Aviation Industry Safety Update

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 "Twelve Month Moving Average" graphs in the Occurrence Statistics sections give an indication of the levels of safety failure in New Zealand aviation during the period 1 July 2003 to 30 June 2006. They are constructed from data in the CAA Safety Monitoring Database, 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 group at 30 September 2006 and 6 months prior:

Aircraft Group	31 Mar 2006		30 Sep 2006		Change	
	Number	Percentage	Number	Percentage	Number	Percentage
Cat 1 - Aeroplanes that must be operated under Part 121	126	3.2	117	2.9	-9	-0.3
Cat 2 - Aeroplanes that must be operated under at least Part 125	113	2.8	112	2.8	- 1	0
Cat 3 - Other Aeroplanes with Standard Cs of A	1378	34.5	1384	34.6	+ 6	+0.18
Cat 4 - Helicopters with Standard Category Cs of A	643	16.1	648	16.2	+ 5	+ 0.1
Cat 5 - Sport Aircraft	1605	40.2	1609	40.3	+ 4	+ 0.1
Cat 6 - Aeroplanes used for agricultural operations	126	3.1	125	3.1	- 1	0
Total	**3,991**		**3,995**		**+ 4**	**+ 0.1**

Licences

The following table summarises the number of private pilot, commercial pilot, air transport pilot, aircraft maintenance engineer, and air traffic controller licences on the register at 30 September 2006 and 6 months prior:

Licence Type	Medical Certificate	31 Mar 2006	30 Sep 2006	Change	
				Number	Percentage
Private Pilot	Class 1 & 2	3,643	3,616	-27	-0.8
Commercial Pilot	Class 2 only	1,572	1,537	- 35	- 2.2
Commercial Pilot	Class 1	2,017	2,108	+ 91	+ 4.5
Airline Transport Pilot	Class 2 only	623	780	+ 157	+25.2
Airline Transport Pilot	Class 1	1,180	1,030	-150	-12.7
Air Traffic Controller	Class 3	306	308	+ 2	+ 0.7
Aircraft Maintenance Engineer	N/A	2,090	2,135	+ 45	+ 2.2
Total Licences		**11,431**	**11,514**	**+ 83**	**+ 0.7**

Note — The statistics above do not show the number of licence holders as each client may hold more than one licence [e.g. PPL (helicopter) and PPL (aeroplane), or PPL (Helicopter) and CPL (Balloon), held by one client counts as two licences].

Certificated Operators

The following tables show the number of Civil Aviation Rule Part certificate holders at 30 September 2006 and 6 months prior.

Rule Part	31 Mar 2006	30 Sep 2006	Change	
			Number	Percentage
Part 119 Air Operator	165	173	+ 8	+ 4.8
Part 119 Air Operator – Pacific	2	3	+ 1	+ 50.0
Part 129 Foreign Air Operator	35	40	- 5	- 14.3
Part 137 Agricultural Aircraft Operator	118	117	-1	- 0.9
Part 139 Aerodromes	25	25	0	0.0
Part 140 Aviation Security Services	1	1	0	0.0
Part 141 Aviation Training Organisation	49	48	- 1	- 2.1
Part 145 Aircraft Maintenance Organisation	53	54	+ 1	+ 1.9
Part 146 Aircraft Design Organisation	11	12	+ 1	+ 9.1
Part 148 Aircraft Manufacturing Organisation	20	22	+ 2	+ 10.0
Part 149 Recreation Organisation	6	7	+ 1	+ 16.7
Part 171 Aeronautical Telecommunication Service Organisation	3	3	0	0.0
Part 172 Air Traffic Service	1	1	0	0.0
Part 174 Meteorological Service Organisation	2	2	0	0.0
Part 175 Aeronautical Information Service Organisation	2	2	0	0.0
Part 19 Supply Organisation Certificate of Approval	53	57	+ 4	+ 7.5
Part 92 Dangerous Goods Packaging Approval	38	36	- 2	- 5.3

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

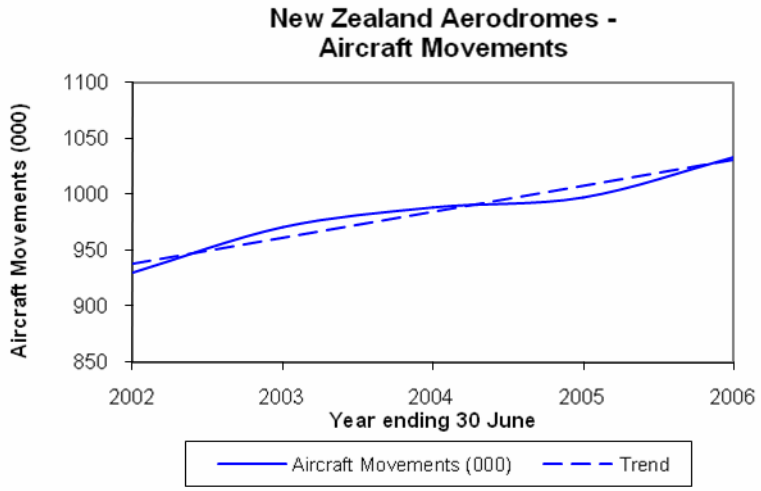
Part 119 Air Operator	31 Mar 2006	30 Sep 2006	Change	
			Number	Percentage
Part 108 Security Programme	18	19	+ 1	+ 5.6
Part 121 Large Aeroplanes	12	11	- 1	- 8.5
Part 125 Medium Aeroplanes	12	13	+ 1	+ 8.5
Part 135 Helicopters and Small Aeroplanes	152	160	+ 8	+ 5.3

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 number of aircraft movements for the five-year period 1 July 2001 to 30 June 2006.



The number of aircraft movements increased at an average of 2.2% each year to 1,033,495 in the year ended 30 June 2006.

Six-Monthly Comparison

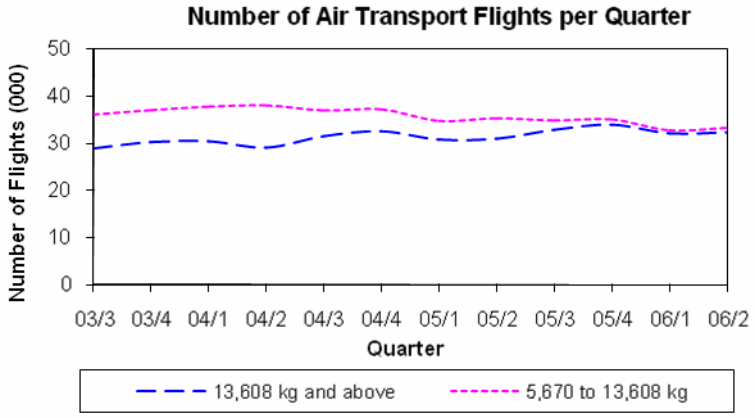
Number of Aircraft Movements

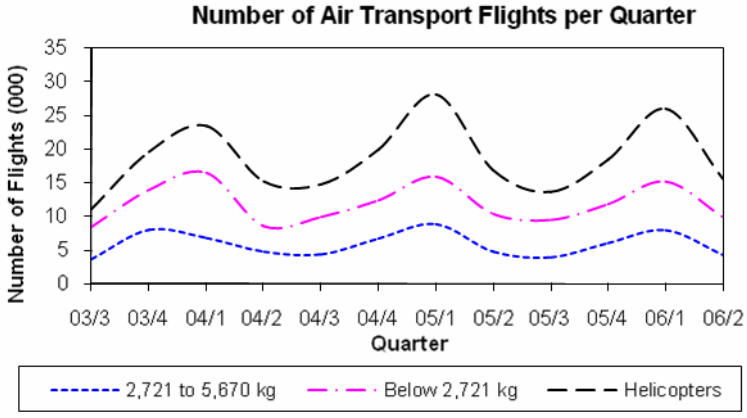
Activity	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change	
			Number	Percentage
Aircraft Movements	535,402	539,875	+ 4,473	+ 0.8

Air Transport Flights

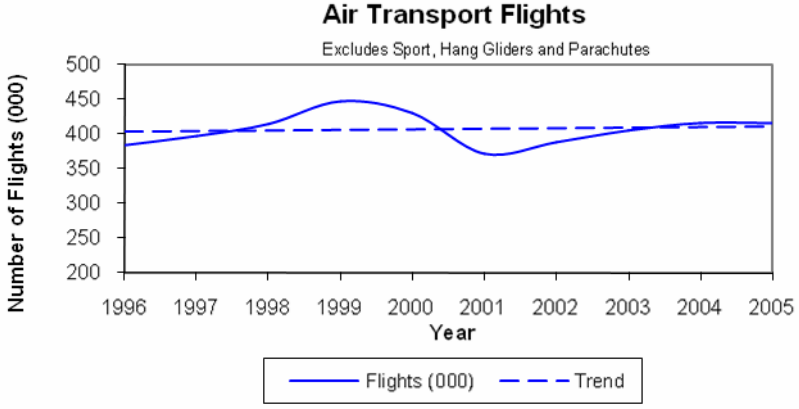
Note that these graphs exclude sport aircraft, hang gliders and parachutes, and foreign registered aircraft that are operated in New Zealand.

The following graphs show the number of air transport flights per quarter during the period 1 July 2003 to 30 June 2006.



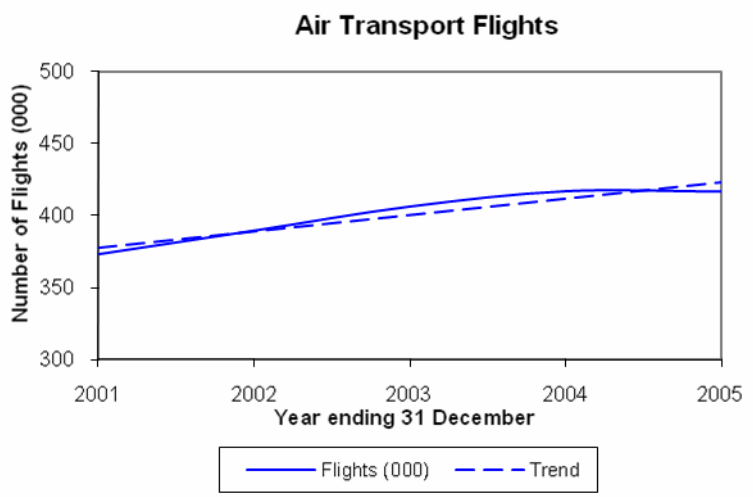


The following graph shows the number of air transport flights (excluding the sport group) for the years 1996 to 2005.



Long-Term Change in Air Transport Flights

The following graph shows the number of air transport flights (excluding the sport group) for the five-year period 1 July 2000 to 30 June 2005.



The number of air transport flights increased at an average of 2.2% each year from the year ended 31 December 2001 until the year ended 31 December 2005 (416,961 air transport flights).

Six-Monthly Comparison

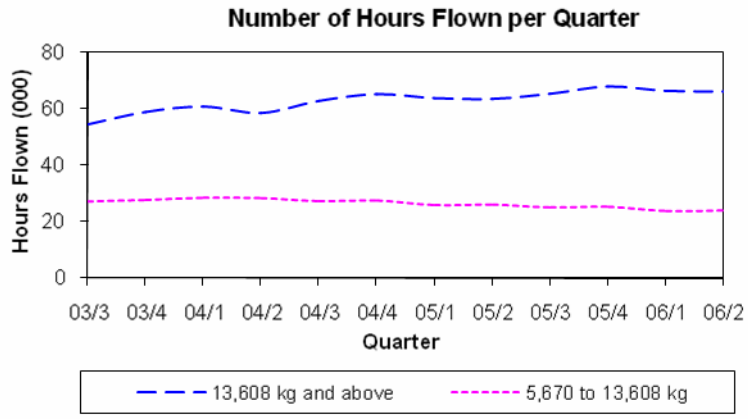
Number of Air Transport Flights

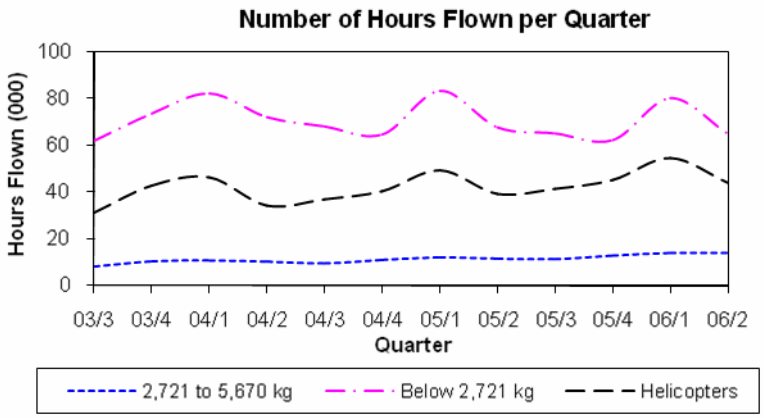
Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change	
			Number	Percentage
13,608 kg and above	66694	64307	- 2,387	-3.7
5,670 to 13,608 kg	70021	66117	- 3,904	- 5.9
2,721 to 5,670 kg	10054	12331	+ 2,277	+ 18.5
Below 2,721 kg	21363	25186	+ 3,823	+ 15.2
Helicopters	32014	41518	+ 9,504	+ 22.9
Total	**200,146**	**209,439**	**+ 9,313**	**+ 4.4**

Hours Flown

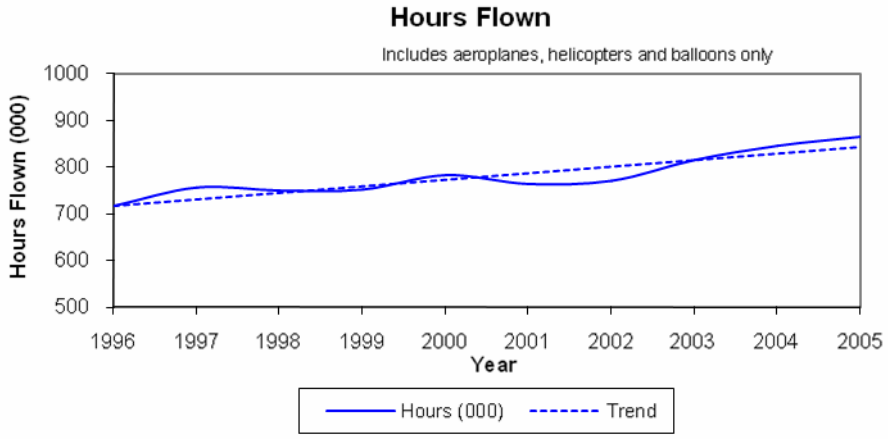
Note that these graphs exclude sport aircraft, hang gliders and parachutes, and foreign registered aircraft that are operated in New Zealand.

The following graphs show the number of hours flown by aircraft during the period 1 July 2003 to 30 June 2006.



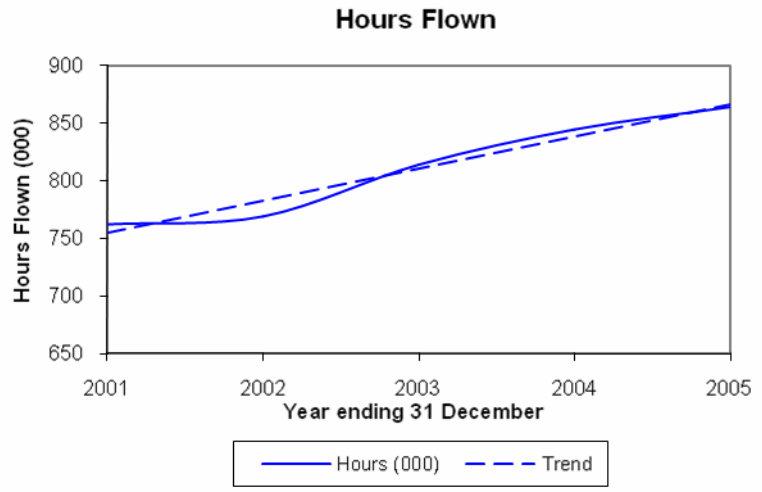


The following graph shows the number of hours flown by aircraft (excluding the sport group) for the years 1996 to 2005.



Long-Term Change in Hours Flown

The following graph shows the number of hours flown (excluding the sport group) for the five-year period 1 January 2001 to 31 December 2005.



The total number of hours flown increased at an average of 2.6% each year from the year ended 31 December 2001 until the year ended 31 December 2005 when a peak of 864,346 hours was reached.

Six-Monthly Comparison

Number of Hours Flown

Group	1 Jan - 30 Jun 2005	1 Jan – 30 Jun 2006	Change	Percent
Airline Operations - Large Aeroplanes	154755.53	148431.8	-6323.75	- 4.1%
Airline Operations - Medium Aeroplanes	39214.31	39353.25	138.94	+ 0.4%
Airline Operations - Small Aeroplanes	33806.39	42561.77	8755.38	+ 25.9%
Airline Operations - Helicopter	33681.63	39700.28	6018.65	+ 17.9%
Sport Transport	997.75	704.66	-293.09	- 29.4%
Other Commercial Operations - Aeroplane	81227.66	67732.95	-13494.70	- 16.6%
Other Commercial Operations - Helicopter	16931.62	18702.03	1770.41	+ 10.5%
Agricultural Operations - Aeroplane	20572.74	27150.74	6578.01	+ 32.0%
Agricultural Operations - Helicopter	28339.78	24871.00	-3468.78	- 12.2%
Private Operations - Aeroplane	23320.36	25706.97	2386.61	+ 10.2%
Private Operations - Helicopter	8245.57	8363.771	118.20	+ 1.4%
Private Operations - Sport	1415.35	1937.162	521.82	+ 36.9%
Total	**442508.67**	**445216.40**	**2707.70**	**+ 0.6%**

Industry Size and Shape

The following table shows the size and shape of the industry as determined by aircraft that returned Aircraft Operating Statistics in the relevant safety target group categories for the period 1 July 2005 to 30 June 2006. The number of seats for aircraft with no seats recorded on the database was estimated using (maximum takeoff weight (lb) of the aircraft/1000). This does not take into account aircraft that are used for freight only, because the small number of aircraft in this category has a minimal effect on the overall outcome. For each safety target group the average number of seats is multiplied by the total hours flown, to give the number of seat hours offered by the group.

