CIVIL AVIATION AUTHORITY
OF NEW ZEALAND

Aviation Safety Summary

1 October to 31 December 2015

Spring 2015

Introduction to the Quarterly Safety Summary Report

Welcome to the CAA's quarterly safety summary report for the spring quarter of 2015. This report is designed to provide a summary of accidents, incidents and safety occurrences that were reported to the CAA for the period 1 October to 31 December 2015. It also provides a summary of key industry activity measures.

This spring there were 31 accidents, down very slightly from 32 in the same period last year. Unfortunately one of these 31 was the tragic accident at Fox Glacier, resulting in 7 fatalities in the Airline Operations - Helicopter group (Public Air Transport sector). This accident is being investigated by the Transport Accident Investigation Commission.

There were also 2 serious and 2 minor injuries in the Adventure Aviation Sector (Sport Transport), with 1 serious injury in a balloon, and 1 serious injury and 2 minor injuries in Part 115 parachute operations.

Within the commercial operations sector there was 1 accident, involving an agricultural helicopter, which resulted in 1 serious injury. The airline and other commercial sectors had 6 non-injury accidents.

There were also 3 serious and 5 minor injuries in the Private Operations - Sport group (including 3 serious and 4 minor injuries in hang gliders, paragliders and parachutes). The Private Operations sector had a further 10 non-injury accidents.

This distribution of accidents, with a large number of relatively minor accidents in the private operations sector and a few, more serious accidents in commercial operations, is not unusual. To a certain extent it reflects the volume and type of activity in these sectors.

By comparison the loss of seven people in a helicopter on air transport and two serious injuries to passengers on part 115 operations represents a greater threat to public safety, in a sector where the acceptance of risk is inherently lower. These sectors are likely to receive on going scrutiny from the CAA and industry groups.

Safe flying,

J.D. Stanton
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Executive Summary - Aviation Safety to 31 December 2015

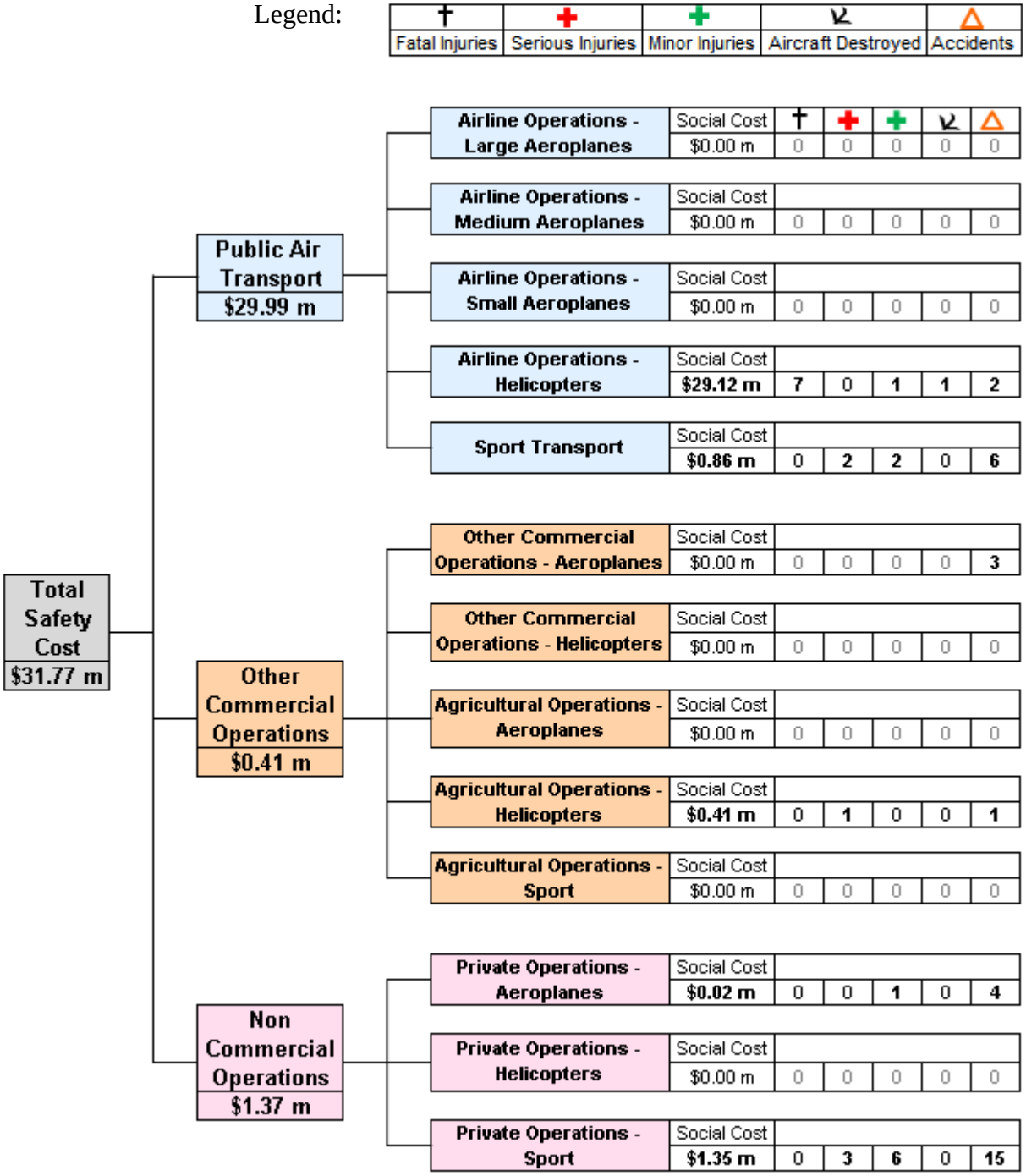
- There were a total of 31 accidents in the October to December quarter, the spring of 2015. There were 7 fatal, 6 serious and 10 minor injuries in these accidents and injury incidents. Social cost in this quarter has accrued from accidents and injury incidents in the following safety target groups:
  - Airline Operations - Helicopters — 7 fatal injuries and 1 minor injury, 1 aircraft destroyed
  - Sport Transport — 2 serious and 2 minor injuries
  - Agricultural Operations - Helicopters — 1 serious injury
  - Private Operations - Aeroplanes — 1 minor injury
  - Private Operations - Sport — 3 serious and 6 minor injuries

  There were additional accidents in the groups above and other safety target groups that were not serious enough to contribute to the social cost outcome this quarter (no injuries or aircraft destroyed), but still represent safety risks, see page 3.
- The Annual Social Cost is now $66 million (three year average). The social cost now shows a downward trend. In the last four years the cost has decreased by 15% from $77M to $66M. See page 4.
- The overall accident rate over the period January 2011 to December 2015 has decreased to 4.5 accidents per 100,000 hours flown, which is below the average of approximately 5.0 accidents per 100,000 hours flown over the previous four years, see page 7.
- Defect incident rates are increasing for small aeroplanes and helicopters, see page 12.
- Aircraft incident rates are increasing for small aeroplanes, see page 13.
- Airspace incident rates are increasing for large aeroplanes, small aeroplanes, agricultural aeroplanes and helicopters, see page 14.
- The total annual number of hours flown for the year ending December 2014 is 10% lower than the year ending December 2010. The number of agricultural hours flown is increasing, but the numbers of other commercial and private hours are decreasing. See page 17.
- The annual number of air transport flights for the year ending December 2014 is 8% lower than the year ending December 2010, see page 18.
- The total annual number of aircraft movements from certificated aerodromes is continuing to decrease, by 11% from the year ending December 2011 to the year ending December 2015. See page 19.
- The number of Recreational Pilot Licences (with a medical fitness certificate) increased from 320 at 31 December 2014 to 395 at 31 December 2015, an increase of 75 (23%).

