

# Aviation Safety Summary

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1 October to 31 December 2017



Spring 2017

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## Introduction to the Quarterly Safety Summary Report

Welcome to the quarterly safety summary report for the spring of 2017 (Oct/Nov/Dec).

The purpose of this document is to summarise the accidents and serious incidents that occurred during the spring quarter of 2017. There were four fatalities in this period and eight serious injuries. The four fatalities and four of the serious injuries occurred in private sport aircraft accidents. Five of the seven minor injuries in this quarter also occurred in private sport aircraft accidents. Many of these accidents occurred during the landing phase of flight.

Five of the six critical incidents in this quarter were Airspace Incidents. Three involved near miss events between small aeroplanes and helicopters, and two involved unmanned aircraft (near large aeroplanes).

There were also a few major incidents involving unmanned aircraft, and many cases of conflicts and reduced separation between aircraft. Poor safety practices by airport ground crew were reported in large aircraft transport operations including damage to a propeller blade from a golf cart.

Agricultural helicopters suffered wire strikes, and agricultural aeroplanes (Pacific Aerospace Cresco 08-600) suffered from jammed controls (including elevator due to contact with a bush; and ailerons due to a detached wing tip). In the large aeroplanes sector there were reported landing incidents including bouncing and tail strikes.

This quarter also saw several foreign registered aircraft on private operations encounter difficulties with Air Traffic Management procedures into Palmerston North and Queenstown.

The next six monthly Aviation Safety Update will be published before the 30<sup>th</sup> of June 2018.

Safe flying,

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## Executive Summary - Aviation Safety to 31 December 2017

- There were 30 accidents in the spring of 2017.
- There were three fatal accidents in this quarter, all in private operations (there were also three fatal accidents in the spring quarter of 2016):
  - an amateur built aeroplane (microlight) with two people on board;
  - a class 2 microlight (glider) with one person board;
  - a glider with one person on board;for details see page 5.
- There were eight serious injuries in accidents:
  - the pilot of a private glider flight during landing;
  - two passengers of tandem parachute flights during landing;
  - a passenger of a tandem parachute during the flight;
  - the cameraman of a parachute flight during landing;
  - the pilot of a private hang glider flight just after take-off;
  - two pilots of private paraglider flights during landing;see pages 5 and 6.
- There were seven minor injuries in accidents:
  - two people on board a private amateur built aeroplane (glider) that crashed;
  - the pilot of a private glider flight during an out landing;
  - the pilot and passenger of a tandem paraglider flight during landing;
  - the pilot of a private paraglider flight that failed to become airborne;
  - a tourist pilot of a private paraglider flight got caught in a tree;see pages 5 and 6.
- And without injury there were:
  - one airline small aeroplane accident while landing after a ferry/positioning flight;
  - one airline helicopter accident during an emergency landing of a ferry/positioning flight;
  - two commercial small aeroplane solo training accidents during/after landing;
  - two microlight solo training accidents during/after landing;
  - two agricultural aeroplane accidents, one during spraying and one during landing;
  - one private small aeroplane accident during landing;
  - one private helicopter accident after landing;
  - one private microlight clipped a fence and crashed into a paddock;
  - two private amateur built aeroplanes, one during landing and one after issues with the landing gear;
  - one unregistered microlight accident during landing after experiencing problems with an elevator cable;for details see pages 7 and 8.

## Section 1 - Accidents

### Accidents by Safety Target Group Quarterly Comparison

Safety Target Group	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
Airline Operations - Large Aeroplanes	0	0	1.0
Airline Operations - Medium Aeroplanes	0	0	0.0
<b>Airline Operations - Small Aeroplanes</b>	<b>1</b>	<b>1</b>	0.0
<b>Airline Operations - Helicopters</b>	<b>1</b>	0	1.3
<b>Sport Transport</b>	<b>4</b>	<b>6</b>	<b>3.3</b>
<b>Other Commercial Operations - Aeroplanes</b>	<b>2</b>	<b>2</b>	<b>1.7</b>
Other Commercial Operations - Helicopters	0	1	1.0
Other Commercial Operations - Sport	3	1	2.0
<b>Agricultural Operations - Aeroplanes</b>	<b>2</b>	<b>2</b>	<b>1.3</b>
Agricultural Operations - Helicopters	0	2	1.7
Agricultural Operations - Sport Aircraft	0	0	0.0
<b>Private Operations - Aeroplanes</b>	<b>1</b>	<b>3</b>	<b>4.3</b>
<b>Private Operations - Helicopters</b>	<b>1</b>	0	<b>0.3</b>
<b>Private Operations - Sport</b>	<b>14</b>	<b>8</b>	<b>14.3</b>
<b>Other</b>	<b>1</b>	0	<b>0.3</b>
<b>Total</b>	<b>30</b>	<b>26</b>	<b>32.7</b>

#### Comment

Overall accident numbers in the 2017 spring quarter have increased by 4 (15%) in comparison to the 2016 spring quarter. The biggest increase is within the Private Operations - Sport group.

## **Summary of Accidents**

This section describes all accidents that occurred during the period 1 October to 31 December 2017. 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***

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

- Amateur built aeroplane (microlight), South of Dargaville: The aircraft with two people on board crashed. The pilot and passenger were killed. The aircraft was substantially damaged. CAA safety investigation in progress. (17/8080)
- Class 2 microlight (glider), Kaikohe: The aircraft with one person on board crashed while on a local flight. The pilot was killed. The aircraft was destroyed. CAA safety investigation in progress. (17/7177)
- Glider, Omarama: A glider with one person on board was reported overdue and the wreckage was later found on a steep western facing ridge at approximately 4,000 feet. The pilot was killed. The glider was destroyed. CAA safety investigation in progress. (17/7309)

### ***Injury Accidents***

#### **Sport Transport**

- Tandem paraglider, Treble Cone Ski Area: On approach, the passenger's foot hit the top of a deer fence. The passenger also hit her head during the impact with the fence and sustained a cut (minor injury). The pilot sustained minor bruising. (17/7096)
- Tandem parachute, Jardines: The passenger failed to lift legs on landing, legs folded behind and foot caught at an awkward angle (suspected broken leg, serious injury). (17/8097)
- Tandem parachute, Kerikeri: The tandem instructor signalled the passenger to release his hands from the harness. After a few seconds in freefall, the passenger grabbed hold of the instructor's left arm. The instructor made several attempts to release his arm by pulling his arm backwards. The passenger released his grip. Initially the instructor thought the passenger's shoulder had dislocated, but it was later found his upper left arm was fractured (serious injury). (17/6864)
- Tandem parachute, Queenstown: The passenger broke an ankle on landing (serious injury). (17/7600)

#### **Other Commercial Operations - Sport**

- Parachute, Wanaka: The skydive cameraman broke both arms on landing on the drop zone at the aerodrome (serious injury). (17/6261)

### **Private Operations - Sport**

- Glider, Centennial Park: Landing accident during out landing. Water in the wings had not completely discharged before landing, as such on turning from right base to final the wings could not be levelled resulting with the right wing striking the ground, followed by the fuselage landing heavily, the undercarriage collapsed, the glider ground looped, the pilots head broke the canopy (minor injury). (17/7071)
- Glider, Morrinsville: During landing, glider came in contact with a small rise on the ground. The pilot was seriously injured. (17/7456)
- Amateur built aeroplane (glider): The aircraft with two people on board crashed, both received minor injuries. (17/8079)
- Hang glider, Christchurch: Hang glider appeared to catch a "bad bit of air" immediately after take-off, banking hard and spiralling before impacting the hill. The pilot suffered a broken femur (serious injury). (17/6312)
- Paraglider, Manaia: The paraglider failed to become airborne and impacted the beach below the launch site. The pilot sustained minor injuries. CAA safety investigation in progress. (17/6721)
- Paraglider, Nelson: Hard landing resulting in a serious injury. (17/7827)
- Paraglider, Queenstown: A tourist without the correct approvals from the paragliding club had an unauthorised jump from Skyline Gondola which resulted in an accident after being caught in a tree at the school landing site. The tourist received minor injuries. (17/7326)
- Paraglider: The paraglider was affected by wind rotor on landing - the pilot suffered a broken back (serious injury). (17/7754)

