

# Aviation Safety Summary

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1 April to 30 June 2016



**Autumn 2016**

## Introduction to the Quarterly Safety Summary Report

Welcome to the quarterly safety summary report for the autumn of 2016 (Apr/May/Jun).

The purpose of this document is to summarise the accidents and serious incidents that occurred during the autumn quarter of 2016. As accidents occur as essentially isolated events, it can be difficult to gain a picture of overall safety performance. By listing the significant safety events within the period, this document aims to provide a brief summary of safety in the NZ aviation system.

To maintain the focus on accidents and serious incidents, this document has been cut down to remove some of the aircraft activity and accident rate information. Processing of aircraft activity reporting was delaying production of this safety summary. Aircraft activity reported to CAA will still be available via the six-monthly Aviation Industry Safety Update.

Safe flying,

J.D. Stanton

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## Executive Summary - Aviation Safety to 30 June 2016

- There were 14 accidents in the autumn of 2016. This is the lowest number of accidents in an autumn quarter since 2014, (which had 13 accidents).
- The aircraft groups with reduced numbers of accidents this quarter were:
  - Small Aeroplanes (two accidents in this quarter)
  - Hang Gliders (one accident this quarter)
  - Parachutes (no accidents this quarter).

This is good news for these largely recreational aircraft categories.

- The only two fatal accidents in the quarter both occurred during private operations.
  - One Helicopter accident in Private Operations (one fatality and one serious injury)
  - One glider accident at Tauranga (Private Operations - Sport) led to another fatality
- The single serious injury sustained in the private helicopter accident represents the lowest number of serious injuries in a quarter for several years. See page 4.
- Fatalities and serious injuries sustained provide only part of the picture of safety risk, and there were a total of four accidents in the commercial sector. Two accidents during dual training in helicopters, and two accidents during agricultural operations in aeroplanes. Fortunately all four accidents were without injury, see page 7.
- There were additional accidents in the groups above and other safety target groups that were not serious enough to cause injuries or destroy aircraft but still represent safety risks, see page 3.

## Section 1 - Accidents

### Accidents by Safety Target Group

#### Quarterly Comparison

Safety Target Group	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
Airline Operations - Large Aeroplanes	0	0	0.0
Airline Operations - Medium Aeroplanes	0	0	0.0
Airline Operations - Small Aeroplanes	0	1	0.3
Airline Operations - Helicopters	0	1	1.0
Sport Transport	1	2	1.7
Other Commercial Operations - Aeroplanes	0	2	2.0
Other Commercial Operations - Helicopters	2	0	1.3
Agricultural Operations - Aeroplanes	2	1	1.7
Agricultural Operations - Helicopters	0	1	1.3
Agricultural Operations - Sport Aircraft	0	0	0.0
Private Operations - Aeroplanes	1	3	1.3
Private Operations - Helicopters	2	0	1.3
Private Operations - Sport	6	12	10.0
Other	0	0	0.0
<b>Total</b>	<b>14</b>	<b>23</b>	<b>22.0</b>

#### Comment

Overall accident numbers in the 2016 autumn quarter have decreased by 9 (39%) in comparison to the 2015 autumn quarter. The biggest decrease is within the Private Operations - Sport group.

## **Summary of Injury Accidents and Destroyed Aircraft Accidents**

This section describes accidents which resulted in injuries or destroyed the aircraft that occurred during the period 1 April to 30 June 2016. These accidents 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 and Serious Injury Accidents**

#### **Private Operations - Helicopters**

- An R22 Beta helicopter crashed. The passenger was killed and the pilot received serious injuries. The helicopter was destroyed. (Occurrence Number 16/1973) CAA safety investigation 16/SAI/237 has been completed.

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

- The solo glider pilot was on their first flight on type, and came in to land too high. The pilot tried to conduct a low level turn at the end of the runway and spun in from approximately 20 metres. The pilot was killed. (16/1970) CAA safety investigation 16/SAI/236 in progress.

### **Minor Injury Accidents**

#### **Sport Transport**

- Due to light to nil wind conditions the paraglider failed to become airborne, the pilot and passenger slid down the hill and the passenger received minor injuries. (16/2471) CAA health and safety assessment 16/HASS/2471 has been completed.