Section 1 - Social Cost and Accidents

Social Cost Quarterly Safety Outcome

The following table displays the social cost contribution from injuries and aircraft losses for each of the safety target groups for the quarter 1 October to 31 December 2015. The table also shows the number of accidents in this quarter.

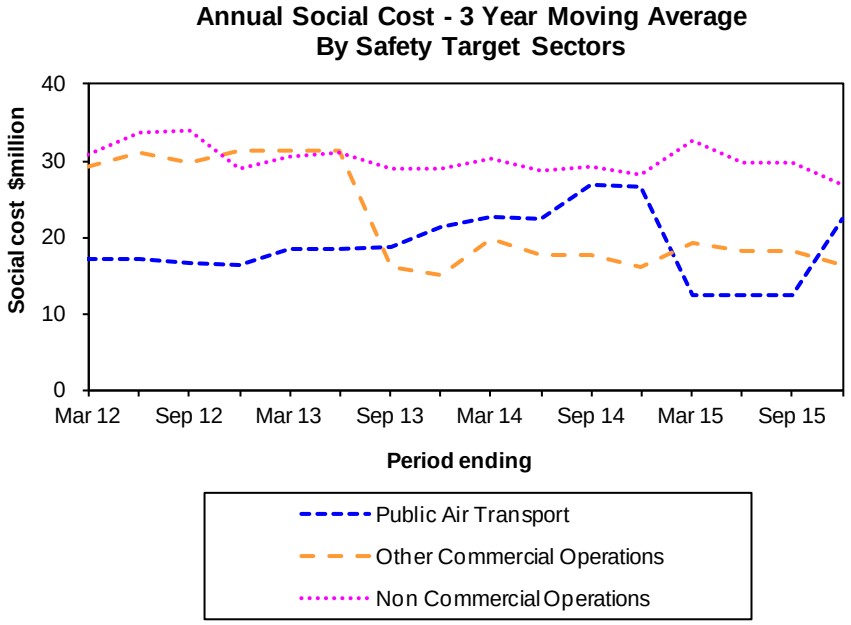


Notes:

1. Individual values in the table may not sum exactly to the subtotals or total shown due to rounding.
2. Sport groups include hang gliders and parachutes.
3. An explanation of the 2014 Safety Target Groups is provided by the diagram in the Definitions section.
4. Social cost is the cost of fatal, serious and minor injuries, and aircraft destroyed, expressed in 2014 dollars.

Social Cost Trends

To provide context to this quarter's social cost outcome, the following graph shows the annual social cost (three year moving average) for the four-year period 1 January 2012 to 31 December 2015, (including the Sport Safety Target Groups).



Social Cost Analysis

The graph above indicates the social cost contribution of each safety target sector averaged over the previous three years. In this graph Public Air Transport shows a marked increase to approximately $22M (three year average). This increase was due to one accident in the Airline Operations - Helicopter group that resulted in 7 fatalities (this was the largest contribution to the social cost in this quarter).

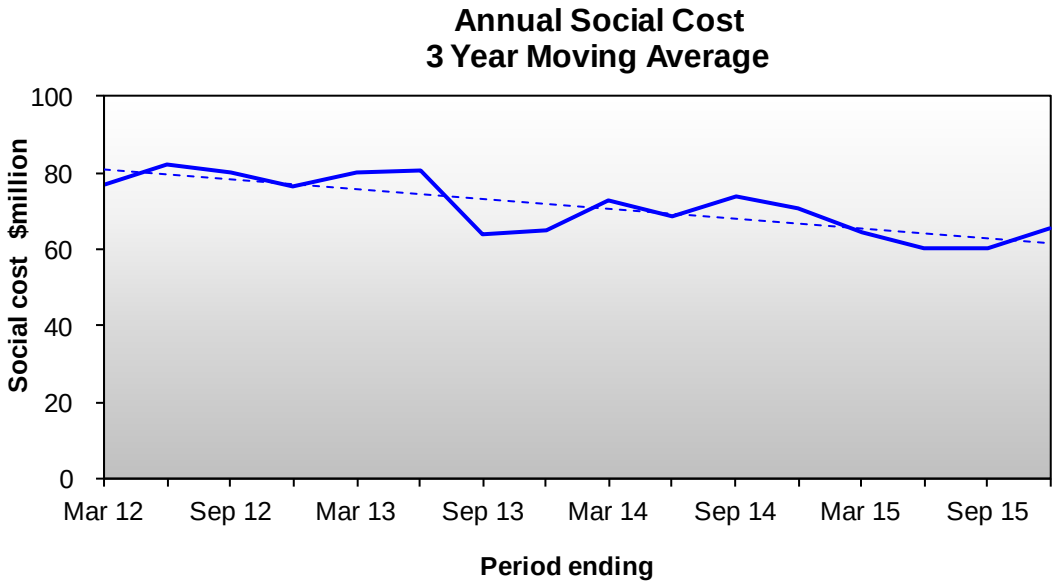
The social cost in the Other Commercial sector has been relatively constant since mid-2013 at approximately $17M (three year average). In this quarter there was 1 serious injury in the Agricultural Operations - Helicopter group.

The Non Commercial sector's social cost has been gradually decreasing and is now at approximately $27M (three year average). This quarter the majority of the cost resulted from 3 serious and 6 minor injuries in the Private Operations - Sport group (including 3 serious and 4 minor injuries in hang gliders, paragliders and parachutes). Note none of these figures are normalised for activity, so decreasing social cost in the non-commercial sector may be a result of declining activity in this sector.

There were also 2 serious and 2 minor injuries in the Sport Transport group (1 serious injury in a balloon, and 1 serious injury and 2 minor injuries in parachutes), which contributed slightly to the Public Air Transport social cost.

The combined annual social cost of all three sectors is shown in the graph on the next page and has decreased by 15% from $77M to $66M between 2012 and 2015.

Section 1



Accidents by Safety Target Group

Quarterly Comparison

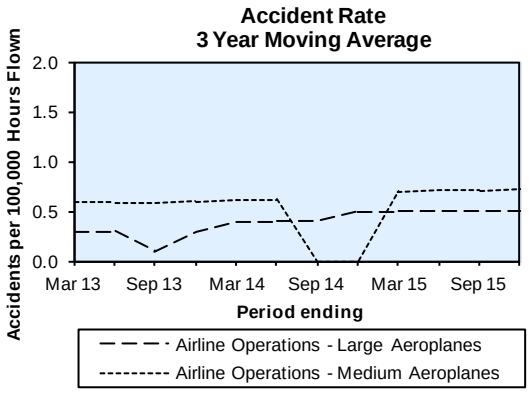
Safety Target Group	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Airline Operations - Large Aeroplanes	0	1	0.7
Airline Operations - Medium Aeroplanes	0	0	0.0
Airline Operations - Small Aeroplanes	0	0	0.0
Airline Operations - Helicopters	2	0	1.3
Sport Transport	6	3	1.0
Other Commercial Operations - Aeroplanes	3	1	2.0
Other Commercial Operations - Helicopters	0	1	2.7
Agricultural Operations - Aeroplanes	0	1	2.7
Agricultural Operations - Helicopters	1	1	1.3
Agricultural Operations - Sport Aircraft	0	0	0.0
Private Operations - Aeroplanes	4	3	2.7
Private Operations - Helicopters	0	1	1.0
Private Operations - Sport	15	20	11.7
Other	0	0	0.3
Total	**31**	32	27.3

