

BY RICK DARBY

Nothing Doing

U.S. scheduled airline and commuter operations had no fatalities in 2010.

For U.S. Federal Aviation Regulations (FARs) Part 135 on-demand operations, the striking improvement in the fatal accident rate and numbers noted in 2009 (*ASW*, 4/10, p. 48) reversed course in 2010, although both rate and numbers remained well below 2001–2008 averages.

Accident rates for commuter flights in 2010 conducted under Part 135 were up from those of 2009, but for the fourth year in a row, there were no fatal accidents. In FARs Part 121 scheduled service — airlines — the accident rate was the highest since 2005, but in that category, too, there were no fatal

accidents. Data for U.S. operations were released in April by the U.S. National Transportation Safety Board (NTSB).¹

Scheduled Part 121 operations had 0.276 accidents per 100,000 departures in 2010 (Table 1). The corresponding number for Part 135 commuter operations was 1.026, or 3.7 times higher.

Accidents, Fatalities and Rates, U.S. Civil Aviation, 2010

| | Accidents | | Fatalities | | Accidents per 100,000 Flight Hours | | Accidents per 100,000 Departures | |
|--|-----------|-------|------------|--------|------------------------------------|-------|----------------------------------|-------|
| | All | Fatal | Total | Aboard | All | Fatal | All | Fatal |
| U.S. air carriers operating under FARs Part 121 | | | | | | | | |
| Scheduled | 26 | 0 | 0 | 0 | 0.152 | — | 0.276 | — |
| Nonscheduled | 3 | 1 | 2 | 2 | 0.613 | 0.204 | 2.001 | 0.667 |
| U.S. air carriers operating under FARs Part 135 | | | | | | | | |
| Commuter | 6 | 0 | 0 | 0 | 1.899 | — | 1.026 | — |
| On-demand | 31 | 6 | 17 | 17 | 1.05 | 0.20 | — | — |
| U.S. general aviation | 1,435 | 267 | 450 | 447 | 6.86 | 1.27 | — | — |
| U.S. civil aviation | 1,501 | 274 | 469 | 466 | — | — | — | — |
| Non-U.S.-registered aircraft | 9 | 1 | 1 | 1 | — | — | — | — |

FARs = U.S. Federal Aviation Regulations

Notes: All data are preliminary.

Flight hours and departures are compiled and estimated by the U.S. Federal Aviation Administration (FAA). On-demand U.S. Federal Aviation Regulations (FARs) Part 135 flight hours are estimated by the FAA. Departure information for on-demand Part 135 operations is not available. On-demand Part 135 operations comprise charters, air taxis, air tours or medical services when a patient is aboard.

Accidents and fatalities in the categories do not necessarily sum to the figures in U.S. civil aviation because of collisions involving aircraft in different categories.

Source: U.S. National Transportation Safety Board

Table 1

Accidents and Accident Rates, FARs Part 121, by NTSB Classification, 2001–2010

| Year | Accidents | | | | Accidents per Million Hours Flown | | | |
|------|-----------|---------|--------|--------|-----------------------------------|---------|--------|--------|
| | Major | Serious | Injury | Damage | Major | Serious | Injury | Damage |
| 2001 | 5 | 1 | 19 | 21 | 0.281 | 0.056 | 1.067 | 1.179 |
| 2002 | 1 | 1 | 14 | 25 | 0.058 | 0.058 | 0.810 | 1.446 |
| 2003 | 2 | 3 | 24 | 25 | 0.114 | 0.172 | 1.374 | 1.431 |
| 2004 | 4 | 0 | 15 | 11 | 0.212 | 0.000 | 0.794 | 0.583 |
| 2005 | 2 | 3 | 11 | 24 | 0.103 | 0.155 | 0.567 | 1.238 |
| 2006 | 2 | 2 | 7 | 22 | 0.104 | 0.104 | 0.363 | 1.142 |
| 2007 | 0 | 2 | 14 | 12 | 0.000 | 0.102 | 0.713 | 0.611 |
| 2008 | 3 | 1 | 8 | 16 | 0.157 | 0.052 | 0.419 | 0.838 |
| 2009 | 2 | 3 | 15 | 10 | 0.114 | 0.170 | 0.852 | 0.568 |
| 2010 | 1 | 0 | 13 | 14 | 0.057 | 0.000 | 0.740 | 0.797 |

