



AVIATION SAFETY SUMMARY
APRIL – JUNE 2019

Introduction

Welcome to the Aviation Safety Summary Report for the autumn quarter of 2019. This report provides a summary of aviation safety in the period and an overview of the long term safety performance within each aviation sector. The report examines performance in each of the three principle sectors that the Civil Aviation uses to characterise flying activity.

- Commercial Passenger (Air Transport & Part 115 operations)
- Commercial non-passenger operations and.
- Private or recreational operations.

These principle sectors reflect the CAA's regulatory operating model. The regulatory model recognises the public has higher expectations of safety (and regulation) in relation to passenger air transport, and commercial aircraft, than for private and recreational flying.

The report has two purposes, to provide a summary of recent aviation accidents, and to provide a record of each sectors safety performance in the medium to long term. The provision of accident details is intended to inform and assist other aviation operators in the management of safety risk. The accident details are summaries of the reports as received, they may be incomplete or still under investigation and are not intended to attribute cause or blame.

The long term safety performance trends are included to provide context. The number of accidents over the short term is highly variable and the CAA uses the long term performance of a sector as guide to selecting an appropriate regulatory response.

Sector Safety Performance

Accidents - 1 April to 30 June 2019					
Commercial Passenger		Commercial Non-Passenger		Private & Recreational	
7	0 Deaths 5 Injuries	8	1 Deaths 1 Injuries	8	2 Deaths 0 Injuries
YTD	20	YTD	18	YTD	29
Last Year	14	Last Year	22	Last Year	56

There were 23 accidents in this quarter compared with 14 in the same quarter last year.

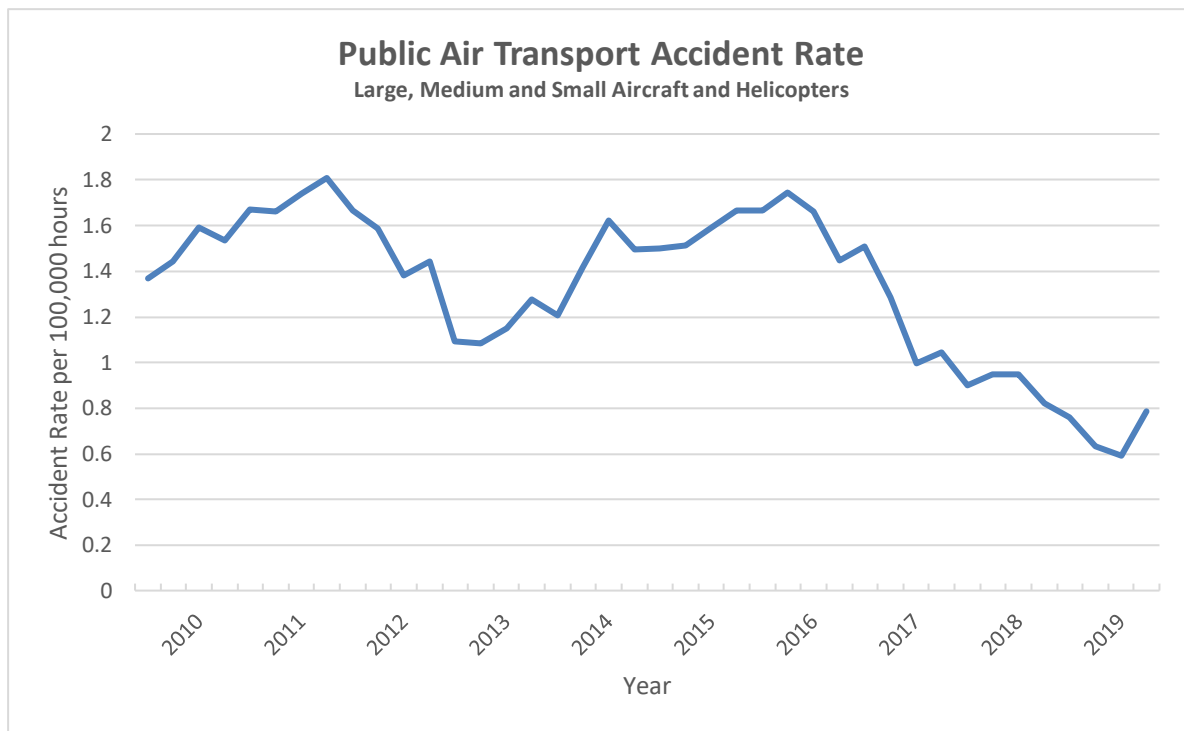
- In the commercial passenger sector there were seven accidents. Two of the accidents involved passenger injuries on large aeroplanes and one was a nose gear failure on a small air transport aeroplane which landed without injury. The other 4 accidents in this sector were adventure aviation passenger operations.
- In the commercial non-passenger sector there were eight accidents including a fatal accident due to a mid-air collision at Masterton, the second aircraft in the mid-air collision was a private operation. There was also a fixed wing agricultural pilot who was seriously injured in a take-off accident. Three helicopter crew members were fortunate to escape injury following a crash into water near the Auckland Islands.
- In the private & recreational flying there were eight accidents and two fatalities. This was slightly more than the 5 accidents reported in the same quarter last year.