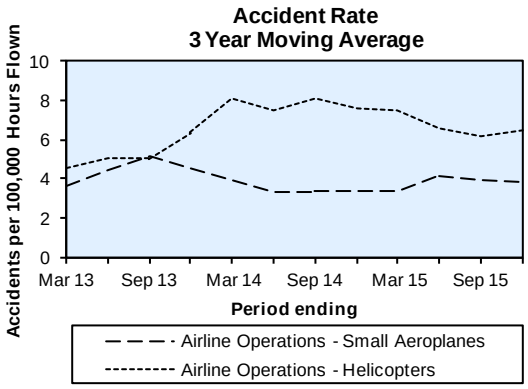
Comment

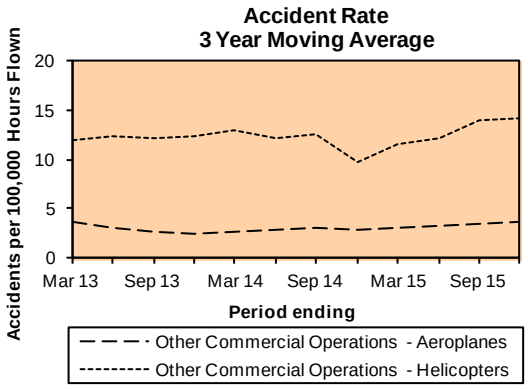
Overall accident numbers in the 2015 spring quarter have decreased by 1 (3%) in comparison to the 2014 spring quarter. The biggest decrease is within the Private Operations - Sport group, while the biggest increase was within the Sport Transport (Part 115) group.

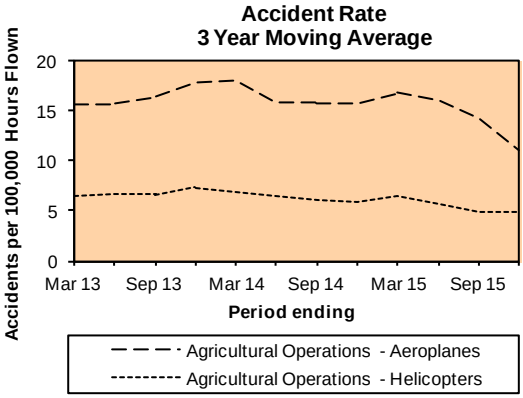
Trends

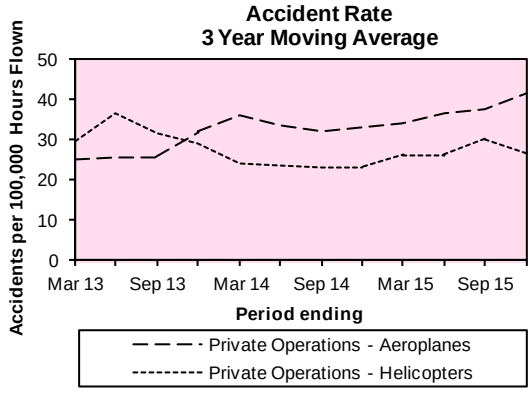
The following graphs show the aircraft accident rates (three year moving average) for the three-year period 1 January 2013 to 31 December 2015 (excluding the Sport Safety Target Groups, for which no accurate activity information is available).











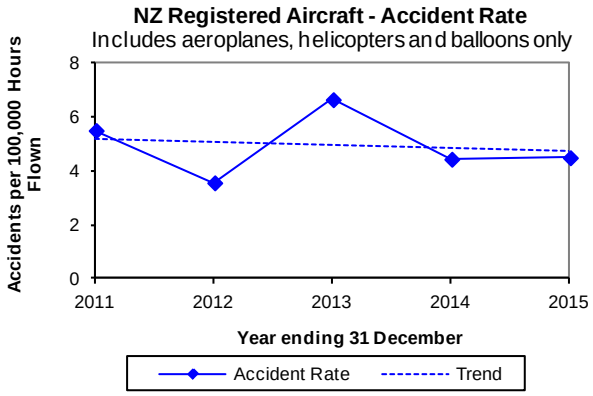
No accident rate information available for Sport Transport or Private Operations - Sport.

Sport Transport (Part 115) data not available for this period but may be provided from a future period.

Activity data is not provided by all aircraft classes in the Private Operations - Sport group (private amateur built aircraft, microlights, gliders, hang gliders and parachutes do not provide activity reports).

Overall Accident Rate

The following graph shows the overall accident rate per 100,000 hours flown. This data includes the aircraft classes aeroplane, helicopter and balloon only. Other aircraft classes such as amateur built aircraft, microlights, gliders, hang gliders and parachutes are excluded from this rate information. Data shown is for the five-year period 1 January 2011 to 31 December 2015. The accident rate has decreased to 4.5 accidents per 100,000 hours flown, which is below the average of approximately 5.0 accidents per 100,000 hours flown over the previous four years.



Note that this graph shows an annual rate and not a 3 year moving average.

Summary of Injury Accidents and Destroyed Aircraft Accidents

This section describes injury accidents, and accidents where there were no injuries but the aircraft was destroyed, that occurred during the period 1 October to 31 December 2015. These descriptions are classified according to the highest level of injury sustained and the safety target group. Not all of these accidents were investigated by the CAA, and some of the CAA investigations have not been completed, so the text may be condensed from the original accident notification.

Fatal Accidents

Airline Operations - Helicopters

- A Eurocopter AS 350BA on a passenger transport A to A flight crashed on Fox Glacier, killing the pilot and the 6 passengers. The helicopter was destroyed.
  TAIC Investigation 15-007 in progress. Report unlikely to be completed before: May 2017.

Serious Injury Accidents

Sport Transport

- One passenger on a passenger transport A to B balloon flight received serious injuries during landing, due to the passenger moving to an incorrect landing position (the passengers had been briefed on the correct landing position).
- An on-ground landing collision of two tandem parachutes resulted in serious injuries to one passenger.

Agricultural Operations - Helicopters

- A Robinson R44 II crashed during a spraying operation. The helicopter had completed a turn when the RPM's dropped, there was not enough speed and height to recover the situation so the helicopter got into an unrecoverable power settling condition and struck the ground. The pilot received serious injuries.
  CAA investigation 16/SAI/114 in progress.

Private Operations - Sport

- A hang glider landed behind a ridge line, the canopy collapsed (due to a suspected 'rotor' wind condition), the pilot lost control and impacted the ground suffering serious injuries.
- A hang glider came in high and had to land short to miss a fence. The hang glider flared aggressively, rising approximately 2 m and landed on one corner of the base bar. The pilot landed face first and sustained serious injuries.
- On approach, the paraglider pilot lost more height than anticipated, resulting in insufficient clearance to execute a turn into wind. The paraglider landed downwind at speed and the pilot received serious injuries on contact with the ground.

Summary of Injury Accidents and Destroyed Aircraft Accidents continues on next page.

Minor Injury Accidents

Sport Transport

- A tandem parachute passenger put their leg back on landing causing a minor injury.
- During the landing of a tandem parachute the passenger placed a foot on the ground causing a minor injury.

Private Operations - Aeroplanes

- A Cessna A185F landed heavily. The aeroplane was attempting to land up hill, due to a tail wind a go-around was attempted, when the aeroplane crested the top of the strip there was a severe downdraft which drove the aeroplane into the ground. The pilot received minor injuries.

Private Operations - Sport

- After the class 2 microlight became airborne, at approximately 10 ft the pilot was unhappy with the engine performance and chose to land ahead. On easing the throttle and lowering the nose, the elevator deflected, resulting in a nose down attitude. The pilot received minor injuries.
- During landing the parachutist slid on the cut grass more than expected and ended up in the long grass, receiving minor injuries.
- A hang glider pilot made a turn close to the ground on approach and collided with the ground, with the canopy draped over. The pilot suffered minor injuries.
- A paraglider misjudged the approach and flared high resulting in a heavy landing causing minor injuries.
- A paraglider was caught in a thermal near the ground when they got caught in sink. The paraglider was dumped onto the rocks receiving minor injuries.