Group	1 Jan - 30 Jun 2005	1 Jan – 30 Jun 2006	Change	Percent
Airline Operations - Large Aeroplanes	154755.53	148431.8	-6323.75	- 4.1%
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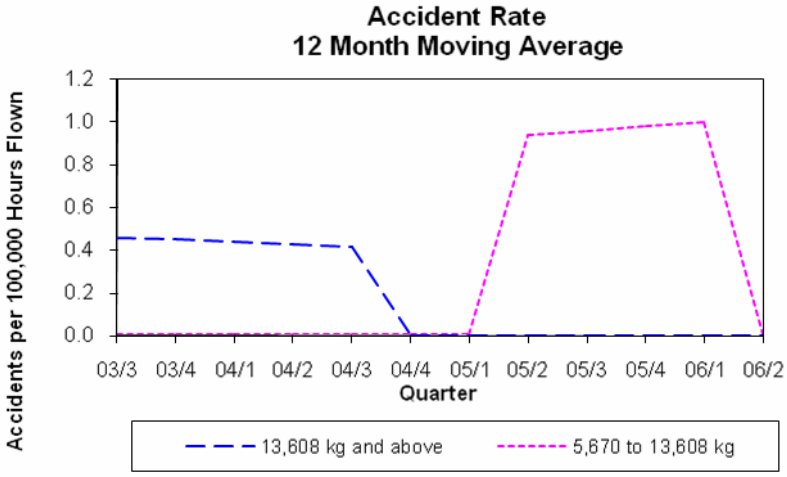
Total	**442508.67**	**445216.40**	**2707.70**	**+ 0.6%**

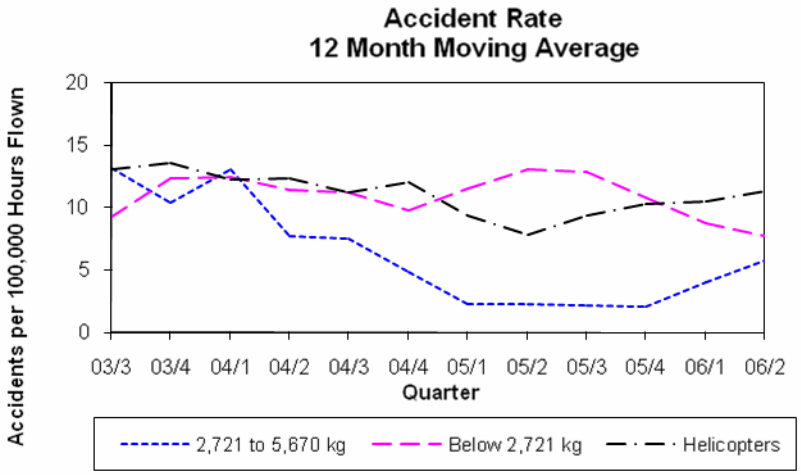
Occurrence Statistics

Aircraft Accidents

Occurrence Trend

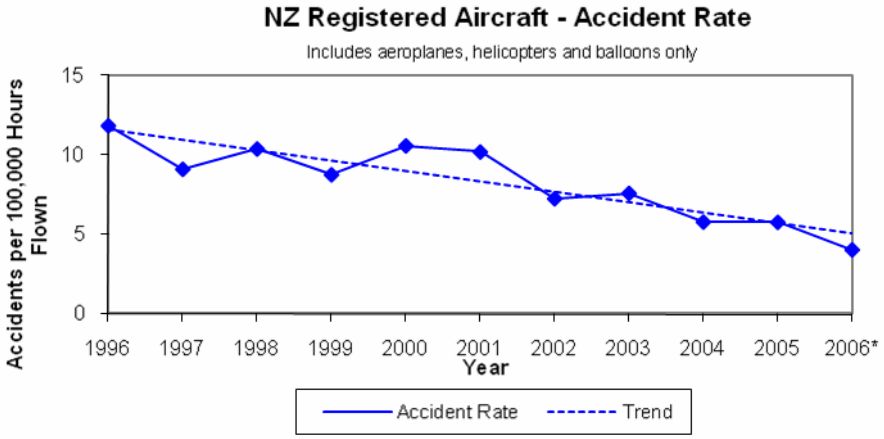
The following graphs show the aircraft accident rates (accidents per 100,000 hours flown) twelve month moving average for the three-year period 1 October 2003 to 30 June 2006 (excluding Sport).





Aircraft Group	Straight Line Trend of 12 Month Moving Average
13,608 kg and above	Trending down
5,670 to 13,608 kg	Trending up
2,721 to 5,670 kg	Trending down
Below 2,721 kg	Trending down
Helicopters	Constant

The following graph shows the overall accident rate per 100,000 hours flown (excluding the sport group, hang gliders and parachutes) for the years 1995 to 2005. The data point for 2006* is for 1 January to 30 June 2006 only.



Note that this graph does not show a moving average.

Six-Monthly Comparison

Number of Aircraft Accidents

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
13,608 kg and above	0	0	0
5,670 to 13,608 kg	1	0	- 1
2,721 to 5,670 kg	0	2	+ 2
Below 2,721 kg	19	10	-9
Helicopters	6	9	+ 3
Sport	17	18	+ 1
Hang Gliders	0	2	+ 2
Parachutes	0	0	0
Unknown	1	0	- 1
Total	**44**	**41**	**- 3**

Severity

Six-Monthly Comparison

Aircraft Group	Severity	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
13,608 kg and above	Critical	0	0	0
	Major	0	0	0
	Minor	0	0	0
5,670 to 13,608 kg	Critical	1	0	- 1
	Major	0	0	0
	Minor	0	0	0
Below 5,670 kg, Helicopters and Sport	Critical	8	7	- 1
	Major	22	16	- 6
	Minor	12	16	+ 4
Hang Gliders and Parachutes	Critical	0	3	+ 3
	Major	4	3	- 1
	Minor	2	5	+ 3
Unknown	Critical	0	0	0
	Major	0	0	0
	Minor	0	0	0
Total	**Critical**	**9**	**10**	**+ 1**
	Major	**26**	**19**	**- 7**
	Minor	**14**	**21**	**+ 7**

Accident Reduction Targets

Safety Outcome Targets for 2010

Each "target group" has 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 outcomes represent the maximum level of social cost considered acceptable for each group.

The table below shows the new Safety Outcome Targets for the period ending 30 June 2006. The target groups highlighted in yellow are groups where major safety improvements need to be achieved. Red highlighting has been used to draw attention to groups with significant recent safety failure.

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Safety Outcome Target Group	Injuries			Current Estimate $	Target $
	Total Fatal	Total Serious	Total Minor		
Airline Operations - Large Aeroplanes*				0.02*	0.10
Airline Operations - Medium Aeroplanes*				1.24*	0.10
Airline Operations - Small Aeroplanes				-	6.50
Airline Operations - Helicopter				-	6.50
Sport Transport		1		32.43	13.00
Other Commercial Operations - Aeroplane				40.24	6.50
Other Commercial Operations - Helicopter				0.43	6.50
Agricultural Operations - Aeroplane				214.93	14.00
Agricultural Operations - Helicopter				0.12	14.00
Agricultural Operations - Sport Aircraft				-	28.00
Private Operations - Aeroplane				99.32	10.00
Private Operations - Helicopter			2	407.61	10.00
Private Operations - Sport				54.85	20.00

Current Estimate:

This is the estimated social cost of injuries over exposure during the averaging period ending 30 June 2006.

- For large and medium aeroplane operations 10 years of injury data*
- For all other operations 1 year of injury data
- Activity data is estimated as at 1 January 2004

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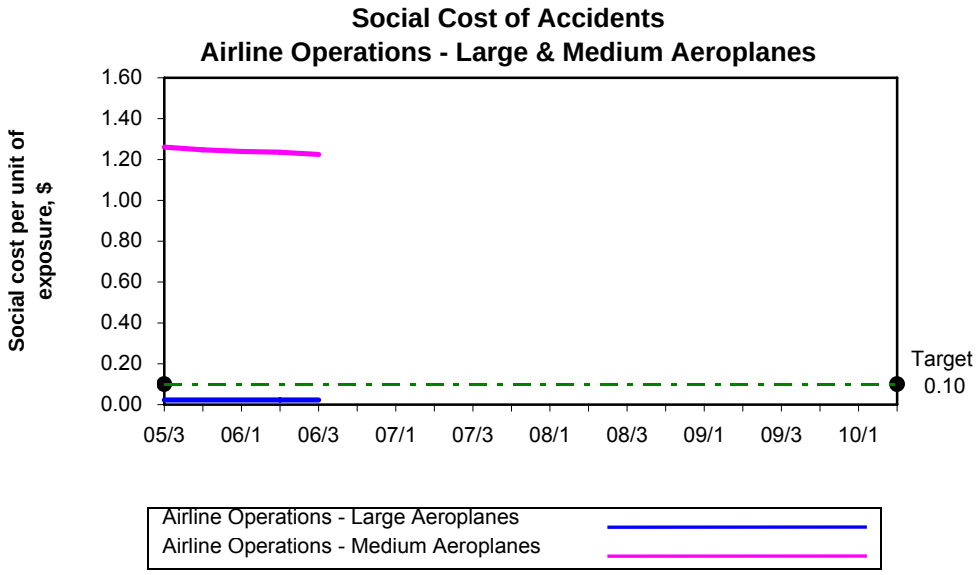
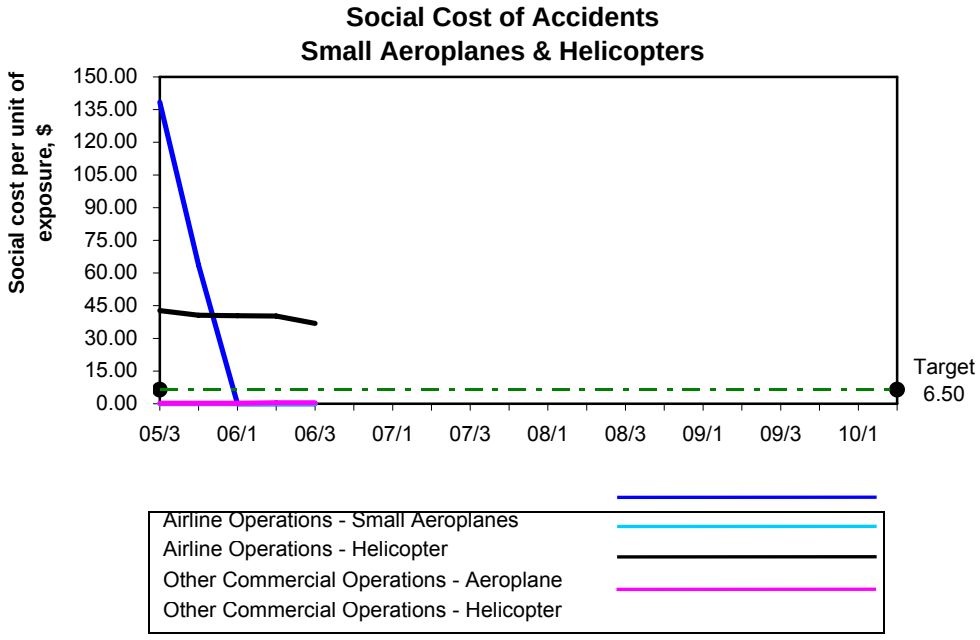
Graphs



The outcome for Airline Operations – Large Aeroplanes has remained well below the target level of $0.10 per hour of exposure since the target regime was established in 2005. There is no discernable trend either up or down.

The outcome for Airline Operations – Medium Aeroplanes exceeds the target by a considerable margin and although trending down, because of the relatively small exposure associated with this sector, it will not be possible for the target to be achieved until after 2010.

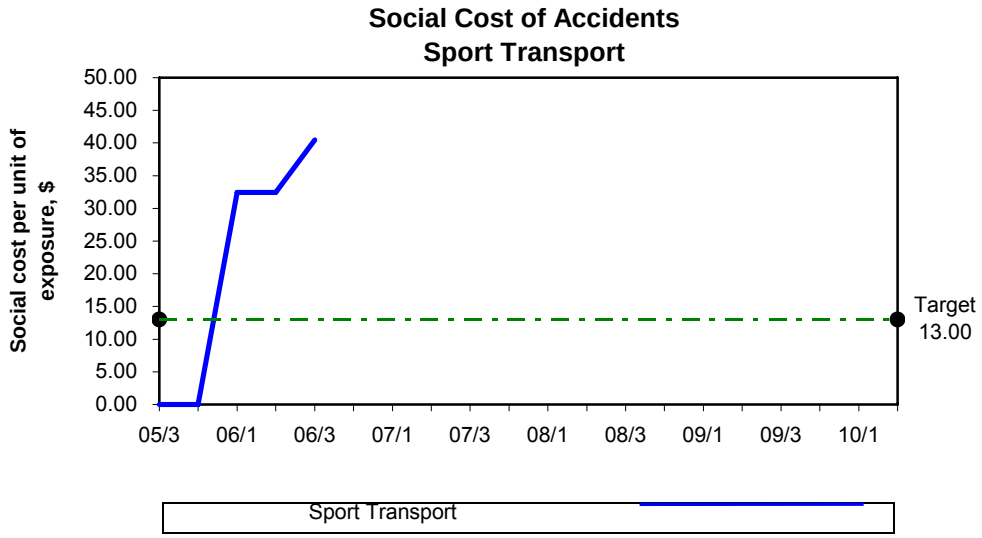
The results for both of these groups are derived using 10 year averages; all other groups use 12 month averages.



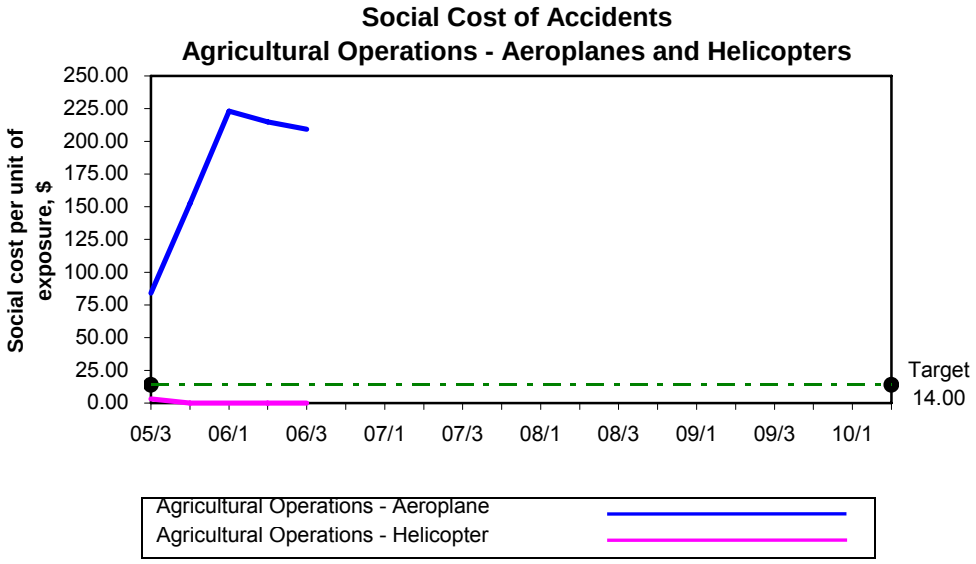
The outcome for Airline Operations – Small Aeroplanes shows a significant downward trend from the high starting point generated by 6 fatalities in late 2004 and early 2005. The safety outcome for this group has been below the target level since April 2006.

The outcome for Airline Operations – Helicopter and Other Commercial Operations – Helicopter remain level on zero as there have been no fatal or serious injuries in these groups since 2003.

The outcome for Other Commercial Operations – Aeroplane is well above the target of $6.50 but is trending down. There have been no injuries in this group since April 2006 and if this performance continues the outcome will sit below the required target by April 2007.

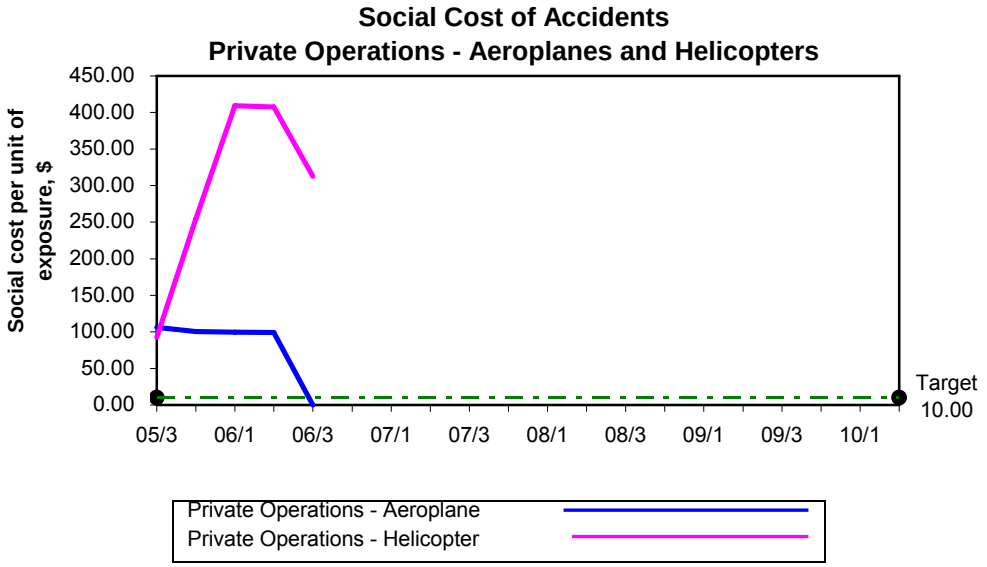


The outcome for Sport Transport is rapidly trending up. There have been 5 serious injuries and 1 minor injury in this group since the establishment of the 2010 Safety Outcome Targets.



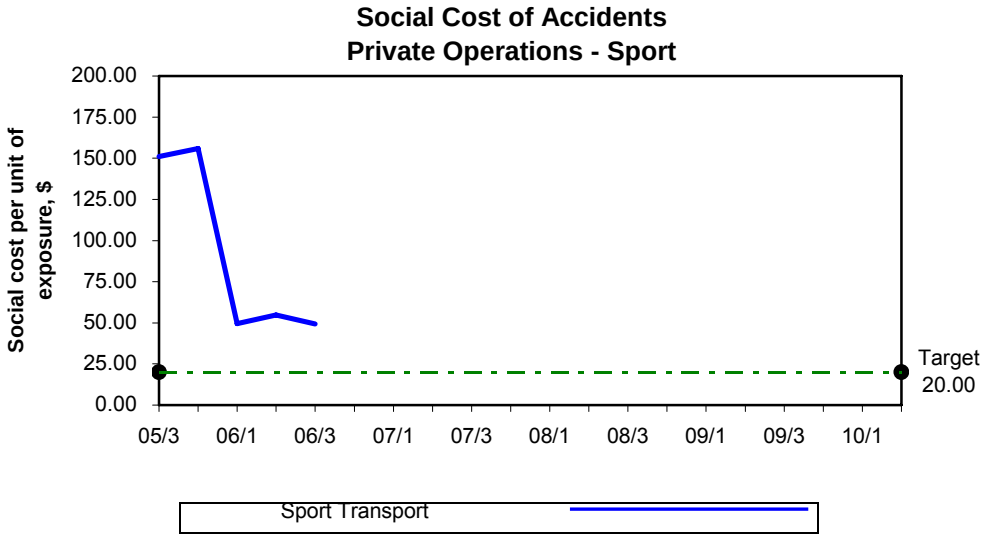
The outcome for Agricultural Operations – Aeroplanes has exceeded the target level since the target regime was established in 2005. A downward trend commenced early in 2006 and if there are no further injury accidents in this sector it is expected the required outcome target will be reached by April 2007.

The outcome for Agricultural Operations – Helicopter has remained near zero as there have been no fatal or serious injuries affecting this group since 2004.



The outcome for Private Operations – Aeroplane having remained around $100.00 for the first 3 quarters of the new regime, and settled down below the required $10.00 target by the end of the third quarter of 2006. There have been no injury accidents in this group since the third quarter of 2005.

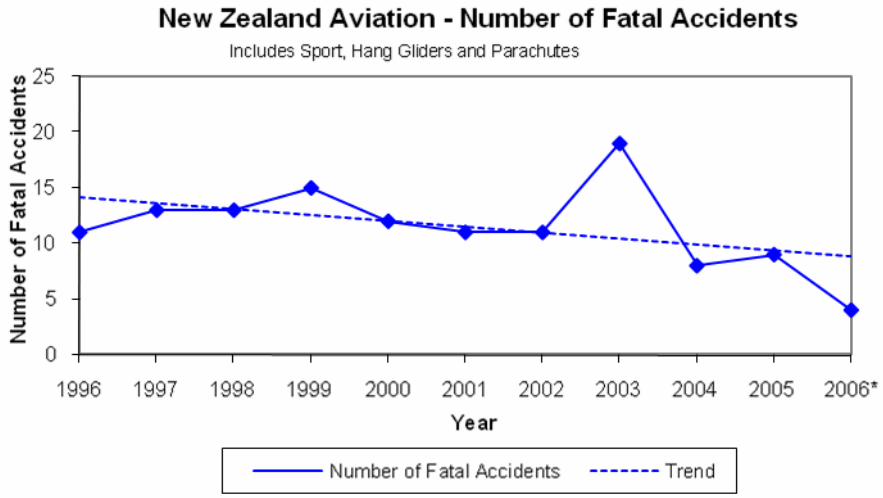
The outcome for Private Operations – Helicopter having rapidly trended up in the initial stages is now established on the way down. This group has generated a significant number of injuries (5 fatal, 2 serious, and 8 minor) since the second quarter of 2005. However, provided there are no fatal or serious injuries before April 2007 the required target level can be achieved around that time.



