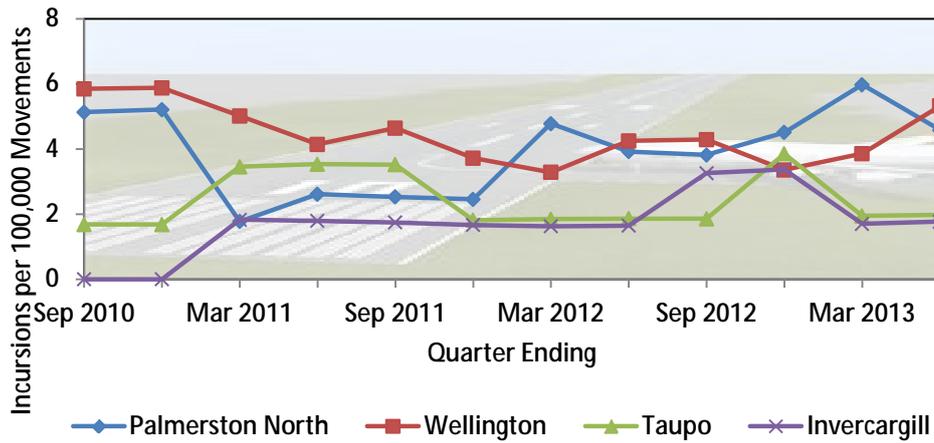
Runway Incursion Rates - Max 15 - 22
TwoYear Moving Average Values



Runway Incursion Rates - Max 6.4 - 10
TwoYear Moving Average Values



Runway Incursion Rates - Max < 6.4
TwoYear Moving Average Values



Occurrences — General

The following table shows the number of occurrences (excluding Non-Reportable Occurrences) that were registered on the CAA database during each of the 12 months of the reporting period.

Month	ACC	ADI	ARC	ASP	BRD	DEF	DGD	HGA	INC	NIO	PAA	PIO	SEC
Jul - 2012	6	12	62	119	65	158	3	1	55	3	0	2	3
Aug - 2012	6	13	87	78	134	157	2	0	57	5	2	1	2
Sep - 2012	0	12	63	80	128	123	0	0	65	4	0	0	1
Oct - 2012	4	21	63	112	126	112	3	0	94	3	0	4	0
Nov - 2012	7	21	64	148	111	139	6	1	75	1	2	2	3
Dec - 2012	8	12	26	87	63	101	4	1	31	2	1	4	0
Jan - 2013	12	18	64	128	87	147	8	2	76	5	0	2	1
Feb - 2013	9	33	79	153	109	172	15	4	75	1	1	1	3
Mar - 2013	9	12	76	130	108	130	3	1	60	2	1	2	4
Apr - 2013	9	25	39	124	160	143	13	4	61	4	0	0	1
May - 2013	8	17	49	101	193	192	8	0	67	2	1	1	3
Jun - 2013	5	14	66	87	99	133	2	6	55	5	1	8	1
Total	83	210	738	1347	1383	1707	67	20	771	37	9	27	22

ACC	Accident	DGD	Dangerous Goods Incident
ADI	Aerodrome Incident	HGA	Hang Glider Accident
ARC	Aviation Related Concern	INC	Aircraft Incident
ASP	Airspace Incident	NIO	Facility Malfunction Incident
BRD	Bird Incident	PAA	Parachute Accident
CSI	Cargo Security Incident	PIO	Promulgated Information Incident
DEF	Defect Incident	SEC	Security Incident

Causal Factor Analysis

Introduction

The following section presents an analysis of occurrence causes recorded during the year ending 30 June 2013 as determined by safety investigations.

The causal factor analysis is grouped into three parts, each dealing with a unique sector of the aviation industry:

- Aircraft Flight Operations (Aircraft Operator Organisations and Flight Crew);
- Aircraft Maintenance Operations (Aircraft Maintenance/Design Organisations and Maintenance Engineers);
- Air Traffic Services and Personnel (Air Traffic Service Organisations and Air Traffic Service personnel).

The first two sections are further sub-grouped by Aircraft Category, namely:

- Large Aeroplanes;
- Medium Aeroplanes;
- Other Aeroplanes, Helicopters and Sport; and
- “Unknown”.

A discussion of the Reason Model – Latent Failure Model used by the CAA for causal factor identification is provided in the appendix.