### **Non-Injury Accidents**

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

- Cessna U206F, Awaroa: The pilot of a ferry/positioning flight (with three people on board) was established on profile for landing. As the aircraft crossed the boundary it encountered windshear and sank onto the runway landing heavily. There is no go-around option from this point so the pilot tried to counter a bounce but the aircraft's nose wheel collapsed. It also suffered a propeller strike. (17/7434)

#### **Airline Operations - Helicopters**

- Single turbine engine helicopter, Carrick Range: Loud bang heard during cruise of a ferry/positioning flight (one person on board), followed by "Low Rotor" annunciation. Pilot entered autorotation and "Engine out" annunciation occurred twice. Made emergency landing on steeply sloped ground, aircraft pitched up and three rotor blades contacted front windscreen and centre pillar support. On leaving helicopter it rolled onto its stinger. The aircraft received minor damage. CAA safety investigation in progress. (17/8089)

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

- Cessna 172R, Ardmore: During taxi after completing some solo circuit training, the aircraft's wing contacted the tail plane of another aircraft which was also taxiing. Aircraft taxied to maintenance (substantial damage). (17/6837)
- Cessna A152, Whanganui: During landing after a solo training flight, aircraft landed heavily which resulted in a bounce. When the aircraft contacted the runway the second time, it landed on the nose wheel first causing it to collapse rearwards. The propeller and engine mounts were also damaged (minor damage). CAA safety investigation completed. (17/7006)

#### **Other Commercial Operations - Sport (Pilot Training - Sport)**

- Class 2 microlight, Thames: Following a dual circuit check, the student pilot had completed three solo circuits. During the landing on completion of the fourth circuit, the student pilot lost directional control after touch-down. The student pilot attempted to go-around but the aircraft veered off the runway into long grass. The port wing, propeller and nose undercarriage were damaged (substantial damage). CAA safety investigation completed. (17/7686)
- Class 2 microlight, Whangarei: Nose-wheel collapsed on landing after a solo training flight. The aircraft was substantially damaged. (17/7370)



### **Agricultural Operations - Aeroplanes**

- De Havilland Canada DHC-2 Beaver Mk 1, Napier/Taupo Rd: Landed short of the topdressing strip, possible downdraft on final. Damage to undercarriage (collapsed), left wing, tail, horizontal stabiliser and prop strike. Aircraft came to rest off the side of the strip down a small bank. (17/6764)
- Gippsland GA200C, Hurunui District: While spraying in a steep gully on a downhill run, an impact was felt and heard. The remaining load was dumped and an initial visual check by the pilot failed to identify any damage to the aircraft and the flying characteristics were unchanged. The aircraft landed back on the airstrip where a visual inspection of the aircraft found damage to the left wing leading edge near the wing tip. The aircraft had struck a cabbage tree which was not seen by the pilot. The aircraft had minor damage. CAA safety investigation completed. (17/7778)

### **Private Operations - Aeroplanes**

- Piper PA-18A-150, Wairau River: Aircraft (with one person on board) overturned while landing on a riverbed. The aircraft received minor damage. (17/6632)

### **Private Operations - Helicopters**

- Guimbal Cabri G2, Ohope: During shut down, the pilot exited the helicopter to close a gate and a gust of wind caused the helicopter to roll over onto its side. The aircraft was substantially damaged. (17/7305)

### **Private Operations - Sport**

- Class 2 microlight: Aircraft clipped fence and crashed into paddock, receiving substantial damage. (17/6251)
- Amateur built aeroplane, Wanaka: Aircraft (with one person on board) lost directional control on landing resulting in a ground loop. (17/6350)
- Amateur built aeroplane, Whenuapai: Aircraft was operating in the circuit on a solo training flight at North Shore when it had issues with the landing gear. Pilot decided to divert to Whenuapai due to the availability of emergency services. The nose gear collapsed on landing. As a result of the impact with the ground, the fuselage and propeller were damaged. The aircraft was substantially damaged. (17/7367)

### **Other**

- Rangiora: After experiencing problems with an elevator cable, the pilot of a private flight (one person on board) elected to land in a paddock adjacent to the aerodrome. The aircraft landed hard causing the undercarriage legs to bend (minor damage, these have since been straightened). Aircraft was taxied back to the airfield. This aircraft (class 2 microlight) is not currently on the aircraft register. (17/7334)

## Section 2 - Incidents

This section describes selected incidents from the period. In the period 1 October to 31 December 2017 there were a total of 1,636 incidents reported to the CAA, the 121 incidents presented here have been selected on the basis of significance to risk management.

For brevity the text may be condensed from the original occurrence notification. In some cases the aircraft model descriptions have been reduced to a sector (e.g. large jet). This is for two reasons:

- to maintain the privacy of the reporter, and
- to focus on the nature of the incident.

In many incidents such as airspace occurrences, the specific aircraft type is not relevant to the problem. By comparison for defect incidents the specific model is highly relevant, but the location is not. The occurrences are grouped by sector to enable consideration of specific risks. While this is intended to assist operators to identify their sector relevant risks, there will be some events occurring in a given sector that could equally occur in other sectors.

### **Critical Incidents**

#### **Airline Operations - Large Aeroplanes**

##### **Aircraft Incident**

- Twin turbine engine, en-route: Two passengers became intoxicated, and abusive and violent to cabin crew. Were restrained but broke all restraints carried. Eventually calmed down and were met by police on arrival. CAA safety investigation completed. (17/6383)

##### **Airspace Incident**

- Queenstown, twin turbine engine: Drone observed to pass approximately 200 ft below the aircraft as the aircraft was conducting the RNAV (RNP) Y 23 approach at Queenstown. (17/8163)

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

##### **Airspace Incident**

- Matamata, Cessna 172R: Aircraft on a dual training flight turned base in front of another small aeroplane which was ahead in the circuit. The crew of the other small aeroplane took avoiding action by turning left and away from the Cessna 172. The distance between the aircraft was estimated to be approximately 1.5 wing spans. CAA safety investigation completed. (17/7514)

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

##### **Airspace Incident**

- Wanaka, Robinson R22 Beta: Near collision during a dual training flight with an agricultural aircraft, estimated 30 m horizontal and slightly above. The agricultural aircraft was spotted by the student who abruptly lowered collective as avoiding action. (17/7987)

**Agricultural Operations - Helicopters**

**Airspace Incident**

- Maihihi, single turbine engine (Hughes 369E): While climbing out from the loading site during agricultural operations, a fixed wing aircraft flew in front of the helicopter at approximately 20 to 30 metres, from right to left. The aircraft was flying at approximately 100 ft. CAA safety investigation completed. (17/6722)

**Other**

**Airspace Incident**

- Wellington, Unmanned aircraft: RPAS observed 50 to 100 m to right of and at similar height to airliner on approach. (17/8081)