Destroyed Aircraft Accidents

In the 1 October to 31 December 2015 quarter, there were **no accidents** where the aircraft was destroyed without injuries.

Summary of Other Accidents and Selected Incidents

This section describes the other accidents that occurred during the period (in addition to the fatal/injury/destroyed accidents already described). Also included here are selected incidents[1] from the period which had a high potential risk. For brevity the text may be condensed from the original occurrence notification.

Airline Operations - Large Aeroplanes

Incidents

There were two incidents where an RPAS was seen near a large aeroplane (one during climb out and one during approach), and two incidents where a model aircraft was encountered on final approach.

Airline Operations - Helicopters

Accidents

- A Robinson R44 II on a passenger transport A to A flight encountered sink during landing on a mountain, resulting in a heavy landing onto rocky terrain.

Incidents

- After being seated in the 369E helicopter ready for a passenger transport A to A flight, a passenger put their head out the door, raised themselves up, and extended an arm to wave. The passenger's hand came into contact with the rotating main rotor disc receiving a minor injury.
- The passengers had been briefed prior to the flight and again prior to landing, but 3 of the 6 passengers failed to comply with the briefing and moved behind the helicopter to pose for photographs. Fortunately the type of helicopter used was a no tail rotor (NOTAR) helicopter, otherwise this could have had very serious consequences.

Sport Transport

Accidents

- Due to a wind shift the tandem hang glider pilot decided to change the approach to land, this created a wide base leg with insufficient height to get back on the runway. The hang glider landed short and heavily in long grass.
- Two tandem paragliders were flying in close proximity to each other, one above the other. The above paraglider descended into the lower paraglider, colliding with the lowers wing while recovering from a stall condition. Both paragliders settled into trees below.

Other Commercial Operations – Helicopters

Incidents

- A Helicopter reported an RPAS at the same level (3,000 ft) and approximately 100 m away.

Summary of Other Accidents and Selected Incidents continues on next page.

[1] In the period 1 October to 31 December 2015 there were a total of 1,299 incidents reported to the CAA, the ones presented here have been selected on the basis of potential risk of injury.

Other Commercial Operations - Aeroplanes

Accidents

- During a dual training glide approach exercise, the small aeroplane became slow and descended below the approach profile. As the speed decayed the rate of descent increased, the right hand main wheel struck a boundary fence post and the aircraft landed heavily.
- The solo student of a Cessna 152 failed to use sufficient right rudder when full power was applied during a touch and go, resulting in a loss of directional control, the aircraft veered off the edge of the runway and came to rest in the grass.
- The small aeroplane was taxiing to the maintenance hangar after completing post maintenance engine ground runs, the left hand wing tip struck a corrugated iron fence during a right hand turn.

Incidents

- Two small aeroplanes converged on final as one was circling off the instrument approach and the other was on a 2 NM final. The aeroplanes came to within 0.2 NM of each other, at the same level. Instructions were issued by ATC for the aeroplanes to take avoiding action.

Private Operations - Aeroplanes

Accidents

There were three landing accidents involving small aeroplanes.

Private Operations - Sport

Accidents

- An aeroplane made an unintentional wheels up landing.
- Some members of the public observed the class 1 microlight to hit the ground nose first. The pilot walked away unhurt.
- During take-off the solo student lost directional control of the class 2 microlight. One wheel hooked in long grass at the runway edge pulling the aircraft around, and the microlight contacted the ground heavily.
- The class 2 microlight experienced sudden sink resulting in a heavy landing, the aircraft hit the ground and bounced, power was applied and a go-around carried out.
- Whilst landing on a private airstrip, a substantial gust under the right wing of the class 2 microlight caused a ground loop.
- A glider suffered a launch failure resulting in a ground loop.
- During a cross country competition flight in a glider it became necessary to make an outlanding. On touch down the left wing contacted the grass and a ground loop ensued during which the tail boom broke off.

Incidents

- The main canopy of the parachute malfunctioned on deployment, the canopy was cutaway and the reserve deployed. The parachutist received minor injuries.

Other - Incidents

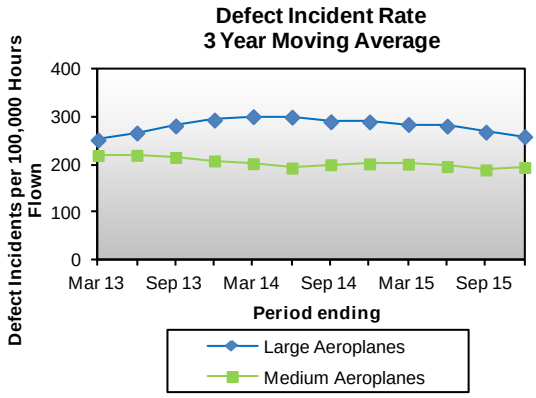
- An object, suspected to be an RPAS, was operated in close proximity to an aeroplane as it was on approach.

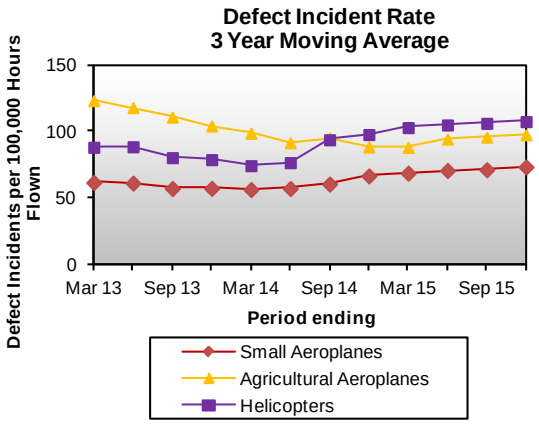
Section 2 - Incidents

Defect Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported defect incident rates (three year moving average) for the three-year period 1 January 2013 to 31 December 2015 (excluding the Sport Aircraft statistics category).





Quarterly Comparison

Number of Reported Defect Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Large Aeroplanes	148	150	237.0
Medium Aeroplanes	23	30	26.7
Small Aeroplanes	52	88	47.0
Agricultural Aeroplanes	8	5	9.7
Helicopters	40	52	36.7
Sport Aircraft	4	6	7.7
Unknown Aircraft	14	11	11.3
Total	**289**	**342**	**376.0**

Severity of Reported Defect Incidents

Severity	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Critical	0	0	1.3
Major	14	32	54.7
Minor	275	310	320.0

No critical defect incidents were reported in the 1 October to 31 December 2015 quarter.

Rate Monitoring

Defect incident rate monitoring of individual types of large and medium air transport aircraft has been carried out for the period ended 31 December 2015, using estimated data for some of the aircraft types due to a shortage of returned Aircraft Operations Statistics for these aircraft. Analysis shows that 1 of the 14 monitored aircraft types has a defect rate above the "trigger level" for CAA action (medium aeroplane[2]).

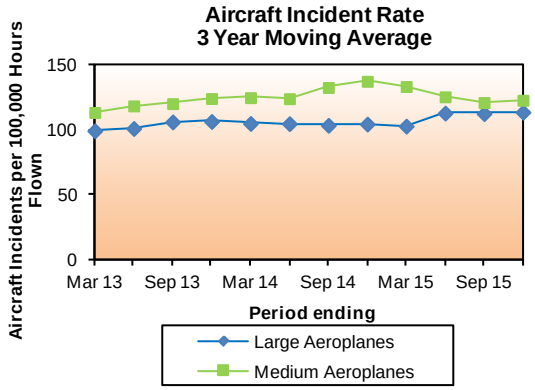
[2] Medium and large aeroplane categories include all aircraft with more than 10 passenger seats operated under CAR Part 125 or 121.