Please note that the following abbreviations apply:

ACC	Accident	DGD	Dangerous Goods Incident
ADI	Aerodrome Incident	HGA	Hang Glider Accident
ARC	Aviation Related Concern	INC	Aircraft Incident
ASP	Airspace Incident	NIO	Facility Malfunction Incident
BRD	Bird Incident	PAA	Parachute Accident
CSI	Cargo Security Incident	PIO	Promulgated Information Incident
DEF	Defect Incident	SEC	Security Incident

Aircraft Flight Operations

The following section summarises causal factors identified from investigation of occurrences that occurred during the year ended 30 June 2013 and which have been attributed to aircraft flight operations (the aircraft operator, organisation or flight crew). The number of times particular causal factors have been identified is reported by occurrence type.

Large Aeroplanes

Category	Cause	ASP	DEF	INC	PIO
Active Failure	PRIMARILY "STRUCTURAL/MECHANICAL"		18	2	
	STATE CHANGE NOT DETECTED "INFORMATION"	1			
Organisation	DESIGN DEFICIENCIES				3
	INADEQUATE COMMUNICATIONS		1		
	INADEQUATE CONTROL AND MONITORING		1		
	INADEQUATE DEFENCES		1		
	INADEQUATE PROCEDURES			2	1
Task/Environment Error	INADEQUATE SPECIFICATIONS/REQUIREMENTS		1		
	FATIGUE - OTHER			1	
	INADEQUATE CHECKING			2	
	LACK OF KNOWLEDGE		1	1	
	POOR SYSTEM FEEDBACK			1	
	PSYCHOLOGICAL OTHER			1	
	TASK OVERLOAD			1	

Medium Aeroplanes

Category	Cause	ASP	DEF	INC	PIO
Active Failure	ACTIONS INCONSISTENT WITH PROCEDURES			1	1
	PRIMARILY "STRUCTURAL/MECHANICAL"		6		
Organisation	INADEQUATE DEFENCES			1	
	INADEQUATE PROCEDURES		1		
	OTHER ORGANISATION FACTOR		1		
	POOR COORDINATION	1			
Task/Environment Error	INADEQUATE CHECKING			1	
	INEXPERIENCE (NOT LACK OF TRAINING)	1			
	RISK MISPERCEPTION	1			

Unknown Aircraft Category

Category	Cause	ARC	ASP	DEF
Active Failure	ACTIONS INCONSISTENT WITH PROCEDURES		1	
	POOR PROCEDURE "ACTION"		4	
	PRIMARILY "STRUCTURAL/MECHANICAL"			1
Organisation	INADEQUATE TRAINING		1	
	OTHER ORGANISATION FACTOR		5	
Task/Environment Error	INADEQUATE CHECKING		4	
	LACK OF KNOWLEDGE	1		
	OTHER ERROR ENFORCING CONDITION		3	

Other Aeroplanes, Helicopters and Sport Aircraft

Category	Cause	ACC	ADI	ARC	ASP	DEF	INC
Active Failure	ACTIONS INCONSISTENT WITH PROCEDURES		1		4		1
	INACCURATE SYSTEM "DIAGNOSIS"		1			1	
	INAPPROPRIATE "GOAL"	1			1		
	INAPPROPRIATE "PROCEDURES"		2		2		
	INAPPROPRIATE "STRATEGY"	2	1		2		1
	POOR PROCEDURE "ACTION"	2			6	1	4
	PRIMARILY "STRUCTURAL/MECHANICAL"	2			1	20	1
	STATE CHANGE NOT DETECTED "INFORMATION"	3	1		2		
Organisation	INADEQUATE DEFENCES	1					
	INAPPROPRIATE GOALS OR POLICIES				1		1
	OTHER ORGANISATION FACTOR						1
	POOR DECISIONS			1		1	
Task/Environment Error	FATIGUE - OTHER				1		
	HOSTILE ENVIRONMENT					1	
	INADEQUATE CHECKING	2			7	1	4
	INEXPERIENCE (NOT LACK OF TRAINING)	3			2		2
	INFORMATION OVERLOAD		1		2		
	LACK OF KNOWLEDGE	1		1	1		
	OTHER ENVIRONMENTAL FACTOR (EG WEATHER)	1			2		2
	OTHER ERROR ENFORCING CONDITION				1		1
	PHYSIOLOGICAL OTHER				1		
	RISK MISPERCEPTION	4			1	1	1
	TASK OVERLOAD				1		
	TASK UNFAMILIARITY				1		
	VISUAL ILLUSION						1
Task/Environment Violation	LACK OF MANAGEMENT CARE/CONCERN			1			
	LACK OF SAFETY CULTURE			1			

Aircraft Maintenance Operations

The following section summarises causal factors identified from investigation of occurrences that occurred during the year ended 30 June 2013 and have been attributed to aircraft maintenance operations (the aircraft operator, aircraft maintenance organisation or maintenance engineer). The number of times particular causal factors have been identified is reported by occurrence type.