FARs = U.S. Federal Aviation Regulations; NTSB = U.S. National Transportation Safety Board
Notes: The NTSB classifications are as follows:
 Major — an accident in which any of three conditions is met: A Part 121 aircraft was destroyed, or there were multiple fatalities, or there was one fatality and a Part 121 aircraft was substantially damaged.
 Serious — an accident in which at least one of two conditions is met: There was one fatality without substantial damage to a Part 121 aircraft, or there was at least one serious injury and a Part 121 aircraft was substantially damaged.
 Injury — a nonfatal accident with at least one serious injury and without substantial damage to a Part 121 aircraft.
 Damage — an accident in which no person was killed or seriously injured, but in which any aircraft was substantially damaged.
 Source: U.S. National Transportation Safety Board

Table 2

The accident rate per 100,000 departures for on-demand (air taxi) Part 135 accidents could not be calculated because of the unavailability of departure data, but there were six fatal accidents in that category.

For all Part 121 operations, there was one accident in 2010 classified as “major” by the NTSB, the lowest number since 2007 (Table 2).² That compared with an average of 2.3 in the previous nine years.³ There were 13 “injury” accidents, close to the average of 14.1 in the previous nine years.

With no fatal accidents in scheduled Part 121 operations in 2010, the year looked good compared with 2009, which included the Colgan Air Bombardier Q400 accident. Nevertheless, the overall accident rate — 0.276 per 100,000 departures — was higher than any year since 2005, and an 8.2 percent increase over 2009 (Table 3). The average for the nine-year period before 2010 was 0.293. The number of accidents

was 26, the same as in 2006, 2007 and 2009; the average for 2001–2009 was 31.2, or 20 percent higher.

This fatal accident rate for Part 121 non-scheduled operations remained about the same in 2010 as in 2009, but the rate for all accidents — as well as the number of accidents — decreased for the second year in a row (Table 4).

As in 2007–2009, commuter operations recorded a fatality-free year in 2010 (Table 5, p. 52). The accident rate almost tripled between 2009 and 2010, from 0.353 accidents per 100,000 departures to 1.026

per 100,000 departures. The average for the previous nine years was 0.827, or 19 percent lower than the 2010 rate. The six accidents in the Part 135 commuter category in 2010 compared with an average of 4.6 in the previous nine years.

The 2010 rate for all accidents in Part 135 on-demand operations was lower than that for the previous year (Table 6, p. 52). The 31 total accidents in 2010 represented a further improvement on the 2009 total of 47, as well as the 2001–2009 average of 61.7.

Although not shown in the table, the latest year’s rate and number of accidents were the lowest of all years beginning in 1991.

The 2010 fatal accident rate, 0.20 per 100,000 flight hours, was an increase of 186 percent over the 0.07 per 100,000 flight hours of 2009. However, flight hours are considered a less significant measure than departures, which were unavailable in this category for analysis.

Continued on p. 52

Accident Rates, FARs Part 121 Scheduled Operations, 2001–2010

| Year | Accidents | | Fatalities | | Accidents per 100,000 Flight Hours | | Accidents per 1,000,000 Miles Flown | | Accidents per 100,000 Departures | |
|------|-----------|-------|------------|--------|------------------------------------|-------|-------------------------------------|--------|----------------------------------|-------|
| | All | Fatal | Total | Aboard | All | Fatal | All | Fatal | All | Fatal |
| 2001 | 41 | 6 | 531 | 525 | 0.216 | 0.012 | 0.0053 | 0.0003 | 0.348 | 0.019 |
| 2002 | 34 | 0 | 0 | 0 | 0.203 | — | 0.0049 | — | 0.331 | — |
| 2003 | 51 | 2 | 22 | 21 | 0.302 | 0.012 | 0.0073 | 0.0003 | 0.499 | 0.020 |
| 2004 | 23 | 1 | 13 | 13 | 0.126 | 0.005 | 0.0030 | 0.0001 | 0.213 | 0.009 |
| 2005 | 34 | 3 | 22 | 20 | 0.182 | 0.016 | 0.0043 | 0.0004 | 0.312 | 0.027 |
| 2006 | 26 | 2 | 50 | 49 | 0.139 | 0.011 | 0.0033 | 0.0003 | 0.245 | 0.019 |
| 2007 | 26 | 0 | 0 | 0 | 0.137 | — | 0.0032 | — | 0.242 | — |
| 2008 | 20 | 0 | 0 | 0 | 0.108 | — | 0.0026 | — | 0.195 | — |
| 2009 | 26 | 1 | 50 | 49 | 0.149 | 0.006 | 0.0036 | 0.0001 | 0.255 | 0.010 |
| 2010 | 26 | 0 | 0 | 0 | 0.152 | — | 0.0036 | — | 0.276 | — |

