

Aviation Industry Safety Update

Introduction	2
Occurrence Statistics	2
Industry Activity Statistics	2
Registered Aircraft	2
Licences	2
Certificated Operators	4
Aircraft Movements	5
Long-Term Change in Aircraft Movements	5
Six-Monthly Comparison	5
Air Transport Flights	6
Long-Term Change in Air Transport Flights	7
Six-Monthly Comparison	7
Hours Flown	8
Long-Term Change in Hours Flown	9
Six-Monthly Comparison	9
Industry Size and Shape	10
Occurrence Analysis	11
Aircraft Accidents	11
Occurrence Trend	11
Long-Term Accident Rate	12
Six-Monthly Comparison	12
Safety Outcome Targets for 2010	14
Safety Target Graphs	15
Injury Accidents	19
Six-Monthly Comparison	21
Flight Phase	22
Accident Causal Factors by Aircraft Category	23
Airspace Incidents	26
Occurrence Trend	26
Six-Monthly Comparison	27
Aircraft Incidents	29
Occurrence Trend	29
Six-Monthly Comparison	29
Defect Incidents	31
Occurrence Trend	31
Six-Monthly Comparison	31
Bird Incident Rates	33
12-Month Moving Average Strike Rate per 10,000 Aircraft Movements	33
CAA Actions	34
Analysis	34
Security Incidents	35
Six-Monthly Comparison	35
Aerodrome Incidents	36
Runway Incursions	36
Occurrences — General	37
Appendix — Definitions	38
General	38
Safety Target Groups	41
Aircraft Categories	42

Introduction

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

Data in tables may not sum exactly to the total shown due to rounding.

Occurrence Statistics

The “Three Year Moving Average” graphs in the Occurrence Analysis section give an indication of the levels of safety failure in New Zealand aviation during the period 1 January 2010 to 30 June 2010. They are constructed from data in the Civil Aviation Authority Management Information System, and use actual data reported to the CAA.

Industry Activity Statistics

Registered Aircraft

The following table summarises the number of aircraft on the register by Aircraft Category at 30 June 2010 and 6 months prior:

Aircraft Category	31 Dec 2009		30 Jun 2010		Change	
	Number	Percent	Number	Percent	Number	Percent
Large Aeroplanes	118	2.7	119	2.7	1	0.8
Medium Aeroplanes	84	1.9	85	1.9	1	1.2
Small Aeroplanes	1,510	34.2	1,522	34.2	12	0.8
Agricultural Aeroplanes	110	2.5	109	2.4	- 1	- 0.9
Helicopters	760	17.2	768	17.2	8	1.1
Sport Aircraft	1,833	41.5	1,850	41.5	17	0.9
Total	4,415		4,453		38	0.9

Licences

The following table summarises the number of recreational pilot, private pilot, commercial pilot, airline transport pilot, air traffic controller, and aircraft maintenance engineer licences on the register at 30 June 2010 and 6 months prior:

Licence Type (Medical Certificate)	31 Dec 2009	30 Jun 2010	Change	
			Number	Percent
RPL (RPL Medical)	133	132	- 1	- 0.8
PPL (Class 1 & 2)	3,829	3,757	- 72	- 1.9
CPL (Class 2 only)	1,969	2,066	97	4.9
CPL (Class 1)	2,359	2,344	- 15	- 0.6
ATPL (Class 2 only)	976	913	- 63	- 6.5
ATPL (Class 1)	1,068	1,134	66	6.2
ATCL (Class 3)	363	363	0	0
LAME (N/A)	2,424	2,463	39	1.6
Total Licences	13,121	13,172	51	0.4

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 client may hold more than one licence.

Certificated Operators

The following tables show the number of Civil Aviation Rule Part certificate holders at 30 June 2010 and 6 months prior.

Rule part	31 Dec 2009	30 Jun 2010	Change	
			Number	Percent
Part 109 Regulated Air Cargo Agent	62	63	1	1.6
Part 119 Air Operator	184	185	1	0.5
Part 119 Air Operator - Pacific	1	0	-1	-100.0
Part 129 Foreign Air Operator	38	37	-1	-2.6
Part 137 Agricultural Aircraft Operator	107	108	1	0.9
Part 139 Aerodromes	25	26	1	4.0
Part 140 Aviation Security Service	1	1	0	0
Part 141 Aviation Training Organisation	55	58	3	5.5
Part 141 Restricted Training Organisation	0	0	0	-
Part 145 Aircraft Maintenance Organisation	57	55	-2	-3.5
Part 146 Aircraft Design Organisation	11	13	2	18.2
Part 148 Aircraft Manufacturing Organisation	21	22	1	4.8
Part 149 Aviation Recreation Organisation	9	9	0	0
Part 171 Aeronautical Telecommunication Service Organisation	2	2	0	0
Part 172 Air Traffic Service	2	1	-1	-50.0
Part 173 Instrument Flight Procedure Service Organisation	3	3	0	0
Part 174 Meteorological Service Organisation	2	2	0	0
Part 175 Aeronautical Information Service Organisation	2	2	0	0
Part 19 Supply Organisation Certificate of Approval	59	61	2	3.4
Part 92 Dangerous Goods Packaging Approval	57	56	-1	-1.8

Note: For organisations with Part 92 certificates the figures show the total number of approvals held.

119 Air Operator	31 Dec 2009	30 Jun 2010	Change	
			Number	Percent
Part 108 Security Programme	19	19	0	0
Part 121 Large Aeroplanes	10	10	0	0
Part 125 Medium Aeroplanes	15	15	0	0
Part 135 Helicopters and Small Aeroplanes	173	174	1	0.6

119 Air Operator Pacific	31 Dec 2009	30 Jun 2010	Change	
			Number	Percent
Part 108 Security Programme	1	0	-1	-100.0
Part 121 Large Aeroplanes	1	0	-1	-100.0
Part 125 Medium Aeroplanes	1	0	-1	-100.0
Part 135 Helicopters and Small Aeroplanes	1	0	-1	-100.0

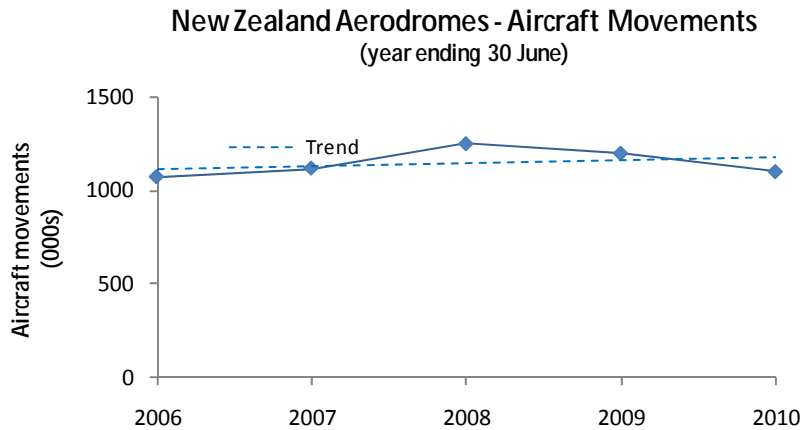
129 Foreign Air Operator	31 Dec 2009	30 Jun 2010	Change	
			Number	Percent
Part 108 Security Programme	28	26	-2	-7.1

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, Queenstown, Rotorua, Taupo, Tauranga, Wellington, Whenuapai and Woodbourne.

Long-Term Change in Aircraft Movements

The following graph shows the annual number of aircraft movements for the five-year period 1 July 2005 to 30 June 2010.



The average annual increase in the number of aircraft movements has been 0.6% from the year ended 30 June 2006 until the year ended 30 June 2010 during which 1,097,110 movements were recorded.

Six-Monthly Comparison

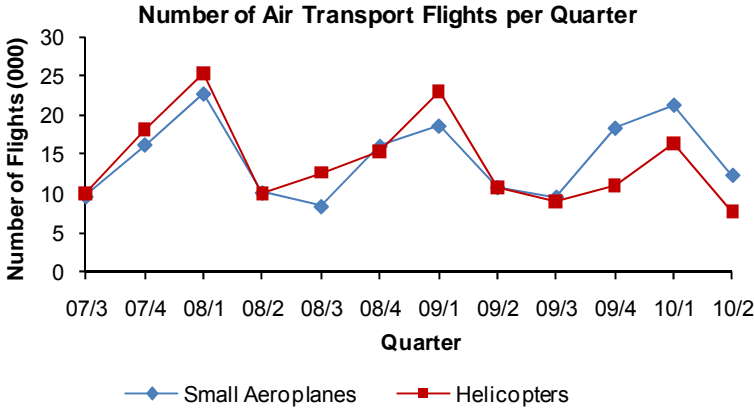
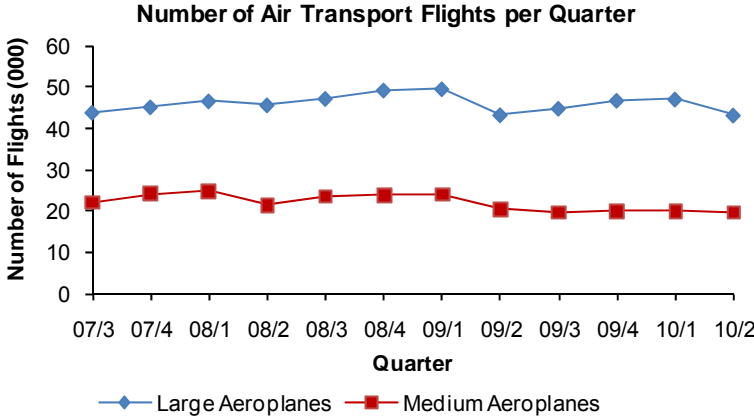
Number of Aircraft Movements

Activity	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change	
			Number	Percent
Aircraft Movements	597,309	544,442	- 52,867	- 8.9

Air Transport Flights

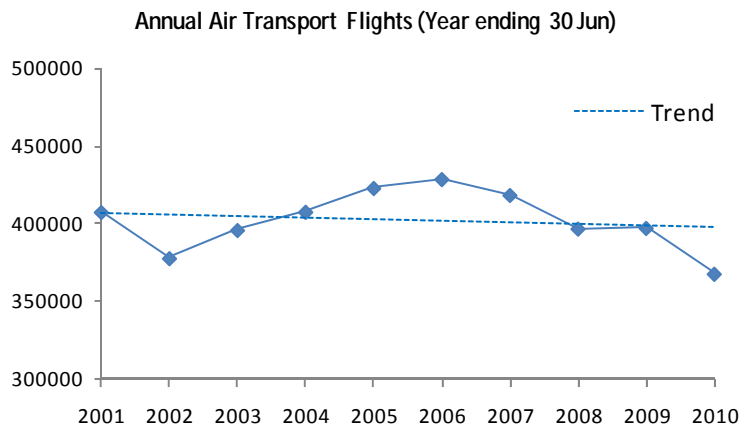
Note that these graphs exclude the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes, and foreign registered aircraft that are operated in New Zealand.

The following graphs show the number of air transport flights per quarter during the three year period 1 July 2007 to 30 June 2010.



Long-Term Change in Air Transport Flights

The following graph shows the number of air transport flights (includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes) for the 10-year period 1 January 2000 to 30 June 2010.



The change in the number of annual air transport flights between the years ended 30 June 2001 and 30 June 2010 was equivalent to an annual decrease of 1.1%.