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

- The pilot of an amateur built aeroplane was practising short strip landings. On the accident approach they landed long, overshooting the end of the strip with the nose of the aircraft striking rising terrain at the end of the airstrip. The pilot and passenger received minor injuries. (16/2170)

### **Destroyed Aircraft Accidents**

#### **Private Operations - Helicopters**

- After departing on a solo training flight, the pilot and sole occupant of the Guimbal Cabri G2 helicopter heard some noise and smelt smoke. The pilot made a precautionary powered landing on a farm paddock. When they saw flames coming from the engine area they shut down the helicopter and moved away. The helicopter was destroyed by fire before the fire service could respond. (16/1755) TAIC investigation 16-004 and CAA safety investigation 16/SAI/232 in progress.

## **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<sup>1</sup> 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**

#### **Airspace Incident - Major Severity**

- Required runway separation was not achieved between aircraft. (Occurrence Number 16/2487)  
CAA safety investigation 16/SAI/252 has been completed.

#### **Defect Incident - Major Severity**

- "DADC Data Invalid" message displayed on the ADU at take-off. This blanked out the ADU, giving crew no active modes for a few minutes (i.e. no autopilot, yaw damper, lat or vert modes and alt selector). On approach into the airport (weather was a gusty NW 20 to 40 kts, heavy rain and ice over the hills) the autopilot disconnected again losing the ADU display with the same caution message. The aeroplane inadvertently deviated 200 ft below the cleared altitude while the crew was dealing with the issues at hand. (16/2528)

#### **Aircraft Incident - Major Severity**

- Chemical fumes/chlorine were detected immediately after take-off. The crew went onto oxygen, made a PAN call, and returned to the airport. (16/2543)
- Climbing through 4,000 ft on departure, in the right turn, the speed reduced below V min ops and the stick shaker activated briefly. Conditions were turbulent at the time. (16/2440)
- While configuring for landing a loud bang was heard from the lower nose area. On the ground the loaders found a can in the forward cargo hold had moved in flight. The forward cargo securing clip was found in the stowed position. An engineering inspection determined that no damage had occurred. (16/2157)
- A PAN was declared due to icing, and the aeroplane diverted to another airport. (16/3005)
- During approach when flap was selected a thump was felt from under the flight deck floor, and felt again when the pitch was lowered for approach. On arrival the flight crew cautioned the ground handler that cargo may have moved. The ground handler reported back that a can had moved from its documented location. (16/2143)
- A MAYDAY was declared due to fumes in the cockpit from the cabin/FA call button. The aircraft landed and taxied to the gate, and a precautionary evacuation was carried out via the main door. (16/3350)  
CAA safety investigation 17/SAI/8 in progress.
- Severe turbulence was encountered with VMO overspeed to over 260 kts. (16/3310)

<sup>1</sup> In the period 1 April to 30 June 2016 there were a total of 1,566 incidents reported to the CAA, the ones presented here have been selected on the basis of potential risk of injury.

- A severe mountain wave was encountered in the cruise. The aeroplane's speed started to reduce so flap was selected. The speed continued to reduce so the crew decided to descend to maintain speed. The aeroplane lost approximately 50 to 60 kts in approximately 10 seconds. At around 13,000 ft the aeroplane exited the mountain wave and the speed increased back to normal and the flap was retracted. This was at night and all happened very fast. (Occurrence Number 16/2379)
- A go-around was carried out from short final due to the landing gear not being selected down by the flight crew. While descending through 500 ft received a Master Warning illumination with LDG GEAR NOT DOWN. (16/1623)  
CAA safety investigation 16/SAI/231 has been completed.