## **Selected Major Incidents**

### **Airline Operations - Large Aeroplanes**

#### **Aircraft Incident**

- Twin turbine engine, Los Angeles: Inadvertent selection of Flap Up instead of Gear Up after take-off. (17/8274)
- Twin turbine engine, Norfolk Island: Heavy landing on RWY 11 after aircraft was too slow to arrest sink rate. Wind was 165/19G30. Touchdown was hard and with bounce. Load 15 report generated and 1.9G recorded at landing. Notified engineer of need for heavy landing check. CAA safety investigation in progress. (17/7088)
- Twin turboprop engine, Auckland: Baggage re-weigh required due to a discrepancy of approximately 130 kg. This was apparently the fourth re-weigh of the day in Auckland. CAA safety investigation completed. (17/6470)
- Twin turboprop engine, Auckland: On the gate, propellers still spinning, beacon on, a member of the loading staff approached the aircraft and connected the GPU. CAA safety investigation completed. (17/6789)
- Twin turboprop engine, Auckland: Prior to engine shutdown with the left #1 propeller spinning, crew noted a loader pushing the GPU past this propeller. The loader was between the left wingtip and the nose of the aircraft. CAA safety investigation completed. (17/7211)
- Twin turboprop engine, Christchurch: During a training flight, aircraft bounced on landing resulting in a tail scrape. Go-around conducted followed by another approach and landing. (17/7757)
- Twin turboprop engine, Dunedin: Go-around due bounced landing. (17/7051)
- Twin turboprop engine, Hamilton: Tail strike due high nose attitude on landing. CAA safety investigation completed. (17/6547)
- Twin turboprop engine, Hamilton: Heavy landing. Tail strike on landing (1.44g). (17/7472)
- Twin turboprop engine, Napier: Hard landing resulting in a bounce followed a tail strike with the aircraft veering hard left. CAA safety investigation completed. (17/7045)
- Twin turboprop engine, Napier: Golf Cart Impacted Propeller Blade. While the ground staff member was moving freight up to the aircraft a box fell from the seat of the cart, onto the accelerator. The cart, unattended, drove forward and impacted the lowest propeller blade on the No.2 engine. The blade tip was substantially damaged. CAA safety investigation completed. (17/6695)
- Twin turboprop engine, Taupo: Flaps retracted below acceleration altitude. Flap was retracted from 10 to 0 following the gear up call. Both crew noticed when the Flap 0 was called for at the acceleration altitude (1,800 ft). (17/7812)

### **Airspace Incident**

- Auckland, twin turbine engine: Simultaneous take-off and go-around. ATC instructed aircraft to hold position while aircraft was in the take-off roll, passing 100 kts. The instruction from ATC was ambiguous. Take-off continued with the aircraft behind instructed to go-around and enter visual circuit. CAA safety investigation in progress. (17/7682)
- Auckland, twin turboprop engine: Separation reduced below the prescribed minima between aircraft as they climbed out of Auckland. CAA safety investigation in progress. (17/7258)
- Auckland, twin turboprop engine: A turboprop was lined up for immediate take-off as a second turboprop was on a 2 mile final. The first turboprop started rolling but was slow to accelerate. As the second turboprop was passing 100 ft with the first turboprop still on the runway, crew asked ATC if they were cleared to land. The second turboprop was below 50 ft when ATC called an incorrect call sign instructing aircraft to go around. Crew initiated a go around with the first turboprop climbing underneath. The second turboprop crew did not have the first turboprop in sight. ATC kept calling the second turboprop crew to remain in the circuit. Master warning activated in the second turboprop after gear retraction as flap 30 was still set. CAA safety investigation in progress. (17/7544)
- Auckland, New Zealand Registered: Loss of separation as both aircraft climbed out of Auckland. Separation reduced to 2.3 NM with aircraft less than 1,000 ft apart. (17/8074)
- Brisbane, twin turbine engine: Aircraft descended below the lowest safe altitude during approach. CAA and TAIC safety investigations in progress. (17/7349)
- Christchurch, twin turbine engine: Aircraft had a near miss with a drone while on final approach for RWY 02. (17/7401)
- Christchurch, New Zealand Registered: Loss of wake turbulence separation between a large aeroplane and another aeroplane. 5 NM separation required and separation reduced to 3.3 NM. (17/8027)
- Hamilton, New Zealand Registered: Twin turboprop engine cleared for take-off and Cessna 172 climbing on upwind instructed to enter the right hand circuit to facilitate the turboprop's departure. The turboprop's departure SID was offset 11 degrees to the right. The turboprop crew requested Cessna 172's intentions as the Cessna 172 was mid right cross wind. (17/7690)
- Napier, New Zealand Registered: Loss Of Separation. Twin turboprop engine requested a visual approach for non-duty RWY 16. They were cleared visual approach to 5,000 ft and to track towards final for RWY 16. After the clearance read back it was realised that this would put the aircraft in an area of conflict with another aeroplane departing on the NR- MOOSE track. Aircraft instructed to track to the VOR. CAA safety investigation in progress. (17/7033)

- New Plymouth, New Zealand registered: Aircraft departed New Plymouth when there was a manning shortage on the Raglan Control position. When Raglan is not on watch, Auckland Control provides limited service above 9,500 ft. The upper limit of the New Plymouth control zone is 6,500 ft, and the airspace between 6,500 ft and 9,500 ft becomes uncontrolled airspace. No NOTAM was issued to this effect, crew were not advised of the shortfall in service and no IFR traffic information was passed to the crew. CAA safety investigation in progress. (17/6483)
- Palmerston North, twin turboprop engine: On approach RNAV RWY 25 into NZPM. Between NIKIP (IAS) and UVUSI, CM2 side PF GPS started tracking on IVREP. Noticed discrepancy so levelled off to 5,000 ft and talked to Radar, gave vectors for visual approach. ATC also picked up the error and will submit a report. Airways Report: During the final approach the pilot flying had different GPS points set up to the pilot monitoring. One pilot had NIKIP IVREP, the other NIKIP UVUSI. The aircraft turned differently than the controllers were expecting. CAA safety investigation completed. (17/6661)
- Paraparaumu, twin turboprop engine: While on the RNAV Approach and on the PP FIS frequency, aircraft was observed by the radar controller fail to turn left as required on the approach. Aircraft instead continued straight ahead for more than 1 NM tracking towards high terrain. Radar requested PP FIS to check if aircraft was in VMC but it was not. Aircraft instructed, though PP FIS to commence missed approach immediately. Aircraft issued radar vectors for the second approach and was kept on the radar frequency until established on final approach. CAA safety investigation completed. (17/6619)
- Tauranga, twin turboprop engine: Landed without establishing comms. Flew the RNAV 07 approach and landed without establishing communication with the tower. Attempts were made to establish comms with the aircraft on two occasions before a blind broadcast was made clearing the aircraft to land. The clearance was also issued by way of a light signal from the signal lamp. At the time the aircraft was being sequenced with three other light aircraft in the circuit. CAA safety investigation in progress. (17/6346)
- Wellington, twin turbine engine: Aircraft appeared to be too fast on touchdown and crew made decision to go-around. A preceding departure, a twin turboprop, was on a Dambo Departure and entered cloud at 2,200 ft. The turbine was instructed to enter the circuit at 1,500 ft or below but crew advised that they preferred the standard missed approach and climb to 3,000 ft. Essential traffic information passed to the turboprop crew. When the turbine crew were requested to advise intentions, they advised that aircraft was climbing to 3,000 ft on the standard missed approach. Aircraft instructed to immediately contact Wellington Terminal Approach. CAA safety investigation in progress. (17/7626)
- Wellington, twin turboprop engine: RPAS encounter in controlled airspace. (17/6472)