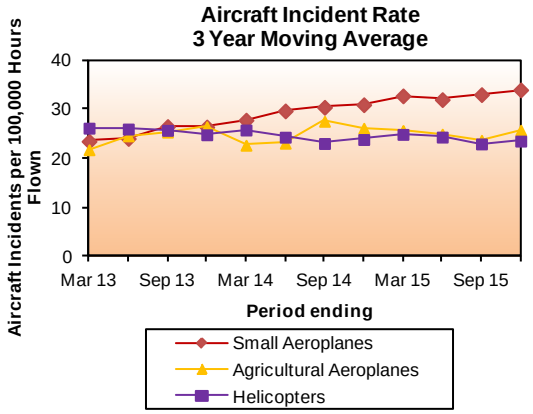
Section 2

Aircraft Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported aircraft incident rates (three year moving average) for the three-year period 1 January 2013 to 31 December 2015 (excluding the Sport Aircraft statistics category). An aircraft incident is any safety occurrence related to the operation of an aircraft that does not result in an accident and is not classified as one of the other nine incident types. Examples of aircraft incidents include hard landings, lightning strikes, icing encounters, turn backs, diversions and go-arounds.





Quarterly Comparison

Number of Reported Aircraft Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Large Aeroplanes	114	79	83.0
Medium Aeroplanes	17	18	20.0
Small Aeroplanes	22	23	24.0
Agricultural Aeroplanes	3	2	2.3
Helicopters	13	15	11.3
Sport Aircraft	9	2	7.7
Unknown Aircraft	52	54	33.7
Total	**230**	**193**	**182.0**

Severity of Reported Aircraft Incidents

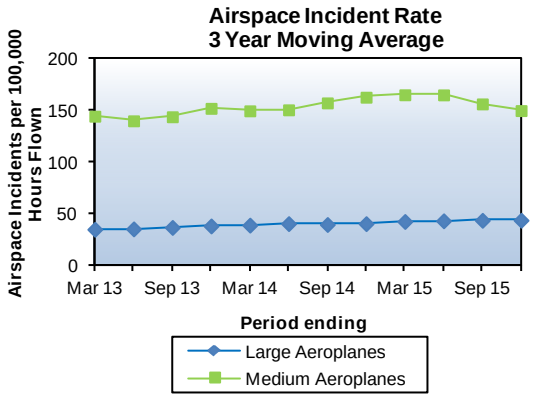
Severity	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Critical	0	5	3.0
Major	23	12	26.3
Minor	207	176	152.7

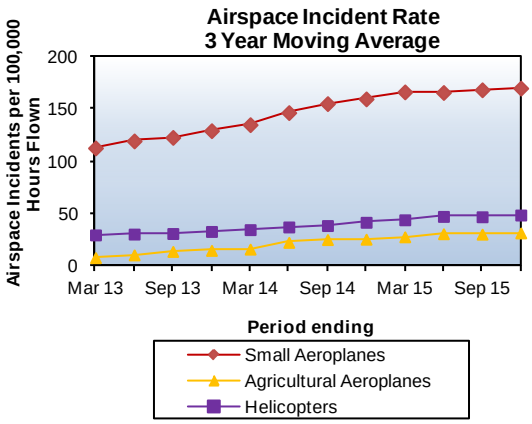
No critical aircraft incidents were reported in the 1 October to 31 December 2015 quarter.

Airspace Incidents by Aircraft Statistics Category

Trends

The following graphs show the reported airspace incident rates (three year moving average) for the three-year period 1 January 2013 to 31 December 2015 (excluding the Sport Aircraft statistics category).





Quarterly Comparison

Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Large Aeroplanes	31	40	32.0
Medium Aeroplanes	15	19	23.3
Small Aeroplanes	114	104	122.0
Agricultural Aeroplanes	1	3	1.3
Helicopters	23	30	17.7
Sport Aircraft	28	18	17.3
Unknown Aircraft	174	138	115.7
Total	**386**	**352**	**329.3**

Severity of Reported Airspace Incidents

Severity	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Critical	2	1	4.3
Major	38	25	42.0
Minor	346	326	283.0

Of the 2 critical airspace incidents reported in the 1 October to 31 December 2015 quarter, 1 was in the 'Small Aeroplanes' statistics category and 1 was in the 'Unknown Aircraft' statistics category.

- Two small aeroplanes converged on final as one was circling off the instrument approach and the other was on a 2 NM final. The aeroplanes came to within 0.2 NM of each other, at the same level. Instructions were issued by ATC for the aeroplanes to take avoiding action.
- An object, suspected to be an RPAS (similar to a quadcopter), was operated in close proximity to an aeroplane as it was on approach at 1200 ft. The RPAS was estimated to have been within 20 ft laterally and 300 ft vertically of the aeroplane. The aeroplane descended from 1500 ft to 1200 ft.

Analysis of reported airspace incidents continues on next page.

Attributability

Of the 386 reported airspace incidents in the 1 October to 31 December 2015 quarter, 16% are Air Traffic Service (ATS) attributable, 76% are pilot attributable, 1% are ATS and pilot attributable, and 7% are unknown attributable.
(Note that the percentages may not sum exactly to 100% due to rounding.)

Since January 2013 the long-term trend of the ATS attributable airspace occurrence rate is upward and the long-term trend of the pilot attributable rate is upward.

Bird Incident Rates

Bird hazard monitoring has been carried out for the period ended 31 December 2015.

There were 3 aerodromes with strike rates in the high risk category of the CAA standard (10.0 and above bird strikes per 10,000 aircraft movements), all having long-term upward trends.

There were 9 aerodromes with strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), 5 having long-term upward trends, 2 having long-term constant trends and 2 having long-term downward trends.

16 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), 3 having long-term upward trends, 6 having long-term constant trends and 7 having long-term downward trends.

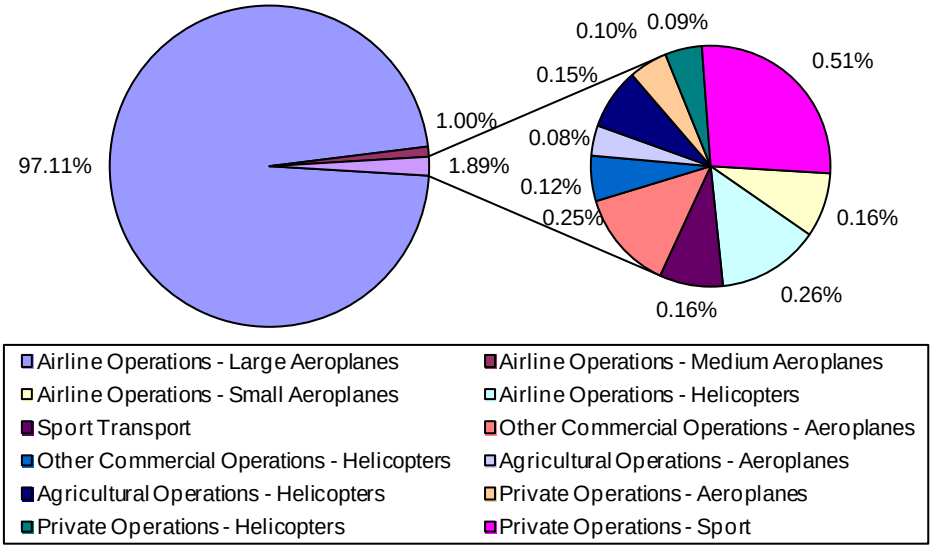
For more information visit the ‘Bird Hazard Reports’ section of the CAA web site http://www.caa.govt.nz/safety_info/safety_reports.htm

Section 3 - Activity

Industry Size and Shape by Safety Target Group

The following graph and table show the size and shape of the aviation industry as determined from Aircraft Operating Statistics in the relevant Safety Target Group categories for the period 1 October to 31 December 2014 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received. Adequate flying hours data for the 1st, 2nd, 3rd and 4th quarters of 2015 are not available yet due to later returns from operators. For each Safety Target Group the total number of hours flown is multiplied by the average number of seats and the appropriate load factor, to give the number of seat hours utilised by the group (person exposure). For Safety Target Groups that are not predominantly passenger carrying a surrogate of 500 kg of aircraft weight is used instead of person exposure. For the Sport Safety Target Groups a standard estimate of seat hours offered is used as well as reported data for such aircraft in these groups, as most sport aircraft do not report hours or seats.