Six-Monthly Comparison

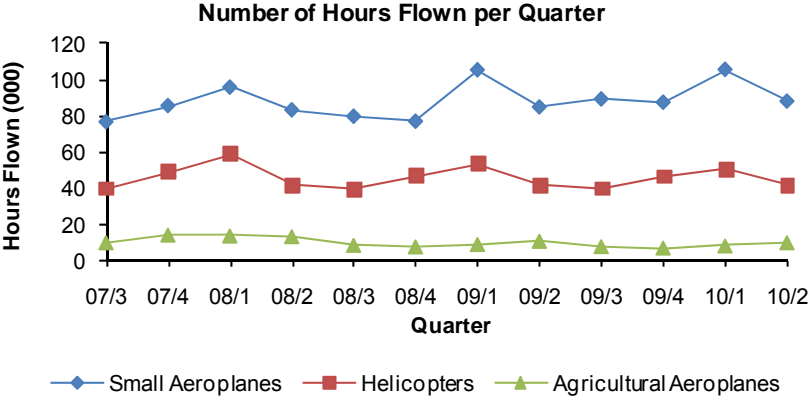
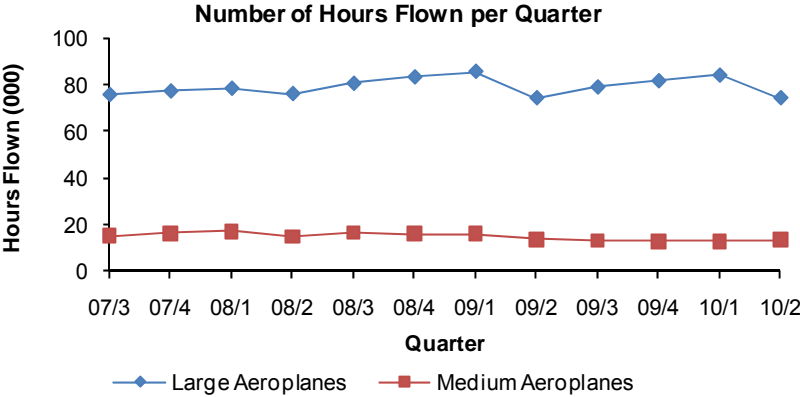
Number of Air Transport Flights

Aircraft Category	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change	
			Number	Percent
Large Aeroplanes	92,881	90,376	- 2,505	- 2.7
Medium Aeroplanes	44,393	39,659	- 4,734	- 10.7
Small Aeroplanes	29,485	33,712	4,227	14.3
Helicopters	33,783	24,141	- 9,642	- 28.5
Sport Aircraft (Aeropl, FB, Helo only)	349	497	148	42.5
Total	200,891	188,385	- 12,506	- 6.2

Hours Flown

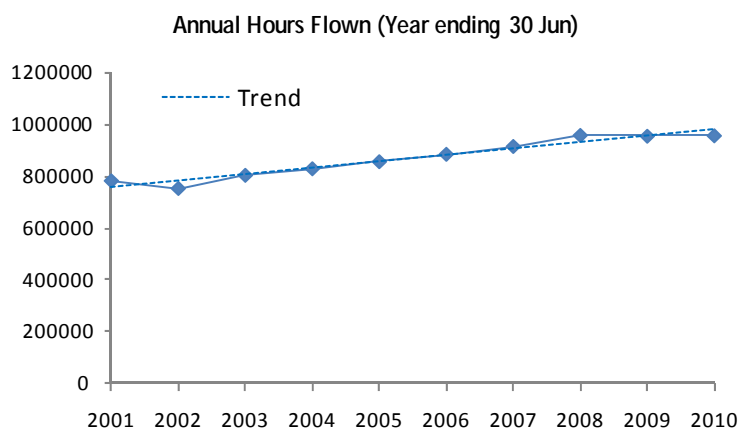
Note that these graphs exclude the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes, and foreign registered aircraft that are operated in New Zealand.

The following graphs show the number of hours flown by aircraft during the three-year period 1 July 2007 to 30 June 2010.



Long-Term Change in Hours Flown

The following graph shows the number of hours flown (includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes) for the 10-year period 1 July 2000 to 30 June 2010.



The change in the number of annual hours flown between the years ended 30 June 2001 and 30 June 2010 from 779,848 to 958,157 was equivalent to an annual increase of 2.3%

Six-Monthly Comparison

Number of Hours Flown by Safety Target Group

Aircraft Category	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change	
			Number	Percent
Airline Operations - Large Aeroplanes	160,205	158,582	- 1,623	- 1.0
Airline Operations - Medium Aeroplanes	29,710	26,291	- 3,420	- 11.5
Airline Operations - Small Aeroplanes	23,734	25,142	1,408	5.9
Airline Operations - Helicopter	30,789	27,963	- 2,826	- 9.2
Sport Transport (Aeropl, FB, Helo only)	861	861	0	0.0
Other Commercial Operations - Aeroplane	146,778	147,362	585	0.4
Other Commercial Operations - Helicopter	30,929	31,739	810	2.6
Agricultural Operations - Aeroplane	17,910	16,873	- 1,037	- 5.8
Agricultural Operations - Helicopter	22,232	21,969	- 263	- 1.2
Agricultural Operations - Sport	0	0	0	-
Private Operations - Aeroplane	21,799	22,605	805	3.7
Private Operations - Helicopter	10,970	10,465	- 505	- 4.6
Private Operations - Sport (Aeropl, FB, Helo only)	1,927	1,623	- 304	- 15.8
Total	497,844	491,475	- 6,369	- 1.3

Industry Size and Shape

The following table shows the size and shape of the aviation industry as determined from Aircraft Operating Statistics in the relevant 2010 Safety Target Group categories for the period 1 July 2009 to 30 June 2010. For each Safety Target Group the total number of hours flown is multiplied by the average number of seats and the appropriate load factor, to give the number of seat hours utilised by the group (person exposure). For Safety Target Groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of seat hours.

Aircraft Category	Average No. Of seats	Seat Hours Offered (000's)	Percent seat hours
Airline Operations - Large Aeroplanes	199.00	46393	96.2
Airline Operations - Medium Aeroplanes	20.59	646	1.3
Airline Operations - Small Aeroplanes	3.89	112	0.2
Airline Operations - Helicopter	3.60	112	0.2
Sport Transport *		122	0.3
Other Commercial Operations - Aeroplane	2.00	282	0.6
Other Commercial Operations - Helicopter	3.60	107	0.2
Agricultural Operations - Aeroplane	2.00	34	0.1
Agricultural Operations - Helicopter	3.60	94	0.2
Agricultural Operations - Sport *			
Private Operations - Aeroplane	2.00	61	0.1
Private Operations - Helicopter	3.60	50	0.1
Private Operations - Sport *		206	0.4

* 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.

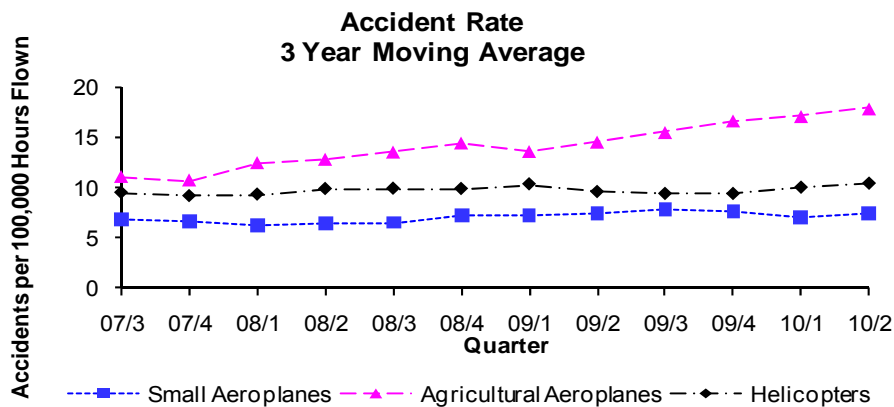
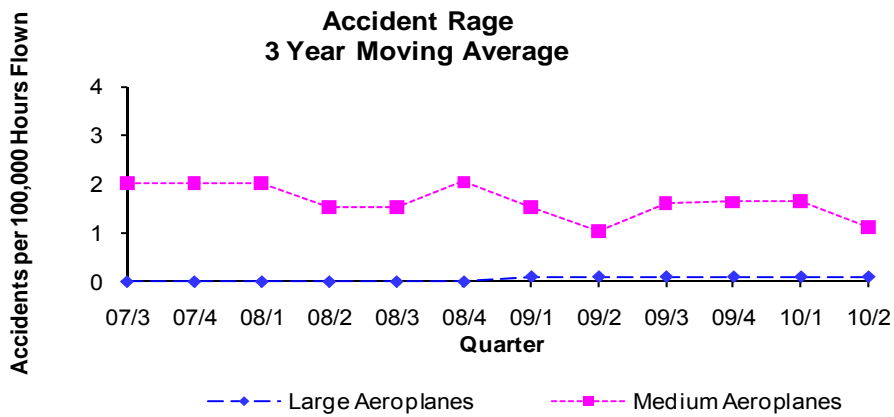
This table shows that approximately 96.2% of seat hours are offered by the Airline Operations – Large Aeroplanes group, around 1.3% by the Airline Operations – Medium Aeroplanes group, with the remaining 2.5% of seat hours offered being split between the other safety target groups.

Occurrence Analysis

Aircraft Accidents

Occurrence Trend

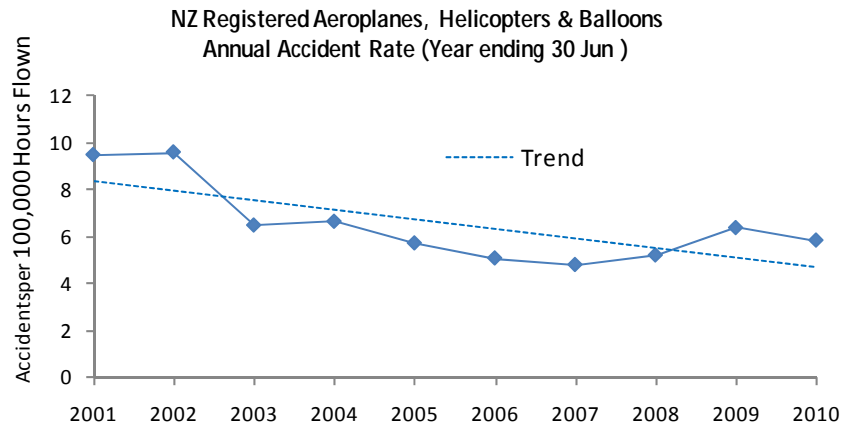
The following graphs show the aircraft accident rates (accidents per 100,000 hours flown) three year moving average for the three-year period 1 July 2007 to 30 June 2010 (excluding the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes).



Aircraft Category	Straight Line Trend of 3 year moving Average
Large Aeroplanes	Trending up
Medium Aeroplanes	Trending down
Small Aeroplanes	Constant
Agricultural Aeroplanes	Trending up
Helicopters	Constant

Long-Term Accident Rate

The following graph shows the overall accident rate per 100,000 hours flown (includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes) for the 10-year period 1 July 2000 to 30 June 2010.



Note that this graph does not show a moving average.