The outcome for Private Operations – Sport has been trending down since late 2005. If the current safety level prevails the outcome for this group will sit below the required target by mid 2007.

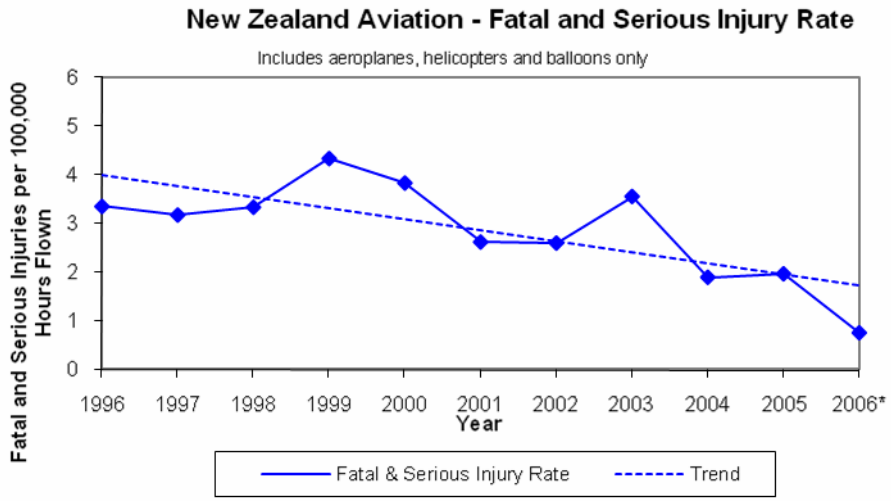
Injury Accidents

The following graph shows the number of fatal accidents in the years 1996 to 2006 (including sport, hang gliders and parachutes). The data point for 2006* is for 1 January to 30 June 2006 only.:

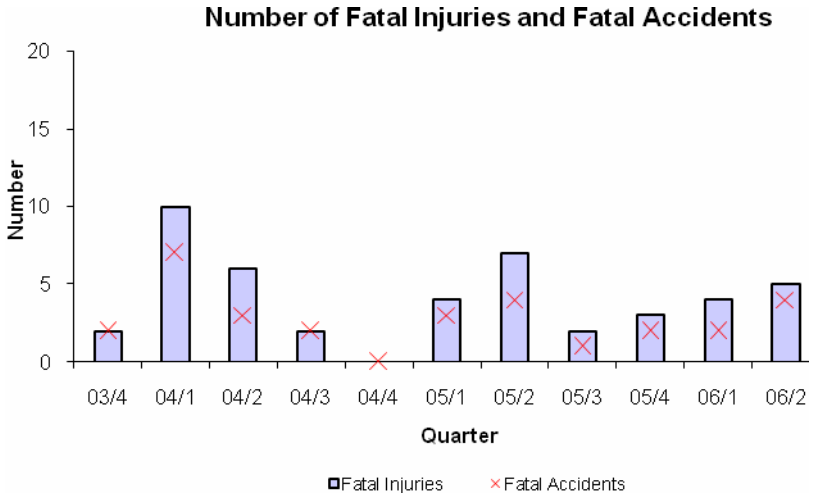


Note: from the report for 1 July to 31 December 2000 this graph includes hang glider and parachute accidents.

The following graph shows the overall fatal and serious injury rate per 100,000 hours flown (excluding sport, hang gliders and parachutes) for the years 1995 to 2004. The data point for 2006* is for 1 January to 30 June 2006 only.



The following graph shows the number of fatal injuries and fatal accidents (including sport, hang gliders and parachutes) for the period 1 October 2003 to 30 June 2006.



Since October 2002 the long-term trends of the number of fatal injuries and the number of fatal accidents are downward. However, the slope of the trend line for the number of fatal accidents is close to zero.

Six-Monthly Comparison

Number of Fatal Accidents (and Number of Fatal Injuries)

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
Cat 1 - Aeroplanes that must be operated under Part 121	0	0	0
Cat 2 - Aeroplanes that must be operated under at least Part 125	1 (2)	0	- 1 (- 2)
Cat 3 - Other Aeroplanes with Standard Cs of A	2 (5)	2 (2)	0 (- 3)
Cat 4 - Helicopters with Standard Category Cs of A	0	1 (2)	+ 1 (+ 2)
Cat 5 - Sport Aircraft	2 (2)	0	- 2 (- 2)
Cat 6 - Aeroplanes used for agricultural operations	0	1 (1)	+ 1 (+ 1)
Hang Gliders	0	0	0
Parachutes	0	0	0
Unknown	0	0	0
Total	**5 (9)**	**4 (5)**	**- 1 (- 4)**

Number of Serious Injuries

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
Cat 1 - Aeroplanes that must be operated under Part 121	0	0	0
Cat 2 - Aeroplanes that must be operated under at least Part 125	0	0	0
Cat 3 - Other Aeroplanes with Standard Cs of A	0	0	0
Cat 4 - Helicopters with Standard Category Cs of A	0	0	0
Cat 5 - Sport Aircraft	2	4	+ 2
Cat 6 - Aeroplanes used for agricultural operations	0	0	0
Hang Gliders	3	6	+ 3
Parachutes	0	1	+ 1
Unknown	0	0	0
Total	**5**	**11**	**+6**

Number of Minor Injuries

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
Cat 1 - Aeroplanes that must be operated under Part 121	0	0	0
Cat 2 - Aeroplanes that must be operated under at least Part 125	0	1	+ 1
Cat 3 - Other Aeroplanes with Standard Cs of A	0	2	+ 2
Cat 4 - Helicopters with Standard Category Cs of A	2	4	+ 2
Cat 5 - Sport Aircraft	4	2	- 2
Cat 6 - Aeroplanes used for agricultural operations	0	0	0
Hang Gliders	0	2	+ 2
Parachutes	0	0	0
Unknown	0	0	0
Total	**6**	**11**	**+ 5**

Flight Phase

The following table shows the flight phase recorded for accidents.

Flight Phase	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
Landing	26	18	- 8
Cruise	11	10	- 1
Takeoff	6	8	+ 2
Descent	0	4	+ 4
Taxiing	0	3	+ 3
Climb	2	2	0
Hover Taxi	0	2	+ 2
Approach	2	1	- 1
Unknown	0	1	+ 1
Hover	0	1	+ 1
Agricultural Manoeuvres	2	0	- 2
Total	**49**	**50**	**+ 1**

Note: from the report for 1 July to 31 December 2002 this table includes hang glider and parachute accidents.

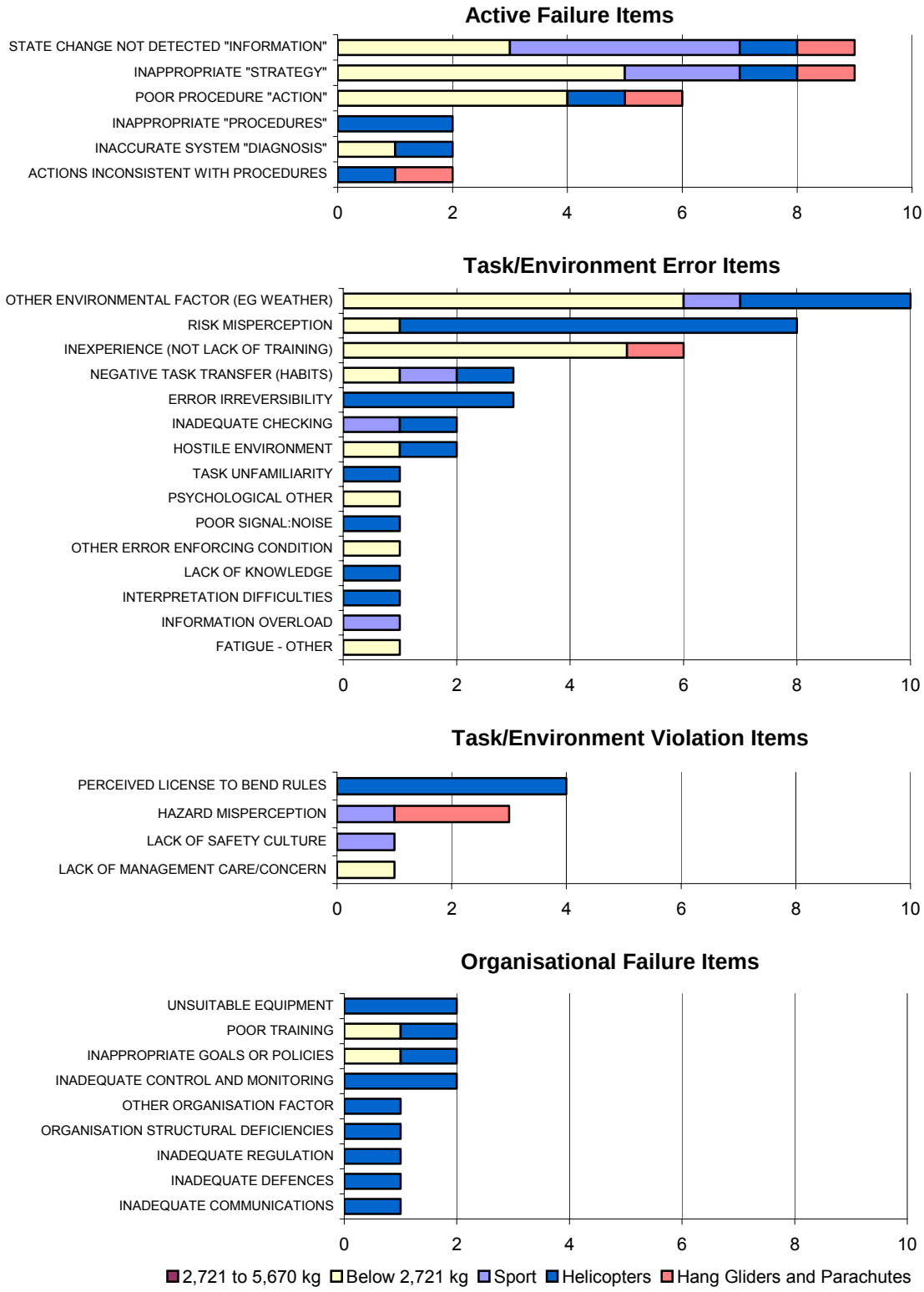
Accidents in the period 1 January to 30 June 2006 were most common during the Landing phase (36%).

Analysis of recorded occurrence descriptors for Landing phase accidents in the 1 January to 30 June 2006 period shows that the most common group of descriptors is collision/strike object (25%).

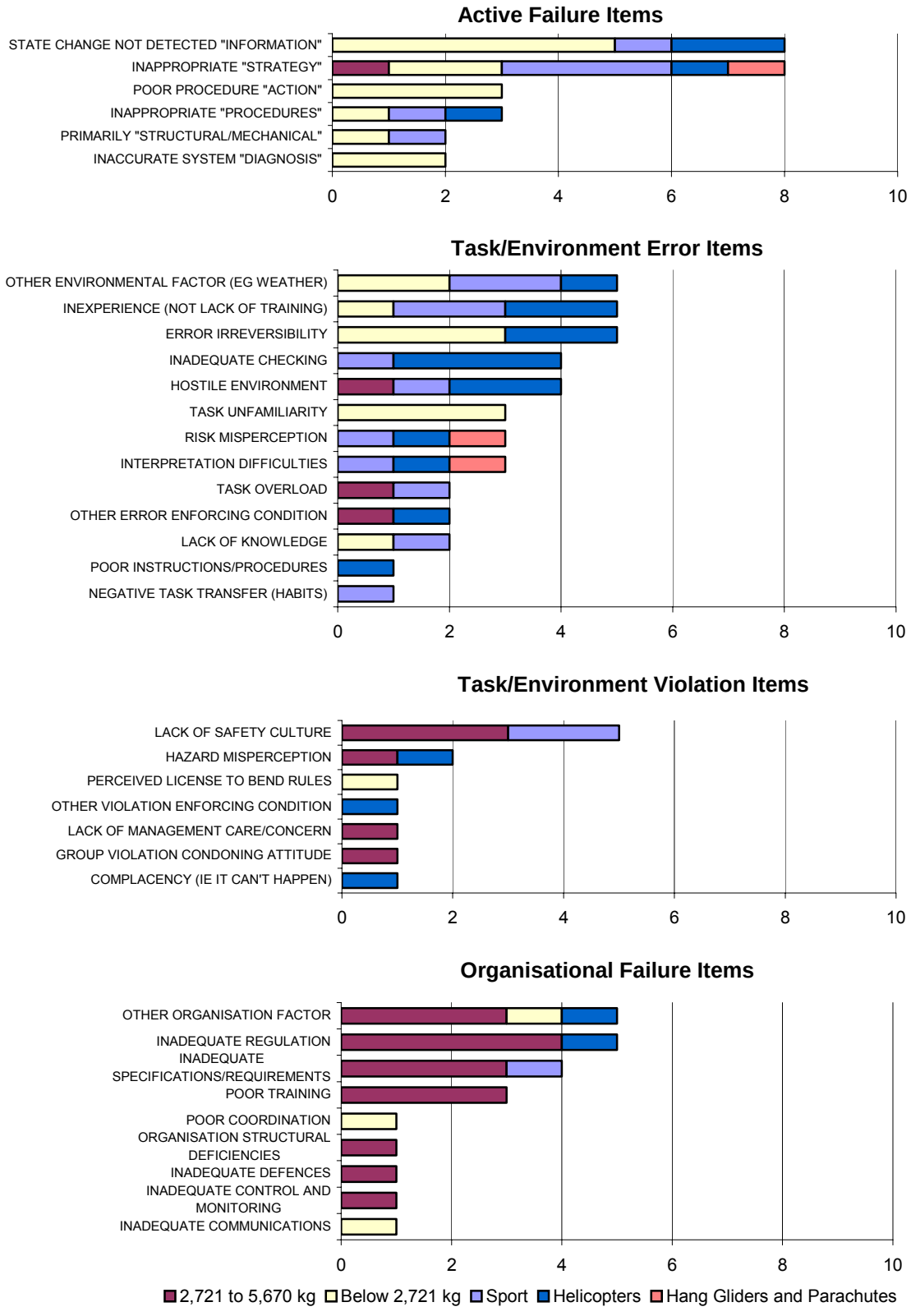
Analysis of recorded causes for Landing phase accidents shows that the most common cause is Local Error Factor – Hostile Conditions, and Organisation Factors – Inadequate Regulation (22% each).

Accident Causal Factors by Aircraft Group

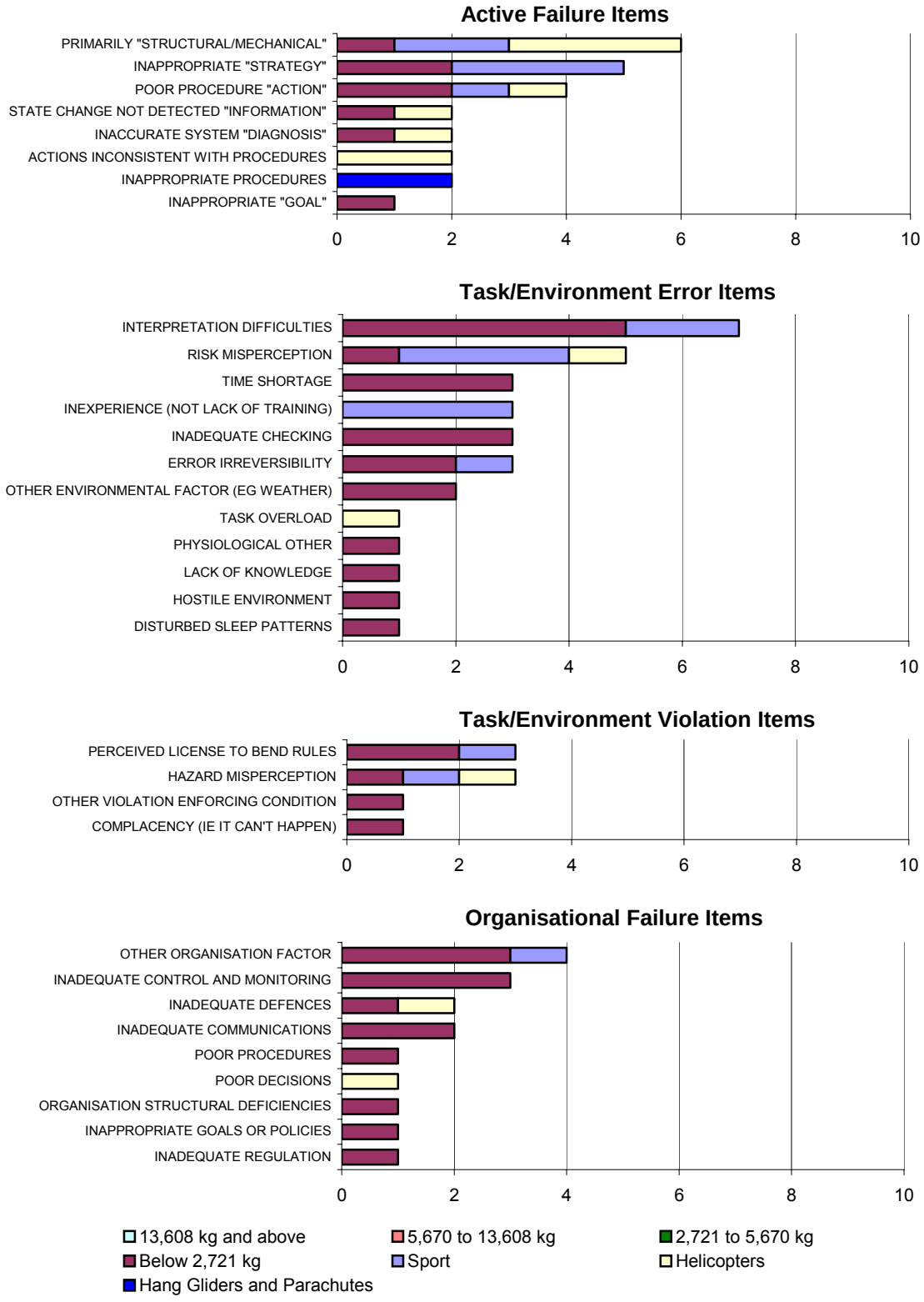
The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 1998 for the various aircraft groups. Causal factors have been assigned to 71% of the 63 accidents.



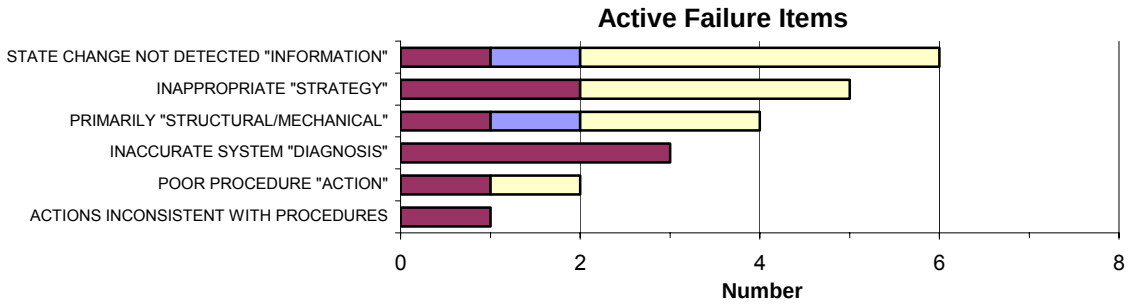
The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 1998 for the various aircraft groups. Causal factors have been assigned to 77% of the 60 accidents.