Percentage Sector Seat Hours



Safety Target Group	Percentage Sector Seat Hours
Airline Operations - Large Aeroplanes	97.11
Airline Operations - Medium Aeroplanes	1.00
Airline Operations - Small Aeroplanes	0.16
Airline Operations - Helicopters	0.26
Sport Transport	0.16
Other Commercial Operations - Aeroplanes	0.25
Other Commercial Operations - Helicopters	0.12
Agricultural Operations - Aeroplanes	0.08
Agricultural Operations - Helicopters	0.15
Agricultural Operations - Sport	-
Private Operations - Aeroplanes	0.10
Private Operations - Helicopters	0.09
Private Operations - Sport	0.51

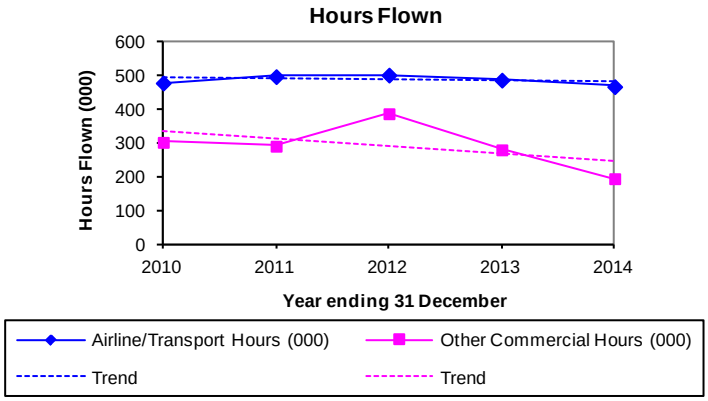
Note that the percentages may not sum exactly to 100.00% due to rounding.

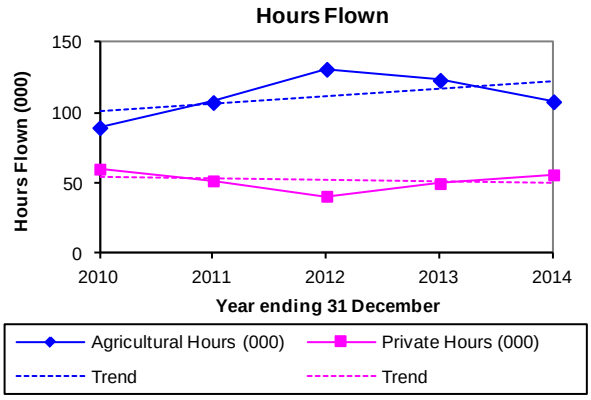
Section 3

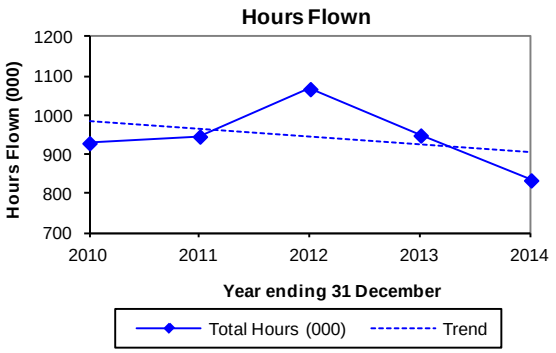
Hours by Operation Type

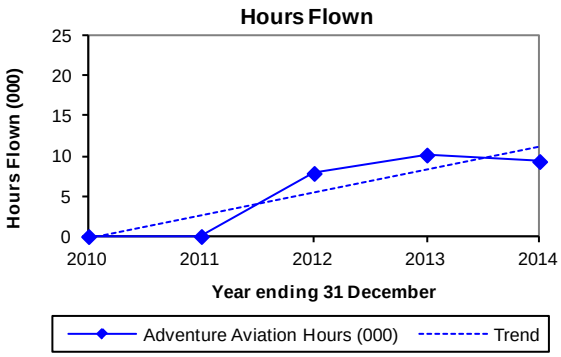
Trends

The following graphs show the number of hours flown (annual data) for the five-year period 1 January 2010 to 31 December 2014 (for the aircraft classes aeroplane, helicopter and balloon only). Adequate flying hours data for the 1st, 2nd, 3rd and 4th quarters of 2015 are not available yet due to later returns from operators.









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

Note that the reporting of adventure aviation hours as a separate category began in 2012.

Quarterly Comparison

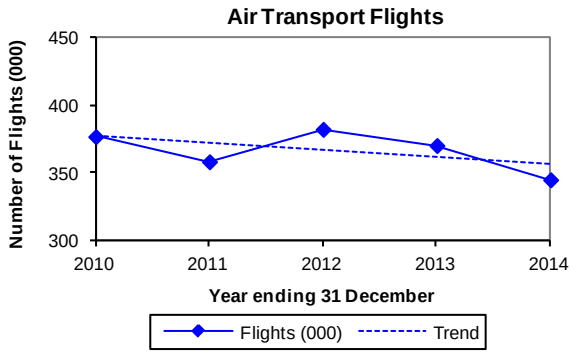
Activity	1 Oct to 31 Dec 2014	1 Oct to 31 Dec 2013	Average Of Same Quarter In Previous 3 Years
Airline/Transport Hours	121,773	121,254	132,495
Adventure Aviation Hours	2,258	2,588	1,215
Other Commercial Hours	42,591	67,133	82,137
Agricultural Hours	27,706	32,803	28,403
Private Hours	14,693	12,816	12,715
Total Hours	**209,022**	**236,596**	**256,966**

Note that these assessments include the aircraft classes aeroplane, helicopter and balloon only and exclude other aircraft classes such as hang gliders and parachutes, and foreign registered aircraft that are operated in New Zealand. These assessments are based on the reported Aircraft Operating Statistics for periods up to the quarter ended 31 December 2014 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received.

Air Transport Flights

Trends

The following graph shows the number of air transport flights (annual data) for the five-year period 1 January 2010 to 31 December 2014 (for the aircraft classes aeroplane, helicopter and balloon only).