Passenger Air Transport Operations - Accidents

Ref.	Location	Aircraft Model	Fatalities	Injuries	Description
19/3629	Hamilton	421C	0	0	Aircraft reported Mayday for nose gear issues, then landed with nose gear not fully extended. A/c stuck on runway. CAA RESPONSE: Technical issue with actuator CAA and operator investigation ongoing
19/3686	Wellington	DHC-8-311	0	1	Elderly passenger (last off aircraft) missed ramp with foot, fell backwards, hitting head on the corner of the Galley Console. Passenger was knocked unconscious for approx 10-15sec with a large cut on the back of head, bleeding heavily. Rescue fire where CAA RESPONSE: No CAA action – within operators SMS
19/4571	Honolulu	777-219	0	1	RTB due pax falling in smooth flight and injured his back and head. Dumped approx. 3 tonnes of fuel to max landing weight. Diversion was recommended by Medlink. CAA RESPONSE: No CAA action – within operators SMS

Part 115 Adventure Aviation - Accidents

19/3478	Jardines	NA	0	1	Pax shoulder dislocated after exiting a/c. Pax failed to declare pre-existing condition CAA RESPONSE: No CAA action – within operators SMS
19/3608	Queens-town	Sigma Micro	0	1	Hard landing after encountering sink, resulting in pax being taken to hospital. Pax released with spine fractures CAA RESPONSE: Referred to H&SE unit for investigation, which is ongoing.
19/3732	Kerikeri	Sigma Tandem	0	1	On approach sink was encountered causing a hard landing. Pax complained of pain in her bottom and was taken to hospital as a precaution. Pax found to have slipped disk CAA RESPONSE: Referred to H&SE unit for investigation, which is ongoing.
19/4373	Jardines	Sigma Micro	0	1	Pax shoulder dislocated on deployment. Pax taken to hospital upon landing CAA RESPONSE: No WR assigned – but investigators discussed with operator during visit