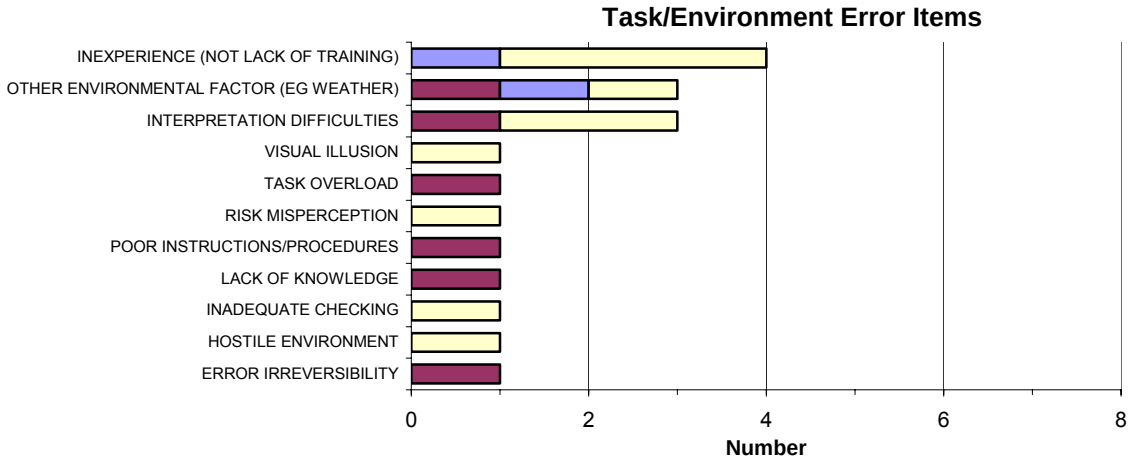


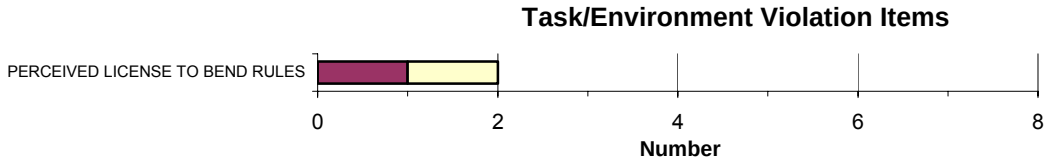
The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 1999 for the various aircraft groups. Causal factors have been assigned to 78% of the 51 accidents.

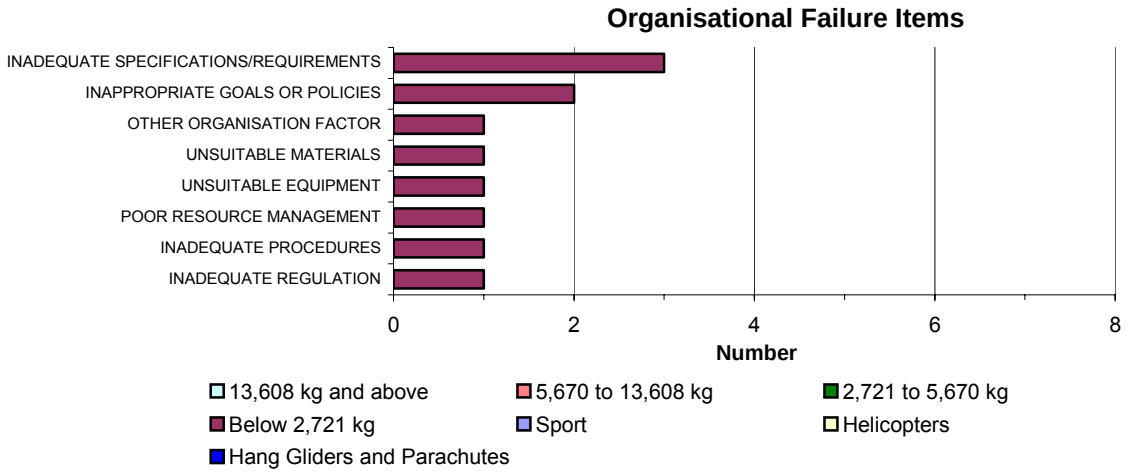


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 1999 for the various aircraft groups. Causal factors have been assigned to 46% of the 48 accidents.

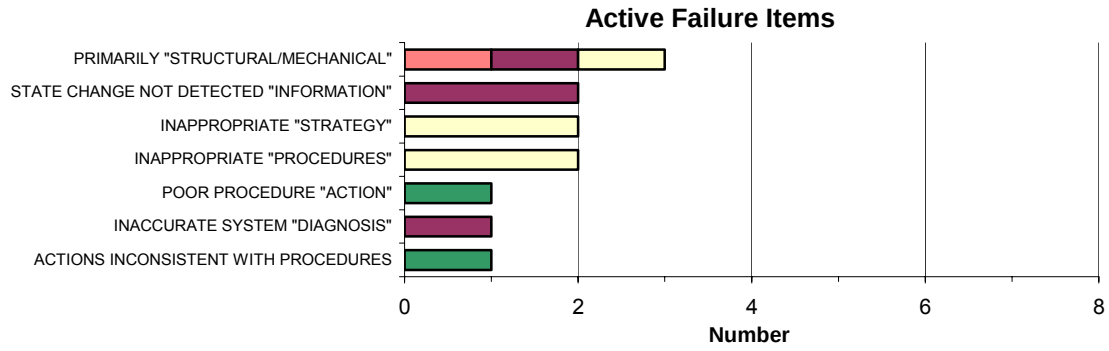


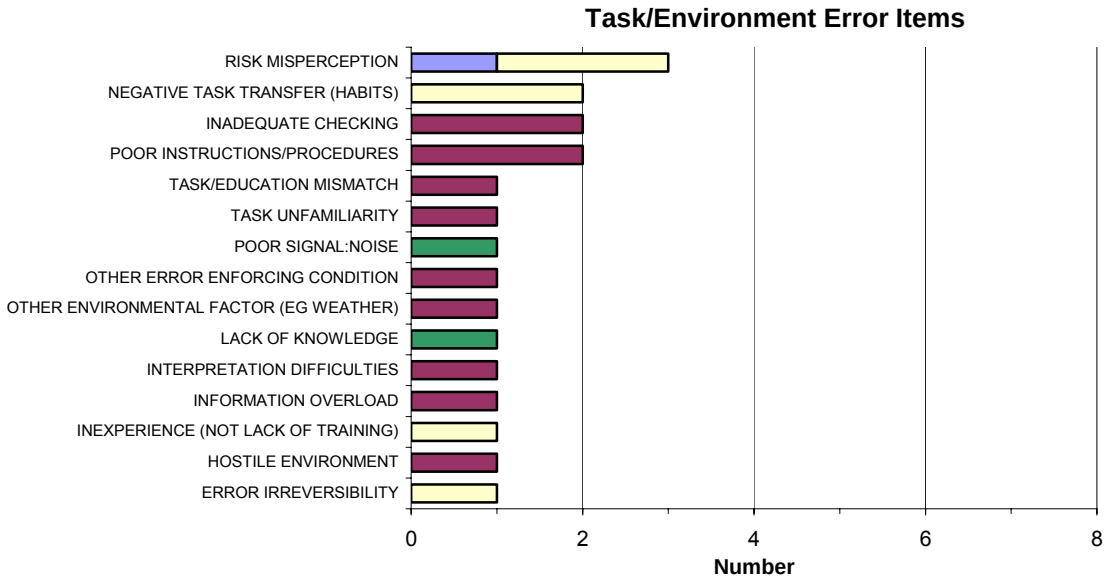


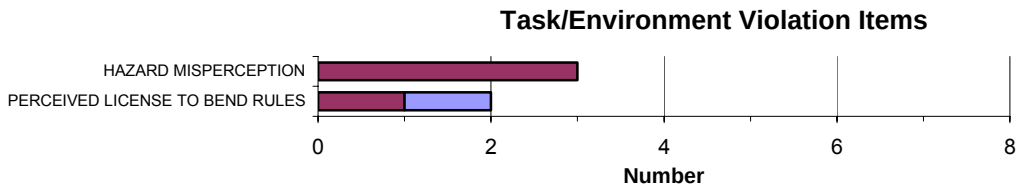


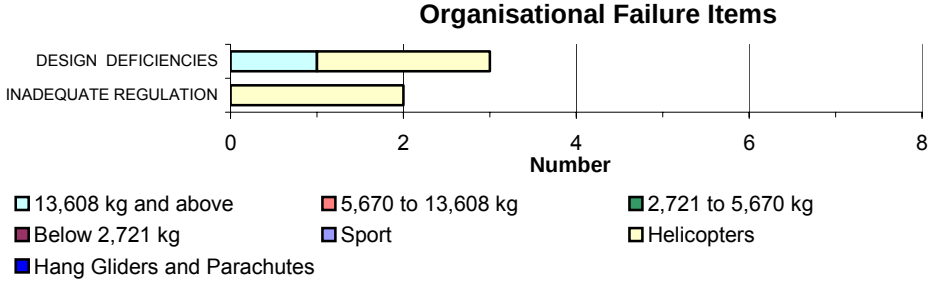


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2000 for the various aircraft groups. Causal factors have been assigned to 41% of the 71 accidents.

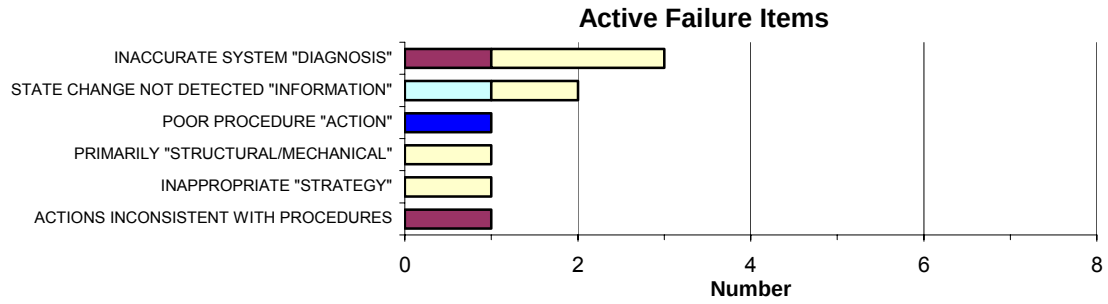


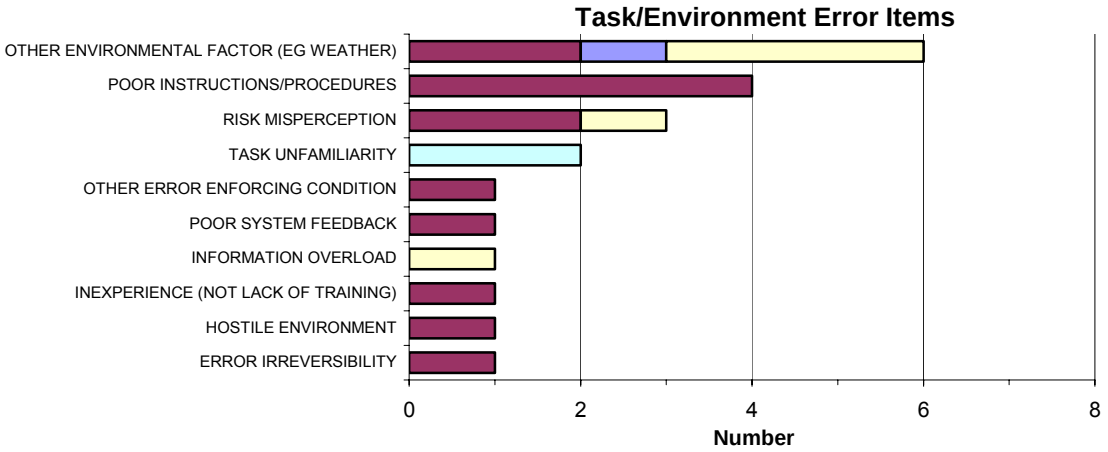


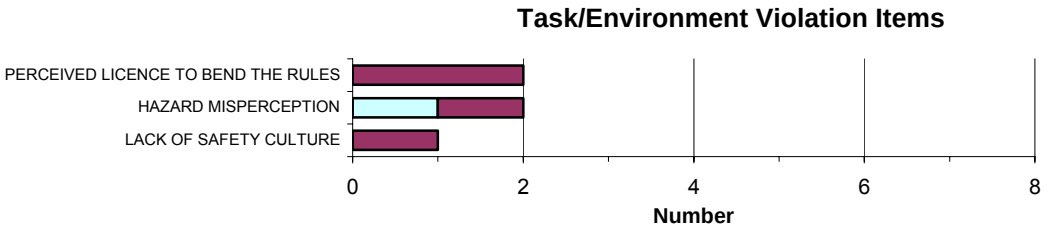


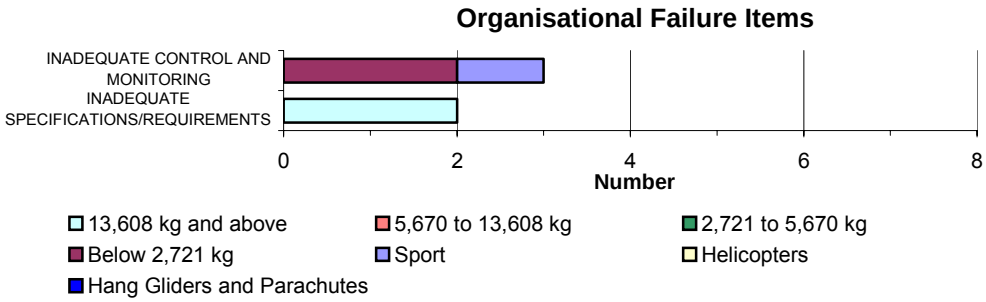


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 2000 for the various aircraft groups. Causal factors have been assigned to 25 (48%) of the 52 accidents.

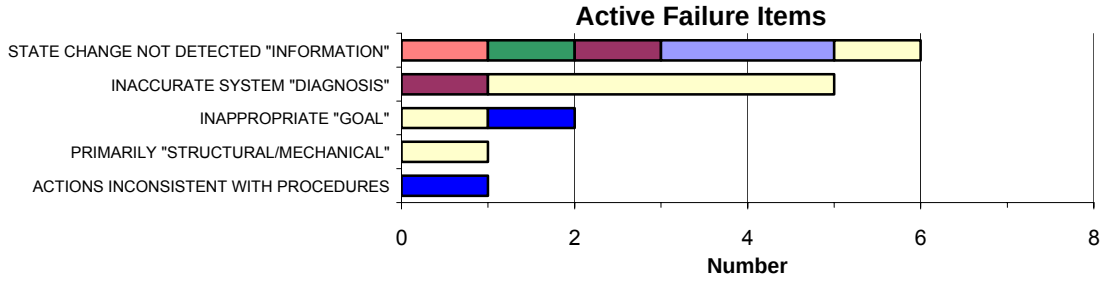


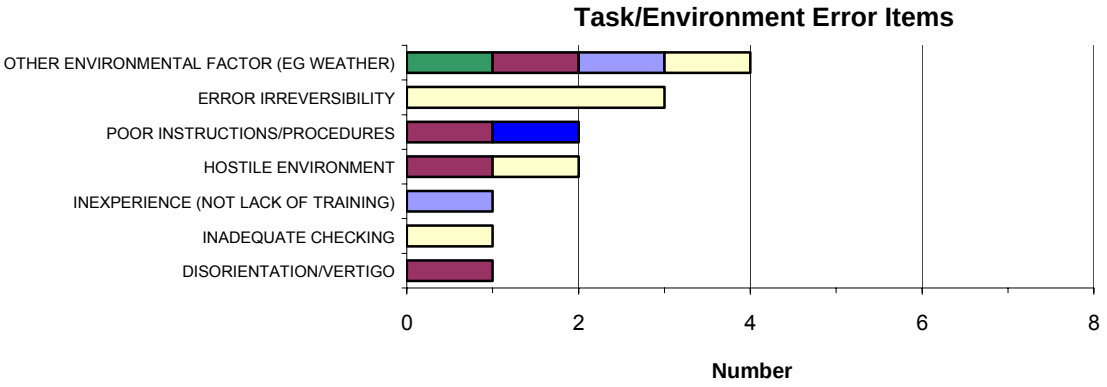


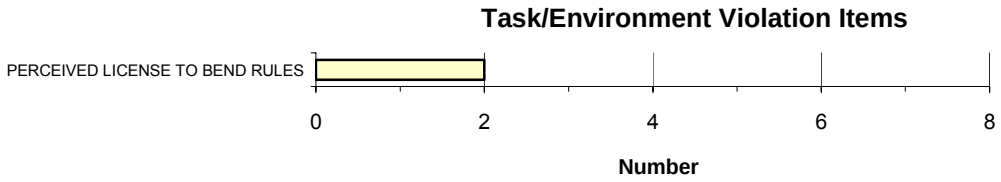


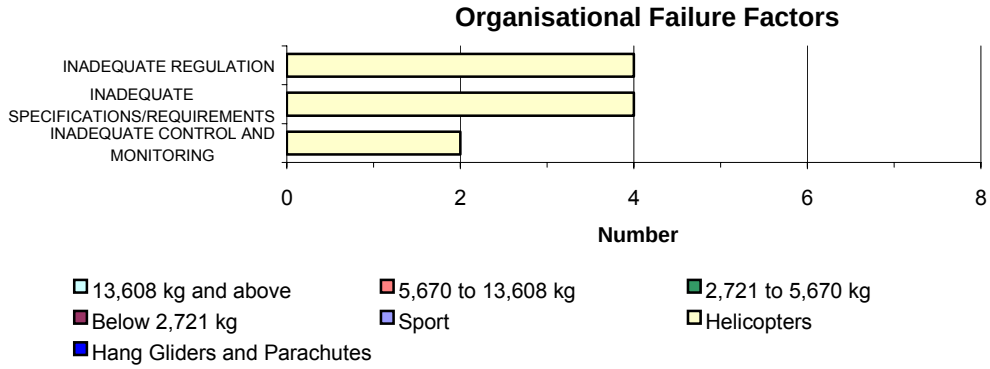


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2001 for the various aircraft groups. Causal factors have been assigned to 28 (44%) of the 63 accidents.