### **Defect Incident**

- Twin turbine engine, Auckland: During climb, crew had to shut one of the engines down due to high vibration and EGT. Aircraft made a turn-back to Auckland, dumped fuel and flapless landing conducted. Visual inspection after landing determined uncontained engine failure with associated damage to pylon and horizontal stabilizer. TAIC safety investigation in progress. (17/7632)
- Twin turbine engine, Auckland: Passing approximately 13,000 ft engine overheat message accompanied by engine limit exceedance was displayed. Right EGT gauge was red indicating in excess of 1000 degrees. Checklists actioned with reduced thrust on the R engines, exceedance and overheat extinguished. EGT on the R engine now the same as L engine. TPR and rotor speeds all lower. No discernible change in vibration. Crew decided to leave engine at idle for remainder of flight. Aircraft made a turn back to Auckland, dumped fuel and requested local standby. Flap 30 approach and landing with brakes 3 carried out with no issues. TAIC safety investigation in progress. (17/7681)
- Twin turbine engine, en-route: Freight flight. Approximately 10 seconds after encountering significant St Elmo's fire on descent, both Auto-Pilots, MCP, Flight Directors and Auto-Throttle failed. The flight then manually flown with raw data approach into Christchurch. (17/6791)
- Twin turboprop engine, Christchurch: During overspeed inspection found flight aileron cables 50% below AMM tension limits. Cables had contacted both LH and RH aft spars with the potential to jam. During other inspections for overspeed, rudder rear cable and both elevator cables also found 20% below AMM tensions. CAA safety investigation in progress. (17/7055)
- Twin turboprop engine, Christchurch: Hydraulic leak dripping onto brake causing smoke after park brake applied. As this was occurring, master cautions for #2 ENG HYD pump as well as nose wheel steering and other associated cautions illuminated. Noted that the #2 hydraulic fluid quantity had reduced to zero. CAA safety investigation completed. (17/7057)
- Twin turboprop engine, Christchurch: Gear unsafe warning at 100. Go around into visual circuit and landing. (17/8096)
- Twin turboprop engine, en-route: MAYDAY declaration due cracked windscreen, descended to 10,000 ft, continued to Christchurch. CAA safety investigation completed. (17/6909)

## **Airline Operations - Medium Aeroplanes**

### **Airspace Incident**

- Napier, single turboprop engine: Aircraft was cleared to climb initially to FL180 due to opposite direction traffic maintaining FL190. Crew read this back correctly but aircraft continued climbing past FL180. Crew advised that the mode 'C' was indicating FL184 climbing and replied 'Affirm'. Aircraft was immediately issued a heading to clear the opposite direction traffic and passed essential traffic information. The opposite direction traffic was also issued essential traffic information. CAA safety investigation completed. (17/6237)
- Queenstown, single turboprop engine: Two single turboprop engine medium aeroplanes belonging to the same organisation entered controlled airspace without a clearance at 10,500 ft to the West of Queenstown. A twin turbine engine large aeroplane, in the vicinity of UBDAM was passing FL150 and descending to 10,000 ft on the UBDAM1B Arrival. CAA safety investigation completed. (17/7035)

## **Airline Operations - Small Aeroplanes**

### **Airspace Incident**

- Milford Sound, single piston engine: Aircraft reported at the Chasm 4,800 ft indication that it had just flown through an active Restricted Area (R701). A NOTAM had been issued for active avalanche control. When queried, pilot advised that the NOTAM had not been seen. CAA safety investigation completed. (17/7036)
- En-Route, twin piston engine: Avoiding action required in the Hauraki Gulf CFZ against a sport aeroplane climbing to the same altitude. CAA safety investigation in progress. (17/6562)



## **Airline Operations - Helicopters**

### **Aerodrome Incident**

- Kerikeri: Helicopter taxied past disembarking passengers on apron. (17/7818)

### **Aircraft Incident**

- Single turbine engine (Hughes 369D), Fox Glacier Neve: After landing on snow field one of the skid snow shoes broke through ice crust below powder snow, helicopter (with three people on board) sunk approximately half a metre resulting in the tail rotor contacting the snow. Engine immediately shutdown. CAA safety investigation in progress. (17/7005)

### **Airspace Incident**

- Huka Falls, unmanned aircraft (private): Helicopter pilot reported a drone approximately 1 m from rotor tip during approach to landing pad. Took evasive action. Police informed but operator could not be located. (17/6386)
- Murchison Valley, single turbine engine: Avoiding action required between two helicopters operating to/from Murchison Corner (one helicopter had five people on board). Pilots appeared to not have heard each other's radio calls. (17/7672)
- Queenstown, single turbine engine: Helicopter lifted off from base (threshold of RWY 05) and departed northbound without a clearance. ATC did not receive any calls from the helicopter but had cleared a fixed wing aircraft to Moonlight 9,500 ft or below. Issue was noticed when the helicopter pilot requested Skippers Saddle. The pilot advised that he thought the helicopter had been cleared to Moonlight. Pilot advised by ATC that no clearance had been issued. Helicopter not observed lifting off or climbing out, probably due to terrain. (17/6264)
- Queenstown, single turbine engine: Helicopter was cleared to Skippers Saddle and was cleared to cross RWY 23 only due to traffic landing on RWY 14. Helicopter was however observed crossing all runways tracking towards the North East. Fixed wing aircraft was on final for RWY 14 when the helicopter crossed that runway. CAA safety investigation in progress. (17/7436)
- Queenstown, single turbine engine: Helicopter conflicted with a small aeroplane on base for RWY 14. The small aeroplane pilot reported seeing the helicopter in aircraft's windscreen. CAA safety investigation completed. (17/8159)
- Queenstown, twin turbine engine: Helicopter reported lifting off from Malaghans Road when the actual departure point was Morven Ferry Road, which is under the RWY 23 approach track. Helicopter appeared on the Multi-lat at Morven Ferry Road and was instructed to maintain 2,000 ft and track towards Arrowtown until a large aeroplane on approach was clear. CAA safety investigation completed. (17/6447)

### **Defect Incident**

- Twin turbine engine, Browns Island: Left transmission oil pressure observed to be reading less than 1 bar. Helicopter (with three people on board) diverted to Ardmore and engineering advised. CAA safety investigation completed. (17/7028)

## **Sport Transport**

### **Aircraft Incident**

- Single piston engine (North American Harvard 3\*), Paraparaumu: While on approach to Grass 30 the aircraft approach dropped below the normal profile for the displaced threshold and it struck a perimeter fence. The aircraft conducted a go-around and personnel on the ground advised the undercarriage looked ok so the pilot re-circuited to land on RWY 34. CAA safety investigation completed. (17/6719)
- Parachute, Franz Josef: Tandem skydive exited aircraft at 19,000 ft. Tandem instructor didn't deploy the drogue and failed in his procedures to check the drogue. At 6,000 ft he tried to activate main with the primary - no result. Tried secondary then both - still no main. He activated reserve which opened normally and landed on PLA. (17/8171)
- Tandem paraglider, Queenstown: While inflating the paraglider, a strong thermal came through causing the paraglider to surge forward aggressively. Pilot used brakes to stop the canopy but it stopped in front of the pilot and passenger. The thermal increased in strength, further powering up the paraglider and the left side of the wing, forcing the canopy to the right. As a result of the movement, pilot and passenger were pulled to the right and after 2 to 3 steps the passenger lost her footing and fell (minor injury). The pilot also slipped and fell (minor injury). Pilot and passenger were dragged for approximately 3 metres before the canopy was brought back under control. (17/7534)

### **Airspace Incident**

- Wanaka, single turboprop engine medium aeroplane (Cessna 208B): Parachuting. Conflict alert activation between a large aeroplane and a medium aeroplane operating in the Wanaka Parachute Sector. The large aeroplane crew advised of the medium aeroplane and they advised that they had the medium aeroplane on TCAS. The medium aeroplane was then observed briefly outside the Parachute Sector and turning back towards the Sector. CAA safety investigation completed. (17/7415)
- Wanaka, single turboprop engine medium aeroplane (Cessna 208B): Parachuting. Conflict alert activated between a medium aeroplane and large aeroplane as the medium aeroplane appeared outside the Parachute Sector. The large aeroplane crew were advised of the medium aeroplane and the medium aeroplane immediately turned back towards the Parachute Sector. CAA safety investigation completed. (17/7416) (This is a separate incident from 17/7415.)