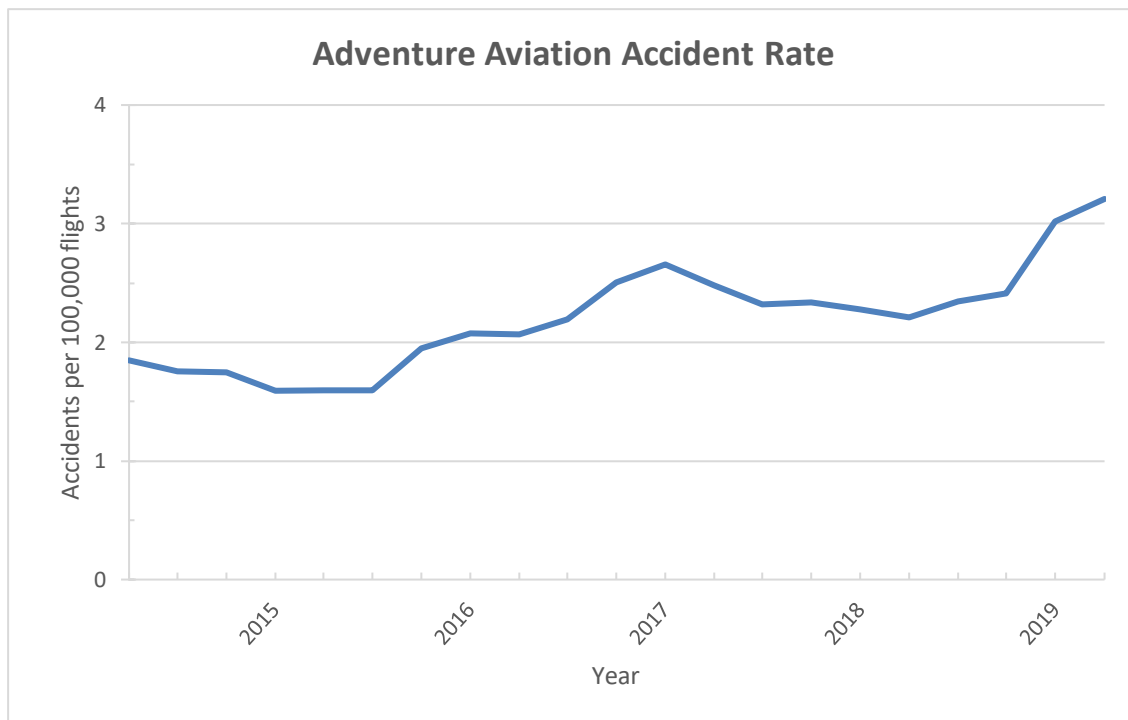


Accident Rate

This displays the accident rate for all public air transport operations, in aeroplanes and helicopters. It does not include Part 115 adventure aviation. The accident rate in this sector is very low and accordingly subject to volatility, despite this being a three year averaged value. In this 2nd quarter of 2019 there were 3 accidents. Most quarters this sector has 0 or 1 accidents.

Nature of Accidents this Quarter

This quarter there were two passenger injuries (falls) on large aeroplanes, and 1 landing accident in a small aeroplane when the landing gear failed to deploy and the aircraft landed without injury to persons on board. Due to the small number and minor nature of these 3 accidents, the recent small upswing is not particularly significant considering the long term.