Six-Monthly Comparison

Number of Aircraft Accidents

Activity	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change
Large Aeroplanes	1	0	- 1
Medium Aeroplanes	0	0	0
Small Aeroplanes	13	11	- 2
Agricultural Aeroplanes	1	3	2
Helicopters	7	11	4
Sport Aircraft (excluding hang gliders and parachutes)	17	15	- 2
Hang Gliders	14	14	0
Parachutes	4	3	- 1
Unknown	0	1	1
Total	57	58	1

Severity

Activity	Severity	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change
Large Aeroplanes	Critical	0	0	0
	Major	0	0	0
	Minor	1	0	- 1
Medium Aeroplanes	Critical	0	0	0
	Major	0	0	0
	Minor	0	0	0
Small Aeroplanes	Critical	2	2	0
	Major	7	8	1
	Minor	4	1	- 3
Agricultural Aeroplanes	Critical	0	2	2
	Major	1	1	0
	Minor	0	0	0
Helicopters	Critical	2	4	2
	Major	5	7	2
	Minor	0	0	0
Sport Aircraft (excluding hang gliders and parachutes)	Critical	5	7	2
	Major	10	7	- 3
	Minor	2	1	- 1
Hang Gliders	Critical	4	2	- 2
	Major	5	3	- 2
	Minor	5	9	4
Parachutes	Critical	0	2	2
	Major	3	1	- 2
	Minor	1	0	- 1
Unknown	Critical	0	0	0
	Major	0	1	1
	Minor	0	0	0
Total	Critical	13	19	6
	Major	31	28	- 3
	Minor	13	11	- 2

Safety Outcome Targets for 2010

Each [Safety Outcome Target Group](#) has its own target level expressed as social cost per unit of passenger exposure, the unit being per 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 outcomes represent the maximum level of social cost considered acceptable for each group.

The table below shows the Safety Outcomes (in dollars per seat-hour) for the three year period ending 30 June 2010 (including the cost of aircraft destroyed). Target groups highlighted in yellow are groups where major safety improvements need to be achieved. Red outlining has been used to draw attention to groups with significant recent safety failure.

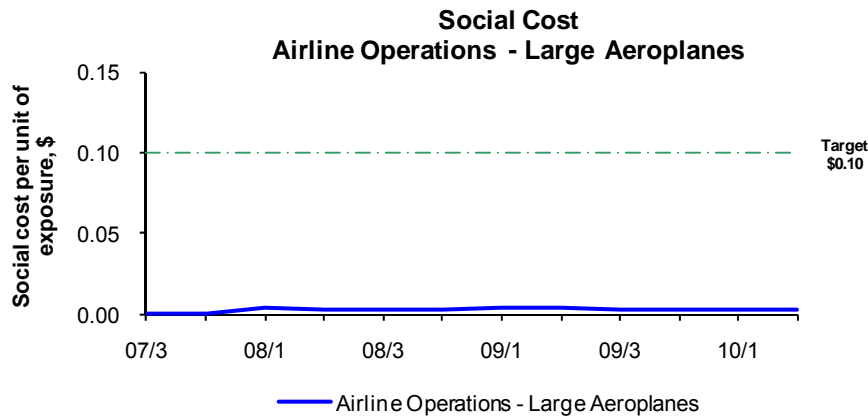
Safety Outcome Target Group	Current Estimate \$	Target \$
Airline Operations - Large Aeroplanes	0.00	0.1
Airline Operations - Medium Aeroplanes	0.02	0.1
Airline Operations - Small Aeroplanes	2.27	6.5
Airline Operations - Helicopter	9.21	6.5
Sport Transport	59.24	13.0
Other Commercial Operations - Aeroplane	25.41	6.5
Other Commercial Operations - Helicopter	36.68	6.5
Agricultural Operations - Aeroplane	96.31	14.0
Agricultural Operations - Helicopter	8.64	14.0
Agricultural Operations - Sport Aircraft	0.00	28.0
Private Operations - Aeroplane	49.71	10.0
Private Operations - Helicopter	39.53	10.0
Private Operations - Sport	96.45	20.0

Current Estimate:

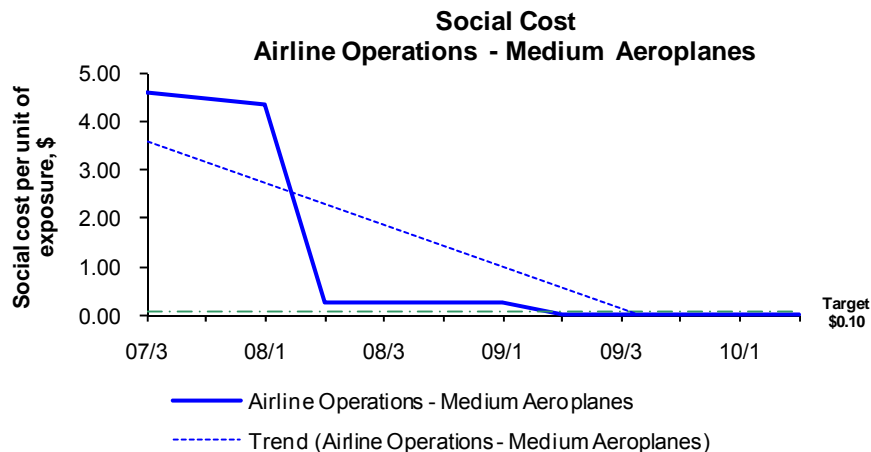
This is the estimated social cost of injuries and aircraft destroyed per seat hour for the three year period ending 30 June 2010. Note: Aviation Safety reports prior to July to December 2008 used a 10 year averaging period for large and medium aeroplanes and a one year period for all others.

Safety Target Graphs

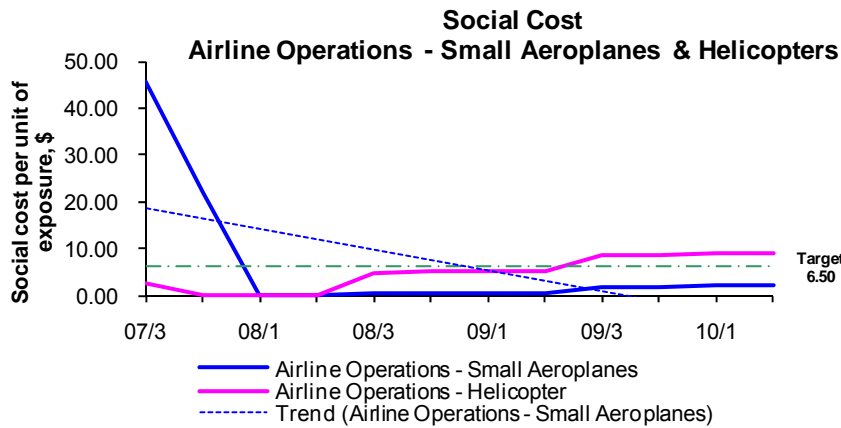
Graphs displaying the Safety Outcome Targets derived using 3 year averages and the progress over each quarter are shown on this and the following pages.



The outcome for Airline Operations – Large Aeroplanes has remained well below the target level of \$0.10 per seat hour of exposure since late 2006. There is no discernible trend either up or down. There were 1 serious and 6 minor injuries reported in this group during the period July 2007 to June 2010.

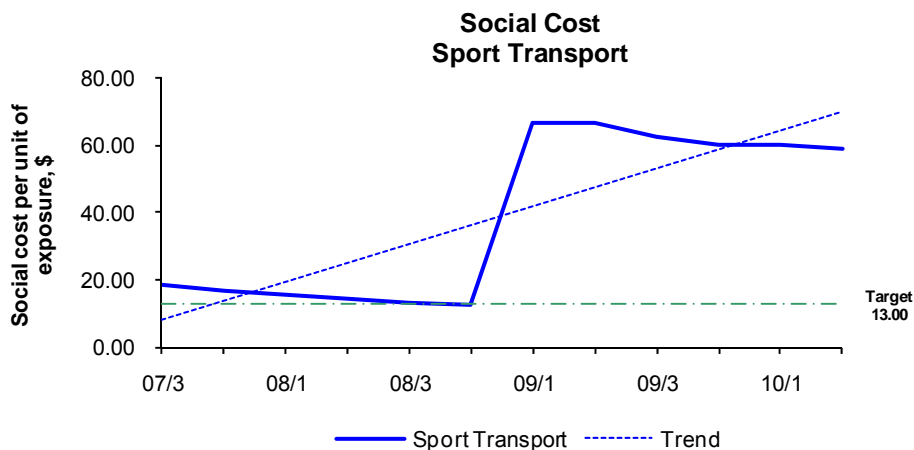


The outcome for Airline Operations – Medium Aeroplanes has now dropped below the target and is trending down. There were 3 minor injuries reported in this group during the period July 2007 to June 2010.



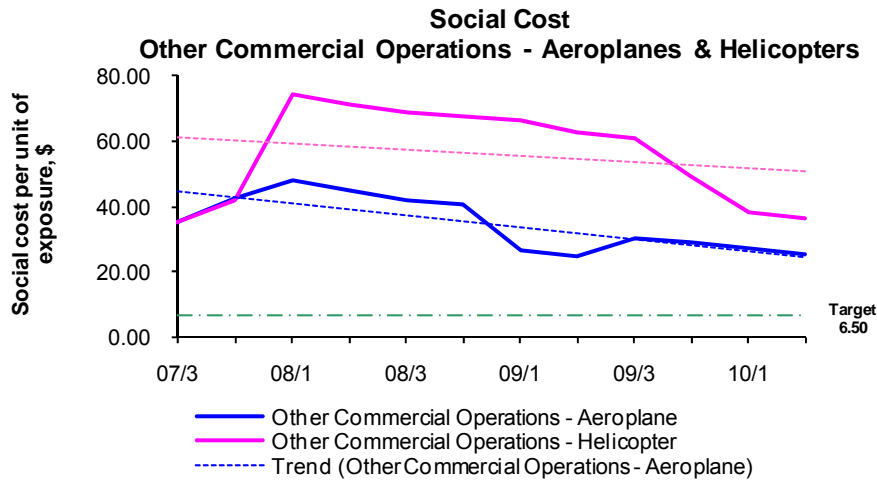
The outcome for Airline Operations – Small Aeroplanes shows a significant long term downward trend from the high starting point of \$45.64 per seat-hour of exposure in the three years to September 2007. The safety outcome for this group has been below the target level since the January to March 2008 quarter. There were 1 serious and 3 minor injuries reported in this group during the period July 2007 to June 2010.

The outcome for Airline Operations – Helicopter recently exceeded the target level which it had been below since the second quarter of 2006. A small upward trend is evident. There were 2 serious and 4 minor injuries reported in this group during the period July 2007 to June 2010.



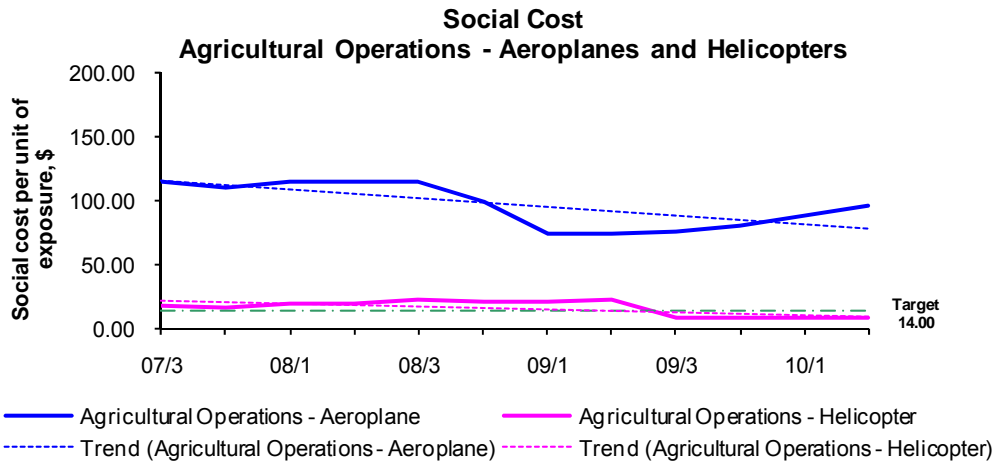
Two hang glider, two microlight and one glider fatalities during the first quarter of 2009 contributed to a significant increase in the upward trend displayed by this group. There were 5 fatal, 10 serious and 10 minor injuries reported in this group during the period July 2007 to June 2010.