## **Other Commercial Operations - Aeroplanes**

### **Aerodrome Incident**

- Hamilton, single piston engine small aeroplane: Solo training aircraft was cleared to line up on RWY 36R when traffic with a landing clearance was on final for RWY 36R. CAA safety investigation in progress. (17/6990)
- Hamilton, single piston engine small aeroplane (Cessna 172S): Dual training aircraft entered the runway when there was another aircraft was on short final. Aircraft on short final conducted a go around. (17/7397)
- Hamilton, single piston engine small aeroplane (Cessna 172R): Solo training aircraft was cleared to taxi to Holding Point Delta 3 and pilot read back the instruction but was observed crossing the holding point and infringing RWY 36L. Aircraft on short final for RWY 36L was instructed to go around. (17/8193)
- Palmerston North, New Zealand Registered: Dual training aircraft was cleared for take-off from grass RWY 07 while a tractor had been cleared to operate on Taxiway Bravo at the eastern end of the grass runway. CAA safety investigation in progress. (17/7147)
- Wanganui, single piston engine small aeroplane (Cessna 152): Dual training aircraft lined up on the runway as traffic was on short final, passing 350 ft. When pilot reported 'rolling', pilot of aircraft on short final advised aircraft to hold position on the runway as traffic on final conducted a go-around and missed approach. CAA safety investigation in progress. (17/7774)

### **Aircraft Incident**

- Single piston engine small aeroplane (Piper PA-28-181), Ashburton: During initial climb after take-off on the dual training flight the engine cowling became detached from its normal latched position and slid backwards approximately 3 to 5 cm. An immediate return and landing carried out. Once stopped on the ground a gust of wind caught the cowling detaching it completely from the aircraft. The student had failed to latch correctly during pre-flight. (17/7993)
- Single piston engine small aeroplane, Raglan: Cloud base reduced to 1,800 ft causing the solo general handling lesson to be cut short. While returning to Hamilton, aircraft was flown too close to terrain as pilot was trying to remain clear of cloud. Arrival route was also obscured due to the low cloud. Pilot became disoriented and sought assistance from Hamilton Tower to track to Temple View and from Temple View arrival procedure completed normally. CAA safety investigation completed. (17/7429)
- Twin diesel engine small aeroplane, Hamilton: Double engine shutdown during dual multi training exercise. Instructor took control, engines restarted. CAA safety investigation completed. (17/7038)
- New Zealand Registered, Wellington: Air ambulance flight. Engine shut-down due to bird strike on approach. Aircraft landed safely but crew requested emergency vehicle assistance on taxi. CAA safety investigation in progress. (17/6485)

### **Airspace Incident**

- Auckland, single piston engine small aeroplane: No radio calls were received from Auckland while the dual training flight was operating in the Auckland Sector. Ambulance helicopter had to take avoiding action against the aircraft while turning final for Auckland Hospital helipad, due to aircraft being in direct conflict to the helicopter. CAA safety investigation completed. (17/6408)
- Christchurch, single piston engine small aeroplane (Piper PA-28-181): Solo training flight. Operational Deviation Lateral and Vertical. On first contact with CH TWR was instructed to descend to below 1,500 ft, make a Riccarton arrival, but descended to 1,800 ft. Entered the zone and instrument sector between Springston and Rolleston, further instruction required to intercept the Riccarton arrival. Was then cleared to VRP Russley, observed crossing through the runway centreline, instruction issued to enable tracking to Russley. Carried out a touch and go on G20, cleared a Southbrook departure, however the pilot appeared to be unaware of the VFR Southbrook departure. CAA safety investigation completed. (17/7066)
- Dunedin, twin piston engine small aeroplane (Piper PA-34-220T): Aircraft on a dual training flight was cleared to BE at 4,000 ft but instead tracked direct to AKLAR and reported crossing AKLAR at 3,500 ft. This put the aircraft below terrain. Pilot reported that aircraft was in VMC. Cloud base had been reported as BKN023. CAA safety investigation completed. (17/6677)
- Hamilton, single piston engine small aeroplane: Dual training flight. Aircraft cut in front of aircraft it was supposed to follow in the circuit. ATC issued instructions to resolve the conflict. (17/7986)
- Hamilton, single piston engine small aeroplane (Cessna 172R): Solo training flight. Lateral Deviation, Multiple Non-Compliances. The solo student's comprehension was so poor ATC advised the student to remain clear of controlled airspace. However, the student entered the control zone conflicting with every aircraft in the airspace. Student instructed to land and shutdown. CAA safety investigation completed. (17/7039)
- Hamilton, single piston engine small aeroplane (Cessna 172S): Aircraft on a solo training flight was sequenced for RWY 18R but completed a hard landing on RWY 18L. Aircraft then went around, was sequenced for RWY 18L again and a safe landing was completed on the correct runway. (17/7034)
- Hamilton, single piston engine small aeroplane: Solo training flight. Aircraft cut in front of leading traffic causing ATC to instruct the leading aircraft to vacate the circuit. (17/7430)
- Huntly, single piston engine small aeroplane (Cessna 172R): Solo training flight. During night operation, no radio calls were heard from the aircraft and only the strobe lights were illuminated. Another small aeroplane operating in the vicinity had to take avoiding action from the Cessna. CAA safety investigation in progress. (17/7933)
- Napier, twin turbine engine medium aeroplane: Ferry/positioning flight. Loss of separation assurance. Was given a diversionary climb of NR351R to FL180, called Ohakea on the 315R. While NR TWR controller had issued the aeroplane with the 351R on the ground, the pilot readback the NR315R, this was not detected by the NR controller. The pilot later reported established outbound on the 315R again not detected by the NR controller. CAA safety investigation in progress. (17/7032)

- Nelson, twin piston engine small aeroplane (Piper PA-34-220T): Cleared Level Deviation. The ferry/positioning flight was inbound to Nelson on 092 radial, cleared to descend via distance steps to 7,000 ft. Observed at 12DME at 7,000 ft, where MSA is 7,500 ft. CAA safety investigation completed. (17/6418)
- Paraparaumu, single piston engine small aeroplane (Cessna A152): Dual training flight. Aircraft cut in front of a Cessna Caravan on final causing the Caravan to conduct a go-around and missed approach. Weather at the time was marginal with rain to the south of the airfield. CAA safety investigation in progress. (17/6454)
- West Melton, single piston engine small aeroplane (Cessna 172P): Student on a solo training flight failed to give way to another single piston engine small aeroplane ahead in the circuit causing a near miss. Student told to go-around by an Instructor on the ground. (17/8292)
- En-route, New Zealand Registered: Dual training flight. Descent issued below MSA. Was given descent to 4,200 ft at GOTNO (MSA 4,400 ft) at 2030. Mistake corrected at 2033:38 to 4,400 ft. CAA safety investigation in progress. (17/6985)

### **Defect Incident**

- Single piston engine small aeroplane, Wanaka: Aircraft on a ferry/positioning flight received a landing gear warning light en-route MF - QN. Diverted to Wanaka and emergency extension carried out satisfactorily. Aircraft landed safely. (17/8132)