Accident Rate

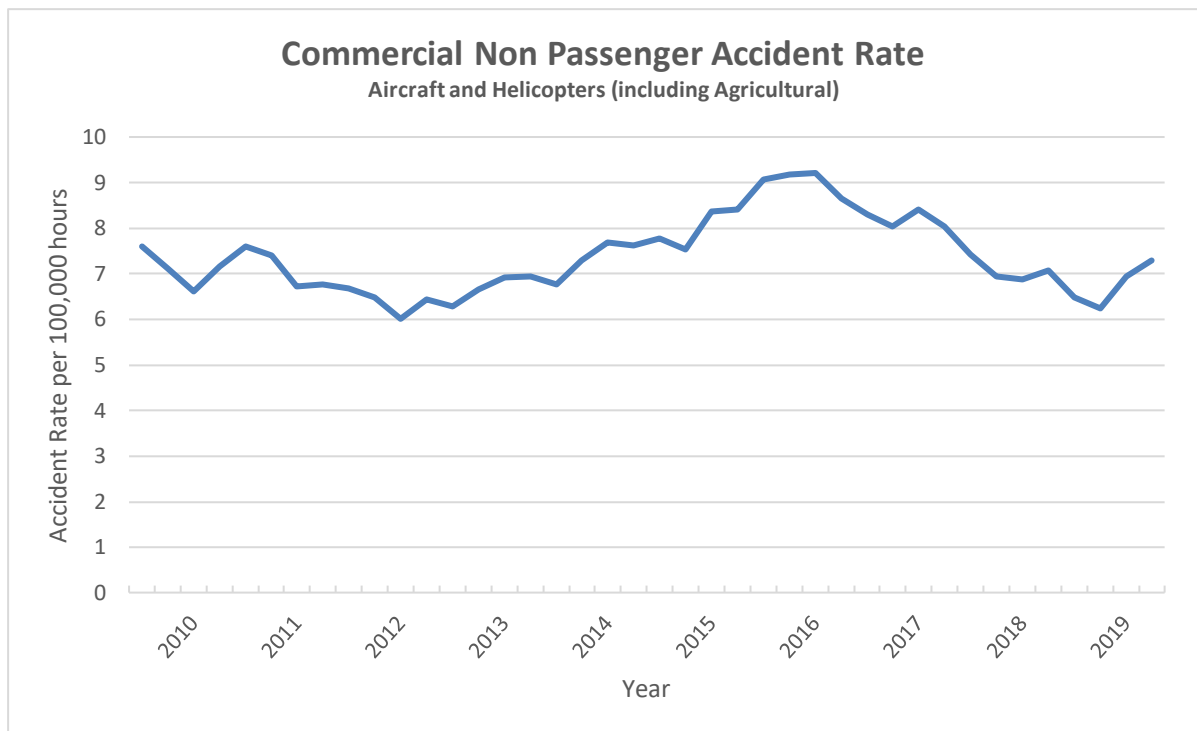
The adventure aviation rate, calculated in accident per flight/jump has continued to increase. The increase is slight, an increase of 0.5 in the rate implies an extra accident every 200,000 jumps.

Nature of Accidents this quarter

All the accidents in this quarter involved joint/ankle/leg injuries. Nonetheless the CAA continues to work with industry to understand the reasons for the increasing accident rate.

Commercial Non Passenger Operations- Accidents

Ref	Location	Aircraft Model	Fatalities	Injuries	Description
19/2659	Motueka	Adventurer CA18	0	0	During T/O roll a/c swerved right then left, then ground looped. Both wing tips contacted the ground and the r/h undercarriage collapsed. Nil injuries CAA RESPONSE: No CAA action – within operators SMS
19/2728	Otaki	R44 II	0	0	During agricultural operation hit a single electric wire. Damage to windscreen, mast, and rotor blades. CAA RESPONSE: Investigator discussed with operator. WR closed
19/2792	Auckland/Yule Island	BK117 C-1	0	0	Initial report. Helicopter missing, presumed crashed into the sea. 23/4/19: Crew (3) found alive. CAA RESPONSE: SIU scope limited investigation completed – and referred to Helicopter and ag unit
19/3120	Thames	P2002 Sierra UL	0	0	Minor take-off accident. Pilot lost directional control on take-off after the application of full power. Aircraft departed the runway to the left and came to rest in a ditch. No injuries, aircraft damaged. CAA RESPONSE: No CAA action – within operators SMS
19/3221	Tiniroto	750XL	0	1	Topdressing operation. Take-off accident, failed to get airborne, product jettison in progress, left wheel followed by left wing impacted fence post which swung the A/C left, left wing struck the ground, further left swing to hit nose down and turned over CAA RESPONSE: CAA Investigation on-going - review of operator's investigation, including site visit
19/4076	Arapohue	FU24-950	0	0	Sudden loss of engine power required forced landing from low level. A/c landed in swamp area and contacted a small tree damaging the R/H outer wing panel CAA RESPONSE: Fuel starvation - operator still investigating - CAA monitoring
19/4375	Southland	R44	0	0	Heli rotors struck scrub during deer mustering, resulting in dents on undersides of blades. No effect on flight - not noticed until post flight inspection. CAA RESPONSE: CAA Investigator worked with operator's investigator. WR closed
19/4239	Masterton	Cessna 185	1	0	Mid air collision WAK and CBY. CAA RESPONSE: Investigation on-going subject to a RIU/HSU/SIU combined investigation. No date set yet.