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



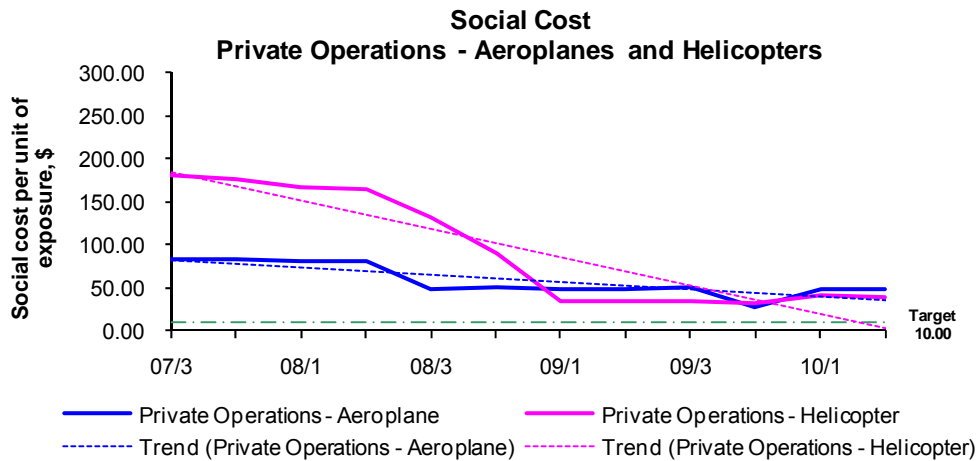
The outcome for Other Commercial Operations – Aeroplane remains above the target of \$6.50. There is a small steady downward trend. There were 5 fatal, 3 serious and 2 minor injuries reported in this group during the period July 2007 to June 2010.

The outcome for Other Commercial Operations – Helicopter turned sharply upwards during the first quarter of 2008 and remains well above the target level. There were 2 fatal, 1 serious and 3 minor injuries reported in this group during the period July 2007 to June 2010.



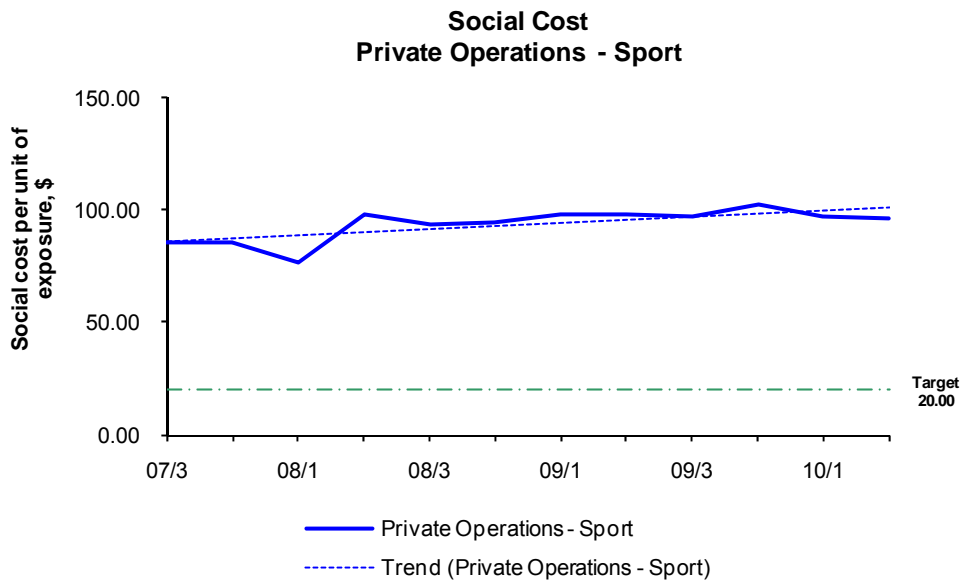
The outcome for Agricultural Operations – Aeroplanes is well above the target level of \$14.00. There were 2 fatal, 2 serious and 2 minor injuries reported in this group during the period July 2007 to June 2010.

The outcome for Agricultural Operations – Helicopter is below the target level. There were 1 serious and 2 minor injuries reported in this group during the period July 2007 to June 2010.



The outcome for Private Operations – Aeroplanes has been slowly trending down since late 2005. There were 2 fatal, 3 serious and 3 minor injuries reported in this group during the period July 2007 to June 2010.

The outcome for Private Operations – Helicopters has been trending down since early 2006. There were 1 fatal and 7 minor injuries reported in this group during the period July 2007 to June 2010.

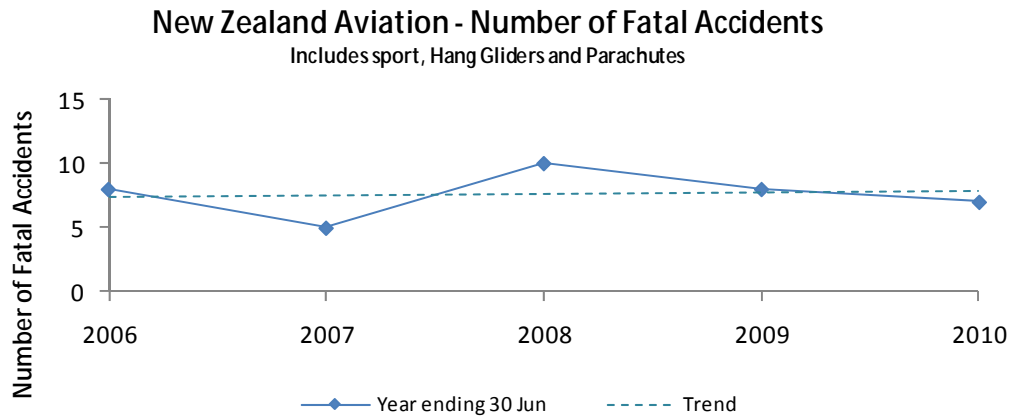


The outcome for Private Operations – Sport is trending gradually upwards. There were 14 fatal, 22 serious and 28 minor injuries reported in this group during the period July 2007 to June 2010.

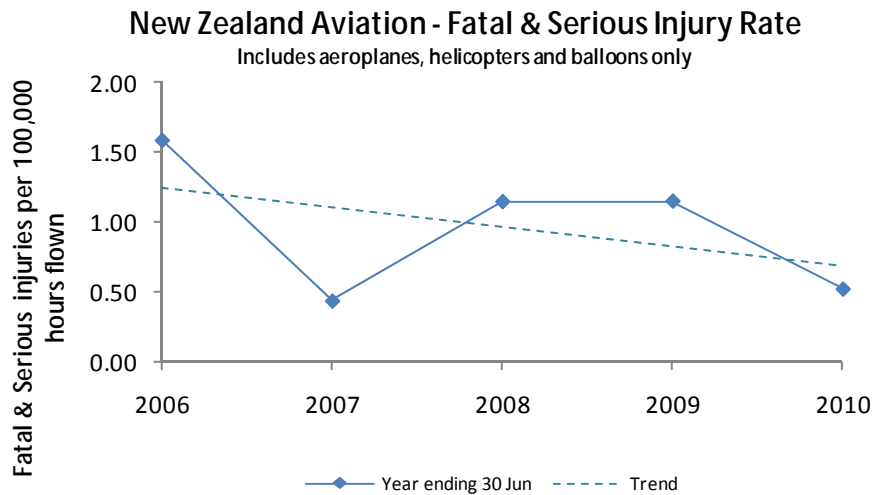
Note that this group includes hang gliders and parachutes used on private operations.

Injury Accidents

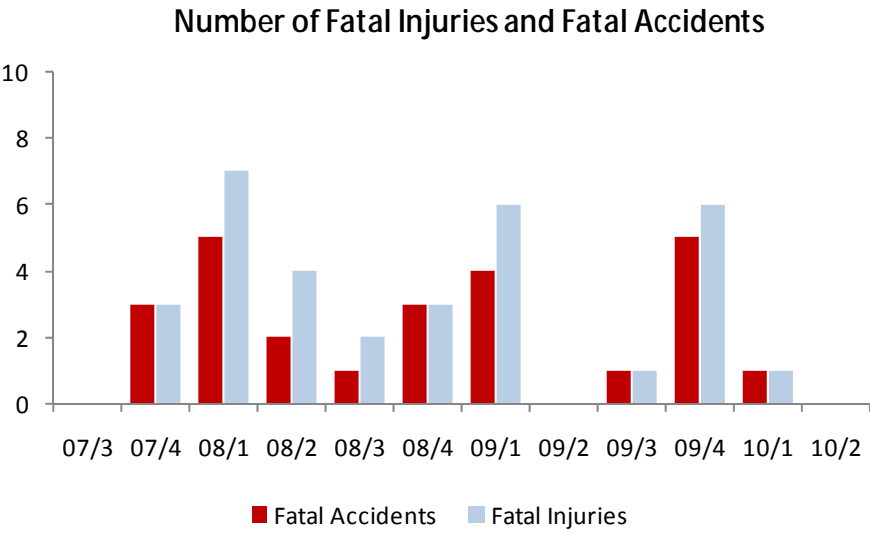
The following graph shows the number of fatal accidents in the 5-year period to 30 June 2010 (including the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes).



The following graph shows the overall fatal and serious injury rate per 100,000 hours flown (includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes) for the 5-year period to 30 June 2010.



The following graph shows the number of fatal injuries and fatal accidents (including the aircraft statistics categories Sport Aircraft, Hang Gliders and Parachutes) for the three-year period to 30 June 2010.



The long-term trend of the number of fatal accidents is slightly upward. The long-term trend of the number of fatal and serious injuries is downward.

Six-Monthly Comparison

Number of Fatal Accidents and Number of Fatal Injuries

Activity	1 Jan to 30 Jun 2009		1 Jan to 30 Jun 2010		Change	
	Fatal Accidents	Fatal Injuries	Fatal Accidents	Fatal Injuries	Fatal Accidents	Fatal Injuries
Large Aeroplanes	0	0	0	0	0	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	0	0	1	1	1	1
Agricultural Aeroplanes	0	0	0	0	0	0
Helicopters	0	0	0	0	0	0
Sport Aircraft	3	4	0	0	-3	-4
Hang Gliders	1	2	0	0	-1	-2
Parachutes	0	0	0	0	0	0
Unknown	0	0	0	0	0	0
Total	4	6	1	1	-3	-5

Number of Serious Injuries

Activity	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	0	0	0
Agricultural Aeroplanes	0	1	1
Helicopters	1	0	-1
Sport Aircraft	4	0	-4
Hang Gliders	3	4	1
Parachutes	3	2	-1
Unknown	0	0	0
Total	11	7	-4

Number of Minor Injuries

Activity	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change
Large Aeroplanes	0	0	0
Medium Aeroplanes	0	0	0
Small Aeroplanes	0	0	0
Agricultural Aeroplanes	0	1	1
Helicopters	1	2	1
Sport Aircraft	3	8	5
Hang Gliders	2	6	4
Parachutes	0	1	1
Unknown	0	0	0
Total	6	18	12

Flight Phase

The following table shows the flight phase recorded for accidents.