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

#### **Aircraft Incident**

- Single turbine engine (Bell 206L-1), Atiamuri/Mangakino: Private flight. Wire strike in the cruise 4 NM east of Mangakino. CAA safety investigation in progress. (17/7105)
- Twin turbine engine, Queenstown: While the dual training aircraft was still on the ground the pilot discovered that the dual control cyclic was not screwed in but just sitting in place. Leather boot was zipped up and canon plug was in place. CAA safety investigation in progress. (17/7679)
- Twin turbine engine (Kawasaki BK117 B-2), Waikato: Main Rotor blades made contact with light foliage. A visual inspection of the M/R blades was carried out by the PIC with green marks but no apparent blade damage. Flight completed, upon shutdown PIC conducted a closer inspection of the M/R blades discovering damage to the skin of 3 of the main rotor blades. (17/8289)

#### **Airspace Incident**

- Motueka, single turbine engine (Eurocopter AS 350 B3): Dual training flight. Avoiding action required due to a solo student in a Cessna communicating descending on the non-traffic side when in fact they were on the traffic side. CAA safety investigation in progress. (17/6821)
- New Plymouth, twin turbine engine: Aircraft was cleared to descend below MSA. Crew remained above MSA until commencing the RNAV approach. CAA safety investigation in progress. (17/7153)

## **Agricultural Operations - Aeroplanes**

### **Defect Incident**

- Single turboprop engine small aeroplane (Pacific Aerospace Cresco 08-600), Waitangi Station: During take-off rotation with the RH main wheel approximately 2 m off the strip edge, the elevator tip and tailplane contacted a small matagouri bush part of which broke off and jammed between the elevator horn balance and tailplane. With a jammed elevator the aircraft was flown to a suitable runway for an uneventful landing. (17/7011)
- Single turboprop engine small aeroplane (Pacific Aerospace Cresco 08-600), Papatu Airstrip: Aileron jam. Turned onto sowing run in a left hand turn, when trying to roll wings level the ailerons were jammed. Managed to free the controls using two hands and roll wings level. Looking outside noted the right hand wing tip had detached. When the tip came loose it jammed up on the aileron horn and fence. (17/7215)
- Single turboprop engine small aeroplane (Pacific Aerospace Cresco 08-600), Stratford: Elevator jammed at 50 ft during approach. Controlled landing with power and trim. CAA safety investigation completed. (17/7977)

## **Agricultural Operations - Helicopters**

### **Aircraft Incident**

- Single piston engine (Robinson R44 II), Waitohi: Wire strike. Pilot hit fence wire strung across a gully causing damage to bubble and one main rotor blade. (17/7427)
- Single turbine engine (Bell 206B), Omakau: Wire strike during spray run, immediate precautionary landing carried out into the next paddock. CAA safety investigation in progress. (17/7406)
- Single turbine engine (Eurocopter AS 350 B3), Kinleith Forest: During re-loading on spraying operations, the pilot decided to take-off with the filling hose still connected to the helicopter spray gear. This resulted in significant damage to the spray pump and associated hoses. (17/6316)
- Single turbine engine (Hughes 369E), Taumarunui: While on a spraying run the aircraft struck a single-strand electric fence wire strung across a gully, resulting in an emergency landing. The operator reported that the pilot had not been made aware of the wire on the briefing flight and noted that the critical lesson learned was to ensure that farmers and land owners are aware of all wire hazards and that this is communicated to pilots. CAA safety investigation in progress. (17/8028)
- Single turbine engine (McDonnell Douglas 500N), Waiotahui: Loader driver pushed the fertiliser bucket with his foot as the helicopter was lifting and taking-off, foot slipped off the bucket frame and his boot caught on rotating spinner resulting in breaking his lower leg. (17/6680)

## **Private Operations - Aeroplanes**

### **Aerodrome Incident**

- Paraparaumu, single piston engine small aeroplane: Aircraft entered the sealed runway while helicopter was on short final. The helicopter made a steep right turn to re-join final. CAA safety investigation completed. (17/6621)

### **Airspace Incident**

- Taupo, twin piston engine small aeroplane (Piper PA-34-200T): Loss of separation with special use airspace. Aircraft was under vectors around NZG451 (AP parachuting) and got within 1.1 NM rather than the 2 NM required. (17/7695)

## **Private Operations - Helicopters**

### **Aircraft Incident**

- Single turbine engine, Fox Glacier: During a flight with two people on board, pilot noticed an anomaly and landed to check the engine. Early indications showed metal in the oil but full report will be issued after engineering inspection. (17/6820)

### **Airspace Incident**

- Christchurch, single turbine engine (Hughes 369E): Helicopter entered controlled airspace at 5,800 ft unverified without a clearance and conflicted with a large aeroplane descending to 4,000 ft. The radar controller instructed the large aeroplane to stop descent at 6,500 ft and issued instructions to the crew to turn away from the helicopter. Helicopter pilot contacted the Tower at 5,500 ft requesting clearance and was instructed to contact Radar for clearance. CAA safety investigation in progress. (17/7409)



## **Private Operations - Sport**

### **Aerodrome Incident**

- Tauranga, single piston engine gyroplane: After landing, pilot contacted the Tower to report that a works vehicle had been cleared to cross the runway while the aircraft was on short final. Until the call was received, the controller and flight data assistant had not been aware of the incident. CAA safety investigation in progress. (17/7937)
- Whangarei, single piston engine gyroplane: While a large aeroplane was back-tracking on RWY 06, a gyrocopter, making radio calls landed on the same runway. Grass 06 was available to the gyrocopter. CAA safety investigation completed. (17/7573)

### **Aircraft Incident**

- Single piston engine amateur built aeroplane, Te Horo Beach: Engine was running rough and aircraft was unable to maintain altitude. Forced landing made on a field near Te Horo beach. (17/6441)

### **Airspace Incident**

- Hamilton, single piston engine amateur built aeroplane: Aircraft departed off RWY 18L and was cleared for a right turn when pilot requested for this. There was a small aeroplane in the non-standard right hand circuit, operating asymmetric. The amateur built aeroplane pilot reported that he had a near miss with the aeroplane. CAA safety investigation in progress. (17/6942)
- Hamilton, single piston engine class 2 microlight: Aircraft failed to follow joining instructions and conflicted with aircraft established in the circuit. (17/7853)
- Matamata, single piston engine class 2 microlight: Pilot was using an incorrect call-sign while operating in the Matamata circuit and also failed to follow the correct sequence, cutting in front other traffic in the circuit. CAA safety investigation completed. (17/7164)
- Milford Sound, single piston engine class 2 microlight: Aircraft was on approach into Milford Sound during a very busy period and strong sea breeze. Aircraft drifted off the runway and flew over an aircraft at the holding point at a very low altitude. After correcting the aircraft's track, back to the centre-line, aircraft was approximately three quarters down the runway and it was too late to make a landing. Several calls were made to the aircraft by Flight Information Service regarding intentions. The aircraft conflicted with several other aircraft on the outbound leg. MF AFIS also concerned about pilot's capability. CAA safety investigation completed. (17/8158)

### **Defect Incident**

- Parachute, Ashburton: Reserve parachute was found incorrectly packed. CAA safety investigation in progress. (17/7362)



## Other

### Aircraft Incident

- Foreign registered, Auckland: Passenger transport A to B aircraft returned to Auckland due to #2 engine problems. A clipboard was left on the engine cowl, which was subsequently ingested into the engine. (17/6742)