Large Aeroplanes

Category	Cause	DEF
Active Failure	POOR PROCEDURE "ACTION"	1
	STATE CHANGE NOT DETECTED "INFORMATION"	1
Organisation	DESIGN DEFICIENCIES	7
	INADEQUATE CONTROL AND MONITORING	2
	INADEQUATE RESOURCE MANAGEMENT	1
	INADEQUATE SPECIFICATIONS/REQUIREMENTS	1
	OTHER ORGANISATION FACTOR	1
Task/Environment Error	FATIGUE - OTHER	2
	INADEQUATE CHECKING	3
	POOR INSTRUCTIONS/PROCEDURES	2
	TASK UNFAMILIARITY	1

Medium Aeroplanes

Category	Cause	DEF	INC	PIO
Active Failure	ACTIONS INCONSISTENT WITH PROCEDURES	2		
	POOR PROCEDURE "ACTION"	3	1	
	STATE CHANGE NOT DETECTED "INFORMATION"			1
Organisation	DESIGN DEFICIENCIES	2		
	INADEQUATE CONTROL AND MONITORING	2		
	INADEQUATE PROCEDURES	3	1	
	INAPPROPRIATE GOALS OR POLICIES	1		
Task/Environment Error	INADEQUATE CHECKING	3		
Task/Environment Violation	HAZARD MISPERCEPTION	1		
	PERCEIVED LICENSE TO BEND RULES	2		

Other Aeroplanes, Helicopters and Sport Aircraft

Category	Cause	ACC	ASP	DEF	INC
Active Failure	ACTIONS INCONSISTENT WITH PROCEDURES			2	
	POOR PROCEDURE "ACTION" PRIMARILY "STRUCTURAL/MECHANICAL"			4	1
Organisation	DESIGN DEFICIENCIES	1		5	1
	INADEQUATE COMMUNICATIONS	1			
	INADEQUATE DEFENCES				1
	INADEQUATE SPECIFICATIONS/REQUIREMENTS			1	1
Task/Environment Error	INADEQUATE CHECKING			3	1
	OTHER ERROR ENFORCING CONDITION		1		1
	POOR INSTRUCTIONS/PROCEDURES			2	

Unknown Aircraft Category

Nothing in the period covered by this report

Air Traffic Services and Personnel

The following tables summarise causal factors identified from investigation of occurrences that occurred during the year ended 30 June 2013 and which have been attributed to air traffic services or personnel. The number of times particular causal factors have been identified is reported by occurrence type.

Air Traffic Service Providers

Category	Cause	ASP	INC
Organisation	DESIGN DEFICIENCIES	3	
	INADEQUATE CONTROL AND MONITORING		1
	INADEQUATE SPECIFICATIONS/REQUIREMENTS	1	
Task/Environment Error	INADEQUATE CHECKING	1	
	LACK OF KNOWLEDGE	1	
	OTHER ERROR ENFORCING CONDITION	4	
	TASK OVERLOAD	1	

Air Traffic Service Personnel

Category	Cause	ADI	ASP
Active Failure	ACTIONS INCONSISTENT WITH PROCEDURES		2
	INAPPROPRIATE "GOAL"		1
	INAPPROPRIATE "PROCEDURES"		1
	POOR PROCEDURE "ACTION"		3
	STATE CHANGE NOT DETECTED "INFORMATION"		2
Task/Environment Error	INADEQUATE CHECKING		4
	INFORMATION OVERLOAD	1	
	OTHER ERROR ENFORCING CONDITION		1
	TASK UNFAMILIARITY		1

Client Risk Assessment

Introduction

The CAA's client risk assessment system came into operation in February 2007.

The system measures a series of factors, rated using a scale of 1 to 5 where 1 is an exemplary rating. It is a qualitative rating and relates solely to the interaction the CAA staff member is having with the client at that time, or to changes in the organisation recorded in the CAA database.

