Kiwi Count

Quarterly data from New Zealand show decreased incident numbers for Part 121 operations.

BY RICK DARBY

The latest published data from the Civil Aviation Authority of New Zealand (CAA) show that in the third quarter, from July 1 to Sept. 30, 2007, the number of accidents involving large and medium-sized airplanes was unchanged from the equivalent period in 2006, namely, zero.[1] When there are no accidents to analyze, incidents — which can be thought of as potential accidents — serve as a proxy for assessing risk management.

The data show that numbers of incidents, airspace incidents and defect incidents for large airplanes decreased in the third quarter of 2007 compared with a year earlier. But the long-term incident rates, especially for large and medium airplanes, are not notably improving.

New Zealand Aircraft Incidents, Second and Third Quarters, 2006–2007

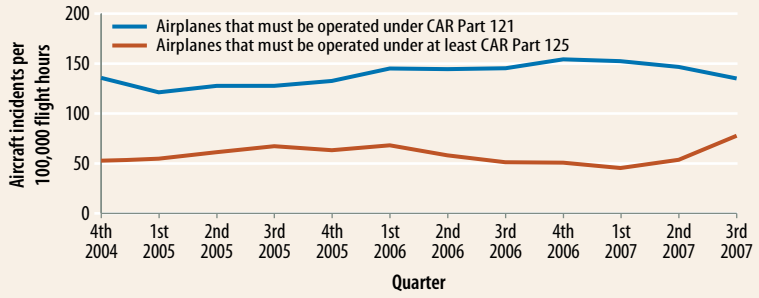
Aircraft Category	Second Quarter 2006	Second Quarter 2007	Change	Third Quarter 2006	Third Quarter 2007	Change
Airplanes that must be operated under CAR Part 121	111	85	–26	120	80	–40
Airplanes that must be operated under at least CAR Part 125	9	13	+4	9	23	+14
Other airplanes with a standard airworthiness certificate	28	30	+2	23	52	+29
Helicopters with a standard category airworthiness certificate	15	10	–5	13	9	–4

CAR = New Zealand Civil Aviation Rules

Source: Civil Aviation Authority of New Zealand

Table 1

New Zealand Aircraft Incidents, Large and Medium Airplanes



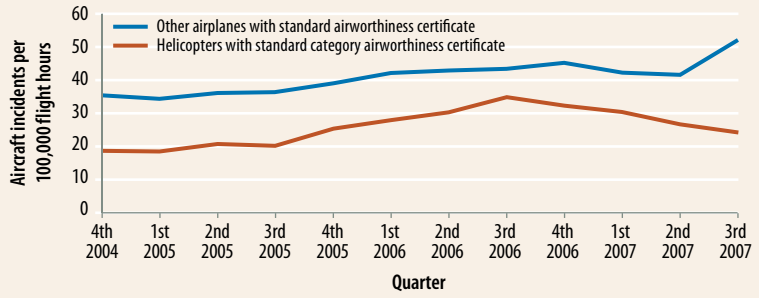
CAR = New Zealand Civil Aviation Rules

Note: Lines represent 12-month moving averages.

Source: Civil Aviation Authority of New Zealand

Figure 1

New Zealand Aircraft Incidents, Airplanes With Standard Airworthiness Certificate and Helicopters With Standard Airworthiness Certificate

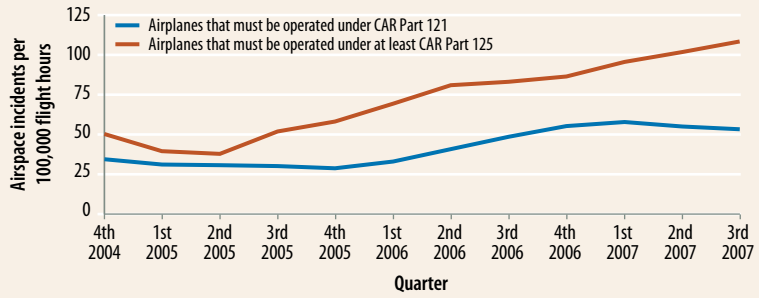


Note: Lines represent 12-month moving averages.

Source: Civil Aviation Authority of New Zealand

Figure 2

New Zealand Airspace Incidents, Large and Medium Airplanes



CAR = New Zealand Civil Aviation Rules

Note: Lines represent 12-month moving averages.