Accident Rate

The long term safety performance of the Commercial Non-Passenger sector has been trending down for the last three years but the first and second quarter of 2019 have seen a small increase in the three year averaged accident rate.

Nature of Accidents this Quarter

The Commercial Non-Passenger sector has four subsectors:

- Agricultural Aeroplanes
- Agricultural Helicopters
- Other Commercial Aeroplanes (inc commercial training)
- Other Commercial Helicopters (inc commercial training)

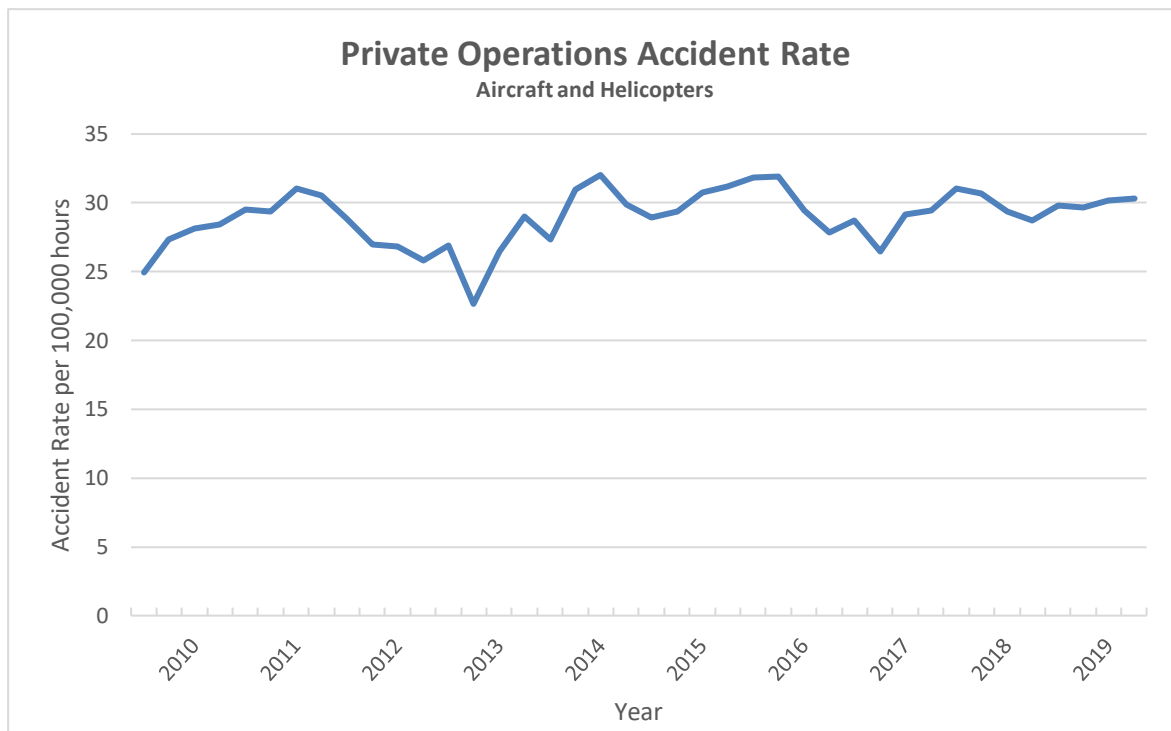
The Agricultural Aeroplane and Helicopter subsectors have been improving over a 10 year period. The increased accident rate in the first two quarters of 2019 is being driven by accidents in both the Other Commercial Helicopters and Other Commercial Aeroplanes subsectors. Both of these subsectors include commercial flight training, which has an inherent risk of accidents as students gain the necessary skills. Training accidents in this quarter have contributed to the other commercial aeroplane accident rate, but are usually minor accidents.