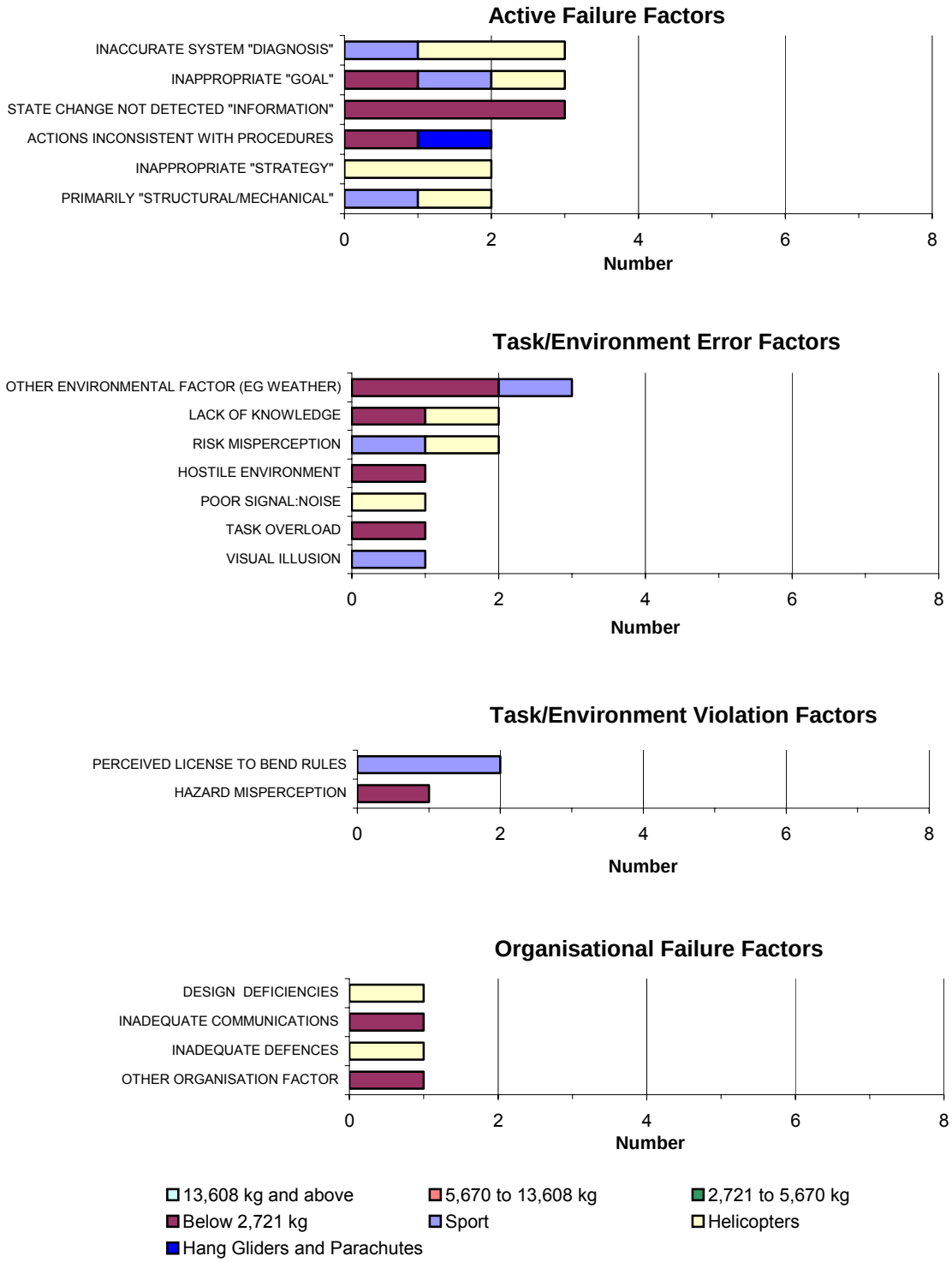




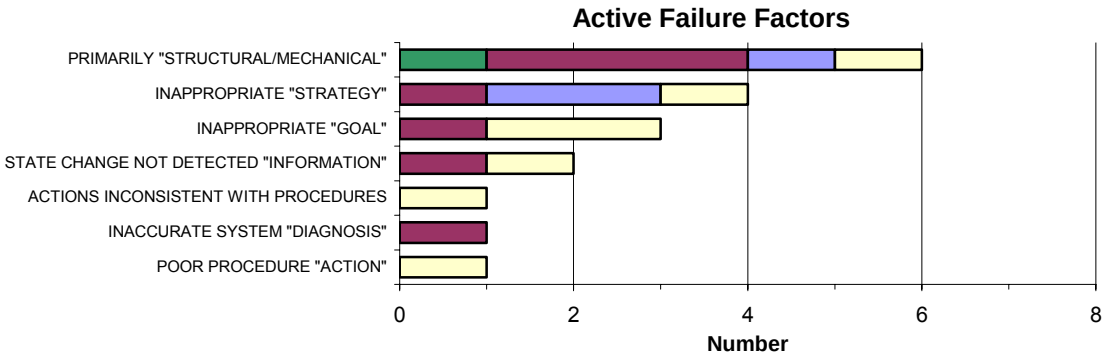


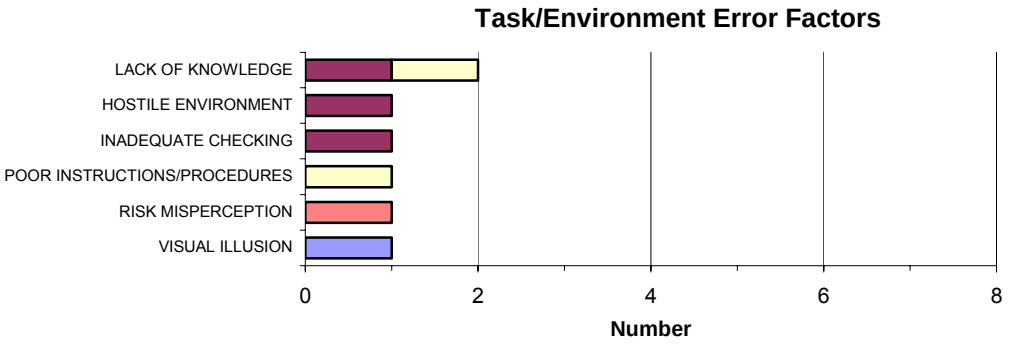


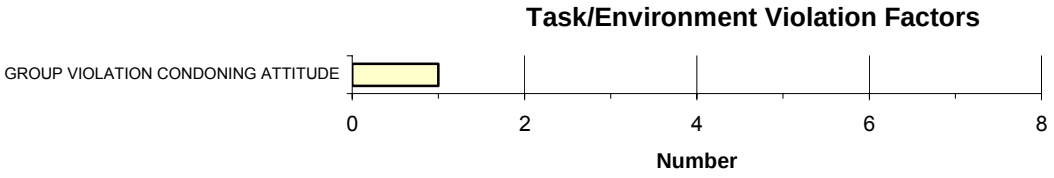
The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 2001 for the various aircraft groups. Causal factors have been assigned to 24 (38%) of the 63 accidents.

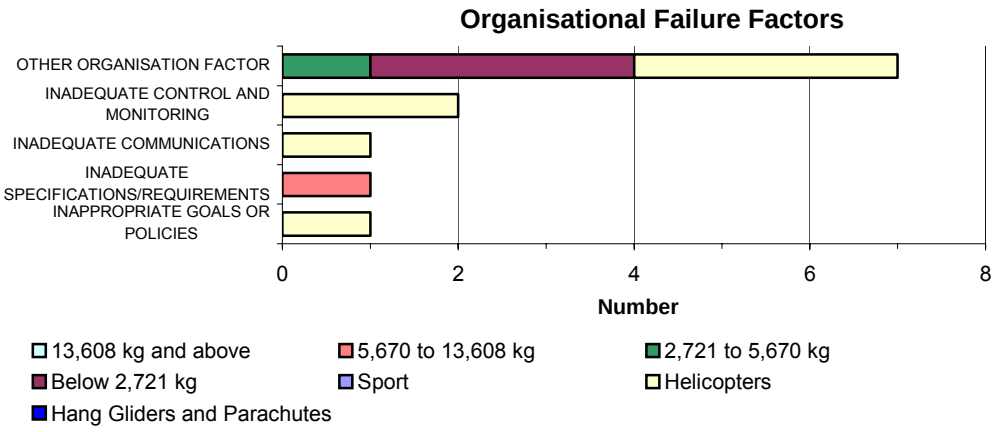


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2002 for the various aircraft groups. Causal factors have been assigned to 21 (39%) of the 54 accidents.

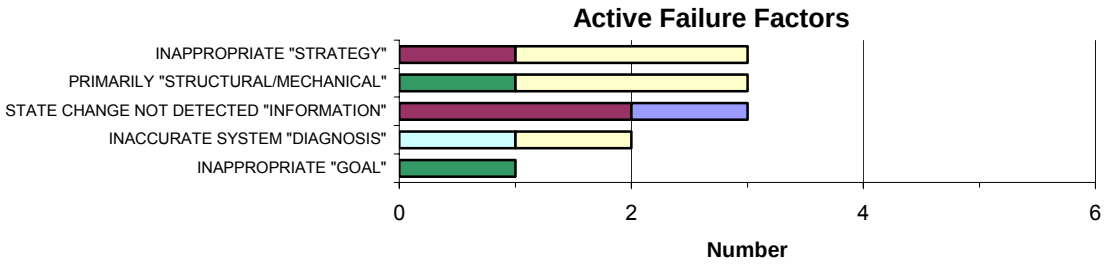


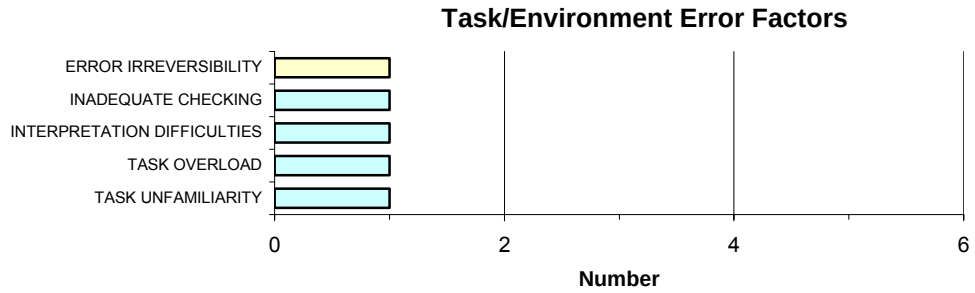


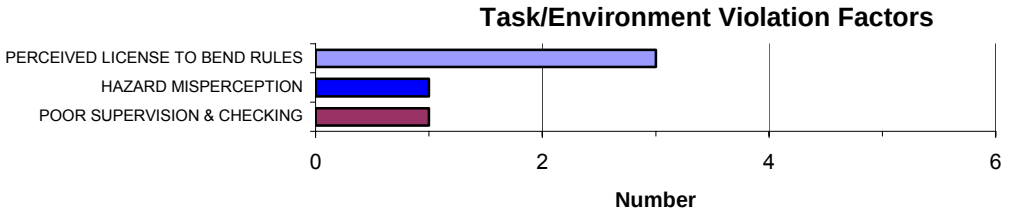


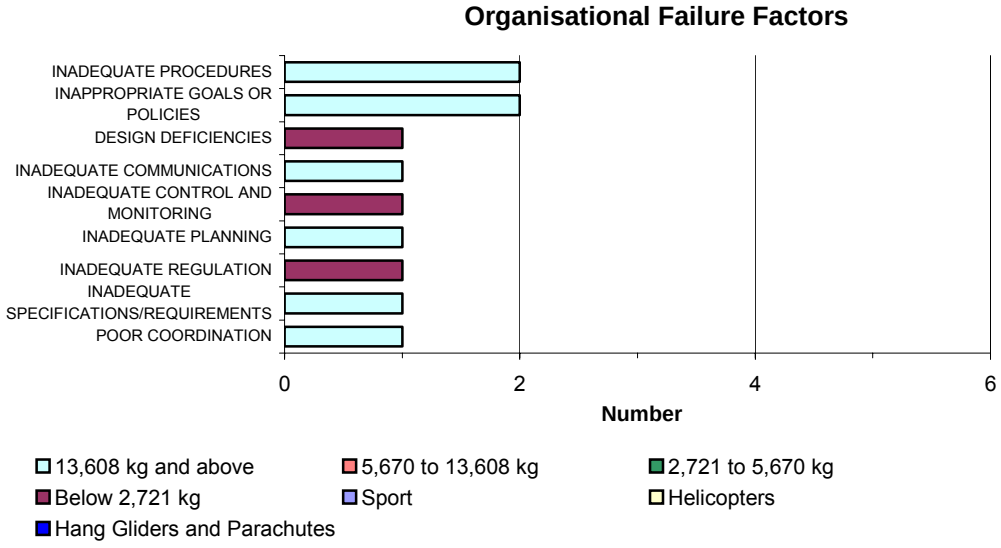


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 2002 for the various aircraft groups. Causal factors have been assigned to 16 (40%) of the 40 accidents.

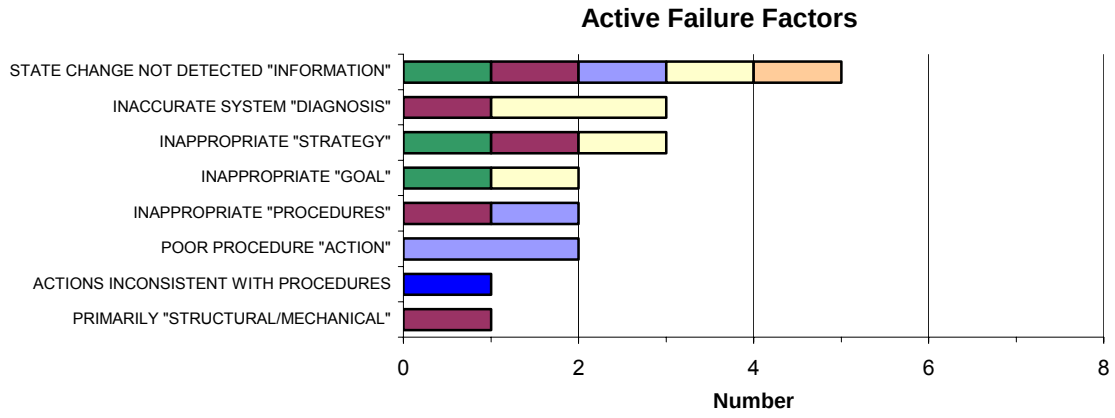


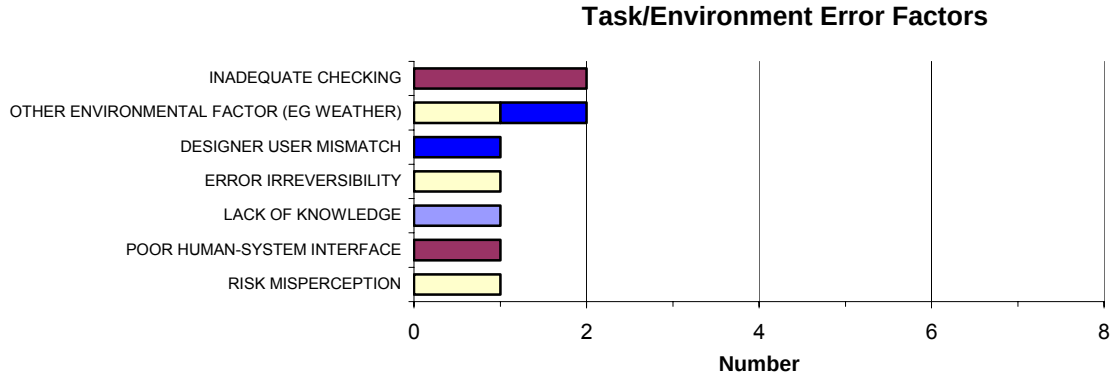


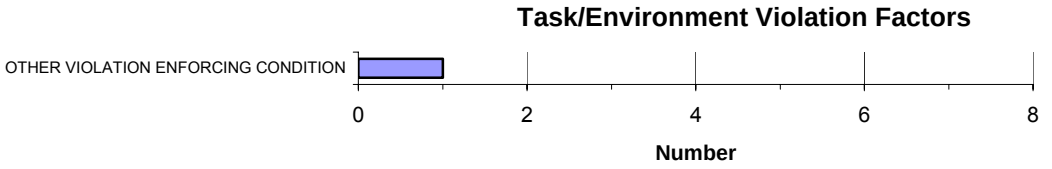


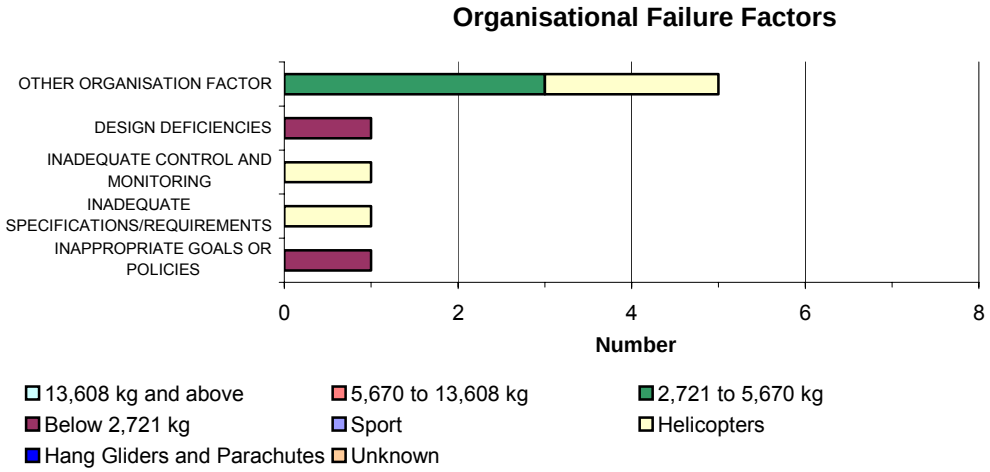


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2003 for the various aircraft groups. Causal factors have been assigned to 25 (51%) of the 49 accidents.

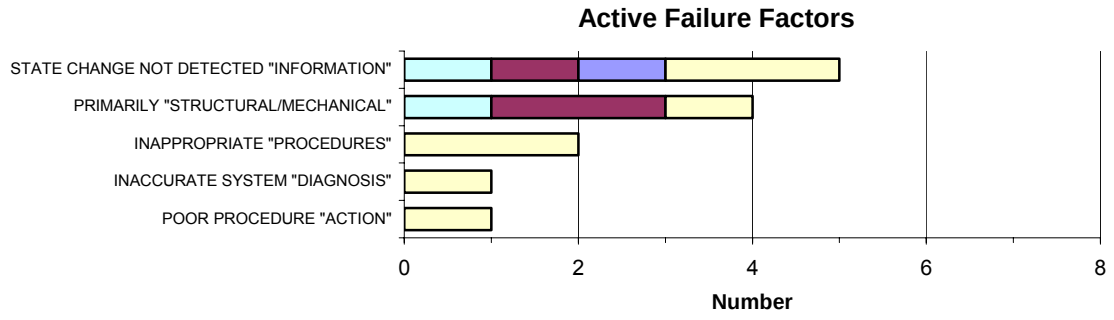


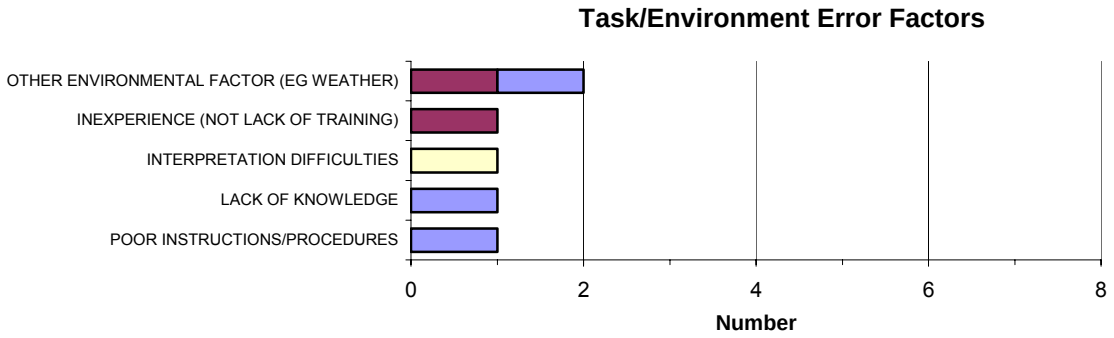


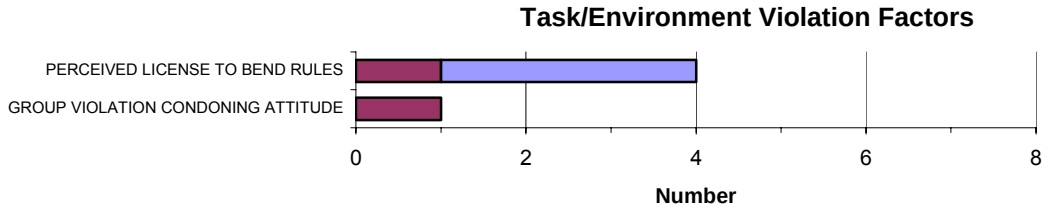


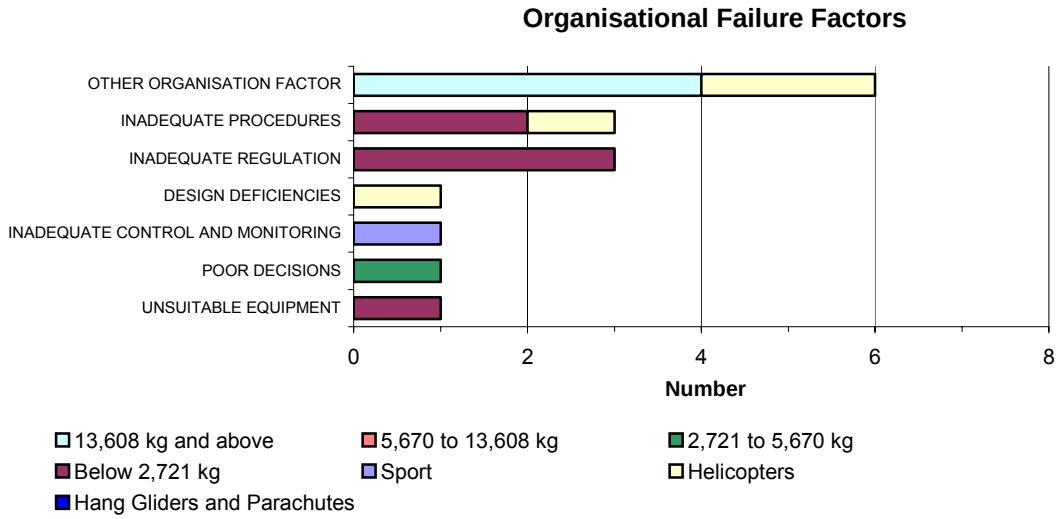


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 2003 for the various aircraft groups. Causal factors have been assigned to 19 (40%) of the 47 accidents.