#### **Aircraft Incident - Minor Severity**

- During moderate turbulence, a cabin crew member of the large aeroplane, on a passenger transport A to B flight, injured their wrist (minor injury) while trying to secure galley carts. (16/3224)

#### ***Airline Operations - Medium Aeroplanes***

##### **Airspace Incident - Major Severity**

- The aeroplane crossed the threshold of RWY 23L prior to the departing large aeroplane being airborne. (16/1719)

#### ***Airline Operations - Small Aeroplanes***

##### **Airspace Incident - Major Severity**

- The aeroplane was handed over to Oceanic radar control on a parallel heading against another IFR aircraft but this was not coordinated. Radar separation between the 2 aircraft reduced to below the applicable minima. (16/2087)  
CAA safety investigation 16/SAI/241 has been completed.

#### ***Other Commercial Operations - Aeroplanes***

##### **Airspace Incident - Major Severity**

- The small aeroplane was on a solo training flight when it came into close proximity with another aircraft while operating in the circuit. (16/2165)
- The small aeroplane was on a solo training flight when it entered controlled airspace at 500 ft above the lower limit without a clearance and conflicted with an IFR training aircraft. The conflict alert was activated on radar. (16/1687)
- Two aircraft that were unsighted and joining base from opposite sides of the runway were both cleared to 'continue approach number one'. One of the aircraft was a small aeroplane on a dual training flight. (16/2018)
- The medium aeroplane on an air ambulance flight turned off the standard instrument departure after becoming airborne, resulting in a loss of separation with a preceding aircraft on a different standard instrument departure. (16/3296)
- The pilot of the small aeroplane on a dual training flight failed to go-around when a helicopter was in near proximity to the runway, causing a near miss occurrence which could have resulted in a collision. The helicopter instructor took evasive action to avoid a collision. (16/3298)  
CAA safety investigation 17/SAI/1 has been completed.

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

#### **Aircraft Accident**

- The Guimbal Cabri G2 helicopter was conducting auto rotations at night for dual training when the helicopter went outside the parameters and struck the ground. (Occurrence Number 16/1625)  
CAA safety investigation 16/SAI/234 in progress.
- The Bell 206B Jet Ranger II/III was being used for dual training. During a demonstration of a jammed pedal condition the helicopter ended up too near wires in a downwind condition. The closeness of the wires meant the pilot had to pull up to get clear, resulting in loss of control and a hard landing. (16/2218)

### ***Agricultural Operations - Aeroplanes***

#### **Aircraft Accident**

- While loading fertilizer, the loader truck drove into the Cresco 08-600 damaging a flap. (16/1700)
- The Pacific Aerospace 750XL failed to clear a fence 100 m from the end of the airstrip; a jettison was initiated prior to impact. The aeroplane sustained damage underneath the left hand outer panel, aileron and wing tip fairing. (16/3505)  
CAA safety investigation 17/SAI/9 in progress.

#### **Airspace Incident - Critical Severity**

- During a procedure turn, following a sowing run along a ridge line, the agricultural pilot noted a helicopter in his 11'oclock position, estimated 30 to 40 ft below. No radio calls had been heard nor could the agricultural pilot establish communications with the helicopter despite frequent attempts. (16/1880)  
CAA safety investigation 16/SAI/238 in progress.

#### **Defect Incident - Critical Severity**

- During agricultural operations the pilot became aware of limited aileron control. The maintenance investigation found the right side elevator torque tube had broken and the section was bent sufficiently to interfere with aileron operation. Metal fatigue was suspected, coupled with pilots standing on the torque tube to enter/exit the cockpit. A replacement torque tube was installed. Following the reporting of a second cracked elevator torque tube, two Emergency Airworthiness Directives were raised by the CAA requiring inspection for cracking and repair/replacement as required. (16/3217)  
CAA safety investigation 16/SAI/268 has been completed.



***Agricultural Operations - Helicopter*****Defect Incident - Major Severity**

- While carrying out agricultural spraying the pilot felt excessive vibration through the helicopter. The pilot carried out a power on landing and shut down the helicopter. The maintenance investigation revealed the Main Rotor Leading Edge Abrasion Strip had separated from the Blade, and revealed defects in all four remaining Main Rotor Blade Leading Edge Abrasion Strips. (Occurrence Number 16/1763)

***Private Operations - Aeroplanes*****Aircraft Accident**

- The Cessna 172S (small aeroplane) touched down too fast, was unable to stop, and overran the airstrip going through the boundary fence. (16/2772)  
CAA safety investigation 16/SAI/257 in progress.