### Airspace Incident

- Auckland, foreign registered: Passenger transport A to B flight. Runway Incursion. Was taxiing for RWY 05R and was instructed by Auckland ground controller to hold on taxiway A10 which the crew acknowledged. After a frequency change, Auckland tower advised that a gap between traffic had been arranged for their departure behind a second aircraft, a twin turbine engine large aeroplane on final at 7 miles. The first large aeroplane proceeded to line up on RWY 05R without the appropriate clearance requiring the second large aeroplane to go around. CAA safety investigation in progress. (17/6405)
- Auckland, foreign registered: Passenger transport A to B flight. Loss of separation between two large aeroplanes during climb out of Auckland. Separation reduced to approximately 500 ft and less than 5 NM. (17/7871)
- Auckland, foreign registered: Business/executive flight. Intercept Of Wrong ILS. IFR inbound to AA from the North. Aircraft was under own navigation direct to LENGU for ILS RWY 05R at AA. Approximately 10 NM SW of WP the aircraft was observed making a left turn to join final approach at WP. (17/6382)
- Auckland Oceanic, foreign registered: Passenger transport A to B flight. Outbound cleared through the level of the inbound aircraft without the required separation. CAA safety investigation in progress. (17/6419)
- Auckland Oceanic, foreign registered: Passenger transport A to B flight. Aircraft was issued a conditional clearance to climb to FL370 at 1246. Level report received from the aircraft indicated that the aircraft had climbed earlier and was maintaining FL370 at 1242, causing a loss of separation with an opposite direction large aeroplane. CAA safety investigation completed. (17/6459)
- Honiara, foreign registered: Passenger transport A to B flight. Aircraft failed to comply with clearance and climbed into controlled airspace without a clearance, creating a loss of separation with an inbound twin turbine engine large aeroplane. Aircraft was instructed to immediately descend and maintain FL240. Alert issued to the opposite direction large aeroplane and crew advised that aircraft was passing FL245. (17/7560)
- Palmerston North, foreign registered: Business/executive flight. Descent below MSA on STAR. Was on the RINRI1B arrival for the RNAV RWY07 NZPM. The Radar controller observed the aircraft descended below 2,500 ft prior to GUTNI. But still above radar terrain. (17/6355)
- Palmerston North, foreign registered: Ferry/positioning flight. Operations below MSA. Descended to 3,500 ft while between AVGUV and NIKIP on the AVGUV1A STAR. The pilot was challenged and then climbed back up to the MSA for this portion of the STAR of 4,500 ft. Pilot thought they could descend to 3,500 ft which is available only after crossing NIKIP. (17/6280)

- Queenstown, foreign registered: Private flight. Aircraft was cleared to descend to 11,000 ft via the STAR profile and given QNH, but was observed descending below the profile and leaving controlled airspace. Aircraft however remained above radar terrain at all times. VHF communications were lost between ATC and aircraft but another aeroplane in the area was able to relay instructions to aircraft for it to climb again and re-join the profile. (17/8072)
- Tauranga, unmanned aircraft: Private flight. Person operated drone in controlled airspace without a clearance. A witness saw the drone being operated high over Plummers Point. At the same time a large aeroplane was on approach, flying in the vicinity. Registration marks of vehicle being driven by the drone operator provided. (17/7264)
- Whitianga, unmanned aircraft: Private flight. Drone had an air proximity with an aircraft flying at 2,000 ft near Whitianga. (17/7065)

#### **Defect Incident**

- Auckland, foreign registered: Passenger transport A to B flight. On departure the tower controller noticed that the undercarriage did not retract. The Tower controller advised the Terminal controller who in turn checked with the crew if everything was ok. Crew advised that the gear was down and aircraft was continuing with the departure as they consulted engineering. After approximately 9 minutes, when aircraft was about 25 NM south of Auckland, at 10,000 ft crew decided to return to Auckland. No emergency declared. (17/8194)

#### **Facility Malfunction Incident**

- Foreign Registered, Queenstown: Passenger transport A to B flight. Power failure at airport caused PEPI to be unavailable. Went around and issue resolved shortly afterwards. Normal landing made. (17/8283)
- Foreign Registered, Rarotonga: Passenger transport A to B flight. Poor comms with RAR VHF - had to ask AKL radio on HF to call them. (17/8284)

## Defect Incidents by Aircraft Statistics Category

### Quarterly Comparison

#### Number of Reported Defect Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
◆ Large Aeroplanes	252	180	201.7
■ Medium Aeroplanes	14	9	25.0
◆ Small Aeroplanes	72	71	63.0
▲ Agricultural Aeroplanes	5	4	7.0
■ Helicopters	39	49	47.3
Sport Aircraft	4	5	5.7
Unknown Aircraft	26	17	14.3
<b>Total</b>	<b>412</b>	<b>335</b>	<b>364.0</b>

#### Severity of Reported Defect Incidents

Severity	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
Critical	0	0	0.0
Major	23	17	36.7
Minor	389	318	327.3

No critical defect incidents were reported in the 1 October to 31 December 2017 quarter.

## Aircraft Incidents by Aircraft Statistics Category

### Quarterly Comparison

#### Number of Reported Aircraft Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
◆ Large Aeroplanes	238	250	88.7
■ Medium Aeroplanes	3	3	20.0
◆ Small Aeroplanes	39	37	23.7
▲ Agricultural Aeroplanes	4	0	2.3
■ Helicopters	20	12	13.3
Sport Aircraft	10	6	7.0
Unknown Aircraft	70	96	51.0
<b>Total</b>	<b>384</b>	<b>404</b>	<b>206.0</b>

#### Severity of Reported Aircraft Incidents

Severity	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
Critical	1	3	3.0
Major	40	29	18.7
Minor	343	372	184.3

One critical aircraft incident was reported in the 1 October to 31 December 2017 quarter; this incident was in the 'Large Aeroplanes' statistics category. (Occurrence Number 17/6383, see page 9 for details.)

## Airspace Incidents by Aircraft Statistics Category

### Quarterly Comparison

#### Number of Reported Airspace Incidents

Aircraft Statistics Category	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
◆ Large Aeroplanes	60	65	34.7
■ Medium Aeroplanes	14	17	19.0
◆ Small Aeroplanes	140	142	116.7
▲ Agricultural Aeroplanes	3	2	1.7
■ Helicopters	26	27	26.3
Sport Aircraft	19	18	23.7
Unknown Aircraft	171	181	149.0
<b>Total</b>	<b>433</b>	<b>452</b>	<b>371.0</b>

#### Severity of Reported Airspace Incidents

Severity	1 Oct to 31 Dec 2017	1 Oct to 31 Dec 2016	Average Of Same Quarter In Previous 3 Years
Critical	5	6	3.0
Major	62	21	30.3
Minor	366	425	337.7

Of the 5 critical airspace incidents reported in the 1 October to 31 December 2017 quarter:

- 1 was in the 'Large Aeroplanes' statistics category (Occurrence Number 17/8163, see page 9 for details);
- 1 was in the 'Small Aeroplanes' statistics category (Occurrence Number 17/7514, see page 9 for details);
- 2 were in the 'Helicopters' statistics category (Occurrence Number 17/6722 and 17/7987, see pages 9 and 10 for details); and
- 1 was in the 'Unknown aircraft' statistics category (unmanned aircraft) (Occurrence Number 17/8081, see page 10 for details).

#### Attributability

Of the 433 reported airspace incidents in the 1 October to 31 December 2017 quarter, 16% are Air Traffic Service (ATS) attributable, 72% are pilot attributable, 2% are ATS and pilot attributable, and 10% are unknown attributable.

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

Since January 2015 the long-term trend of the ATS attributable airspace occurrence rate is neutral and the long-term trend of the pilot attributable rate is neutral.

### **Bird Incident Rates**

Bird hazard monitoring has been carried out for the period ended 31 December 2017.

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), 2 having long-term upward trends, and 1 having a long-term downward trend.

There were 7 aerodromes with strike rates in the medium risk category (5.0 to 10.0 per 10,000 movements), 5 having long-term upward trends, 1 having a long-term constant trend and 1 having a long-term downward trend.