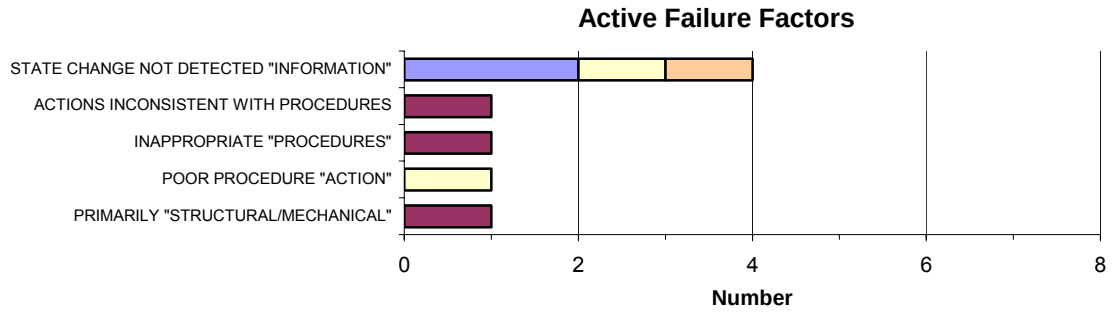


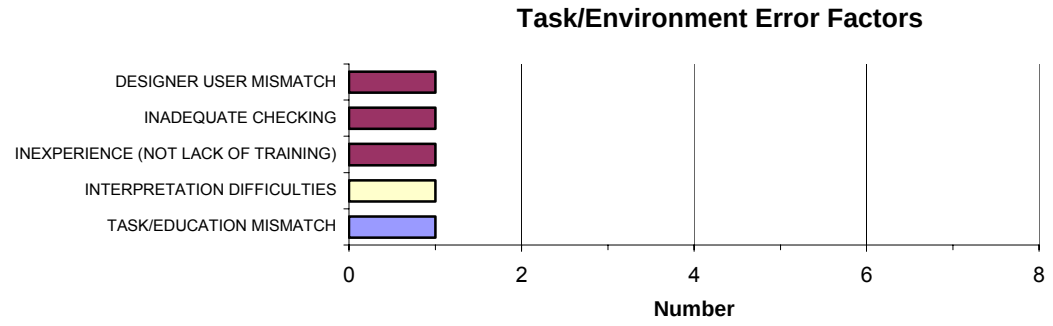


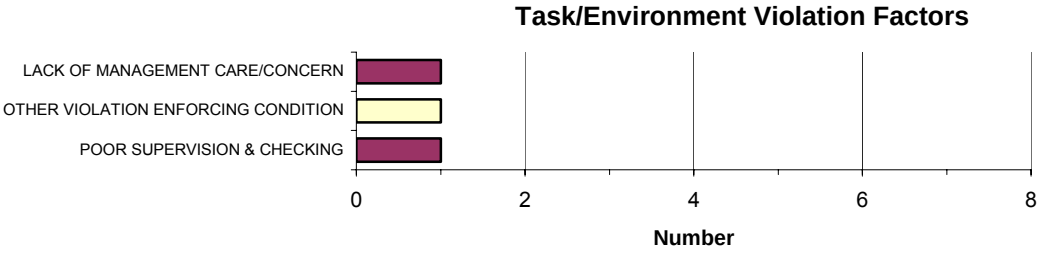


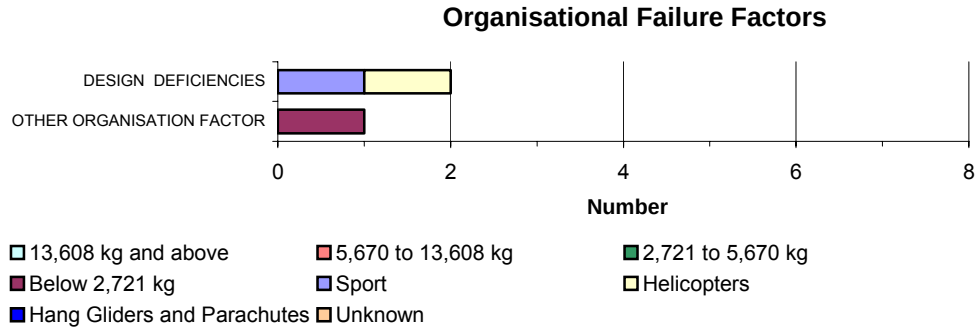


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2004 for the various aircraft groups. Causal factors have been assigned to 14 (35%) of the 40 accidents.

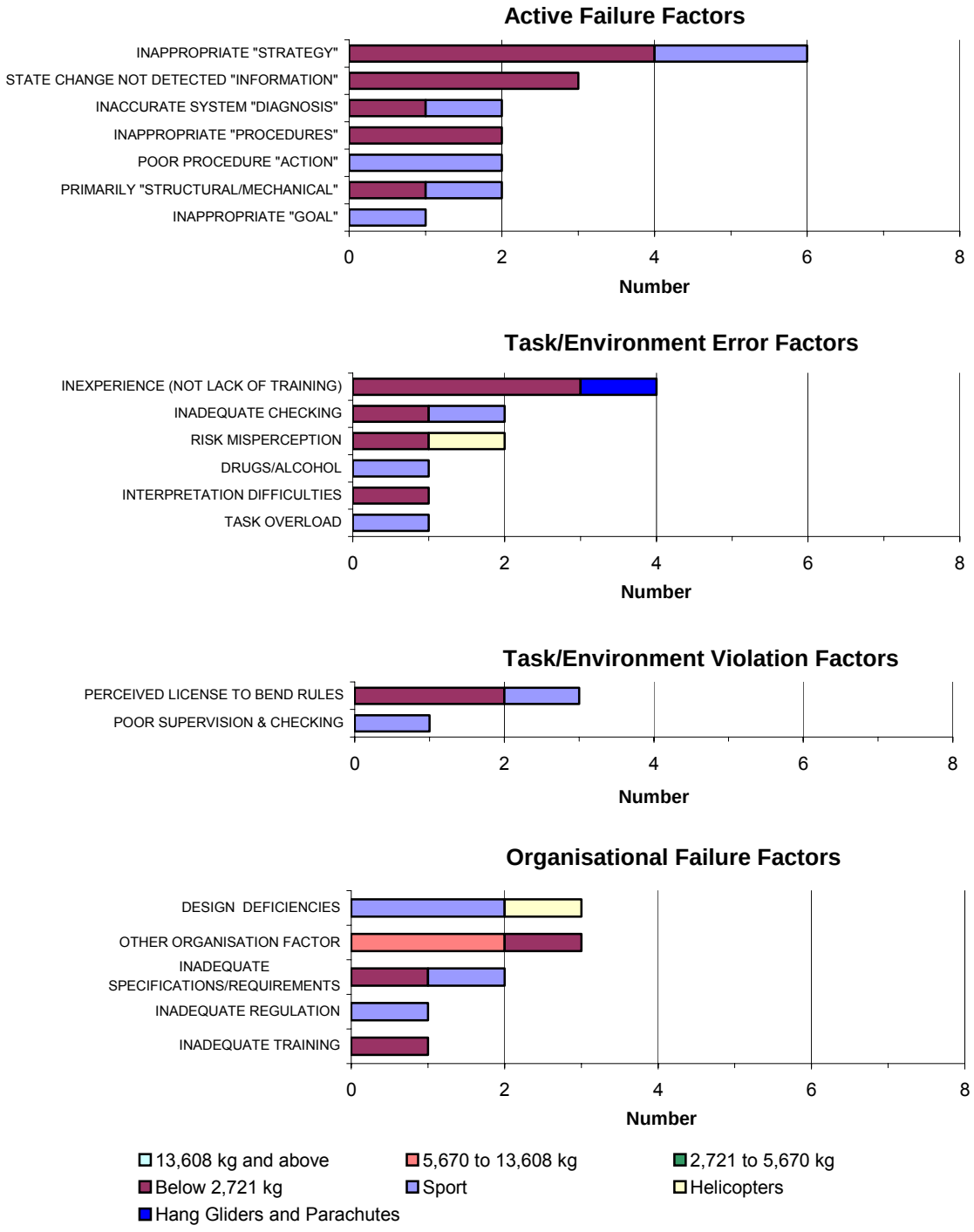




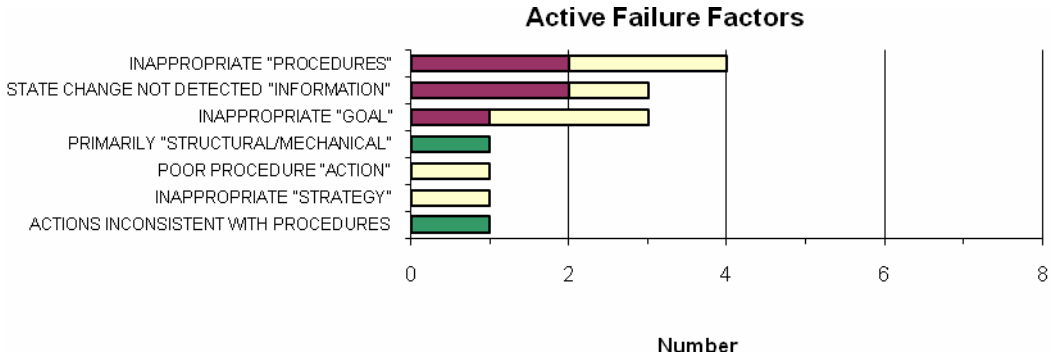


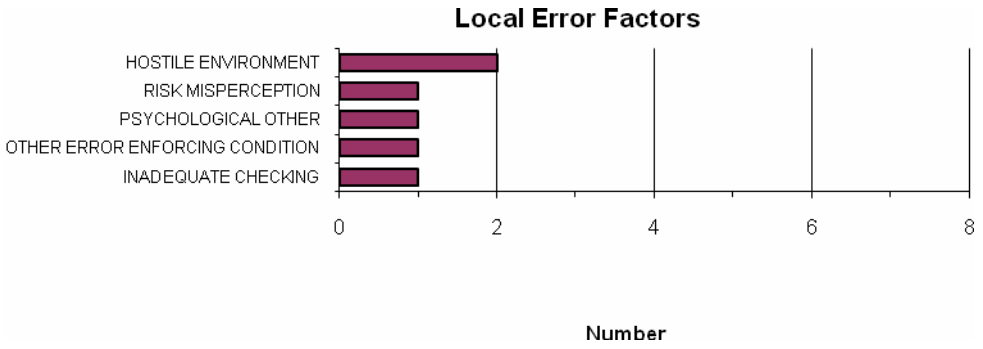


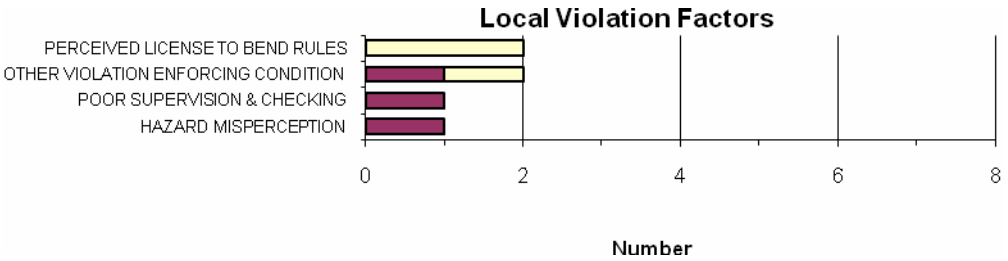
The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2005 for the various aircraft groups. Causal factors have been assigned to 26 (53%) of the 49 accidents.

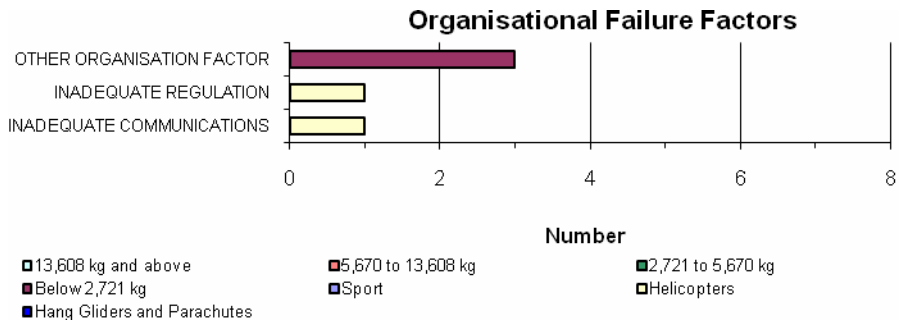


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 July to 31 December 2005 for the various aircraft groups. Causal factors have been assigned to 19 (56%) of the 34 accidents.

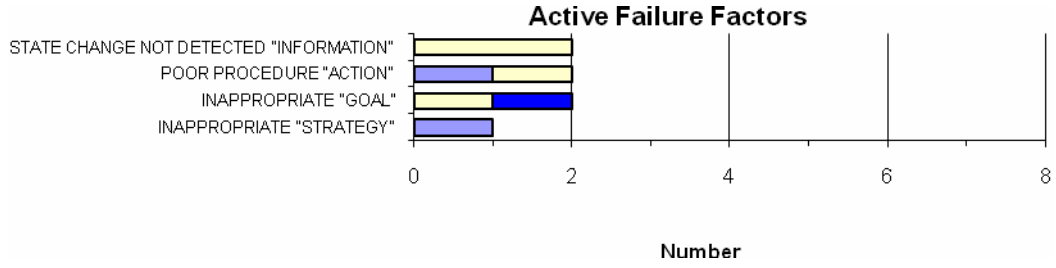


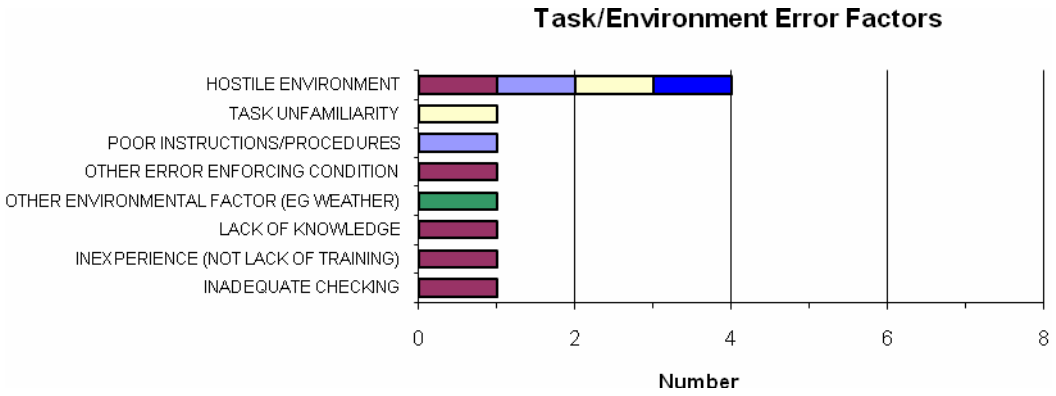


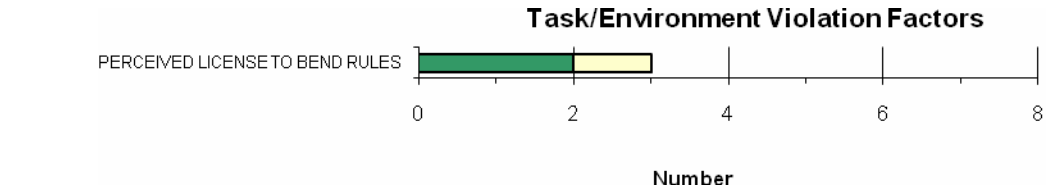


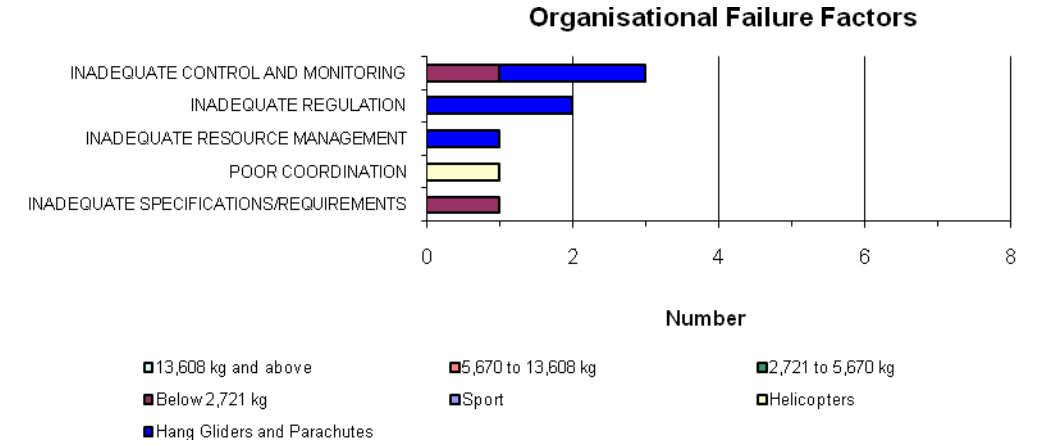


The following graphs show the number of causal factors recorded for accidents that occurred during the period 1 January to 30 June 2006 for the various aircraft groups. Causal factors have been assigned to 21 (30%) of the 70 accidents.





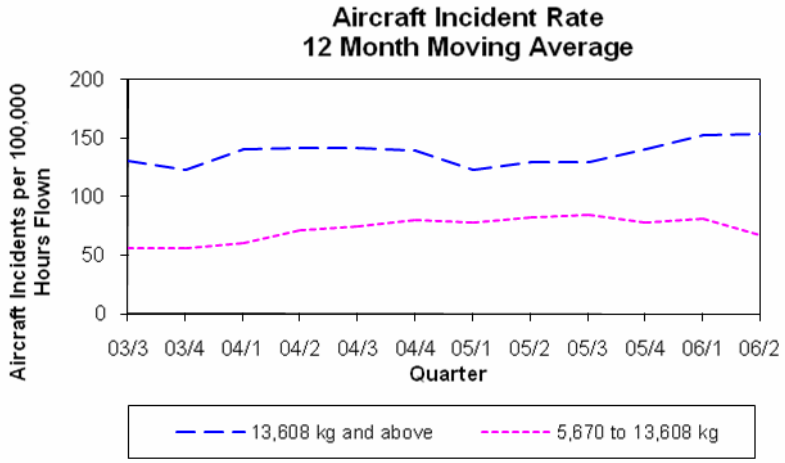


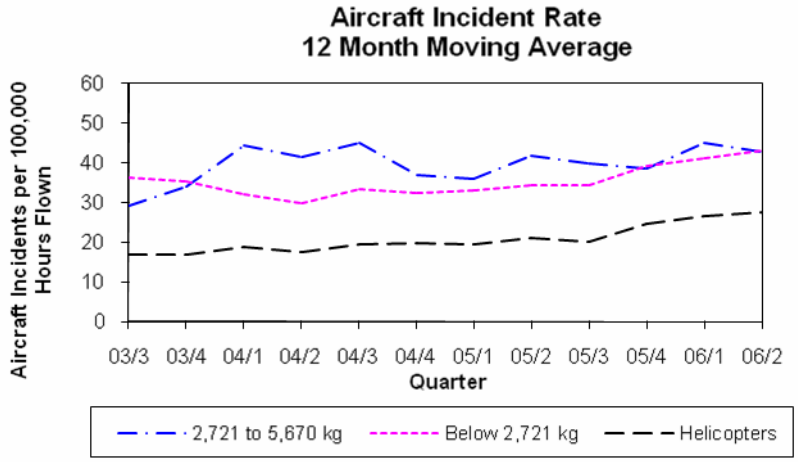


Aircraft Incidents

Occurrence Trend

The following graphs show the aircraft incident rates (incidents per 100,000 hours flown) twelve month moving average for the three-year period 1 July 2003 to 30 June 2006 (excluding Sport).