Flight Phase	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change
Agricultural manoeuvres	1	2	1
Approach	2	3	1
Climb	3	2	- 1
Cruise	4	1	- 3
Descent	3	2	- 1
Hover	1	4	3
Landing	17	28	11
Parked	1	2	1
Takeoff	14	8	- 6
Taxiing	4	2	- 2
Unknown	2	1	- 1
Total	52	55	3

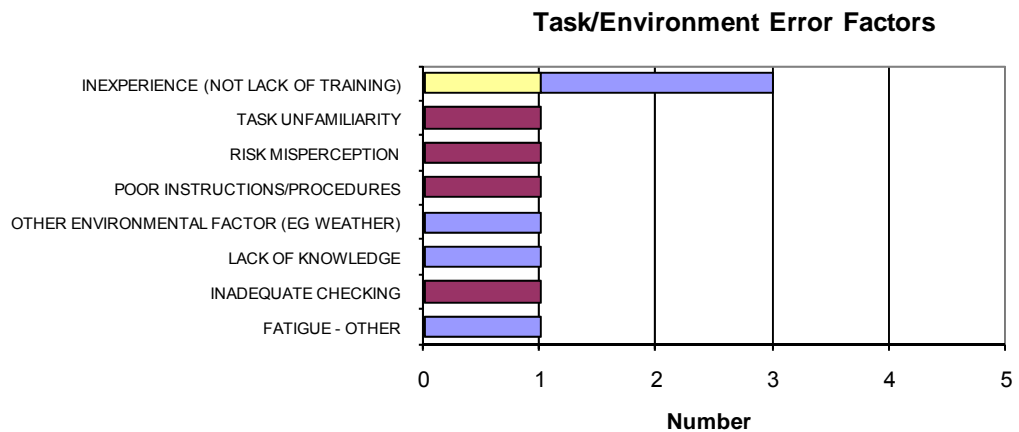
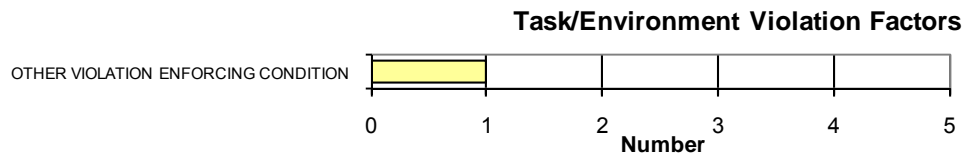
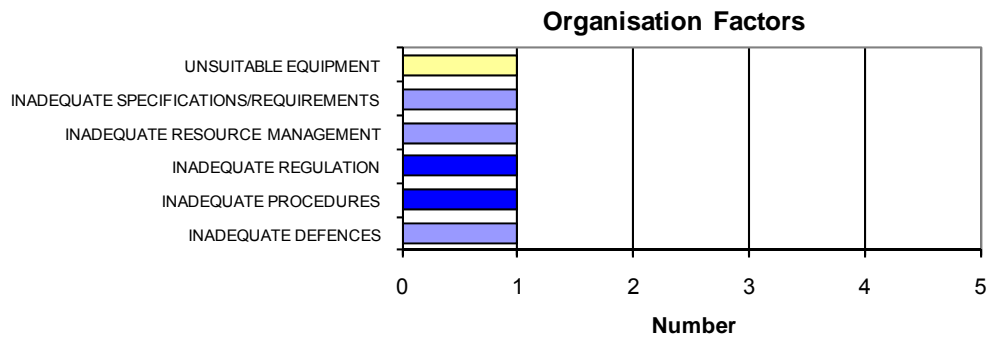
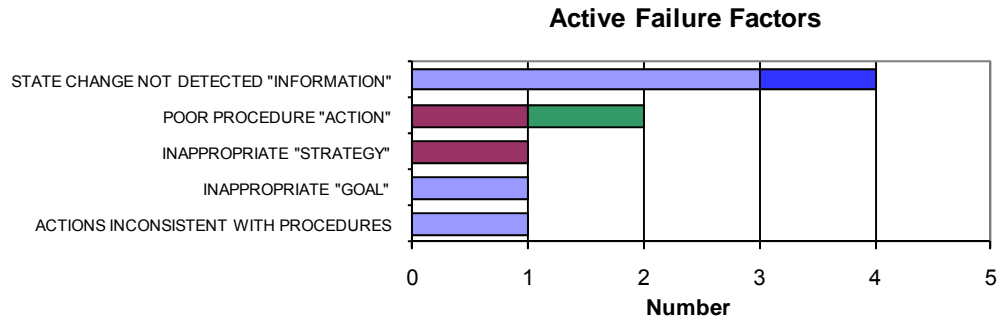
Accidents in the period 1 January to 30 June 2010 were most common during the Landing phase (51%).

Analysis of recorded occurrence descriptors for Landing phase accidents in the 1 January to 30 June 2010 period shows that the most common descriptor is 'Hard Landing' (23%).

Analysis of recorded causes for Landing phase accidents shows that the most common causes are Active Failure – Inappropriate "Strategy" (14%) and Active Failure – State Change not Detected "Information" (14%).

Accident Causal Factors by Aircraft Category

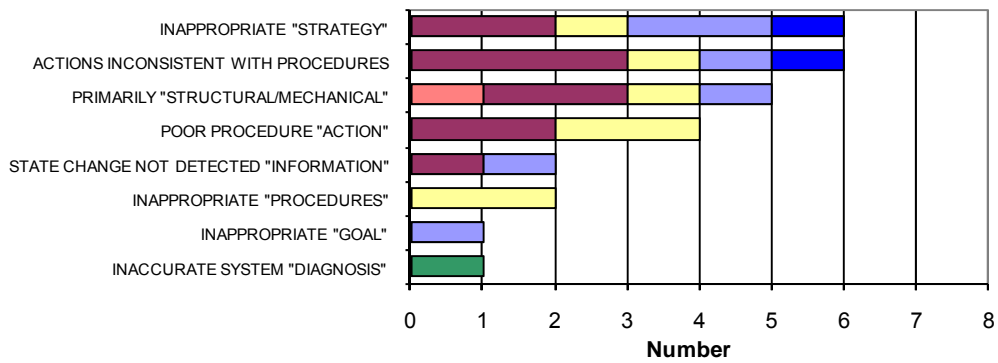
The following graphs show the number of causal factors recorded for accidents that occurred during the 6-month period 1 January to 30 June 2009 for the various aircraft statistics categories. Causal factors have been assigned to 19 (33%) of the 57 accidents.



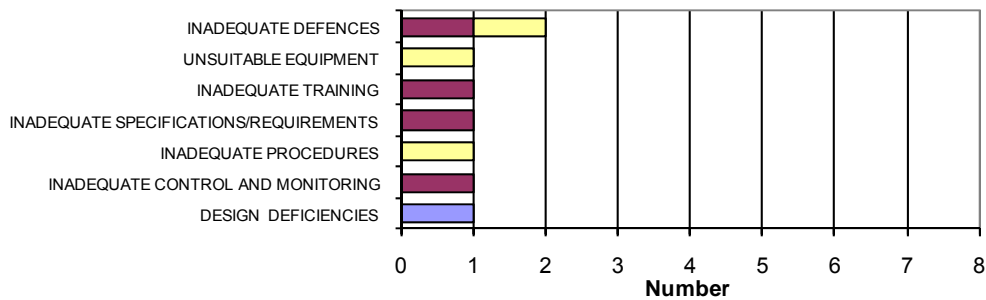
- Large Aeroplanes
- Medium Aeroplanes
- Small Aeroplanes
- Agricultural Aeroplanes
- Helicopters
- Sport Aircraft
- Hang Gliders and Parachutes

The following graphs show the number of causal factors recorded for accidents that occurred during the 6-month period 1 July to 31 December 2009 for the various aircraft statistics categories. Causal factors have been assigned to 41 (66%) of the 62 accidents.

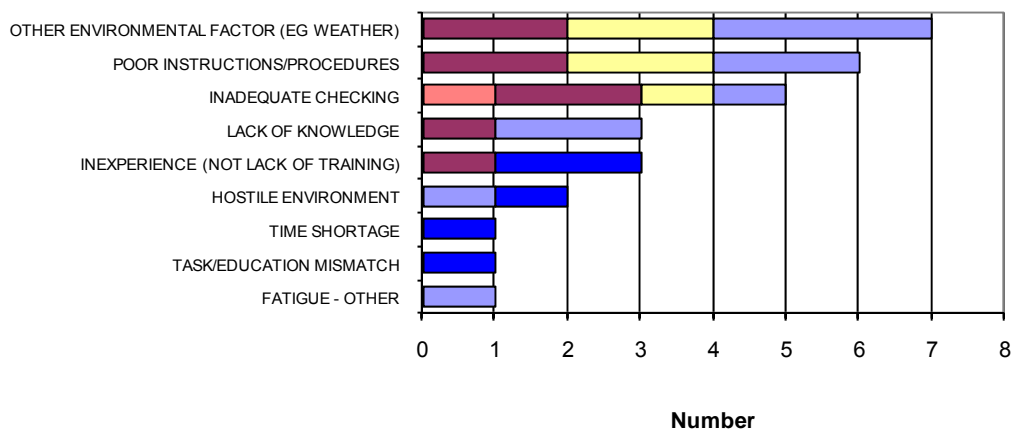
Active Failure Factors



Organisation Factors

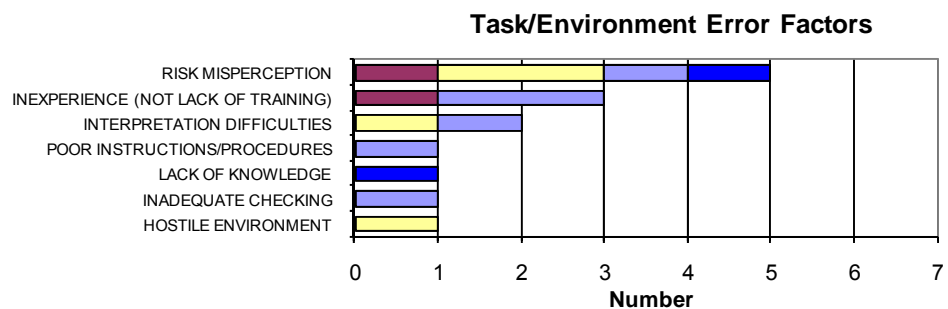
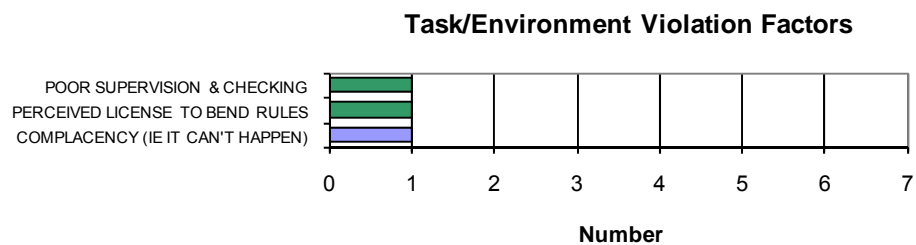
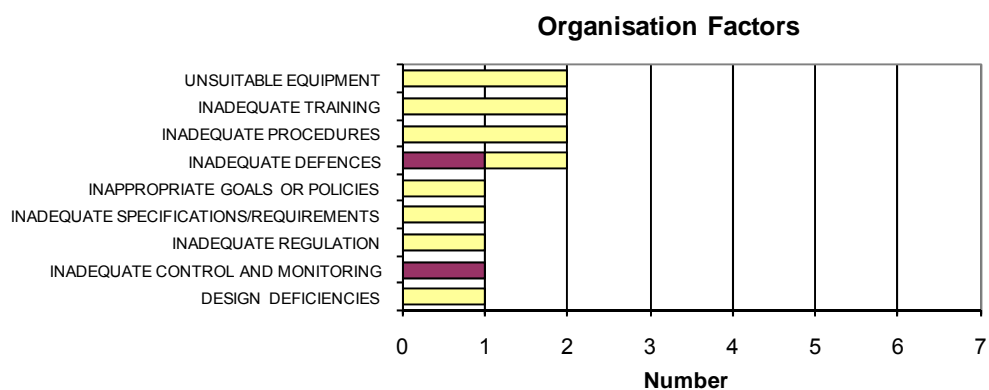
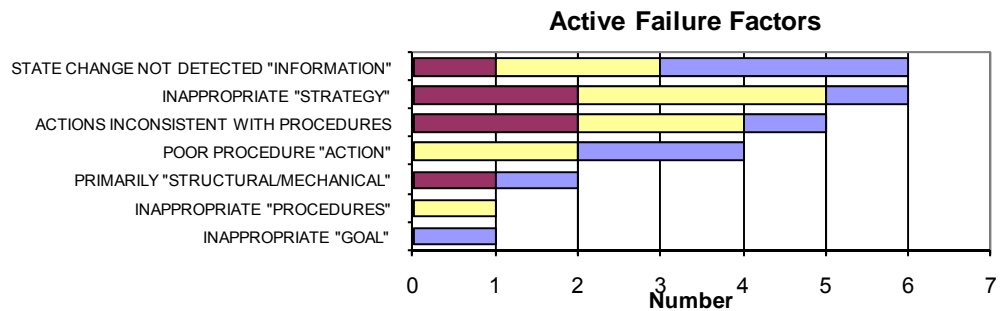


Task/Environment Error Factors



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

The following graphs show the number of causal factors recorded for accidents that occurred during the 6-month period 1 January to 30 June 2010 for the various aircraft statistics categories. Causal factors have been assigned to 30 (52%) of the 58 accidents.