**Aircraft Incident - Major Severity**

- The small aeroplane had an engine failure on finals due to fuel starvation (the aeroplane had run out of fuel). The pilot declared a MAYDAY. The aeroplane landed safely, short of the aerodrome boundary. (16/1559)  
CAA safety investigation 16/SAI/230 in progress.

***Private Operations - Helicopters*****Airspace Incident - Major Severity**

- While in cruise the helicopter came into close proximity with a fixed wing aircraft. The helicopter pilot had made all position reports and nothing had been heard from the fixed wing aircraft's pilot prior to or after the incident. The aircraft came to within approximately 20 ft vertically and 300 m laterally. The helicopter pilot attempted to establish contact with the fixed wing aircraft pilot but only received a scratchy, unclear response. (16/3083)  
CAA safety investigation 16/SAI/264 has been completed.

***Private Operations - Sport***

**Aircraft Accident**

- The amateur built aeroplane touched down with the wheels up, caused by the inadvertent switching off of power to the undercarriage pump. (Occurrence Number 16/2798)
- The pilot reported that shortly after take-off the engine of the gyroplane lost power. A forced landing was carried out on the beach, and the gyroplane rolled on its side during the landing. (16/3299)
- The class 2 microlight landed slightly off centre on the private grass airstrip, with the port wheel in slightly longer grass. The microlight veered left which the pilot was unable to correct resulting in a collision with a fence post and fencing wire. The propeller boss, propeller, engine cowl and port wing were damaged. (16/2701)
- The class 2 microlight landed short of the runway strip. (16/2779)

**Airspace Incident - Major Severity**

- A sport aeroplane on a solo training flight was cleared for a touch and go, with a small aeroplane close behind for a full stop. After touching down, as the sport aeroplane was powering up for take-off, the controller issued taxi instructions to the sport aeroplane for vacating the runway (this was done in error). The pilot queried this and the controller advised the pilot to disregard the instruction but the transmission was crossed. The pilot decided to abort the take-off, rolling off at the end of the runway, onto the grass manoeuvring area. The small aeroplane on final was instructed to make a go-around. On-the-job instructor training was in progress at the time. (16/2100)

***Other***

**Airspace Incident - Major Severity**

- The foreign registered passenger transport aeroplane was issued clearance to climb to FL360, then climbed through the opposite direction traffic's level of FL350 without formal ATC separation in place. (16/3034)  
CAA safety investigation 16/SAI/261 has been completed.

## Section 2 - Incidents

### Defect Incidents by Aircraft Statistics Category

#### Quarterly Comparison

#### Number of Reported Defect Incidents

Aircraft Statistics Category	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
◆ Large Aeroplanes	186	161	246.0
■ Medium Aeroplanes	12	15	27.3
◆ Small Aeroplanes	67	55	46.0
▲ Agricultural Aeroplanes	12	11	6.7
■ Helicopters	32	50	44.0
Sport Aircraft	5	6	8.3
Unknown Aircraft	15	17	11.0
<b>Total</b>	<b>329</b>	<b>315</b>	<b>389.3</b>

#### Severity of Reported Defect Incidents

Severity	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
Critical	1	0	0.7
Major	14	6	59.3
Minor	314	309	329.3

The critical defect incident reported in the 1 April to 30 June 2016 quarter was in the 'Agricultural Aeroplanes' statistics category.

- During agricultural operations the pilot became aware of limited aileron control. The maintenance investigation found the right side elevator torque tube had broken and the section was bent sufficiently to interfere with aileron operation. Metal fatigue was suspected, coupled with pilots standing on the torque tube to enter/exit the cockpit. A replacement torque tube was installed. Following the reporting of a second cracked elevator torque tube, two Emergency Airworthiness Directives were raised by the CAA requiring inspection for cracking and repair/replacement as required. (Occurrence Number 16/3217)  
CAA safety investigation 16/SAI/268 has been completed.