Aircraft Group	Straight Line Trend of 12 Month Moving Average
13,608 kg and above	Trending up
5,670 to 13,608 kg	Trending down
2,721 to 5,670 kg	Trending up
Below 2,721 kg	Trending up
Helicopters	Trending up

The ratios of reported aircraft incidents for the below 2,721 kg and helicopter groups to the respective number of reported accidents continue to be low.

Six-Monthly Comparison

Number of Aircraft Incidents

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change	
			Number	Percentage
13,608 kg and above	162	204	+ 42	+ 25.9%
5,670 to 13,608 kg	47	33	- 14	- 29.8%
2,721 to 5,670 kg	13	17	+ 4	+ 30.8%
Below 2,721 kg	55	63	+ 8	+ 14.5%
Helicopters	19	27	+ 8	+ 42.1%
Sport	11	16	+ 5	+ 45.5%
Unknown	21	57	+ 36	+ 171.4%
Total	328	417	+ 89	+ 27.1%

Severity

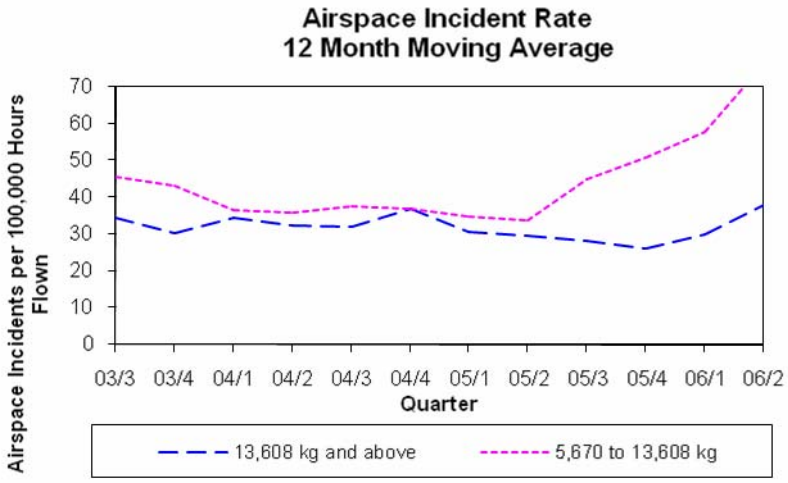
Six-Monthly Comparison

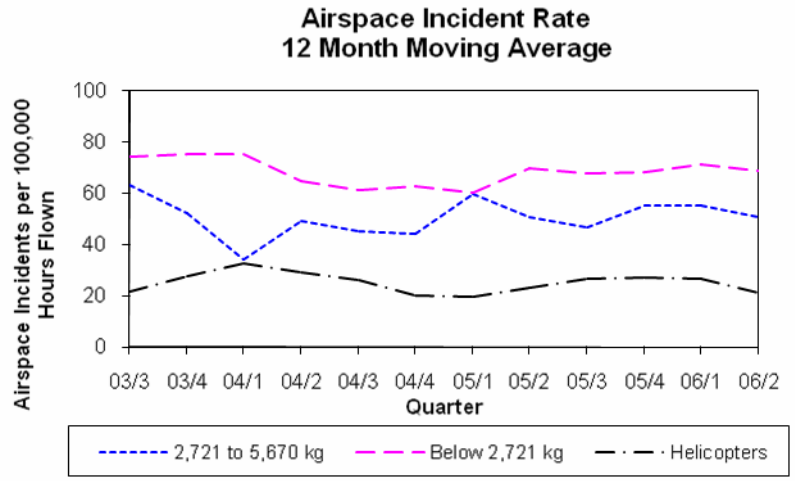
Aircraft Group	Severity	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
13,608 kg and above	Critical	0	0	0
	Major	5	27	+ 22
	Minor	157	177	+ 20
5,670 to 13,608 kg	Critical	0	0	0
	Major	5	1	- 4
	Minor	42	32	- 10
Below 5,670 kg, Helicopters and Sport	Critical	1	1	0
	Major	11	10	- 1
	Minor	86	112	+ 34
Unknown	Critical	0	0	0
	Major	2	1	- 1
	Minor	19	22	+ 3
Total	**Critical**	**1**	**1**	**0**
	Major	**23**	**39**	**+ 16**
	Minor	**304**	**343**	**+ 39**

Airspace Incidents

Occurrence Trend

The following graphs show the airspace incident rates (incidents per 100,000 hours flown) twelve month moving average for the three-year period 1 July 2003 to 30 June 2006 (excluding Sport).





Aircraft Group	Straight Line Trend of 12 Month Moving Average
13,608 kg and above	Trending up
5,670 to 13,608 kg	Trending up
2,721 to 5,670 kg	Trending up
Below 2,721 kg	Trending up
Helicopters	Trending down

The slope of the trend lines for the 2,721to 5,670 kg, below 2,721 and helicopter groups are close to zero.

Six-Monthly Comparison

Number of Airspace Incidents

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change	
			Number	Percentage
13,608 kg and above	32	65	+ 33	+ 103.1%
5,670 to 13,608 kg	19	42	+ 23	+ 121.1%
2,721 to 5,670 kg	15	15	0	0.0%
Below 2,721 kg	108	105	- 3	-2.8%
Helicopters	24	16	- 8	-33.3%
Sport	16	11	- 5	-31.3%
Unknown	189	145	- 44	-23.3%
Total	403	399	-4	-1.0%

Severity

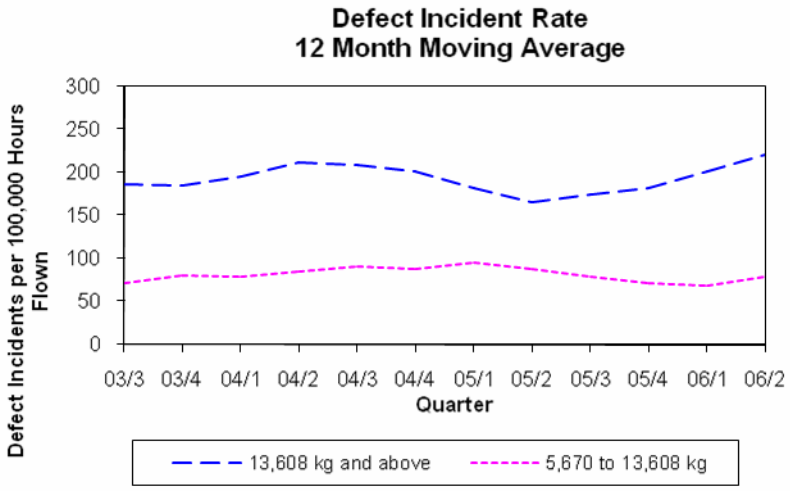
Six-Monthly Comparison

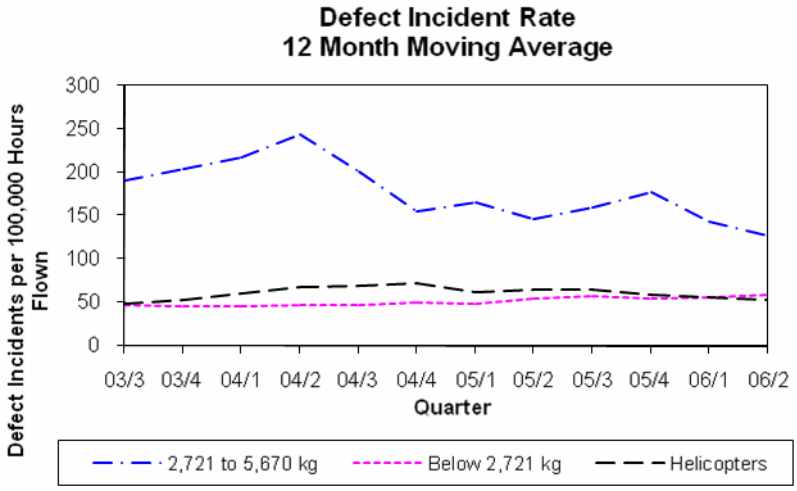
Aircraft Group	Severity	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
13,608 kg and above	Critical	0	0	0
	Major	0	4	+ 1
	Minor	32	61	+ 29
5,670 to 13,608 kg	Critical	0	0	0
	Major	3	2	- 1
	Minor	16	40	+ 24
Below 5,670 kg, Helicopters and Sport	Critical	0	2	+ 2
	Major	9	11	+ 2
	Minor	154	134	- 20
Unknown	Critical	0	0	0
	Major	17	14	- 3
	Minor	172	131	- 41
Total	**Critical**	**0**	**2**	**+2**
	Major	**29**	**31**	**+ 2**
	Minor	**374**	**366**	**- 8**

Defect Incidents

Occurrence Trend

The following graphs show the aircraft defect incident rates (incidents per 100,000 hours flown) twelve month moving average for the three-year period 1 October 2002 to 30 June 2006 (excluding Sport).





Aircraft Group	Straight Line Trend of 12 Month Moving Average
13,608 kg and above	Trending up
5,670 to 13,608 kg	Trending up
2,721 to 5,670 kg	Trending down
Below 2,721 kg	Trending up
Helicopters	Constant

Six-Monthly Comparison

Number of Defect Incidents

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change	
			Number	Percentage
13,608 kg and above	212	204	- 8	- 3.7
5,670 to 13,608 kg	35	33	- 2	- 5.7
2,721 to 5,670 kg	48	17	- 31	-64.6
Below 2,721 kg	87	63	- 24	- 27.6
Helicopters	53	27	- 26	- 49.1
Sport	12	16	+ 4	+ 33.3
Unknown	6	57	+ 51	+ 850
Total	**453**	**417**	**- 36**	**- 12.6**

Severity

Six-Monthly Comparison

Aircraft Group	Severity	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
13,608 kg and above	Critical	1	0	- 1
	Major	19	34	+ 15
	Minor	192	291	+99
5,670 to 13,608 kg	Critical	0	0	0
	Major	14	3	- 11
	Minor	21	35	+14
Below 5,670 kg, Helicopters and Sport	Critical	1	0	- 1
	Major	33	22	- 11
	Minor	166	157	- 9
Unknown	Critical	0	0	0
	Major	1	1	0
	Minor	5	8	+ 3
Total	**Critical**	**2**	**0**	**- 2**
	Major	**67**	**60**	**- 7**
	Minor	**384**	**491**	**+ 107**

Bird Incident Rates

12-Month Moving Average Strike Rate per 1,000 Aircraft Movements

The following table shows the 12-month moving average strike rates for identified aerodromes for the three years ending June 2006.

Aerodrome	03/3	03/4	04/1	04/2	04/3	04/4	05/1	05/2	05/3	05/4	06/1	06/2
Auckland	2.6	2.3	2.1	2.3	2.9	3.3	3.8	3.5	3.2	3.0	2.7	2.7
Christchurch	2.4	2.0	2.4	2.6	2.6	3.0	2.8	2.7	3.4	3.7	4.0	4.6
Dunedin	4.2	5.8	4.5	5.5	5.6	4.6	6.7	7.3	5.9	7.5	5.2	4.7
Gisborne	6.1	7.8	8.4	7.1	5.8	6.5	5.3	6.6	11.6	10.1	10.1	11.5
Hamilton	2.4	2.6	3.3	2.8	2.6	2.7	2.5	2.8	2.5	3.0	3.8	4.5
Invercargill	5.4	5.5	4.1	3.7	3.4	4.1	5.3	5.9	7.5	9.3	10.4	11.4
Napier	5.1	4.6	4.5	4.0	5.6	6.8	7.8	9.1	7.3	7.2	6.7	7.5
Nelson	2.4	2.1	1.9	2.6	2.9	2.9	2.7	1.4	0.9	0.8	1.1	1.9
New Plymouth	7.1	8.4	9.0	8.5	9.0	7.8	9.0	8.5	7.9	7.6	6.0	5.8
Ohakea	0.8	1.2	2.1	3.5	4.8	5.1	4.9	5.3	4.4	4.3	3.2	2.3
Palmerston North	3.0	3.5	4.0	3.3	3.9	3.0	4.0	3.2	3.3	3.8	3.4	3.9
Queenstown	3.1	2.9	2.7	1.7	2.5	3.0	3.7	4.1	3.5	3.6	3.5	2.8
Rotorua	4.7	5.3	6.4	5.7	7.0	7.4	7.8	9.3	9.0	9.4	10.3	9.8
Taupo	1.2	1.4	1.4	1.7	1.5	0.8	1.0	0.8	1.0	1.5	1.8	1.8
Tauranga	2.8	2.9	3.9	3.2	2.4	2.3	1.4	1.9	2.2	2.9	3.2	3.3
Wellington	1.6	1.6	1.8	1.9	1.6	2.2	2.1	2.6	2.4	2.1	2.2	1.7
Whenuapai	10.8	8.7	10.8	10.3	12.1	14.1	9.5	4.7	4.1	3.4	4.8	6.0
Woodbourne	3.4	2.0	2.8	2.4	2.8	4.2	6.3	6.9	7.6	6.5	4.9	5.2

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 1,000 to achieve strikes per 1,000 aircraft movements. Aircraft movements at aerodromes are obtained from the ACNZ, and where available, from individual airport companies.

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 1,000 aircraft movements	Risk Category	Trending Down	Constant	Trending Up
≥ 0.0 and < 0.5	Low	Monitor	Monitor	Advise Aerodrome Operator
≥ 0.5 and < 1.0	Medium	Monitor	Advise Aerodrome Operator	Advise Aerodrome Operator, Request Rectification Action
≥ 1.0	High	Advise Aerodrome Operator	Advise Aerodrome Operator, Request Rectification Action	Advise Aerodrome Operator, Request Rectification Action

Analysis

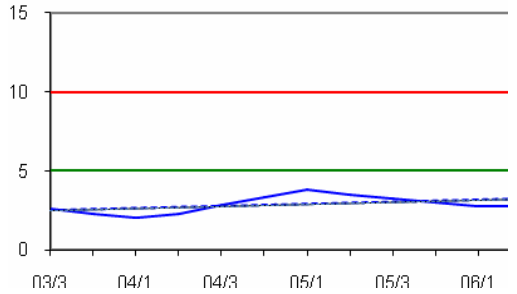
Analysis shows that 8 of the 18 monitored aerodromes have bird strike rates above the "trigger level" for CAA Action. Details were forwarded to Manager Aeronautical Services.

Two aerodromes exhibited strike rates in the high risk category of the CAA standard (above 10.0 bird strikes per 10,000 aircraft movements). Six aerodromes exhibited a strike rate in the medium risk category (5.0 to 10.0 per 10,000 movements) and all of these aerodromes displayed a long-term upward or constant trend. Ten aerodromes exhibited a strike rate in the low risk category (below 5.0 per 10,000 movements) and two of these aerodromes displayed a long-term upward trend.

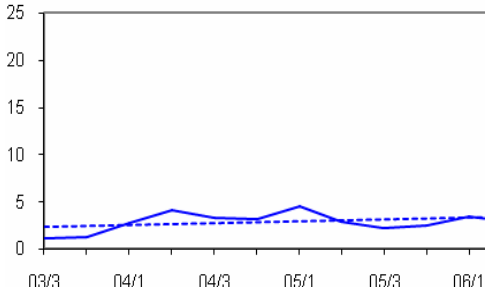
The top line on the strike rate graph shows the High risk category. The next line shows the Medium risk category.

Aerodrome	Risk Category	Trend	CAA Action
Auckland	Low	Trending up	Advise Aerodrome Operator
Christchurch	Low	Trending up	Advise Aerodrome Operator
Dunedin	Medium	Trending up	Advise Aerodrome Operator
Gisborne	Medium	Trending up	Advise Aerodrome Operator, Request Rectification Action
Hamilton	Low	Trending up	Advise Aerodrome Operator
Invercargill	High	Constant	Advise Aerodrome Operator, Request Rectification Action
Napier	Medium	Trending up	Advise Aerodrome Operator, Request Rectification Action
Nelson	Low	Trending down	Monitor
New Plymouth	Medium	Trending down	Monitor
Ohakea	Low	Trending up	Advise Aerodrome Operator
Palmerston North	Low	Constant	Monitor
Queenstown	Low	Trending up	Advise Aerodrome Operator
Rotorua	Medium	Trending up	Advise Aerodrome Operator, Request Rectification Action
Taupo	Low	Constant	Monitor
Tauranga	Low	Constant	Monitor
Wellington	Low	Constant	Monitor
Whenuapai	Low	Trending down	Monitor
Woodbourne	Medium	Trending up	Advise Aerodrome Operator, Request Rectification Action

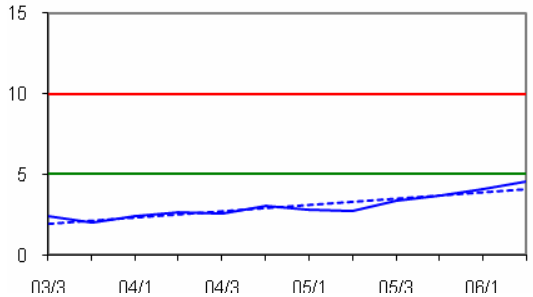
Auckland - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



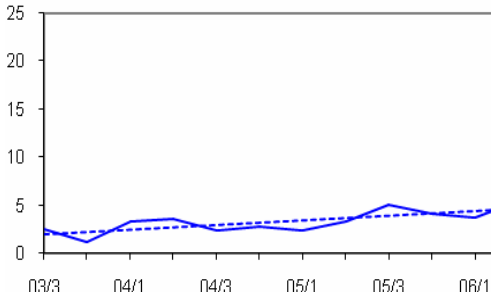
Auckland - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



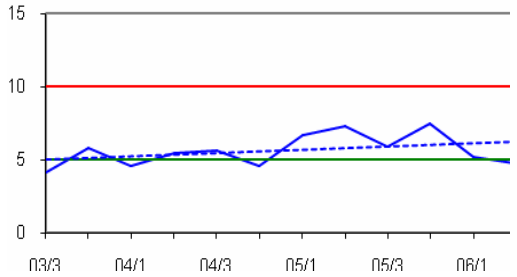
Christchurch - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



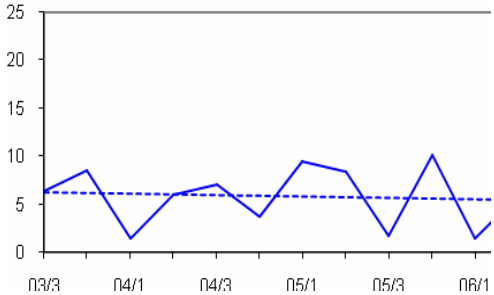
Christchurch - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



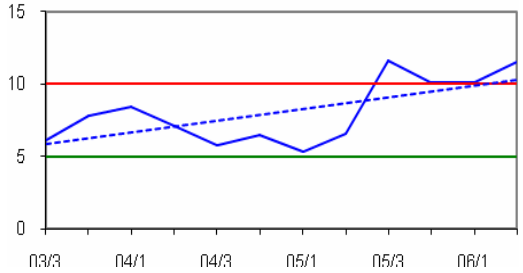
Dunedin - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