Risk profiles can be generated at any time, including at the end of every audit.

The combined ratings form a risk assessment used to help decide the depth and frequency of inspection and monitoring for each client.

Results are in the form of a percentage of the maximum possible score (if all factors had been rated 5), and are divided into bands of low, moderate, high and very high:

Low: <=16%

Moderate: 16-26%

High: 26-36%

Very High: >36%

Clients can have several risk profiles current at one time, one for each activity. Each risk profile is independent of the others, and applies only to the relevant activity.

The following table refers to risk profiles current on the dates shown and shows the numbers of certificate holders with risk scores in each band.

Comparison of Client Numbers in Risk Score Bands

(as at 30 June 2013 and over the Preceding Four Years)

Activity	As at 30 June 2013				Average at end of each of 4 prior 12 month periods			
	Very High	High	Moderate	Low	Very High	High	Moderate	Low
Australia AOC with ANZA Privileges Part 108 Security Programme	0	0	0	1	0.0	0.0	0.0	0.5
Part 108 Security Programme	0	0	2	11	0.0	0.0	1.3	6.8
Part 109 Regulated Air Cargo Agent	1	0	5	59	0.0	0.8	4.3	25.5
Part 121 Air Operator Large Aeroplanes	0	0	0	8	0.3	0.0	0.5	4.8
Part 125 Air Operator Medium Aeroplanes	0	1	3	11	0.3	0.0	1.5	6.0
Part 129 Foreign Air Transport Operator	1	0	0	27	0.3	0.0	1.8	12.8
Part 135 Air Operator Helicopters and Small Aeroplanes	0	5	37	113	0.8	3.0	27.0	54.3
Part 137 Agricultural Aircraft Operator	0	3	21	75	0.3	2.3	15.0	36.5
Part 139 Aerodrome Operator	0	0	0	24	0.0	0.0	0.0	11.8
Part 140 Aviation Security Service Organisation	0	0	0	1	0.0	0.0	0.0	0.5
Part 141 Aviation Training Organisation	1	0	2	48	0.0	0.5	2.3	22.5
Part 145 Maintenance Organisation	2	0	2	51	0.5	0.0	2.8	27.3
Part 146 Aircraft Design Organisation	0	0	0	14	0.3	0.0	1.0	6.3
Part 148 Aircraft Manufacturing Organisation	0	0	0	21	0.5	0.3	0.8	10.8
Part 149 Aviation Recreation Organisation	0	0	0	6	0.3	0.0	0.3	1.8
Part 171 Telecom Service Organisation	0	0	0	2	0.0	0.0	0.3	1.0
Part 172 Air Traffic Service Organisation	0	0	1	0	0.0	0.0	0.3	0.3
Part 173 Instrument Flight Procedure	0	0	0	3	0.0	0.0	0.3	1.3
Part 174 Meteorological Service Organisation	0	0	0	2	0.0	0.0	0.3	0.8
Part 175 Aeronautical Info Service Organisation	0	0	0	1	0.0	0.0	0.3	0.3
Part 19F Supply Organisation	2	0	0	46	0.8	0.0	2.5	25.3
Part 92 Dangerous Goods Packaging Approval Holder	0	0	0	2	0.0	0.0	0.0	0.8

Appendix — Definitions

General

Accident [ACC] — 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.

Aerodrome incident [ADI] — means an incident involving an aircraft operation and—

- (1) an obstruction either on the aerodrome operational area or protruding into the aerodrome obstacle limitation surfaces; or
- (2) a defective visual aid; or
- (3) a defective surface of a manoeuvring area; or
- (4) any other defective aerodrome facility.

Aircraft incident [INC] — means any incident, not otherwise classified, associated with the operation of an aircraft.

Airspace incident [ASP] — 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 [BRD] — 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.

Cargo security incident [CSI] — means an incident involving cargo or mail that is carried, or has been accepted by a regulated air cargo agent or an air operator for carriage, by air on an aircraft conducting an international regular air transport operation passenger service, and—

- (1) there is evidence of tampering or suspected tampering with the cargo or mail which could be an act or an attempted act of unlawful interference; or
- (2) a weapon, explosive, or other dangerous device, article or substance, that may be used to commit an act of unlawful interference is detected in the cargo or mail.