However in the other commercial helicopters sector the accidents this quarter are more related to the nature of operations undertaken than they are training related. The agricultural accidents this quarter involve well known operational risks, such as wire strikes, and failure to get airborne that continue to present a threat to these operations.

These accidents in commercial service are frequently more serious, due to the aircraft loads and speeds involved. Consequently they are a focus for CAA regulatory attention.

Private & Recreational Operations - Accidents

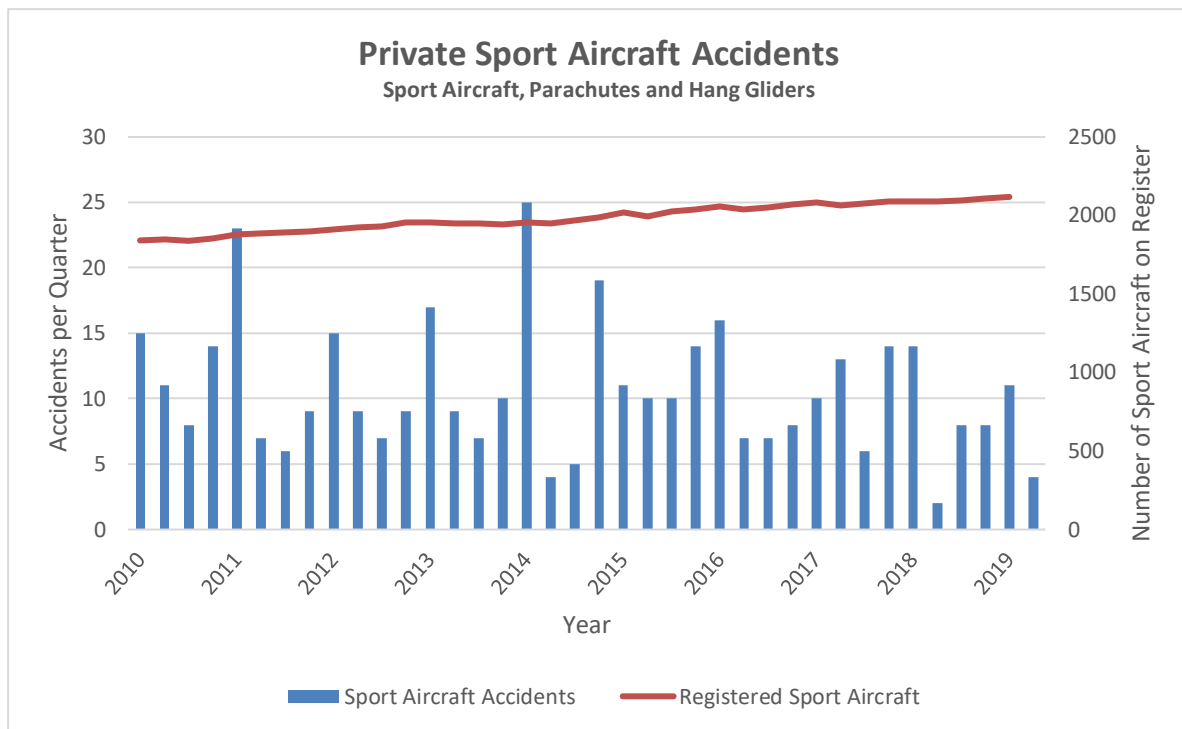
Ref	Location	Aircraft Model	Fatalities	Injuries	Description
19/3003	Ardmore	369D	0	0	Pilot forgot to uncouple the foot pedals before T/O. Helicopter became airborne and began to spin. Pilot dropped collective and a skid partially collapsed. CAA RESPONSE: No immediate action
19/3208	Parakai	B22 Bantam	0	0	Minor accident. Ground testing steerable nose wheel at approx 25kts. Wind gust lifted the port wing, a/c briefly became airborne, directional control lost, came to rest in the ditch beside the runway. No injuries. Damage to aircraft. Uneconomic to repair CAA RESPONSE: No immediate action
19/3363	Thames	Aquila	0	0	While parked near the fuel pump area on the airport and strapping in, a Skyworks helicopter flew too close while coming in for landing. The helicopters rotor wash tipped the microlight over by 90 degrees. The wing came to rest on its left leading edge CAA RESPONSE: No immediate action
19/3465	429 Makure Rd	180	0	0	Minor landing accident. On landing the pilot did not realise that the grass strip was wet. Left the braking to late and went through the fence at the end of the strip. No injuries. CAA RESPONSE: No immediate action
19/4239	Masterton	P2002-JF UL	1	0	Mid air collision WAK and CBY. CAA RESPONSE: Investigation on-going subject to a RIU/HSU/SIU combined investigation. No date set yet.
19/4241	Coromandel	RV-12	1	0	Aircraft wreckage located in Coromandel Ranges. CAA RESPONSE: CAA Investigation on-going
19/4245	Ruawai airfield	B22 Bantam	0	0	During circuits I misjudged my height to round out and had a hard landing on runway 25. Moderate damage to fuselage. CAA RESPONSE: No immediate action
19/4655	Fiordland	369E	0	0	While parked on a ridge, the helicopter tipped back due to soft ground, until the tail and tail rotor blades hit the ground. Pilot shut a/c down CAA RESPONSE: Awaiting operator's investigation report