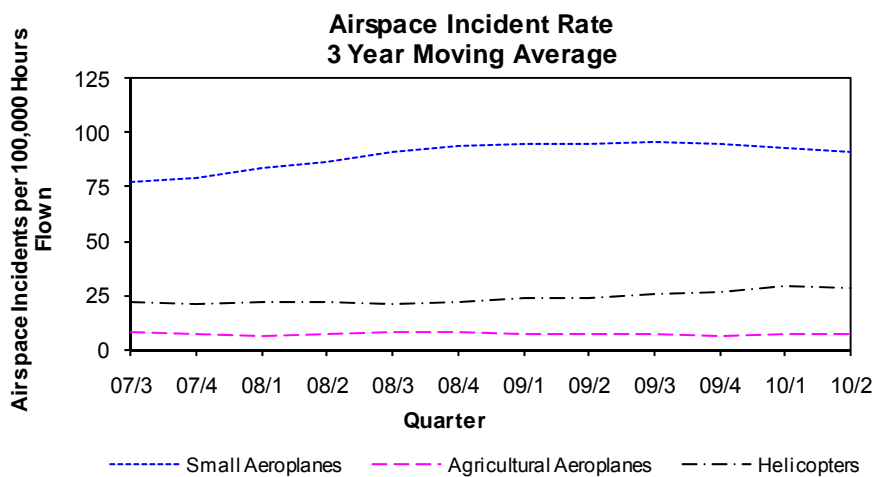
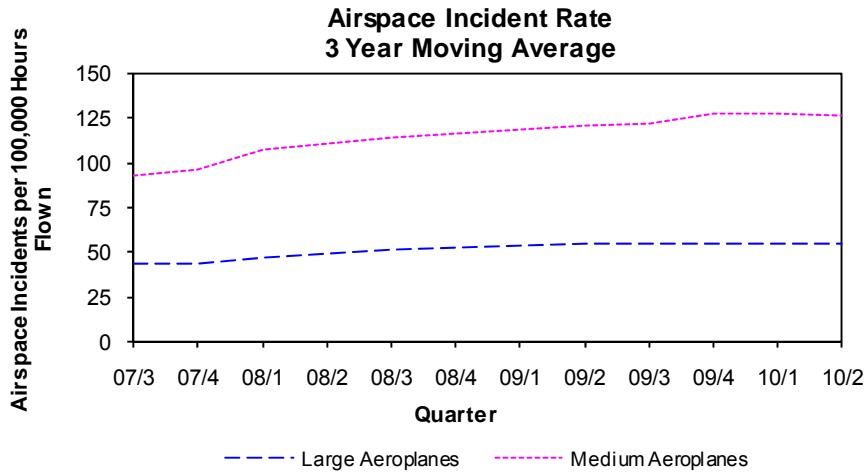


Large Aeroplanes
 Medium Aeroplanes
 Small Aeroplanes
 Agricultural Aeroplanes
 Helicopters
 Sport Aircraft

Airspace Incidents

Occurrence Trend

The following graphs show the reported airspace incident rates (incidents per 100,000 hours flown) three year moving average for the three-year period 1 July 2007 to 30 June 2010 (excluding the Sport Aircraft category). The graphs do not differentiate between incidents that are pilot or ATS attributable.



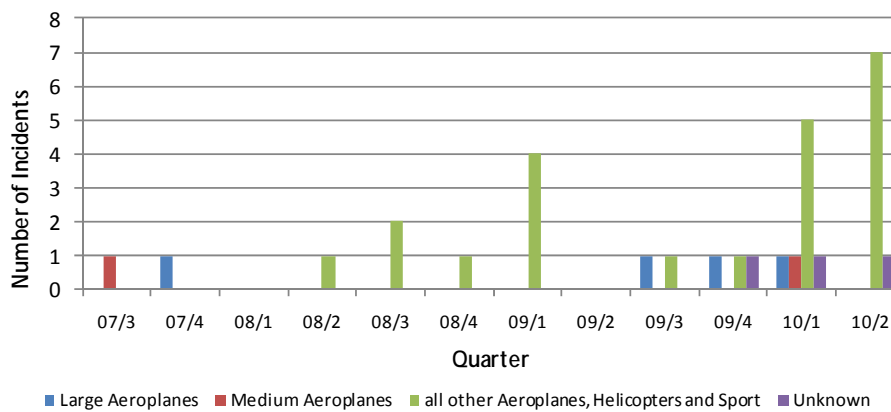
Aircraft Category	Straight line trend of 3 Year moving average
Large Aeroplanes	Trending up
Medium Aeroplanes	Trending up
Small Aeroplanes	Constant
Agricultural Aeroplanes	Constant
Helicopters	Trending up

Six-Monthly Comparison

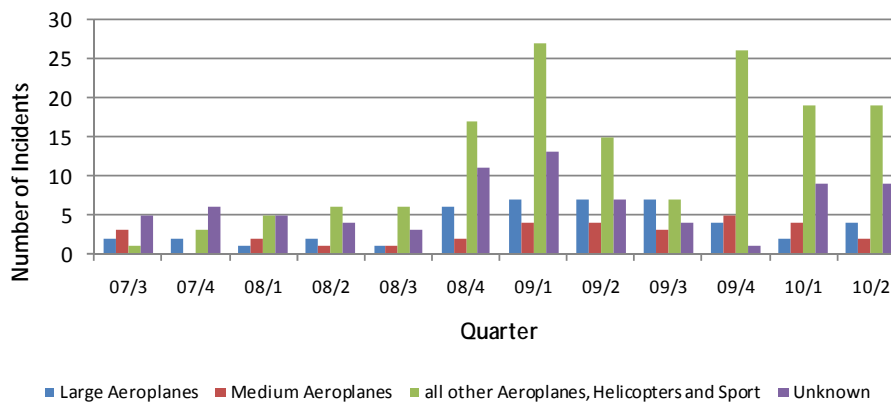
Number of Reported Airspace Incidents

Aircraft Category	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change	
			Number	Percent
Large Aeroplanes	93	78	- 15	- 16.1
Medium Aeroplanes	40	32	- 8	- 20.0
Small Aeroplanes	162	132	- 30	- 18.5
Agricultural Aeroplanes	0	1	1	-
Helicopters	27	32	5	18.5
Sport Aircraft	29	24	- 5	- 17.2
Unknown	124	125	1	0.8
Total	475	424	- 51	- 10.7

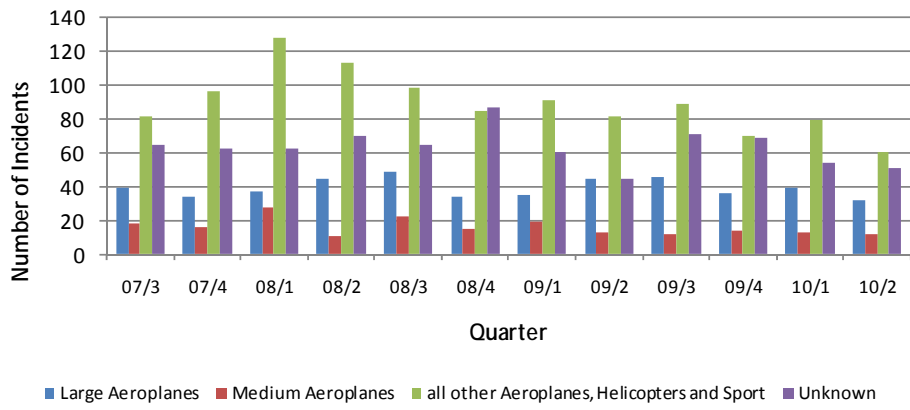
Critical Airspace Incidents by Aircraft Type



Major Airspace Incidents by Aircraft Type



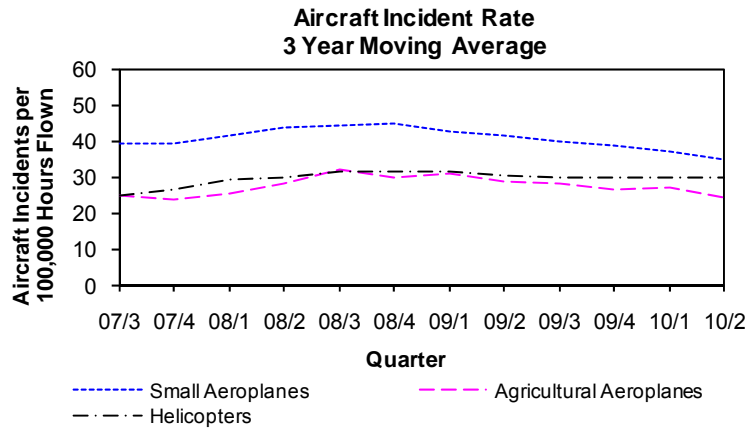
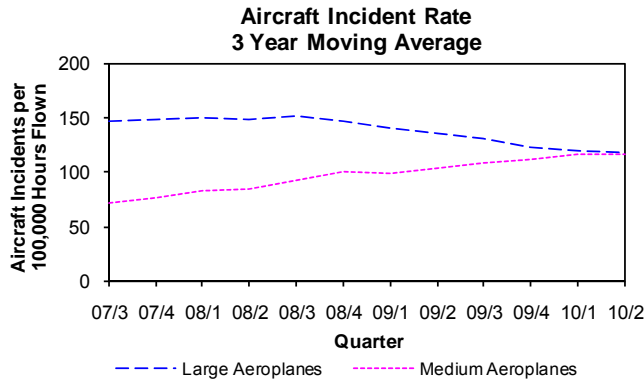
Minor Airspace Incidents by Aircraft Type



Aircraft Incidents

Occurrence Trend

The following graphs show the reported aircraft incident rates (incidents per 100,000 hours flown) three year moving average for the three-year period 1 July 2007 to 30 June 2010 (excluding Sport).