18 aerodromes had strike rates in the low risk category (below 5.0 per 10,000 aircraft movements), 8 having long-term upward trends, 2 having long-term constant trends and 8 having long-term downward trends.

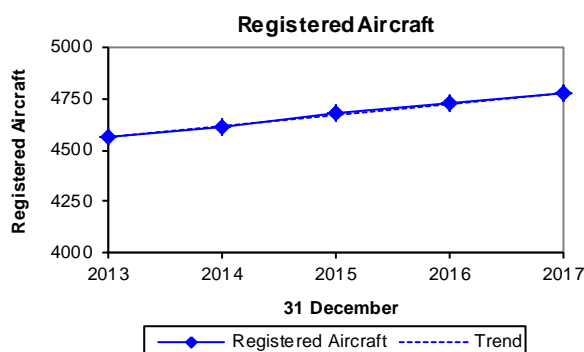
For more information visit the 'Bird Hazard Reports' section of the CAA web site <http://www.caa.govt.nz/safety-info/safety-reports.htm> (or look up Aviation Info, Safety Info, Safety reports)

## Section 3 - Activity

### 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 2013 to 2017.



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

#### Quarterly Comparison

Aircraft Statistics Category	31 December 2017	31 December 2016	Average Of 31 December In Previous 3 Years
Large Aeroplanes	134	136	127
Medium Aeroplanes	74	69	78
Small Aeroplanes	1,525	1,508	1,506
Agricultural Aeroplanes	93	94	98
Helicopters	863	845	822
Sport Aircraft	2,090	2,071	1,988
<b>Total</b>	<b>4,779</b>	<b>4,723</b>	<b>4,619</b>

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

#### Licences and Organisations

The number of 'Part 129 Foreign Air Operators' increased from 40 at 31 December 2016 to 45 at 31 December 2017, an increase of 5 (13%). Over the same period the number of 'Part 19 Supply Organisation Certificate of Approvals' decreased from 50 to 42, a decrease of 8 (16%).

At 31 December 2017 there were 105 'Part 102 Unmanned Aircraft Operators', this certificate was introduced on 1 August 2015.

At 31 December 2017 there were 45 'Recreational Helicopter Pilot Licences', this licence was introduced in April 2016.

## Section 4 - Quarterly Statistics

Quarter	2015/1	2015/2	2015/3	2015/4	2016/1	2016/2
<b>Social Cost \$ million<sup>1</sup></b>	43.83	3.37	1.90	33.35	8.35	9.52
<b>Number of Fatal Accidents<sup>2</sup></b>	4	0	0	1	1	2
<b>Number of Fatal Injuries<sup>2</sup></b>	9	0	0	7	1	2
<b>Number of Serious + Minor Injuries<sup>2</sup></b>	13	11	12	15	18	5
<b>Number of Aircraft Accidents<sup>2</sup></b>						
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	3	4
Sport Aircraft	8	5	7	9	7	6
Unknown Aircraft	0	0	0	0	0	0
Hang Gliders	6	7	7	8	11	2
Parachutes	1	2	1	4	3	0
<b>Number of Incidents<sup>3</sup></b>	1,432	1,432	1,233	1,310	1,428	1,612
<b>Number of Aviation Related Concerns<sup>4</sup></b>	244	188	171	136	260	202
<b>Number of Hours Flown<sup>5</sup></b>	244,904	193,755	197,169	218,320	243,864	203,167
<b>Number of Air Transport Flights<sup>5</sup></b>	110,624	83,020	85,321	101,483	114,691	86,611
<b>Number of Aircraft Movements<sup>6</sup></b>	237,404	211,137	222,320	227,208	237,499	213,927
<b>Number of Aircraft on the Register<sup>7</sup></b>	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)<sup>8</sup></b>						
Recreational Pilot Licence (RPL Medical)	337	366	385	395	401	439
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>1</sup> Social cost of accidents and injuries. All aircraft statistics categories. Includes hang gliders and parachutes. Cost of fatal, serious and minor injuries, and aircraft destroyed, in June 2016 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 2016 (the most recent quarter for which adequate data are available) with an allowance for aircraft for which reports were not received. Estimated for 2017/1 and 2017/2. Data not yet available for 2017/3 and 2017/4.



Quarter	2016/3	2016/4	2017/1	2017/2	2017/3	2017/4
<b>Social Cost \$ million<sup>1</sup></b>	3.91	29.86	15.49	30.14	1.02	20.46
<b>Number of Fatal Accidents<sup>2</sup></b>	0	3	2	5	0	3
<b>Number of Fatal Injuries<sup>2</sup></b>	0	5	2	6	0	4
<b>Number of Serious + Minor Injuries<sup>2</sup></b>	7	14	20	12	7	15
<b>Number of Aircraft Accidents<sup>2</sup></b>						
Large Aeroplanes	1	0	0	1	0	0
Medium Aeroplanes	0	0	0	0	0	0
Small Aeroplanes	2	6	6	0	4	4
Agricultural Aeroplanes	1	2	4	0	0	2
Helicopters	2	3	10	2	1	2
Sport Aircraft	5	4	8	8	3	11
Unknown Aircraft	1	0	0	2	0	1
Hang Gliders	2	4	4	4	3	6
Parachutes	0	7	7	2	1	4
<b>Number of Incidents<sup>3</sup></b>	1,635	1,675	1,879	1,815	1,725	1,636
<b>Number of Aviation Related Concerns<sup>4</sup></b>	229	235	253	278	230	277
<b>Number of Hours Flown<sup>5</sup></b>	211,276	237,542	260,761	251,503		
<b>Number of Air Transport Flights<sup>5</sup></b>	87,395	106,986	120,183	97,572		
<b>Number of Aircraft Movements<sup>6</sup></b>	221,092	231,713	233,701	222,907	221,296	249,554
<b>Number of Aircraft on the Register<sup>7</sup></b>	4,687	4,723	4,734	4,704	4,751	4,779
<b>Number of Part 119 Certificated Operators</b>						
Air Operator – Large Aeroplanes	8	7	6	6	6	6
Air Operator – Medium Aeroplanes	15	15	13	13	13	13
Air Operator – Helicopters and Small Aeroplanes	163	164	166	166	165	167
<b>Number of Part 137 Agricultural Aircraft Operators</b>	103	102	102	102	103	105
<b>Number of Part 115 Adventure Aviation Operators</b>	28	29	31	29	29	29
<b>Number of Part 102 Unmanned Aircraft Operators</b>	54	76	86	89	94	105
<b>Number of Part 141 Training Organisations</b>	51	52	53	52	52	50
<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)	456	453	446	442	440	456
Private Pilot Licence (Class 1 & 2)	2,418	2,385	2,402	2,358	2,348	2,367
Commercial Pilot Licence (Class 2 only)	2,240	2,192	2,094	2,108	1,992	1,927
Commercial Pilot Licence (Class 1)	2,045	2,030	2,085	2,032	2,096	2,100
Airline Transport Pilot Licence (Class 2 only)	1,016	1,006	990	996	1,031	1,064
Airline Transport Pilot Licence (Class 1)	1,249	1,248	1,252	1,261	1,232	1,201
Air Traffic Controller Licence (Class 3)	373	366	360	364	371	364
Aircraft Maintenance Engineer Licence (N/A)	2,817	2,830	2,842	2,852	2,867	2,882

<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 (certificated until Nov 2017), Te Anau/Manapouri (certificated until Apr 2015), Timaru, Westport, Whakatane (certificated from Apr 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. RPL helicopter licences were introduced in April 2016. 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.

### **Social Cost of Accidents and Injuries**

Social cost of accidents and injuries 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 \$4.14 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.

<b>Incident Sub-Types</b>	
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:

<b>Severity</b>	<b>Definition</b>
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**