Long Term Performance

The number of accidents in private & recreational sector this autumn quarter was slightly more than last autumn (7 against 5 in 2018). The long term safety performance for private operations in certified aircraft and helicopters is essentially unchanged. While there two fatal accidents involving a sport aircraft, they are not included in the graph above which only cover certified aircraft for which activity data is provided annually by owners.

Uncertified or 'sport' aircraft which includes microlights and homebuilt aircraft as well as gliders and parachutes, are not required to provide activity returns which precludes calculation of accident rates. To gauge safety in the sport aircraft sub sector the following graph plots the number of sport aircraft accidents each quarter along with the number of sport aircraft on the register (right-hand axis) in the graph below.



This chart indicates that the number of accidents involving sport aircraft is declining even as the number of sport aircraft on the register increases. While the amount of flying activity is not known, it is reasonable to assume activity is proportional to the number of sport aircraft on the register, from which it can be inferred the accident rate in this sector is probably reducing.

Nature of Accidents this Quarter

Despite the improvement in overall safety performance, this quarter included two fatal accidents. The first involved an experienced microlight pilot who collided with terrain in the Coromandel Ranges. The second fatal accident occurred near Masterton when a sport aircraft was struck by a commercial parachuting aircraft also returning to land. Both pilots, who were the sole occupants of each aircraft, were killed.

The other six accidents were minor landing or take-off accidents, with no injuries. Landing and take-off accidents are common in this sector, as they occur in the phase of flight that is most susceptible to limitations of pilot skill & experience. Because of the relatively low power and speed of these aircraft these accidents are less likely to be fatal. Accidents away from the landing surface are less frequent, but more likely to be fatal, as evidenced in the events this quarter.

Accordingly CAA engagement through safety education has concentrated on the skills for flight planning and maintaining situational awareness and good airmanship en-route and at uncontrolled aerodromes. The investigation into the Masterton mid-air collision is still in progress but the outcome has already informed the CAA Safety Message dated 12 August 2019. <https://www.caa.govt.nz/safety-info/safety-messages/>