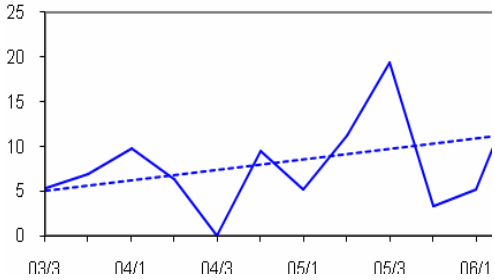
Dunedin - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



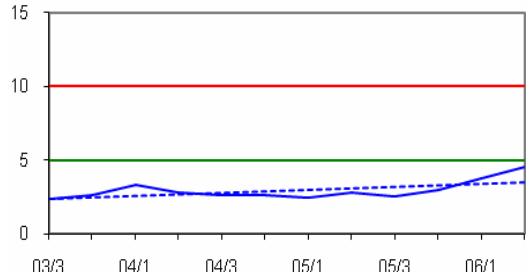
Gisborne - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



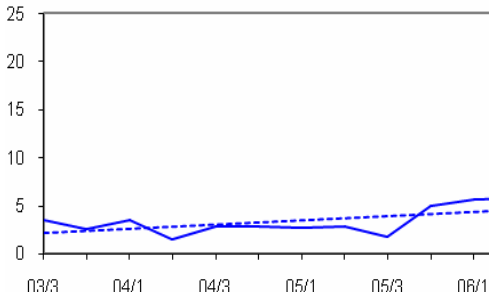
Gisborne - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



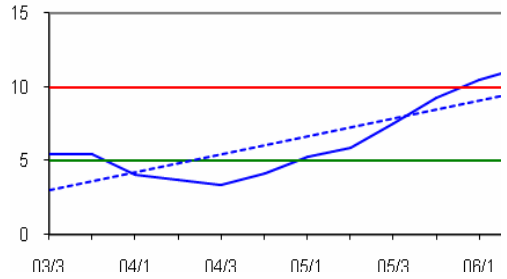
Hamilton - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



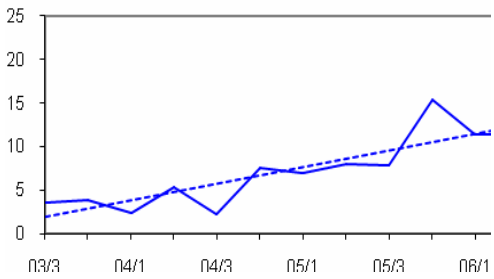
Hamilton - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



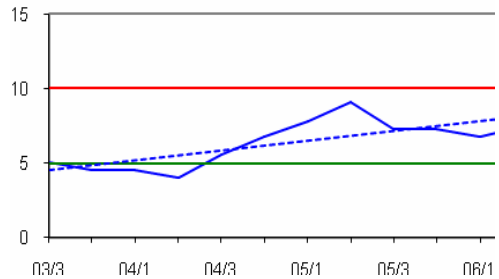
Invercargill - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



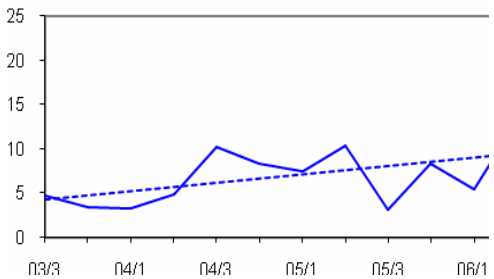
Invercargill - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



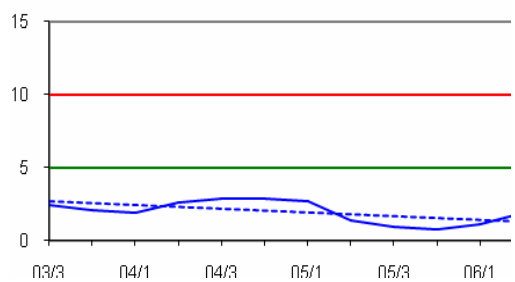
Napier - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



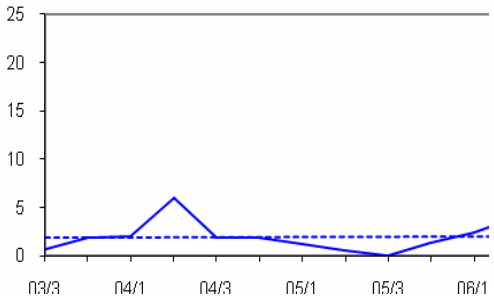
Napier - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



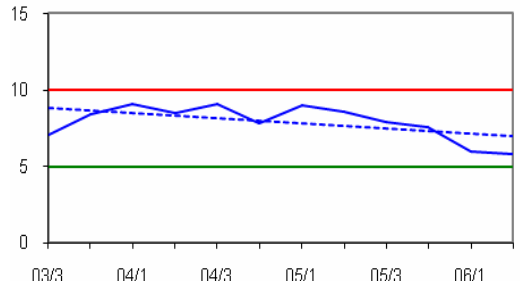
Nelson - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



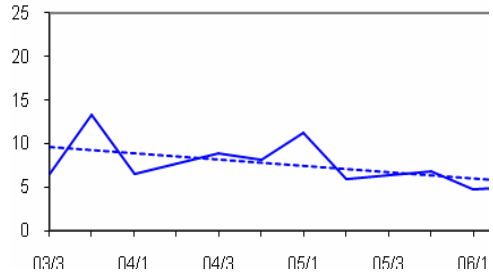
Nelson - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



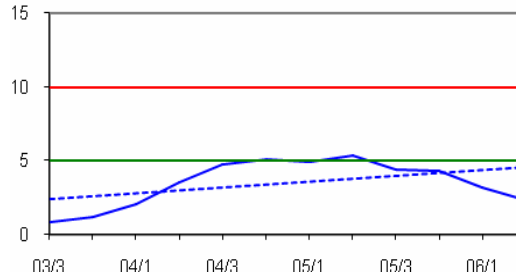
New Plymouth - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



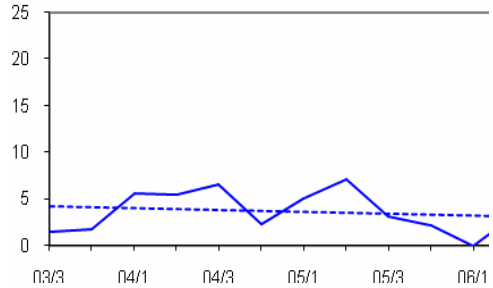
New Plymouth - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



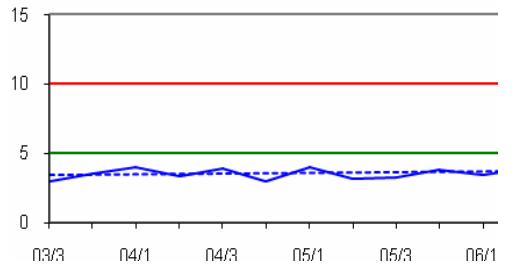
Ohakea - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



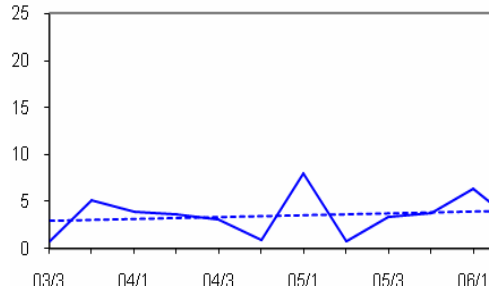
Ohakea - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



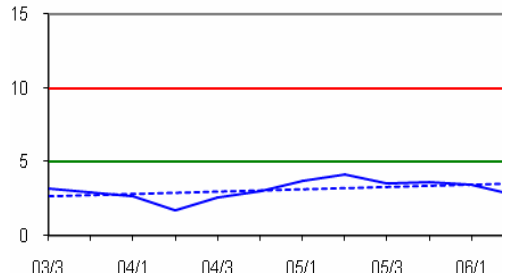
Palmerston North - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



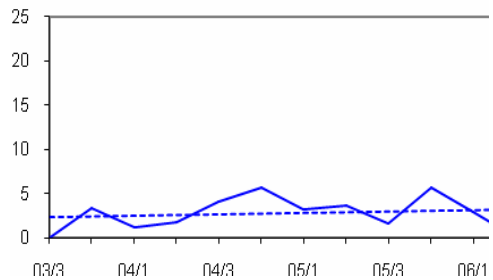
Palmerston North - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



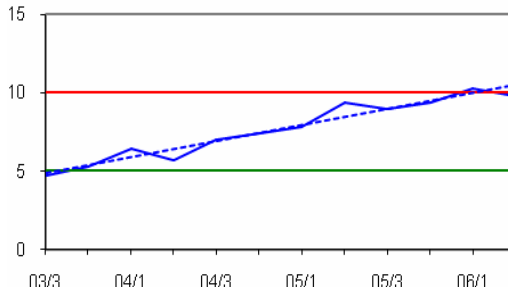
Queenstown - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



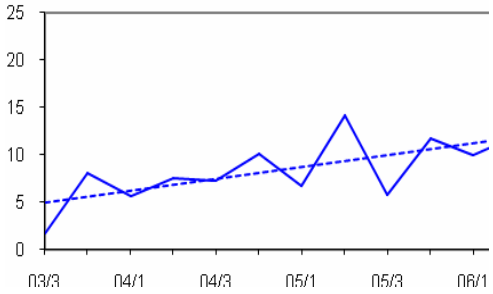
Queenstown - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



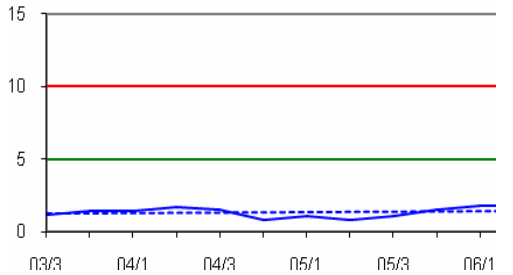
Rotorua - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



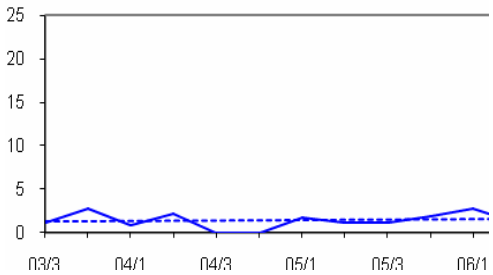
Rotorua - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



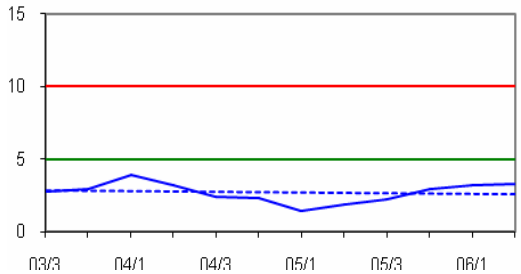
Taupo - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



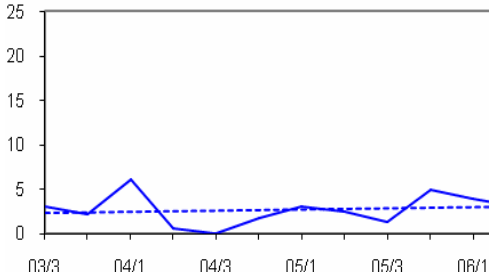
Taupo - Quarterly Bird Strike Rate per 10,000 Aircraft Movements



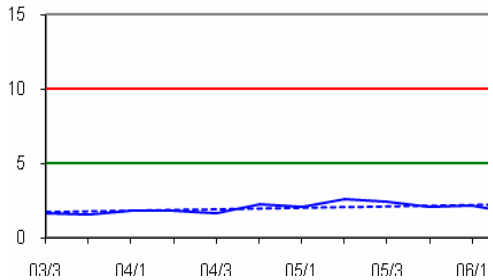
Tauranga - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements



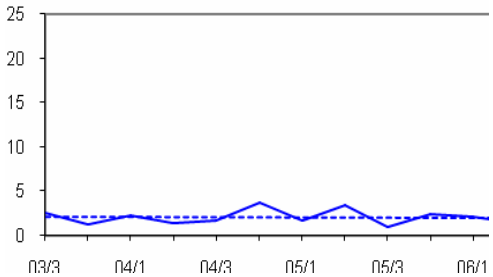
Tauranga - Quarterly Bird Strike Rate per 10,000 Aircraft Movements

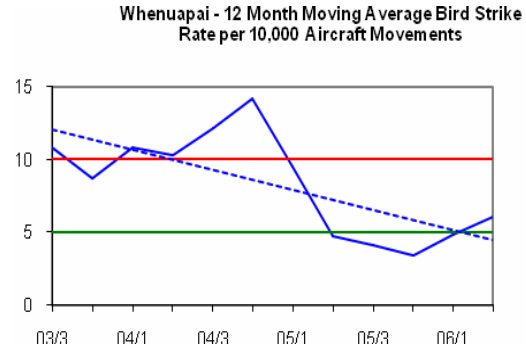


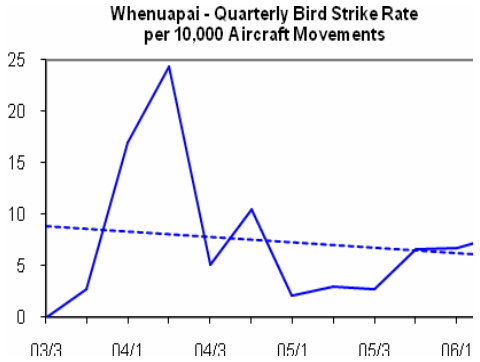
Wellington - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements

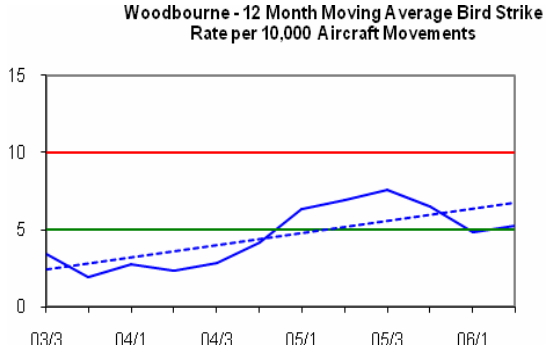


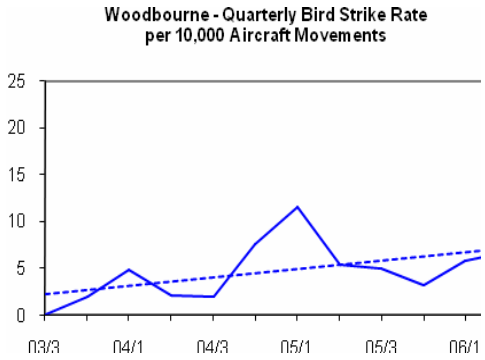
Wellington - Quarterly Bird Strike Rate per 10,000 Aircraft Movements

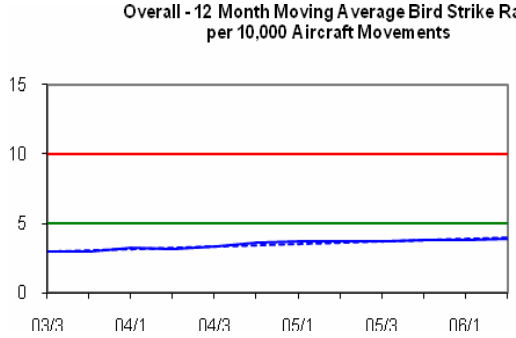


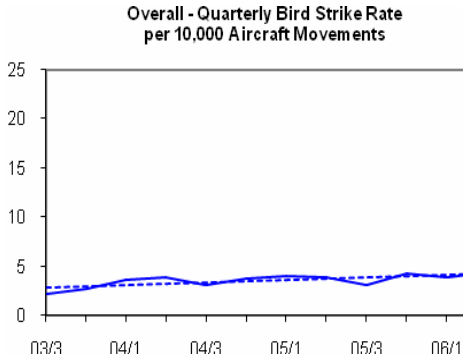

Whenuapai - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements
15
10
5
0
03/3
04/1
04/3
05/1
05/3
06/1


Whenuapai - Quarterly Bird Strike Rate per 10,000 Aircraft Movements
25
20
15
10
5
0
03/3
04/1
04/3
05/1
05/3
06/1


Woodbourne - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements
15
10
5
0
03/3
04/1
04/3
05/1
05/3
06/1


Woodbourne - Quarterly Bird Strike Rate per 10,000 Aircraft Movements
25
20
15
10
5
0
03/3
04/1
04/3
05/1
05/3
06/1


Overall - 12 Month Moving Average Bird Strike Rate per 10,000 Aircraft Movements
15
10
5
0
03/3
04/1
04/3
05/1
05/3
06/1


Overall - Quarterly Bird Strike Rate per 10,000 Aircraft Movements
25
20
15
10
5
0
03/3
04/1
04/3
05/1
05/3
06/1

Security Incidents

Six-Monthly Comparison

Number of Security Incidents

Aircraft Group	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
13,608 kg and above	33	26	- 7
5,670 to 13,608 kg	8	6	- 2
2,721 to 5,670 kg	0	0	0
Below 2,721 kg	3	0	- 3
Helicopters	0	0	0
Sport	0	0	0
Unknown	45	36	- 9
Total	**89**	**68**	**- 21**

Severity

Severity	1 Jan to 30 Jun 2005	1 Jan to 30 Jun 2006	Change
Critical	2	0	- 2
Major	3	4	+1
Minor	84	64	- 20

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 1 January to 30 June 2004 period.

Month	ACC	ADI	ARC	ASP	BRD	DEF	DGD	HGA	INC	NIO	PAA	PIO	SEC	TOTAL
06/1	8	2	26	60	96	70	2	2	76	1	1	2	19	**365**
06/2	10	7	54	83	62	80	7	3	67	5	1	1	11	**391**
06/3	8	7	43	62	198	92	1	2	81	3			12	**509**
06/4	7	3	19	45	138	72	3	1	40	7			5	**340**
06/5	5	7	37	74	171	129	8	1	82	5		3	17	**539**
06/6	4	8	30	85	71	97	5		83	2			7	**392**
Total	**42**	**34**	**209**	**409**	**736**	**540**	**26**	**9**	**429**	**23**	**2**	**6**	**71**	**2536**

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		

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, rotors, 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 collisions between aircraft; or

(2) avoiding collisions 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.

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 telecommunications 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 promulgated in any aeronautical information publication, map, or chart.

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 seven 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.

Aircraft Groups

The actual aircraft groups used to derive data in this report, although reported to the nearest kilogram, have been based on the imperial measures used in the United States design requirements which are the basis for certification of most aircraft. The relevant aircraft data is therefore recorded as pounds on the database. Since they are related to design requirements the "break" figures group aircraft with similar complexities and associated operational factors together. Attempts to query based on metric figures can lead to error where aircraft are clustered about a particular break by splitting groups that should logically be kept together.

The following table shows the actual imperial weights used in the reporting queries, the nearest metric conversion, the metric label used on graphs and tables in the report, and the nearest "nominal" metric weight break.

Actual Weight Break (lbs)	Metric Conversion (kg) [NB Rounded down]	Report Data Label (kg)	Nearest "Nominal" Metric Break (kg)
≥ 30,000	≥ 13,608	13,608 kg and above	13,600
≥12,500 and < 30,000	≥ 5,670 and < 13,608	5,670 to 13,608 kg	5,700-13,600
≥ 6,000 and < 12,500	≥ 2,721 and < 5,670	2,721 to 5,670 kg	2,700-5,700
< 6,000	< 2,721	Below 2,721 kg	2,700

The following table shows the aircraft classes included in each aircraft group.

Aircraft Group	Aircraft Class
13,608 kg and above	Aeroplane
5,670 to 13,608 kg	Aeroplane
2,721 to 5,670 kg	Aeroplane, Balloon
Below 2,721 kg	Aeroplane, Balloon
Helicopters	Helicopter
Sport	Amateur Built Aeroplane, Amateur Built Glider, Amateur Built Helicopter, Glider, Gyroplane, Microlight Class 1, Microlight Class 2, Power Glider