Dangerous goods incident [DGD] — means an incident associated with and related to the carriage of dangerous goods by air after acceptance by the operator, that—

- (1) results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation, or other evidence that the integrity of the packaging has not been maintained; or
- (2) involves dangerous goods incorrectly declared, packaged, labelled, marked, or documented.

Defect incident [DEF] — means an incident that involves failure or malfunction of an aircraft or aircraft component, whether found in flight or on the ground.

Facility malfunction incident [NIO] — means an incident that involves an aeronautical facility.

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. Note: Incident has many sub-categories.

Occurrence — means an accident or incident.

Promulgated information incident [PIO] — means an incident that involves significantly incorrect, inadequate, or misleading information or aeronautical data promulgated in an aeronautical information publication, map, chart, or otherwise provided for the operation of an aircraft.

Security incident [SEC] — means an incident that involves unlawful interference.

Serious Injury — means any injury that is sustained by a person in an accident and that—

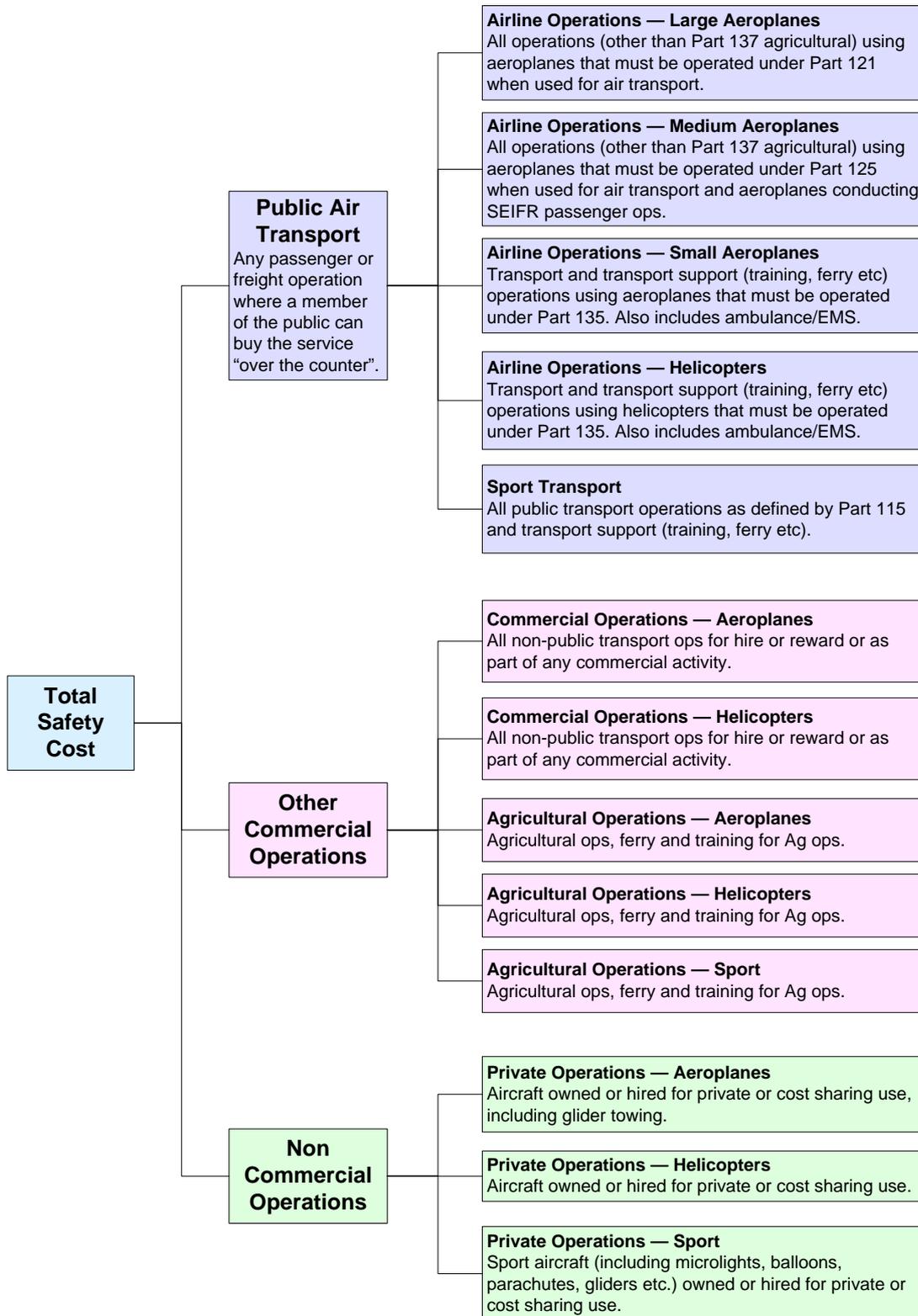
- (1) requires hospitalisation for more than 48 hours, commencing within 7 days from the date the injury was received; or
- (2) results in a fracture of any bone, except simple fractures of fingers, toes, or nose; or
- (3) involves lacerations which cause severe haemorrhage, nerve, muscle, or tendon 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 occurrences and to findings as the result of investigation of occurrences.