## Aircraft Incidents by Aircraft Statistics Category

### Quarterly Comparison

#### Number of Reported Aircraft Incidents

Aircraft Statistics Category	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
◆ Large Aeroplanes	176	166	83.7
■ Medium Aeroplanes	7	12	18.3
◆ Small Aeroplanes	18	33	27.3
▲ Agricultural Aeroplanes	0	0	2.3
■ Helicopters	7	10	9.0
Sport Aircraft	10	3	5.7
Unknown Aircraft	61	51	28.3
<b>Total</b>	<b>279</b>	<b>275</b>	<b>174.7</b>

#### Severity of Reported Aircraft Incidents

Severity	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
Critical	0	0	1.3
Major	21	68	24.3
Minor	258	207	149.0

No critical aircraft incidents were reported in the 1 April to 30 June 2016 quarter.

## Airspace Incidents by Aircraft Statistics Category

### Quarterly Comparison

#### Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
◆ Large Aeroplanes	55	36	35.7
■ Medium Aeroplanes	13	21	15.7
◆ Small Aeroplanes	106	112	123.7
▲ Agricultural Aeroplanes	1	4	3.7
■ Helicopters	20	32	17.0
Sport Aircraft	19	29	14.3
Unknown Aircraft	168	147	90.7
<b>Total</b>	<b>382</b>	<b>381</b>	<b>300.7</b>

#### Severity of Reported Airspace Incidents

Severity	1 Apr to 30 Jun 2016	1 Apr to 30 Jun 2015	Average Of Same Quarter In Previous 3 Years
Critical	1	3	2.7
Major	17	13	31.7
Minor	364	365	266.3

The critical airspace incident reported in the 1 April to 30 June 2016 quarter was in the 'Agricultural Aeroplanes' statistics category.

- During a procedure turn, following a sowing run along a ridge line, the agricultural pilot noted a helicopter in his 11'oclock position, estimated 30 to 40 ft below. No radio calls had been heard nor could the agricultural pilot establish communications with the helicopter despite frequent attempts. (Occurrence Number 16/1880)  
CAA safety investigation 16/SAI/238 in progress.

#### Attributability

Of the 382 reported airspace incidents in the 1 April to 30 June 2016 quarter, 15% are Air Traffic Service (ATS) attributable, 75% are pilot attributable, 3% are ATS and pilot attributable, and 7% are unknown attributable.

(Note that the percentages may not sum exactly to 100% due to rounding.)

Since July 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 30 June 2016.

There was 1 aerodrome with a strike rate in the high risk category of the CAA standard (10.0 and above bird strikes per 10,000 aircraft movements), having a long-term upward trend.

There were 5 aerodromes with strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), 2 having long-term upward trends, 2 having long-term constant trends and 1 having a long-term downward trend.

22 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), 5 having long-term upward trends, 8 having long-term constant trends and 9 having long-term downward trends.

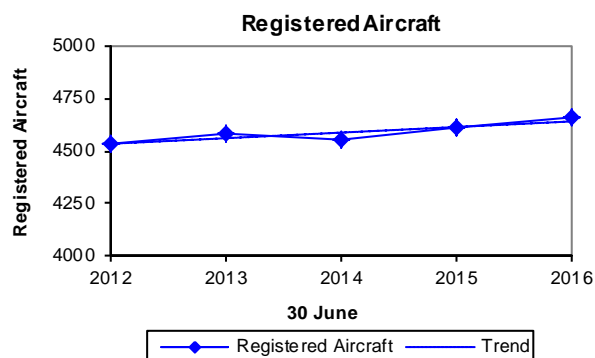
For more information visit the 'Bird Hazard Reports' section of the CAA web site [http://www.caa.govt.nz/safety\\_info/safety\\_reports.htm](http://www.caa.govt.nz/safety_info/safety_reports.htm)

## Section 3 - Activity

### Registered Aircraft by Aircraft Statistics Category

#### Trends

The following graph shows the number of registered aircraft at 30 June for each of the five-years 2012 to 2016.