FARs = U.S. Federal Aviation Administration
Notes: 2010 data are preliminary.
 Flight hours, miles and departures are compiled by the U.S. Federal Aviation Administration.
 For 2001, the Sept. 11 terrorist attack is included in the totals for accidents and fatalities but excluded for accident rate comparison. Other than the persons aboard aircraft who were killed, fatalities resulting from the act are excluded.
 Source: U.S. National Transportation Safety Board

Table 3

Accidents, Fatalities and Rates, FARs Part 121, Nonscheduled Operations, 2001–2010

| Year | Accidents | | Fatalities | | Accidents per 100,000 Flight Hours | | Accidents per 1,000,000 Miles Flown | | Accidents per 100,000 Departures | |
|------|-----------|-------|------------|--------|------------------------------------|-------|-------------------------------------|--------|----------------------------------|-------|
| | All | Fatal | Total | Aboard | All | Fatal | All | Fatal | All | Fatal |
| 2001 | 5 | 0 | 0 | 0 | 0.762 | — | 0.0167 | — | 1.553 | — |
| 2002 | 7 | 0 | 0 | 0 | 1.225 | — | 0.0265 | — | 3.012 | — |
| 2003 | 3 | 0 | 0 | 0 | 0.517 | — | 0.0113 | — | 1.462 | — |
| 2004 | 7 | 1 | 1 | 1 | 1.002 | 0.143 | 0.0215 | 0.0031 | 2.915 | 0.416 |
| 2005 | 6 | 0 | 0 | 0 | 0.885 | — | 0.0186 | — | 2.728 | — |
| 2006 | 7 | 0 | 0 | 0 | 1.138 | — | 0.0243 | — | 3.619 | — |
| 2007 | 2 | 1 | 1 | 1 | 0.321 | 0.161 | 0.0069 | 0.0034 | 1.030 | 0.515 |
| 2008 | 8 | 2 | 3 | 1 | 1.464 | 0.366 | 0.0325 | 0.0081 | 4.832 | 1.208 |
| 2009 | 4 | 1 | 2 | 2 | 0.753 | 0.188 | 0.0166 | 0.0041 | 2.663 | 0.666 |
| 2010 | 3 | 1 | 2 | 2 | 0.613 | 0.204 | 0.0131 | 0.0044 | 2.001 | 0.667 |

FARs = U.S. Federal Aviation Regulations
Notes: 2010 data are preliminary.
 Flight hours, miles and departures are compiled by the U.S. Federal Aviation Administration.
 Source: U.S. National Transportation Safety Board