Severity Factor		Definition
CR	Critical	An occurrence or deficiency that caused, or on its own had the potential to cause, loss of life or limb;
MA	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;
MI	Minor	An isolated occurrence or deficiency not indicative of a significant system problem.

Safety Target Groups



Target group name	General description	Includes	Excludes
Airline Operation - Large Aeroplanes	All operations using large passenger and freight aeroplanes that are operated under part 121	Ferry, test, training, passenger and freight, domestic and international, Part 91 operations, and commercial operations other than Part 137 agricultural operations. Includes all aeroplanes that have a passenger seating configuration of 30 seats or more, or a payload capacity of more than 3410kg.	Part 137 agricultural operations
Airline Operation - Medium aeroplanes	All operations using medium passenger and freight aeroplanes that are operated under part 125.	Ferry, test, training, passenger and freight, domestic and international, Part 91 operations, and commercial operations other than Part 137 agricultural operations. Aeroplanes that have a seating configuration of 10 to 30 seats, excluding any required crew member seats, or a payload capacity of 3410 kg or less and a MCTOW of greater than 5700 kg, and any aeroplanes conducting SEIFR passenger operations.	Part 137 agricultural operations
Airline Operation - Small aeroplanes	All operations by 119 certificate holders using other aeroplanes.	Ferry, test, passenger and freight, domestic and international, training in support of Part 135 operations, Ambulance/EMS	Part 137 agricultural operations, Part 91 operations, and commercial operations. SEIFR under Part 125
Airline Operation - Helicopters	All operations by 119 certificate holders using helicopters	Ferry, test, passenger and freight, domestic and international, training in support of Part 135 operations, Ambulance/EMS	Part 137 agricultural operations, Part 91 operations, and commercial operations. SEIFR under Part 125
Commercial Operations - Aeroplane	Other commercial operations Aeroplane (all non-public transport ops for hire or reward or as part of any commercial activity)	Positioning, ferrying flights, training (dual and solo), "Commercial non-certified", Business and Executive	Public transport ops, Agricultural ops & training for Agricultural ops, non-commercial ops
Commercial Operations - Helicopter	Other commercial operations Helicopter (all non-public transport ops for hire or reward or as part of any commercial activity)	Positioning, ferrying flights, training (dual and solo), "Commercial non-certified", Business and Executive	Agricultural ops & training for Agricultural ops, public transport, non-commercial ops.
Agricultural Operations - Aeroplane	Agricultural operations using aeroplanes	Agricultural ops, ferry & training for Ag ops.	Everything else.
Agricultural Operations - Helicopters	Agricultural operations using helicopters	Agricultural ops, ferry & training for Ag ops.	Everything else
Agricultural Operations - Sport Aircraft	Agricultural operations using sport aircraft	Agricultural ops, ferry & training for Ag ops.	Everything else
Private Aeroplane	Private operations in aeroplanes	Cost sharing, aircraft hired from schools and clubs for private or cost sharing use, glider towing	Airline, commercial, agricultural operations, sport aircraft, balloons, training (dual and solo)
Private Helicopter	Private operations in helicopters	Cost sharing, aircraft hired from schools and clubs for private or cost sharing use	Airline, commercial, agricultural operations, sport aircraft, balloons, training, ferry/positioning flights by commercial operators
Sport Transport	All public transport ops by sport aircraft	Ferry, test, passenger and freight, domestic and international, training for such ops. And balloons	Agricultural operations.