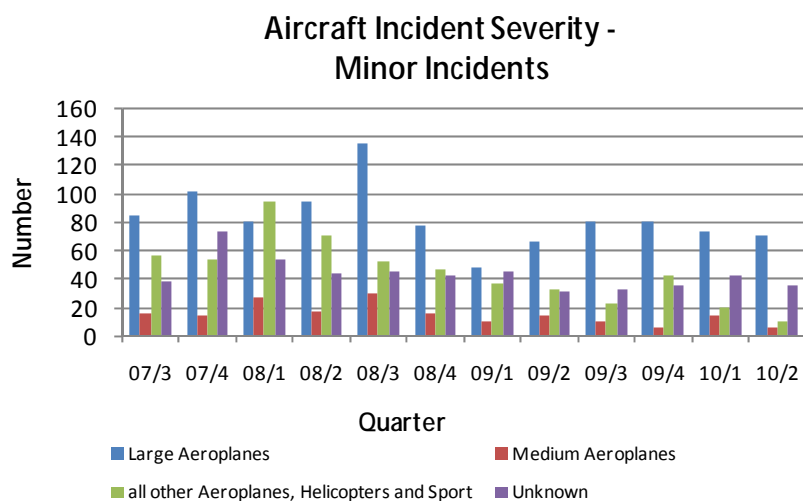
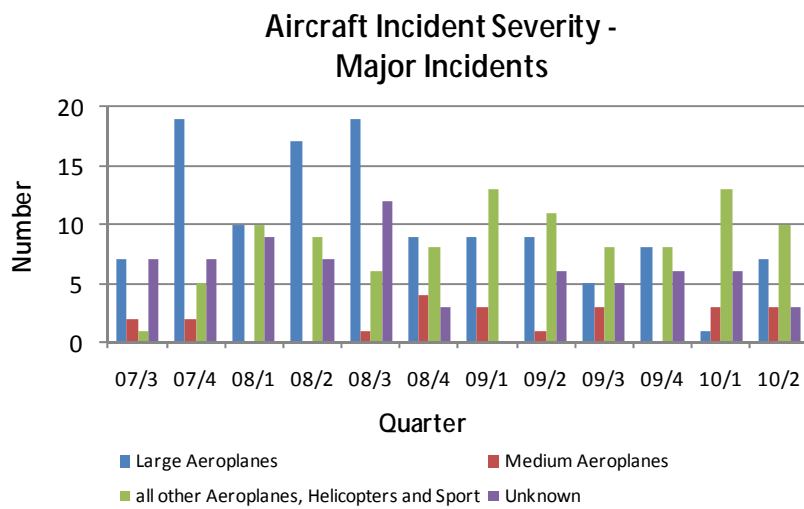
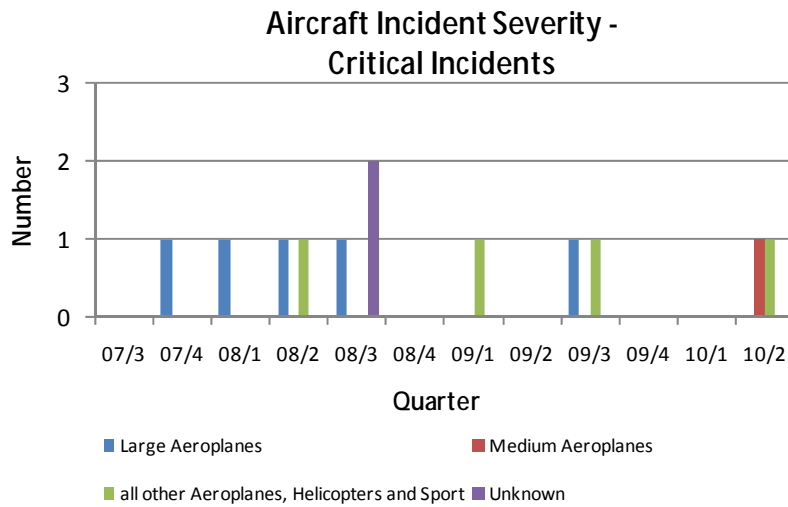
Aircraft Category	Straight line trend of 3 year moving average
Large Aeroplanes	Trending down
Medium Aeroplanes	Trending up
Small Aeroplanes	Constant
Agricultural Aeroplanes	Constant
Helicopters	Constant

Six-Monthly Comparison

Number of Reported Aircraft Incidents

Aircraft Category	1 Jan to 30 Jun 2009	1 Jan to 30 Jun 2010	Change	
			Number	Percent
Large Aeroplanes	133	152	19	14.3
Medium Aeroplanes	29	27	-2	- 6.9
Small Aeroplanes	55	26	-29	- 52.7
Agricultural Aeroplanes	2	2	0	
Helicopters	23	18	-5	- 21.7
Sport Aircraft	15	8	-7	- 46.7
Unknown	84	86	2	2.4
Total	341	319	-22	- 6.5

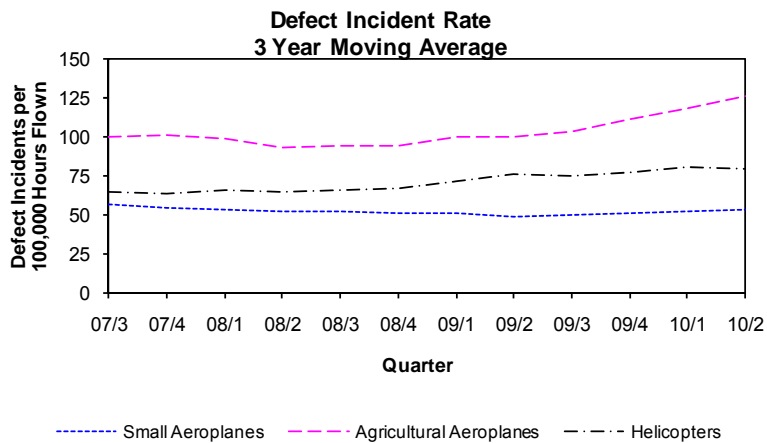
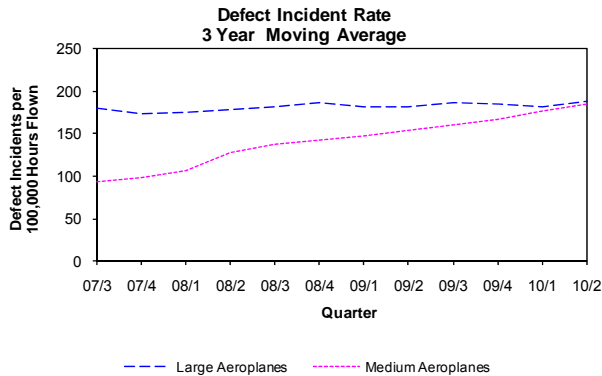
The following graphs show the severity of reported aircraft incidents recorded over the period 1 July 2007 to 30 June 2010 broken down by aircraft type.



Defect Incidents

Occurrence Trend

The following graphs show the aircraft defect incident rates (incidents per 100,000 hours flown) three year moving average for the three-year period 1 July 2007 to 30 June 2010 (excluding Sport).



Aircraft Category	Straight line trend of 3 year moving average
Large Aeroplanes	Constant
Medium Aeroplanes	Trending up
Small Aeroplanes	Constant
Agricultural Aeroplanes	Trending up
Helicopters	Trending up

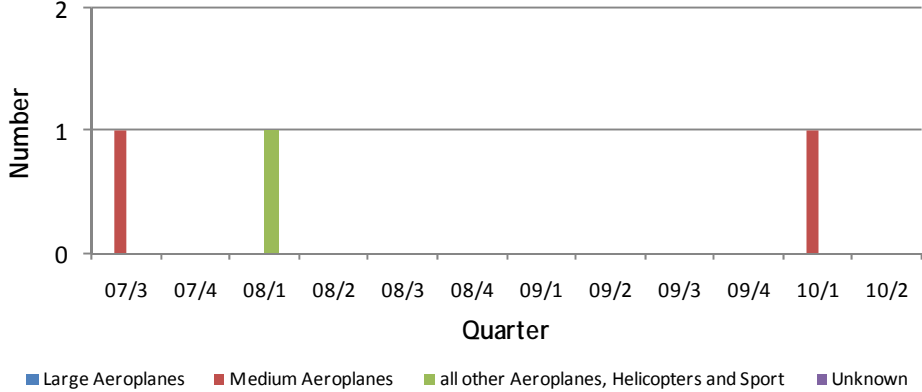
Six-Monthly Comparison

Number of Defect Incidents

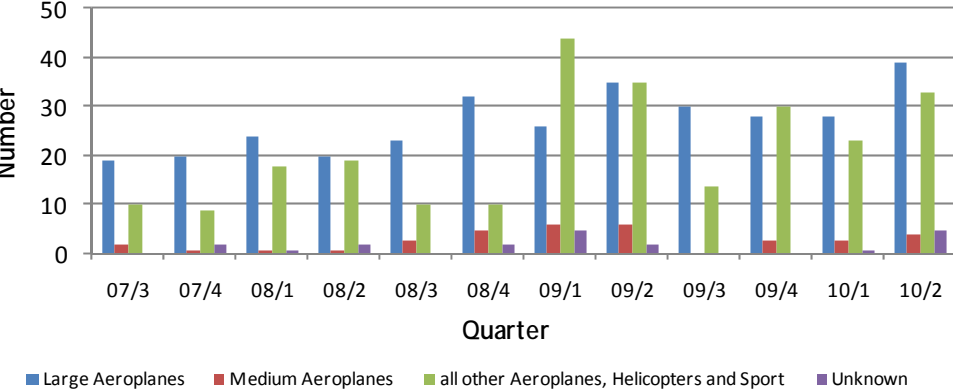
Aircraft Category	1 Jan to	1 Jan to	Change	
	30 Jun 2009	30 Jun 2010	Number	Percent
Large Aeroplanes	309	306	-3	- 1.0
Medium Aeroplanes	50	46	-4	- 8.0
Small Aeroplanes	105	135	30	28.6
Agricultural Aeroplanes	25	27	2	8.0
Helicopters	98	84	-14	- 14.3
Sport Aircraft	8	19	11	137.5
Unknown	17	31	14	82.4
Total	612	648	36	5.9

The following graphs show the severity of defect incidents recorded over the period 1 July 2007 to 30 June 2010.

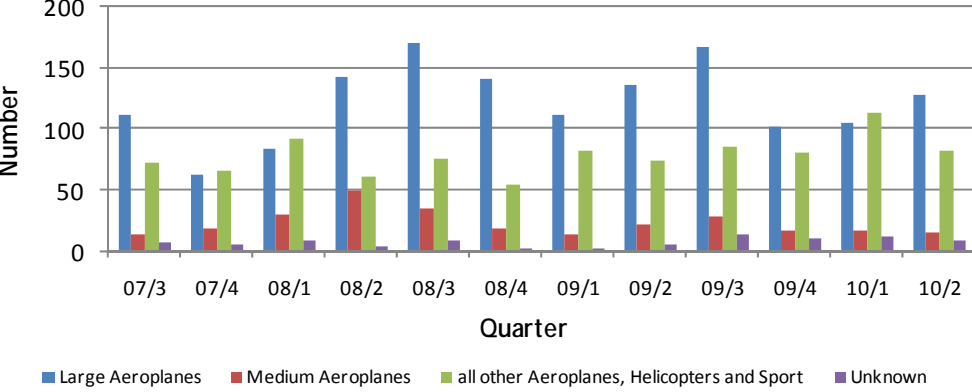
**Defect incident severity -
Critical Incidents**



**Defect incident severity -
Major Incidents**



**Defect incident severity -
Minor Incidents**



Bird Incident Rates

12-Month Moving Average Strike Rate per 10,000 Aircraft Movements

Bird occurrence rates are measured monthly, quarterly or annually by aerodrome. This is achieved by querying the database for the number of strikes at aerodromes over a period of time summarising by month, quarter or year. The results of this query are then divided by the aircraft movements at each aerodrome and multiplied by 10,000 to achieve 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 years ending 30 June 2010.