Source: Civil Aviation Authority of New Zealand

Figure 3

The number of air carrier incidents, involving large airplanes that must be operated under Civil Aviation Rules (CAR) Part 121, decreased to 80 in the quarter, from 120 (Table 1, p. 49).[2] That marked a drop of 33 percent, greater than the year-to-year 23 percent decrease in the second quarter.

The data were somewhat less encouraging in other categories. For medium-size airplanes in air transport that must be operated under at least CAR Part 125, the year-over-year incident totals were up in the second and third quarters.[3,4] For other airplanes with a standard airworthiness certificate — excluding airplanes used for agricultural operations or in sport — incidents increased 126 percent in third quarter of 2007 over the third quarter of 2006.

Part 121 airplanes had a higher incident rate since the fourth quarter of 2004 than those operated under at least Part 125. The incident rates, as 12-month moving averages, are shown in Figure 1. The incident rate for "other airplanes" has been gradually rising (Figure 2).

The CAA classifies incidents as critical, major and minor.[5] No incidents in the "airplanes that must be operated under Part 121" or "airplanes that must be operated under at least Part 125" categories were classified as critical in the second quarter or third quarter of either 2006 or 2007.

Rates of airspace incidents trended higher for both airplanes operated under at least Part 125 and those in Part 121 operations in the same period (Figure 3).[6] "Other airplanes" had a higher rate of airspace incidents than helicopters with a standard category airworthiness certificate (Figure 4).

Airspace incidents decreased year-over-year in the second and third quarters for Part 121 operations, but increased in the "other airplanes" category, with 51 percent more recorded in the third quarter comparison. The airspace incidents are shown for the second and third quarters of 2006 and 2007 in Table 2.

New Zealand Airspace Incidents, Second and Third Quarters, 2006–2007

Aircraft Category	Second Quarter 2006	Second Quarter 2007	Change	Third Quarter 2006	Third Quarter 2007	Change
Airplanes that must be operated under CAR Part 121	47	40	–7	47	39	–8
Airplanes that must be operated under at least CAR Part 125	19	18	–1	16	17	+1
Other airplanes with a standard airworthiness certificate	54	81	+27	45	68	+23
Helicopters with a standard category airworthiness certificate	7	13	+6	3	7	+4

CAR = New Zealand Civil Aviation Rules

Source: Civil Aviation Authority of New Zealand

Table 2

Defect incidents[7] occurred at a higher rate in Part 121 operations than for those involving airplanes operated under at least Part 125 from the 2004 fourth quarter to the 2007 third quarter (Figure 5).

Rates of defect incidents were similar in a side-by-side comparison of helicopters with a standard category airworthiness certificate and the "other airplanes" data category in this period (Figure 6, page 52).

The numbers of defect incidents declined year-over-year in the second and third quarters of 2006 and 2007 for all these airplanes.

Defect incidents involving Part 121 operations were down 36 percent from the second quarter of 2006 to the second quarter of 2007, and declined 10 percent for the respective third quarters. Table 3 (page 52) shows the numbers.

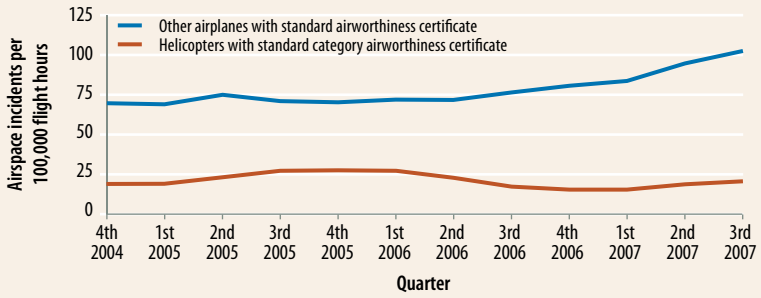
Bird hazard monitoring through March 31, 2007, indicated that eight of the 18 monitored airports had bird strike rates above the "trigger level" that calls for CAA action.

"One aerodrome exhibited a strike rate in the high-risk category of the CAA standard (above 10.0 bird strikes per 10,000 aircraft movements)," the report says. Six fell into the medium-risk category, and 11 were in the low-risk category. ●

Notes

1. CAA. *Aviation Safety Summary Report: 1 July to 30 September 2007*. Available via the Internet at <www.caa.govt.nz/safety_info/safety_reports.htm>.