Target group name	General description	Includes	Excludes
Sport Private	Private operations using sport aircraft	Cost sharing, aircraft hired from schools and clubs for private or cost sharing use, training, gliders, power gliders, hang gliders, parachutes and all forms of inflatable wing, balloons	Airline, commercial, agricultural operations, and training for these activities

Aircraft Categories

Aircraft Statistics Category	Definition	Aircraft Class
Large Aeroplanes	Aeroplanes that must be operated under Part 121 when used for air transport	Aeroplane
Medium Aeroplanes	Aeroplanes that must be operated under Part 125 when used for air transport, except for those required to operate under Part 125 solely due to operating SEIFR	Aeroplane
Small Aeroplanes	Other Aeroplanes with Standard Category Certificates of Airworthiness	Aeroplane
Agricultural Aeroplanes	Aeroplanes with Restricted Category Certificates of Airworthiness limited to agricultural operations	Aeroplane
Helicopters	Helicopters with Standard or Restricted Category Certificates of Airworthiness	Helicopter
Sport Aircraft	All aircraft not included in the groups above	Aeroplane, Amateur Built Aeroplane, Amateur Built Glider, Amateur Built Helicopter, Balloon, Glider, Gyroplane, Helicopter, Microlight Class 1, Microlight Class 2, Power Glider

Significant Events

The following text is taken from the procedure SI - 0.0 Occurrence Management, 0.08 - Occurrence completion:

To facilitate in deciding whether or not your investigation file should be “tagged” as a “Significant Event” here are some occurrences that substantially meet the criteria.

- 2 Occurrences that are investigated by TAIC unless it is known that the TAIC are using the event for their own training purposes and would not otherwise be investigating.
- 2 Critical air transport occurrences resulting in Near Collision (provided one of the aircraft involved is airborne, nearly airborne, or has just landed). In cases where an aircraft is landing or taking off the event would not be significant unless the aircraft’s speed was in excess of 10 kts.
- 2 Critical air transport occurrences resulting in Loss of Control
- 2 Critical air transport occurrences where a Distress or Urgency call was (or should have been) made
- 2 Air transport occurrences where the last in a series of “redundant” systems failed in flight or during take off or landing
- 2 SEIFR air transport occurrences involving loss of engine power to the extent that an unscheduled landing is required
- 2 Fatal accidents
- 2 Occurrences that are relevant to a current (group) of safety concerns. For example in 1999/2000 aircraft electrical wiring was a significant international concern therefore occurrences in the New Zealand fleet of electrical wiring problems may warrant them being tagged as significant.
- 2 Occurrences that are relevant to the current CAA (Business) Safety Plan. For the 1999/2000-year collision with terrain, obstacles, and water; controlled flight into terrain and loss of control in flight were relevant for aircraft with a MCTOW of 5,670 kg and above.
- 2 Engine failure in 2-plus engined air transport aircraft at critical phases of flight or failures of a nature that may have a fleet impact or significantly affect safe operations or are subject to media scrutiny.
- 2 Significant structural or engine failure of a private GA aircraft/helicopter that may have implications for the fleet type, particularly where that type is used for air transport operations.

Serious Events

The following text is taken from the procedure SI - 2.0 Safety Investigation - Appendices, 2.02 Appendix B - Aviation Occurrence Notification Checklist:

“Serious incident” means an incident involving circumstances indicating that an accident nearly occurred. The difference between an accident and serious incident lies only in the result (ICAO Annex 13 definition). The serious incidents listed below are extracted from ICAO Annex 13 attachment D. The list is not exhaustive and only serves as guidance to the definition of serious incident.

- (a) Near collisions requiring an avoidance manoeuvre to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate.
- (b) Controlled flight into terrain only marginally avoided.
- (c) Aborted take-off on a closed or engaged runway.
- (d) Take-off from a closed or engaged runway with marginal separation from obstacle(s).
- (e) Landings or attempted landings on a closed or engaged runway.
- (f) Gross failures to achieve predicated performance during take-off or initial climb.
- (g) Fires and smoke in the passenger compartment, in cargo compartments or engine fires, even though such fires were extinguished by the use of extinguishing agents.
- (h) Events requiring the emergency use of oxygen by the flight crew.
- (i) Aircraft structural failures or engine disintegration’s not classified as an accident.
- (j) Multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft.
- (k) Flight crew incapacitation in flight.
- (l) Fuel quantity requiring the declaration of an emergency by the pilot.
- (m) Take-off or landing incidents. Incidents such as undershooting, overrunning or running off the side of runways.
- (n) System failures, weather phenomena, operations outside the approved flight envelope or other occurrences, which could have caused difficulties controlling the aircraft.
- (o) Failures of more than one system in a redundancy system mandatory for flight guidance and navigation.