Quarter	2016/3	2016/4	2017/1	2017/2	2017/3	2017/4
Social Cost \$ million¹	3.91	29.86	15.49	30.14	1.02	20.46
Number of Fatal Accidents²	0	3	2	5	0	3
Number of Fatal Injuries²	0	5	2	6	0	4
Number of Serious + Minor Injuries²	7	14	20	12	7	15
Number of Aircraft Accidents²						
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
Number of Incidents³	1,635	1,675	1,879	1,815	1,730	1,755
Number of Aviation Related Concerns⁴	229	235	253	278	231	322
Number of Hours Flown⁵	211,276	237,542	243,721	216,424	265,225	329,716
Number of Air Transport Flights⁵	87,395	106,986	99,330	82,766	89,074	114,244
Number of Aircraft Movements⁶	221,092	231,713	233,701	222,907	221,296	249,554
Number of Aircraft on the Register⁷	4,687	4,723	4,734	4,704	4,751	4,779
Number of Part 119 Certificated Operators						
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
Number of Part 137 Agricultural Aircraft Operators	103	102	102	102	103	105
Number of Part 115 Adventure Aviation Operators	28	29	31	29	29	29
Number of Part 102 Unmanned Aircraft Operators	54	76	86	89	94	105
Number of Part 141 Training Organisations	51	52	53	52	52	50
Number of Part 149 Recreation Organisations	8	8	8	8	8	8
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)	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

Quarter	2018/1	2018/2	2018/3	2018/4	2019/1	2019/2
Social Cost \$ million¹	18.23	9.31	11.08	33.22	19.61	17.98
Number of Fatal Accidents²	3	2	2	2	2	3
Number of Fatal Injuries²	3	2	2	3	2	3
Number of Serious + Minor Injuries²	23	7	9	8	18	6
Number of Aircraft Accidents²						
Large Aeroplanes	0	0	0	0	0	2
Medium Aeroplanes	0	1	0	0	0	0
Small Aeroplanes	7	4	4	4	10	3
Agricultural Aeroplanes	1	1	0	0	0	1
Helicopters	4	3	2	4	5	5
Sport Aircraft	7	3	8	8	9	6
Unknown Aircraft	0	0	1	0	1	1
Hang Gliders	7	1	3	5	11	1
Parachutes	2	1	3	4	10	4
Number of Incidents³	2,096	2,042	1,630	1,788	2,033	2,033
Number of Aviation Related Concerns⁴	371	323	338	334	389	389
Number of Hours Flown⁵	239,837	201,676	210,183	229,274	160,714	207,089
Number of Air Transport Flights⁵	118,635	94,147	88,986	112,671	110,134	110,134
Number of Aircraft Movements⁶	244,396	234,833	242,644	252,758	256,334	256,334
Number of Aircraft on the Register⁷	4,773	4,770	4,789	4,825	4,843	4,843
Number of Part 119 Certificated Operators						
Air Operator – Large Aeroplanes	6	13	6	5	5	5
Air Operator – Medium Aeroplanes	13	12	12	11	11	11
Air Operator – Helicopters and Small Aeroplanes	166	167	165	163	160	160
Number of Part 137 Agricultural Aircraft Operators	104	104	105	106	106	105
Number of Part 115 Adventure Aviation Operators	27	27	27	27	27	26
Number of Part 102 Unmanned Aircraft Operators	105	105	110	100	105	110
Number of Part 141 Training Organisations	51	51	48	48	48	48
Number of Part 149 Recreation Organisations	8	8	8	8	8	8
Number of Licences (Type of Medical Certificate)⁸						
Recreational Pilot Licence (RPL Medical)	426	363	342	348	332	326
Private Pilot Licence (Class 1 & 2)	2,402	2,408	2,418	2,406	2,428	2,419
Commercial Pilot Licence (Class 2 only)	1,864	1,863	1,824	1,799	1,837	1,865
Commercial Pilot Licence (Class 1)	2,129	2,143	2,189	2,203	2,168	2,126
Airline Transport Pilot Licence (Class 2 only)	1,077	1,057	1,034	1,122	1,134	1,194
Airline Transport Pilot Licence (Class 1)	1,206	1,228	1,166	1,217	1,195	1,138
Air Traffic Controller Licence (Class 3)	357	361	361	365	369	371
Aircraft Maintenance Engineer Licence (N/A)	2,891	2,898	2,914	2,918	2,937	2,940