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

Quarterly Comparison

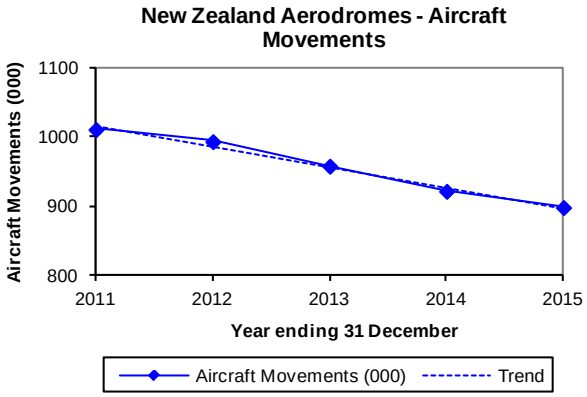
Activity	1 Oct to 31 Dec 2014	1 Oct to 31 Dec 2013	Average Of Same Quarter In Previous 3 Years
Air Transport Flights	92,039	94,318	100,396

Note that these assessments include the aircraft classes aeroplane, helicopter and balloon only and exclude other aircraft classes such as hang gliders and parachutes, and foreign registered aircraft that are operated in New Zealand. These assessments are based on the reported Aircraft Operating Statistics for periods up to the quarter ended 31 December 2014 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received.

Aircraft Movements

Trends

The following graph shows the number of aircraft movements at certificated aerodromes (annual data) for the five-year period 1 January 2011 to 31 December 2015.



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

Quarterly Comparison

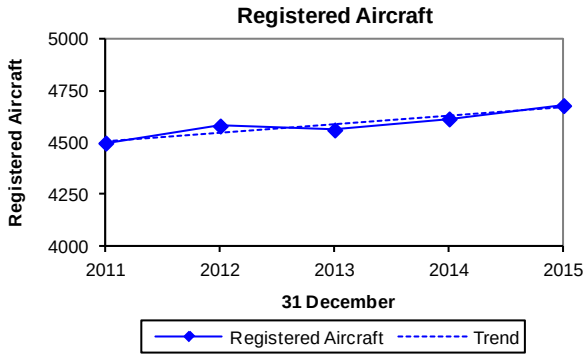
Activity	1 Oct to 31 Dec 2015	1 Oct to 31 Dec 2014	Average Of Same Quarter In Previous 3 Years
Aircraft Movements	227,208	220,846	246,591

Note that this covers certificated aerodromes only. These figures are as reported to CAA by Airways Corporation and Taupo Airport. Includes Auckland, Christchurch, Dunedin, Gisborne, Hamilton, Invercargill, Napier, Nelson, New Plymouth, Ohakea, Palmerston North, Paraparaumu (certificated from April 2009, included in the graph from late July 2011), Queenstown, Rotorua, Taupo, Tauranga, Wellington and Woodbourne. Excludes Chatham Islands/Tuuta Airport, Hokitika, Kerikeri/Bay of Islands, Mount Cook (certificated from Nov 2012), Te Anau/Manapouri (certificated until April 2015), Timaru, Westport, Whakatane (certificated from April 2015), Whanganui and Whangarei.

Registered Aircraft by Aircraft Statistics Category

Trends

The following graph shows the number of registered aircraft at 31 December for each of the five-years 2011 to 2015.



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

Quarterly Comparison

Aircraft Statistics Category	31 December 2015	31 December 2014	Average Of 31 December In Previous 3 Years
Large Aeroplanes	125	128	127
Medium Aeroplanes	77	78	79
Small Aeroplanes	1,506	1,497	1,522
Agricultural Aeroplanes	93	97	106
Helicopters	840	831	783
Sport Aircraft	2,038	1,984	1,931
Total	**4,679**	**4,615**	**4,547**

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

Licences and Organisations

The number of Recreational Pilot Licences (with a medical fitness certificate) increased from 320 at 31 December 2014 to 395 at 31 December 2015, an increase of 75 (23%).

Over the same period the number of Part 115 certificated Adventure Aviation Operators increased from 27 to 30, an increase of 3 (11%).

At 31 December 2015 there were 16 ‘Part 102 Unmanned Aircraft Operators’, this certificate was introduced on 1 August 2015.

Section 4 - Quarterly Statistics

Quarter	2013/1	2013/2	2013/3	2013/4	2014/1	2014/2
Social Cost $ million[1]	27.06	3.09	2.54	14.59	36.77	10.79
Number of Fatal Accidents[2]	3	0	0	2	5	1
Number of Fatal Injuries[2]	5	0	0	2	6	2
Number of Serious + Minor Injuries[2]	14	10	6	21	19	6
Number of Aircraft Accidents[2]						
Large Aeroplanes	0	0	0	2	2	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	11	6	4	7	8	3
Agricultural Aeroplanes	2	3	1	3	2	0
Helicopters	6	8	1	6	5	2
Sport Aircraft	11	8	6	10	22	5
Unknown Aircraft	1	0	0	1	2	0
Hang Gliders	4	4	2	4	6	0
Parachutes	5	1	0	1	4	3
Number of Incidents[3]	1,515	1,460	1,375	1,384	1,290	1,244
Number of Aviation Related Concerns[4]	206	181	219	208	271	171
Number of Hours Flown[5]	266,122	223,070	223,324	236,596	235,844	189,686
Number of Air Transport Flights[5]	103,364	86,684	86,186	94,318	97,185	78,094
Number of Aircraft Movements[6]	256,386	227,657	232,694	240,943	247,546	221,072
Number of Aircraft on the Register[7]	4,587	4,579	4,577	4,562	4,587	4,552
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	9	9	9	9	9
Air Operator – Medium Aeroplanes	16	16	16	15	15	14
Air Operator – Helicopters and Small Aeroplanes	174	173	168	166	167	168
Number of Part 137 Agricultural Aircraft Operators	103	103	98	99	99	99
Number of Part 115 Adventure Aviation Operators	33	33	34	34	32	28
Number of Part 102 Unmanned Aircraft Operators	0	0	0	0	0	0
Number of Part 141 Training Organisations	59	57	57	56	52	53
Number of Part 149 Recreation Organisations	7	7	8	8	8	8
Number of Licences (Type of Medical Certificate)[8]						
Recreational Pilot Licence (RPL Medical)	248	247	267	281	289	293
Private Pilot Licence (Class 1 & 2)	3,298	3,193	3,108	3,017	2,948	2,816
Commercial Pilot Licence (Class 2 only)	2,561	2,554	2,578	2,571	2,527	2,544
Commercial Pilot Licence (Class 1)	2,225	2,217	2,167	2,150	2,147	2,098
Airline Transport Pilot Licence (Class 2 only)	1,053	993	1,060	1,052	990	994
Airline Transport Pilot Licence (Class 1)	1,078	1,163	1,121	1,120	1,204	1,223
Air Traffic Controller Licence (Class 3)	363	367	375	380	381	381
Aircraft Maintenance Engineer Licence (N/A)	2,626	2,639	2,647	2,660	2,678	2,699

[1] All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2014 dollars.
[2] All accidents. All aircraft statistics categories. Includes hang gliders and parachutes.
[3] Number of reported incidents. All incident sub-types.
[4] Number of reported Aviation Related Concerns.
[5] New Zealand registered aircraft. Includes the aircraft classes aeroplane, helicopter and balloon only; excludes other aircraft classes, hang gliders and parachutes. Based on reported Aircraft Operating Statistics for periods up to the quarter ended 31 December 2014 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received. Estimated for 2015/1, 2015/2, 2015/3 and 2015/4.