New Zealand Airspace Incidents, Airplanes With Standard Airworthiness Certificate and Helicopters With Standard Airworthiness Certificate

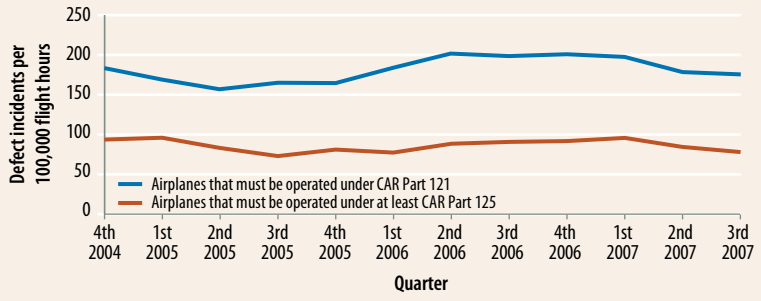


Note: Lines represent 12-month moving averages.

Source: Civil Aviation Authority of New Zealand

Figure 4

New Zealand Defect Incidents, Large and Medium Airplanes



CAR = New Zealand Civil Aviation Rules

Note: Lines represent 12-month moving averages.

Source: Civil Aviation Authority of New Zealand

Figure 5

New Zealand Defect Incidents, Second and Third Quarters, 2006–2007

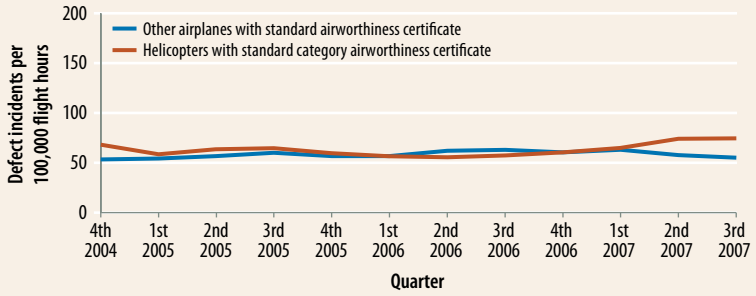
Aircraft Category	Second Quarter 2006	Second Quarter 2007	Change	Third Quarter 2006	Third Quarter 2007	Change
Airplanes that must be operated under CAR Part 121	176	113	–63	146	131	–15
Airplanes that must be operated under at least CAR Part 125	23	11	–12	20	13	–7
Other airplanes with a standard airworthiness certificate	55	41	–14	38	32	–6
Helicopters with a standard category airworthiness certificate	28	45	+17	28	29	+1

CAR = New Zealand Civil Aviation Rules

Source: Civil Aviation Authority of New Zealand

Table 3

New Zealand Defect Incidents, Airplanes With Standard Airworthiness Certificate and Helicopters With Standard Airworthiness Certificate



Note: Lines represent 12-month moving averages.

Source: Civil Aviation Authority of New Zealand

Figure 6

2. Part 121, *Air Operations — Large Aeroplanes*, applies to airplanes with more than 30 passenger seats or a payload capacity of more than 3,410 kg (7,518 lb).

3. Part 125, *Air Operations — Medium Aeroplanes*, applies to airplanes with 10 to 30 passenger seats, or a payload capacity of 3,410 kg or less and a maximum certificated takeoff weight greater than 5,700 kg (considered equivalent to 12,500 lb), or with a single engine and carrying passengers under instrument flight rules.

4. In response to a query by *AeroSafety World* about the meaning of the phrase "operated under at least CAR Part 125," the CAA said, "We take the view that an operator of an airplane that could be operated under Part 125 can operate that airplane to the higher specification of Part 121."

5. A *critical incident* causes, or on its own has the potential to cause, loss of life or limb.

   A *major incident* involves a major system that causes, or has the potential to cause, significant problems to the function or effectiveness of that system.

   A *minor incident* is an isolated occurrence or deficiency not indicative of a significant system problem.

6. An *airspace incident* involves deviation from, or falling short of, the procedures or rules for avoiding a collision between aircraft or avoiding a collision between aircraft and other obstacles when the aircraft is under air traffic control.

7. A *defect incident* involves failure or malfunction of an aircraft or aircraft component, whether found in flight or on the ground.