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

#### Quarterly Comparison

Aircraft Statistics Category	30 June 2016	30 June 2015	Average Of 30 June In Previous 3 Years
Large Aeroplanes	131	117	127
Medium Aeroplanes	75	77	78
Small Aeroplanes	1,498	1,499	1,520
Agricultural Aeroplanes	93	93	106
Helicopters	825	828	785
Sport Aircraft	2,035	1,996	1,938
<b>Total</b>	<b>4,657</b>	<b>4,610</b>	<b>4,554</b>

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 366 at 30 June 2015 to 420 at 30 June 2016, an increase of 54 (15%). The number of Private Pilot Licences decreased from 2,580 to 2,462, a decrease of 118 (5%).

Over the same period the number of 'Part 129 Foreign Air Operators' increased from 28 to 36, an increase of 8 (29%); and the number of 'Part 19 Supply Organisation Certificate of Approvals' decreased from 60 to 54, a decrease of 6 (10%).

At 30 June 2016 there were 45 'Part 102 Unmanned Aircraft Operators', this certificate was introduced on 1 August 2015.

At 30 June 2016 there were 2 'Part 147 Maintenance Training Organisations', this certificate was introduced on 1 February 2016.

## Section 4 - Quarterly Statistics

Quarter	2013/3	2013/4	2014/1	2014/2	2014/3	2014/4
<b>Social Cost \$ million<sup>1</sup></b>	2.60	14.91	37.63	11.07	16.91	15.26
<b>Number of Fatal Accidents<sup>2</sup></b>	0	2	5	1	2	2
<b>Number of Fatal Injuries<sup>2</sup></b>	0	2	6	2	2	2
<b>Number of Serious + Minor Injuries<sup>2</sup></b>	6	21	19	6	16	23
<b>Number of Aircraft Accidents<sup>2</sup></b>						
Large Aeroplanes	0	2	2	0	0	1
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	4	7	8	3	2	4
Agricultural Aeroplanes	1	3	2	0	0	1
Helicopters	1	6	5	2	4	3
Sport Aircraft	6	10	22	5	2	13
Unknown Aircraft	0	1	2	0	0	0
Hang Gliders	2	4	6	0	5	7
Parachutes	0	1	4	3	2	3
<b>Number of Incidents<sup>3</sup></b>	1,375	1,384	1,290	1,244	1,379	1,288
<b>Number of Aviation Related Concerns<sup>4</sup></b>	219	208	271	171	214	227
<b>Number of Hours Flown<sup>5</sup></b>	223,324	236,596	235,028	189,466	199,823	208,770
<b>Number of Air Transport Flights<sup>5</sup></b>	86,186	94,318	96,946	78,023	77,818	91,961
<b>Number of Aircraft Movements<sup>6</sup></b>	232,694	240,943	247,546	221,072	232,016	220,846
<b>Number of Aircraft on the Register<sup>7</sup></b>	4,577	4,562	4,587	4,552	4,570	4,615
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	9	9	9	9	9	8
Air Operator – Medium Aeroplanes	16	15	15	14	13	12
Air Operator – Helicopters and Small Aeroplanes	168	166	167	168	167	165
<b>Number of Part 137 Agricultural Aircraft Operators</b>	98	99	99	99	98	97
<b>Number of Part 115 Adventure Aviation Operators</b>	34	34	32	28	27	27
<b>Number of Part 102 Unmanned Aircraft Operators</b>	0	0	0	0	0	0
<b>Number of Part 141 Training Organisations</b>	57	56	52	53	55	55
<b>Number of Part 149 Recreation Organisations</b>	8	8	8	8	8	8
<b>Number of Licences (Type of Medical Certificate)<sup>8</sup></b>						
Recreational Pilot Licence (RPL Medical)	267	281	289	293	311	320
Private Pilot Licence (Class 1 & 2)	3,108	3,017	2,948	2,816	2,763	2,617
Commercial Pilot Licence (Class 2 only)	2,578	2,571	2,527	2,544	2,515	2,442
Commercial Pilot Licence (Class 1)	2,167	2,150	2,147	2,098	2,107	2,125
Airline Transport Pilot Licence (Class 2 only)	1,060	1,052	990	994	986	998
Airline Transport Pilot Licence (Class 1)	1,121	1,120	1,204	1,223	1,232	1,226
Air Traffic Controller Licence (Class 3)	375	380	381	381	384	379
Aircraft Maintenance Engineer Licence (N/A)	2,647	2,660	2,678	2,699	2,708	2,726

<sup>1</sup> All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2015 dollars.