Table 4

Accidents, Fatalities and Rates, FARs Part 135, Commuter Operations, 2001–2010

| Year | Accidents | | Fatalities | | Accidents per 100,000 Flight Hours | | Accidents per 1,000,000 Miles Flown | | Accidents per 100,000 Departures | |
|------|-----------|-------|------------|--------|------------------------------------|-------|-------------------------------------|--------|----------------------------------|-------|
| | All | Fatal | Total | Aboard | All | Fatal | All | Fatal | All | Fatal |
| 2001 | 7 | 2 | 13 | 13 | 2.330 | 0.666 | 0.1624 | 0.0464 | 1.254 | 0.358 |
| 2002 | 7 | 0 | 0 | 0 | 2.559 | — | 0.1681 | — | 1.363 | — |
| 2003 | 2 | 1 | 2 | 2 | 0.627 | 0.313 | 0.0422 | 0.0211 | 0.349 | 0.175 |
| 2004 | 4 | 0 | 0 | 0 | 1.324 | — | 0.0855 | — | 0.743 | — |
| 2005 | 6 | 0 | 0 | 0 | 2.002 | — | 0.1312 | — | 1.138 | — |
| 2006 | 3 | 1 | 2 | 2 | 0.995 | 0.332 | 0.0645 | 0.0215 | 0.528 | 0.176 |
| 2007 | 3 | 0 | 0 | 0 | 1.028 | — | 0.0651 | — | 0.506 | — |
| 2008 | 7 | 0 | 0 | 0 | 2.385 | — | 0.1508 | — | 1.215 | — |
| 2009 | 2 | 0 | 0 | 0 | 0.685 | — | 0.0432 | — | 0.353 | — |
| 2010 | 6 | 0 | 0 | 0 | 1.899 | — | 0.1239 | — | 1.026 | — |

FARs = U.S. Federal Aviation Regulations; NTSB = U.S. National Transportation Safety Board

Notes: 2010 data are preliminary. Flight hours, miles and departures are compiled by the U.S. Federal Aviation Administration (FAA).

Based on a February 2002 FAA legal interpretation provided to the NTSB, any Part 135 operation conducted with no revenue passengers aboard is to be considered an on-demand flight. This interpretation is applied to accidents beginning with 2002 but not retroactively for 2001.

Source: U.S. National Transportation Safety Board

Table 5

Accidents, Fatalities and Rates, FARs Part 135, On-Demand Operations, 2001–2010

| Year | Accidents | | Fatalities | | Accidents per 100,000 Flight Hours | |
|------|-----------|-------|------------|--------|------------------------------------|-------|
| | All | Fatal | Total | Aboard | All | Fatal |
| 2001 | 72 | 18 | 60 | 59 | 2.40 | 0.60 |
| 2002 | 60 | 18 | 35 | 35 | 2.06 | 0.62 |
| 2003 | 73 | 18 | 42 | 40 | 2.49 | 0.61 |
| 2004 | 66 | 23 | 64 | 63 | 2.04 | 0.71 |
| 2005 | 65 | 11 | 18 | 16 | 1.70 | 0.29 |
| 2006 | 52 | 10 | 16 | 16 | 1.39 | 0.27 |
| 2007 | 62 | 14 | 43 | 43 | 1.54 | 0.35 |
| 2008 | 58 | 20 | 69 | 69 | 1.81 | 0.62 |
| 2009 | 47 | 2 | 17 | 14 | 1.63 | 0.07 |
| 2010 | 31 | 6 | 17 | 17 | 1.05 | 0.20 |

FARs = U.S. Federal Aviation Regulations

Notes: 2010 data are preliminary.

Flight hours are estimated by the U.S. Federal Aviation Administration (FAA).

In 2002, the FAA changed its estimate of on-demand activity. The revision was retroactively applied to the years 1992 to 2002. In 2003, the FAA again revised flight activity estimates for 1999 to 2002.

On-demand Part 135 operations comprise charters, air taxis, air tours or medical services when a patient is aboard.

Source: U.S. National Transportation Safety Board

Table 6

The 2010 fatal accident rate was far from a reversion to the mean. The 2001–2009 average was 0.40, double the 2010 rate, and the six fatal accidents in the category were below the previous nine-year average of 14.9. 🌐

Notes

1. Available via the Internet at <www.nts.gov/aviation/Stats.htm>.
2. The NTSB classifications are as follows:
 Major — an accident in which any of three conditions is met: A Part 121 aircraft was destroyed, or there were multiple fatalities, or there was one fatality and a Part 121 aircraft was substantially damaged.
 Serious — an accident in which at least one of two conditions is met: There was one fatality without substantial damage to a Part 121 aircraft, or there was at least one serious injury and a Part 121 aircraft was substantially damaged.
 Injury — a nonfatal accident with at least one serious injury and without substantial damage to a Part 121 aircraft.
 Damage — an accident in which no person was killed or seriously injured, but in which any aircraft was substantially damaged.
3. All averages in this article are means.