Reason Model – Latent Failure Model

CAA identification of occurrence causal factors is based on the Reason Model (latent failure model). Occurrence investigations attempt to assign attributable cause by identifying the generic type of organisation or person involved and the contributing active failures, local

factors, and/or organisation factors. The analysis contained in the Causal Factor Analysis section of this report summarises the results from investigation by reporting the different types of causal factors identified versus occurrence type. It should be noted that occurrence types (e.g. Accident, Defect etc.) are not mutually exclusive (e.g. an accident and a defect may be associated) and hence any causal factor recorded during the investigation will be recorded for all associated occurrence types.

The following two diagrams are designed to show the basic principles of the latent failure model:

Diagram 1

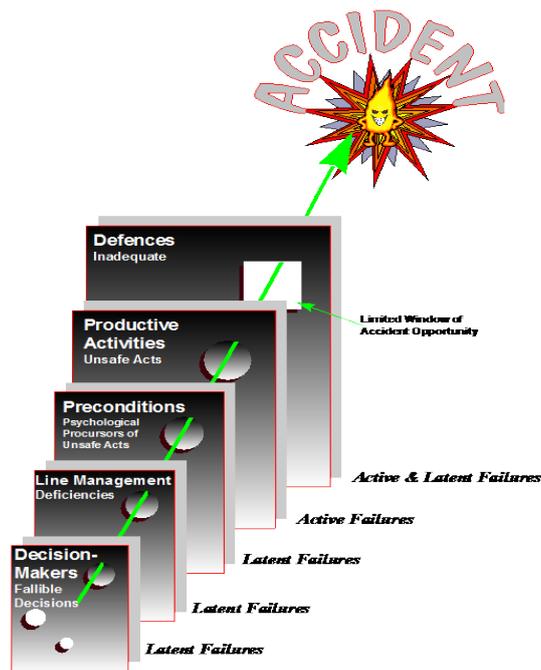


Diagram 1 shows the layers of defences that have been created within the aviation system to prevent accidents and incidents happening. It also shows how these defences have holes in them. When these holes line up there is a window of opportunity for an accident or incident. All that is needed to complete the breach in the defence is an active failure at the operational level. When this happens an accident occurs. When the defences in the system work properly and are only partially breached the end result may be an incident. Incidents are free lessons that should be investigated to show where the holes (latent failures) in the system are. Holes in the system are there all the time and a good pro-active audit program should also help in detecting them.

Diagram 2

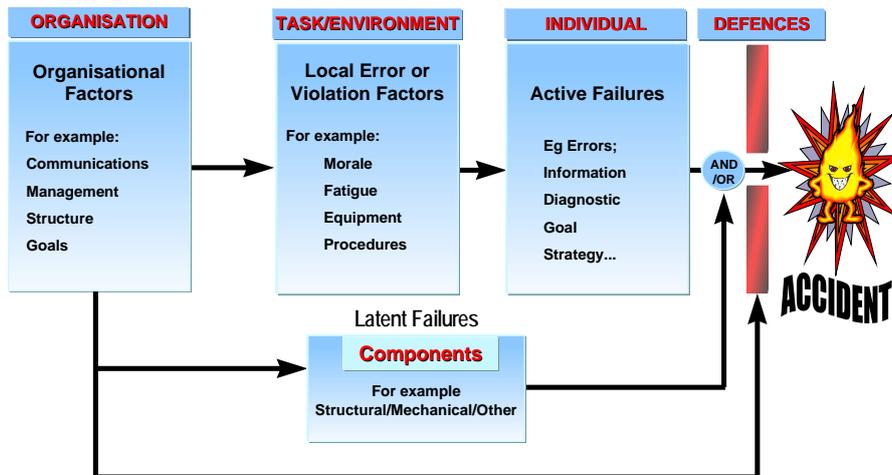


Diagram 2 shows how the latent failures are grouped into 3 areas:

1. The active failures.
2. Task/environment or local factors.
3. Organisational factors.

In basic terms the latent failure model states that an accident is predicated by deficiencies in the management and physical systems responsible for and supporting the particular operation. Management system deficiencies in the responsible organisation(s) can lead to error or violation inducing conditions in the local working environment. The existence of these conditions increases the likelihood of actual errors or violations by personnel which can place an over-reliance on, or expose deficiencies in, final defences.