<sup>2</sup> All accidents. All aircraft statistics categories. Includes hang gliders and parachutes.

<sup>3</sup> Number of reported incidents. All incident sub-types.

<sup>4</sup> Number of reported Aviation Related Concerns.

<sup>5</sup> 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 2015 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received. Estimated for 2016/1. Data not yet available for 2016/2.



Quarter	2015/1	2015/2	2015/3	2015/4	2016/1	2016/2
<b>Social Cost \$ million</b> <sup>1</sup>	42.98	3.32	1.87	32.65	7.76	9.32
<b>Number of Fatal Accidents</b> <sup>2</sup>	4	0	0	1	1	2
<b>Number of Fatal Injuries</b> <sup>2</sup>	9	0	0	7	1	2
<b>Number of Serious + Minor Injuries</b> <sup>2</sup>	13	11	12	15	17	4
<b>Number of Aircraft Accidents</b> <sup>2</sup>						
Large Aeroplanes	0	0	0	0	1	0
Medium Aeroplanes	1	0	0	0	0	0
Small Aeroplanes	7	6	4	7	8	2
Agricultural Aeroplanes	1	1	0	0	0	1
Helicopters	7	2	5	4	2	4
Sport Aircraft	8	5	7	9	7	6
Unknown Aircraft	0	0	0	0	0	0
Hang Gliders	6	7	7	8	11	1
Parachutes	1	2	1	4	3	0
<b>Number of Incidents</b> <sup>3</sup>	1,431	1,432	1,233	1,310	1,413	1,566
<b>Number of Aviation Related Concerns</b> <sup>4</sup>	244	188	171	136	258	196
<b>Number of Hours Flown</b> <sup>5</sup>	251,926	203,612	212,486	241,477	256,270	
<b>Number of Air Transport Flights</b> <sup>5</sup>	115,035	88,297	92,965	107,243	118,757	
<b>Number of Aircraft Movements</b> <sup>6</sup>	237,404	211,137	222,320	227,208	237,499	213,927
<b>Number of Aircraft on the Register</b> <sup>7</sup>	4,662	4,610	4,650	4,679	4,700	4,657
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	8	7	7	8	8	8
Air Operator – Medium Aeroplanes	13	13	13	15	15	15
Air Operator – Helicopters and Small Aeroplanes	163	163	163	164	161	162
<b>Number of Part 137 Agricultural Aircraft Operators</b>	101	103	104	104	102	103
<b>Number of Part 115 Adventure Aviation Operators</b>	27	28	30	30	28	28
<b>Number of Part 102 Unmanned Aircraft Operators</b>	0	0	4	16	31	45
<b>Number of Part 141 Training Organisations</b>	56	56	57	55	54	53
<b>Number of Part 149 Recreation Organisations</b>	8	8	8	8	8	8
<b>Number of Licences (Type of Medical Certificate)</b> <sup>8</sup>						
Recreational Pilot Licence (RPL Medical)	337	366	385	395	401	420
Private Pilot Licence (Class 1 & 2)	2,587	2,580	2,585	2,530	2,492	2,462
Commercial Pilot Licence (Class 2 only)	2,390	2,448	2,376	2,316	2,248	2,281
Commercial Pilot Licence (Class 1)	2,141	2,046	2,048	2,076	2,073	2,051
Airline Transport Pilot Licence (Class 2 only)	987	995	1,046	1,034	1,019	1,002
Airline Transport Pilot Licence (Class 1)	1,232	1,228	1,173	1,210	1,221	1,268
Air Traffic Controller Licence (Class 3)	379	387	387	383	380	381
Aircraft Maintenance Engineer Licence (N/A)	2,737	2,754	2,766	2,779	2,789	2,800

<sup>6</sup> 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.

<sup>7</sup> As at the last day of the quarter. Includes the sport aircraft statistics category, excluding hang gliders, paragliders and parachutes.

<sup>8</sup> 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 \$4.06 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, Jetpack, 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