Quarter	2014/3	2014/4	2015/1	2015/2	2015/3	2015/4
Social Cost $ million[1]	16.52	14.91	42.31	3.27	1.82	31.77
Number of Fatal Accidents[2]	2	2	4	0	0	1
Number of Fatal Injuries[2]	2	2	9	0	0	7
Number of Serious + Minor Injuries[2]	16	23	14	11	12	14
Number of Aircraft Accidents[2]						
Large Aeroplanes	0	1	0	0	0	0
Medium Aeroplanes	0	0	1	0	0	0
Small Aeroplanes	2	4	7	6	4	7
Agricultural Aeroplanes	0	1	1	1	0	0
Helicopters	4	3	7	2	4	3
Sport Aircraft	2	13	8	5	7	9
Unknown Aircraft	0	0	0	0	0	0
Hang Gliders	5	7	6	7	7	8
Parachutes	2	3	1	2	1	4
Number of Incidents[3]	1,378	1,285	1,429	1,428	1,227	1,299
Number of Aviation Related Concerns[4]	214	226	244	188	171	134
Number of Hours Flown[5]	200,006	209,022	277,589	239,644	252,774	254,810
Number of Air Transport Flights[5]	77,924	92,039	118,879	102,633	113,375	119,588
Number of Aircraft Movements[6]	232,016	220,846	237,404	211,137	222,320	227,208
Number of Aircraft on the Register[7]	4,570	4,615	4,662	4,610	4,650	4,679
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	9	8	8	7	7	8
Air Operator – Medium Aeroplanes	13	12	13	13	13	15
Air Operator – Helicopters and Small Aeroplanes	167	165	163	163	163	164
Number of Part 137 Agricultural Aircraft Operators	98	97	101	103	104	104
Number of Part 115 Adventure Aviation Operators	27	27	27	28	30	30
Number of Part 102 Unmanned Aircraft Operators	0	0	0	0	4	16
Number of Part 141 Training Organisations	55	55	56	56	57	55
Number of Part 149 Recreation Organisations	8	8	8	8	8	8
Number of Licences (Type of Medical Certificate)[8]						
Recreational Pilot Licence (RPL Medical)	311	320	337	366	385	395
Private Pilot Licence (Class 1 & 2)	2,763	2,617	2,587	2,580	2,585	2,530
Commercial Pilot Licence (Class 2 only)	2,515	2,442	2,390	2,448	2,376	2,316
Commercial Pilot Licence (Class 1)	2,107	2,125	2,141	2,046	2,048	2,076
Airline Transport Pilot Licence (Class 2 only)	986	998	987	995	1,046	1,034
Airline Transport Pilot Licence (Class 1)	1,232	1,226	1,232	1,228	1,173	1,210
Air Traffic Controller Licence (Class 3)	384	379	379	387	387	383
Aircraft Maintenance Engineer Licence (N/A)	2,708	2,726	2,737	2,754	2,766	2,779

[6] Certificated aerodromes. Reported to CAA by Airways Corporation and Taupo Airport. Includes Auckland, Christchurch, Dunedin, Gisborne, Hamilton, Invercargill, Napier, Nelson, New Plymouth, Ohakea, Palmerston North, Paraparaumu, Queenstown, Rotorua, Taupo, Tauranga, Wellington and Woodbourne. Excludes Chatham Islands/Tuuta Airport, Hokitika, Kerikeri/Bay of Islands, Mount Cook, Te Anau/Manapouri (certificated until April 2015), Timaru, Westport, Whakatane (certificated from April 2015), Whanganui and Whangarei.

[7] As at the last day of the quarter. Includes the sport aircraft statistics category, excluding hang gliders, paragliders and parachutes.

[8] As at the last day of the quarter. For RPL holders, a medical fitness certificate, in accordance with the NZTA medical fitness standards that are applicable for a Class 2, 3, 4 or 5 driver licence with a passenger endorsement. For PPL, CPL & ATPL holders, an active class 1 or active class 2 medical certificate; this means that for CPL and ATPL licences, the number with a class 2 medical only, must only be exercising PPL privileges (or not flying at all). For ATCL holders, an active class 3 medical certificate. This does not show the number of licence holders as each client may hold more than one licence.

Definitions

Accident

An occurrence that is associated with the operation of an aircraft and takes place between the time any person boards the aircraft with the intention of flight and such time as all such persons have disembarked and the engine or any propellers or rotors come to rest, being an occurrence in which–

(1) a person is fatally or seriously injured as a result of–

(i) being in the aircraft; or

(ii) direct contact with any part of the aircraft, including any part that has become detached from the aircraft; or

(iii) direct exposure to jet blast–

except when the injuries are self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to passengers and crew; or

(2) the aircraft sustains damage or structural failure that–

(i) adversely affects the structural strength, performance, or flight characteristics of the aircraft; and

(ii) would normally require major repair or replacement of the affected component–

except engine failure or damage that is limited to the engine, its cowlings, or accessories, or damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents, or puncture holes in the aircraft skin; or

(3) the aircraft is missing or is completely inaccessible.

Aircraft Incident

Any incident, not otherwise classified, associated with the operation of an aircraft which did not immediately affect the safety of an aircraft operation but which,

(1) if allowed to continue uncorrected, or

(2) if repeated in different but likely circumstances,

could affect the safety of an aircraft operation.

Note about Social Cost

Social cost is a way of measuring safety performance by accounting for the number and severity of casualties, and aircraft damage. The values used to estimate cost to the nation of fatal, serious and minor injuries are obtained from the annual report of the 'Social Cost of Road Crashes and Injuries' published by the Ministry of Transport. The Ministry of Transport has directed its agencies to use social cost to permit comparisons between transport modes. The current value of statistical life is $3.95 million. Estimates of the values of aircraft destroyed or written off are made by the CAA on the basis of market prices in a number of developed aviation nations.

Aircraft Statistics Category

The following table shows the definition of each aircraft statistics category and the aircraft classes included.

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

Other Aircraft Types (not included on the NZ Aircraft Register)

Hang Glider
A glider, including a powered glider, that is capable of being launched and landed solely by the use of the pilot's legs, and includes paragliders. **Paraglider** means a hang glider with no rigid primary structure.

Parachute
Any device, without a motor in operation, comprising a flexible drag, or lift/drag, surface from which a load is suspended by shroud lines capable of controlled deployment from a packed condition.

Airspace Incident

An incident involving deviation from, or shortcomings of, the procedures or rules for–

(1) avoiding a collision between aircraft; or

(2) avoiding a collision between aircraft and other obstacles when an aircraft is being provided with an Air Traffic Service.

Bird Incident

Means an incident where–

(1) there is a collision between an aircraft and one or more birds; or

(2) when one or more birds pass sufficiently close to an aircraft in flight to cause alarm to the pilot.

Defect Incident

An incident that involves failure or malfunction of an aircraft or aircraft component, whether found in flight or on the ground.

Fatal Injury

An injury which results in death within 30 days of the accident.

Incident

Any occurrence, other than an accident, that is associated with the operation of an aircraft and affects or could affect the safety of operation.

Incident Sub-Types	
Aerodrome Incident	Dangerous Goods Incident
Aircraft Incident	Defect Incident
Airspace Incident	Facility Malfunction Incident
Bird Incident	Promulgated Information Incident
Cargo Security Incident	Security Incident

Occurrence

Means an accident or incident.

Serious Injury

Means any injury that is sustained by a person in an accident and that–

(1) requires hospitalisation for more than 48 hours, commencing within 7 days from the date the injury was received; or

(2) results in a fracture of any bone, except simple fractures of fingers, toes, or nose; or

(3) involves lacerations which cause severe haemorrhage, nerve, muscle, or tendon damage; or

(4) involves injury to an internal organ; or

(5) involves second or third degree burns, or any burns affecting more than 5% of the body surface; or

(6) involves verified exposure to infectious substances or injurious radiation.

Severity

The following definitions apply to the severity accorded to accidents and incidents as the result of investigation of occurrences:

Severity	Definition
Critical	An occurrence or deficiency that caused, or on its own had the potential to cause, loss of life or limb;
Major	An occurrence or deficiency involving a major system that caused, or had the potential to cause, significant problems to the function or effectiveness of that system;
Minor	An isolated occurrence or deficiency not indicative of a significant system problem.

Safety Target Structure