Aerodrome	Quarter											
	07/3	07/4	08/1	08/2	08/3	08/4	09/1	09/2	09/3	09/4	10/1	10/2
Auckland	2.6	2.6	2.5	2.8	2.7	2.5	2.8	2.1	1.9	2.3	2.4	3.0
Chatham Islands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	10.0	10.0	10.0	0.0
Christchurch	3.1	2.9	2.5	3.1	2.9	3.2	3.2	2.6	2.6	2.1	1.8	1.9
Dunedin	3.3	2.9	2.2	3.2	2.9	3.3	4.1	3.4	3.4	4.5	4.3	4.1
Gisborne	7.0	6.3	5.7	11.2	10.7	11.5	10.4	6.6	5.9	5.4	4.7	3.0
Hamilton	2.3	2.0	1.8	2.3	2.5	3.0	2.9	2.4	2.1	1.6	1.8	1.9
Hokitika	7.5	10.0	7.5	7.5	5.0	2.5	5.0	2.5	2.5	2.5	2.5	2.5
Invercargill	6.7	7.7	9.4	8.1	8.0	9.9	7.7	7.4	5.7	5.0	7.0	6.5
Kerikeri	1.3	0.0	3.8	3.8	3.8	5.0	3.8	7.5	11.3	10.0	8.8	8.8
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	6.2	4.5	5.6	6.9	5.5	6.4	5.0	4.6	6.5	6.6	8.2	12.9
Nelson	2.3	1.8	1.4	1.6	1.6	1.3	1.9	1.8	1.8	1.7	1.4	1.6
New Plymouth	3.6	3.0	2.1	2.8	3.0	3.7	5.0	5.3	4.7	4.6	4.5	4.4
Ohakea	1.2	1.3	2.0	1.7	2.2	2.7	2.2	2.1	1.7	1.4	1.9	2.5
Palmerston North	3.5	3.0	3.1	3.2	3.1	3.1	3.8	5.0	5.3	6.0	5.6	4.5
Paraparaumu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.1	2.1
Queenstown	3.1	3.9	3.7	3.8	3.6	2.2	3.1	2.4	2.8	2.8	1.8	1.6
Rotorua	7.9	7.1	5.8	5.2	4.7	4.0	4.4	5.4	5.7	6.3	6.8	6.0
Taupo	1.8	1.8	1.5	1.8	2.0	1.7	2.7	2.5	2.3	2.9	2.0	2.4
Tauranga	1.9	1.6	1.5	1.4	1.8	2.1	2.1	2.0	1.3	1.0	0.7	0.7
Timaru	10.0	10.0	10.0	5.0	7.5	5.0	6.3	8.8	7.5	7.5	6.3	3.8
Wanganui	10.0	10.0	10.0	3.3	3.3	0.0	3.3	6.7	3.3	2.2	0.8	1.6
Wellington	1.6	1.1	1.0	1.0	1.2	1.4	1.7	1.7	1.5	1.4	1.3	1.5
Westport	43.6	38.8	24.2	19.4	4.8	9.7	19.4	19.4	29.1	24.4	23.9	23.9
Whangarei	11.0	11.0	10.0	1.0	0.0	0.0	3.0	4.0	9.0	10.0	8.0	9.0
Whenuapai	9.6	10.3	13.6	12.2	12.7	12.1	9.6	7.7	7.9	10.6	9.9	12.5
Woodbourne	6.0	6.2	3.7	4.1	3.5	3.1	2.9	2.9	2.9	2.9	5.4	5.2
Overall	3.3	3.1	2.9	3.1	3.0	3.2	3.4	3.1	3.0	2.9	2.9	3.1

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.

CAA Actions

The CAA uses the following criteria for assessing actions to be taken with regard to identified trends in bird strike rates.

Bird strikes per 10,000 aircraft movements	Risk Category	Trending Down	Constant	Trending Up
≥ 0.0 and < 5.0	Low	Monitor	Monitor	Advise Aerodrome Operator
≥ 5.0 and < 10.0	Medium	Monitor	Advise Aerodrome Operator	Advise Aerodrome Operator, Request Rectification Action
≥ 10.0	High	Advise Aerodrome Operator	Advise Aerodrome Operator, Request Rectification Action	Advise Aerodrome Operator, Request Rectification Action

Analysis

The table below shows the status of all monitored aerodromes as at 30 June 2010.

Aerodrome	Risk Category	Trend	CAA Action
Auckland	Low	Constant	Monitor
Chatham Islands	Low	Upward	Advise Aerodrome Operator
Christchurch	Low	Downward	Monitor
Dunedin	Low	Upward	Advise Aerodrome Operator
Gisborne	Low	Downward	Monitor
Hamilton	Low	Constant	Monitor
Hokitika	Low	Downward	Monitor
Invercargill	Medium	Downward	Monitor
Kerikeri	Medium	Upward	Advise Aerodrome Operator, Request Rectification Action
Manapouri	Low	Constant	Monitor
Napier	High	Upward	Advise Aerodrome Operator, Request Rectification Action
Nelson	Low	Constant	Monitor
New Plymouth	Low	Upward	Advise Aerodrome Operator
Ohakea	Low	Constant	Monitor
Palmerston North	Low	Upward	Advise Aerodrome Operator
Paraparaumu	Low	Upward	Advise Aerodrome Operator
Queenstown	Low	Downward	Monitor
Rotorua	Medium	Constant	Advise Aerodrome Operator
Taupo	Low	Upward	Advise Aerodrome Operator
Tauranga	Low	Downward	Monitor
Timaru	Low	Downward	Monitor
Wanganui	Low	Downward	Monitor
Wellington	Low	Constant	Monitor
Westport	High	Downward	Advise Aerodrome Operator
Whanagrei	Medium	Constant	Advise Aerodrome Operator
Whenuapai	High	Downward	Advise Aerodrome Operator
Woodbourne	Medium	Downward	Monitor
Overall	Low	Constant	Monitor

Security Incidents Six-Monthly Comparison

Number of Security Incidents

Aircraft Category	1 Jan to	1 Jan to	Change	
	30 Jun 2009	30 Jun 2010	Number	Percent
Large Aeroplanes	7	6	- 1	- 14.3
Medium Aeroplanes	1	0	- 1	- 100.0
Small Aeroplanes	0	0	0	-
Agricultural Aeroplanes	0	0	0	-
Helicopters	0	0	0	-
Sport Aircraft	0	0	0	-
Unknown	27	37	10	37.0
Total	35	43	8	22.9

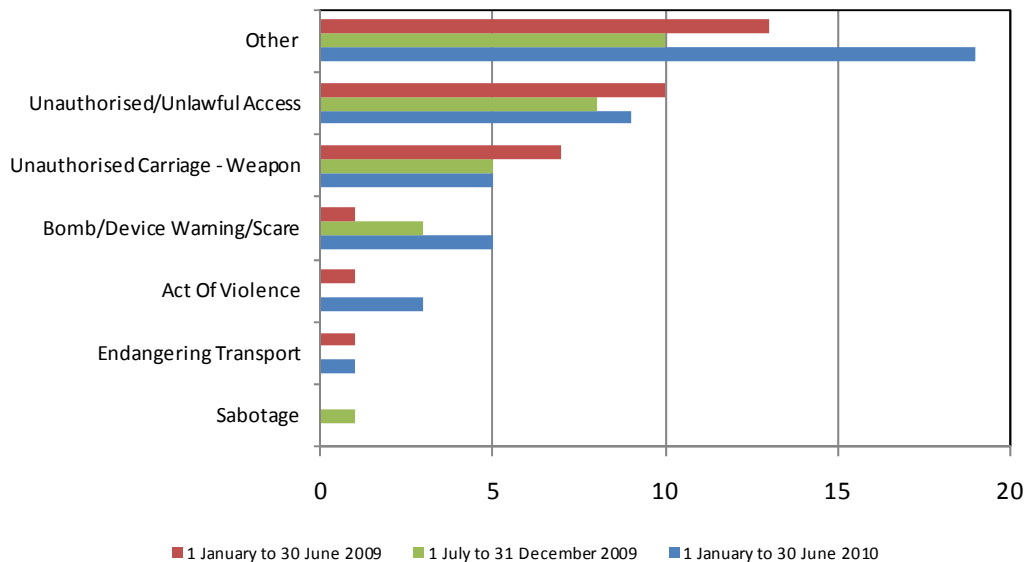
Severity

Severity	1 Jan to	1 Jan to	Change	Percent
	30 Jun 2009	30 Jun 2010		
Critical	0	0	0	-
Major	2	3	1	50.0
Minor	33	40	7	21.2
Total	35	43	8	22.9

Descriptors

The following graph shows the numbers of occurrence descriptors recorded for security incidents that occurred during the period 1 January to 30 June 2010 and the two previous six-month periods.

Security incident descriptors



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 rather limited. As time progresses the table and graphs will be extended until they cover a three year period. 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. When sufficient data becomes available it may be more useful to present this data in a moving 12 month average format.

The following table shows quarterly runway incursion rates for all certificated aerodromes for which adequate movement data is available.

Aerodrome	08/4	09/1	09/2	09/3	09/4	10/1	10/2
NZAA Auckland	12.1	10.0	2.7	2.5	5.0	5.0	10.5
NZAP Taupo	0.0	0.0	0.0	0.0	12.6	0.0	0.0
NZCH Christchurch	5.6	2.8	5.7	0.0	9.1	3.0	20.0
NZDN Dunedin	0.0	6.3	0.0	0.0	9.9	0.0	16.5
NZGS Gisborne	33.9	15.8	0.0	0.0	0.0	16.8	0.0
NZHN Hamilton	10.3	7.5	2.7	7.6	0.0	3.6	12.6
NZMF Milford Sound	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NZNP New Plymouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NZNR Napier	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NZNS Nelson	0.0	8.0	16.7	8.5	0.0	22.7	7.8
NZNV Invercargill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NZOH Ohakea	0.0	0.0	0.0	0.0	0.0	5.8	0.0
NZPM Palmerston North	0.0	25.0	6.6	0.0	0.0	0.0	6.4
NZQN Queenstown	0.0	7.3	10.9	0.0	0.0	15.1	0.0
NZRO Rotorua	0.0	38.4	0.0	0.0	0.0	0.0	18.3
NZTG Tauranga	8.4	0.0	3.8	4.6	4.6	3.5	0.0
NZWB Woodbourne	17.5	13.9	0.0	18.1	18.3	0.0	0.0
NZWN Wellington	6.9	7.0	10.9	3.5	14.5	3.5	0.0
NZWP Whenuapai	0.0	0.0	0.0	0.0	0.0	25.2	28.4

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.

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 six months of the reporting period.

Month	ACC	ADI	ARC	ASP	BRD	DEF	DGD	HGA	INC	NIO	PAA	PIO	SEC
Jan-10	8	10	39	70	105	90	9	5	60	2	1	5	4
Feb-10	4	10	37	83	117	102	5	3	49	6	1	4	6
Mar-10	8	9	55	86	125	124	3	2	71	2		1	2
Apr-10	10	13	54	61	136	105	6	3	49	3	1	1	11
May-10	8	7	49	65	136	96	1	2	47	2		1	7
Jun-10	3	23	46	73	113	128			52	3		7	10
Total	41	72	280	438	732	645	24	15	328	18	3	19	40

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

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.
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