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Madrid Accident Overshadows EASA Data

Fatal accidents in member states remained below the 10-year average in 2008.

Airplanes registered in member states of the European Aviation Safety Agency (EASA) had three fatal accidents in 2008, the same number as in 2007, according to data released in EASA's annual safety review.^{1,2} But on-board fatalities for 2008 totaled 160, in contrast with 25 the previous year. Most of 2008's fatalities resulted from the crash of a McDonnell Douglas MD-82 in Madrid on Aug. 20 that took 154 lives.³

The total number of EASA airplane accidents in commercial air transport was lower in 2008 than in 2007, though greater than the 1997–2006 average (Table 1). The number of fatal accidents was half that of the 1997–2006 average.

The fatal accident rates for both EASA airplanes and those registered elsewhere in the world in scheduled passenger operations trended downward in the 1999–2008 period (Figure 1). Throughout the period, the fatal accident rate was lower for EASA airplanes.

The proportion of EASA airplane accidents among worldwide fatal airplane accidents in 2008 was 6 percent. It had

Accidents and Fatal Accidents, EASA Member State Airplanes				
Period	Number of Accidents	Fatal Accidents	On-Board Fatalities	Ground Fatalities
1997–2006 (average)	32	6	105	1
2007 (total)	37	3	25	1
2008 (total)	35	3	160	2

EASA = European Aviation Safety Agency
Source: European Aviation Safety Agency

Table 1

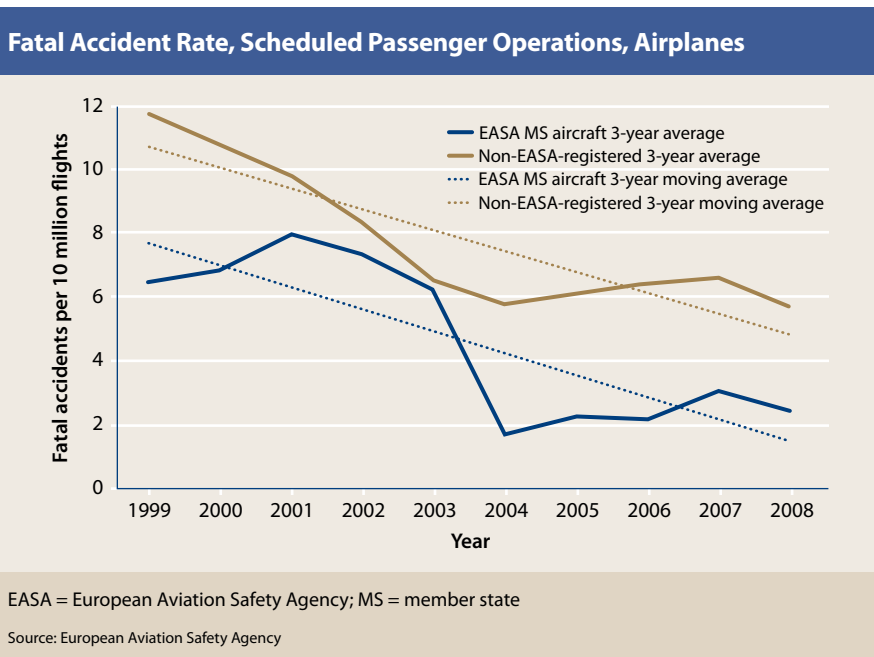
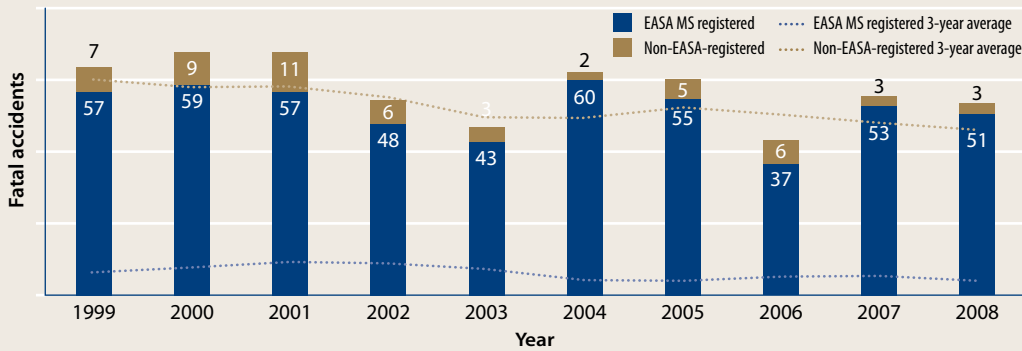


Figure 1

Fatal Accidents, Commercial Air Transport, 1999–2008

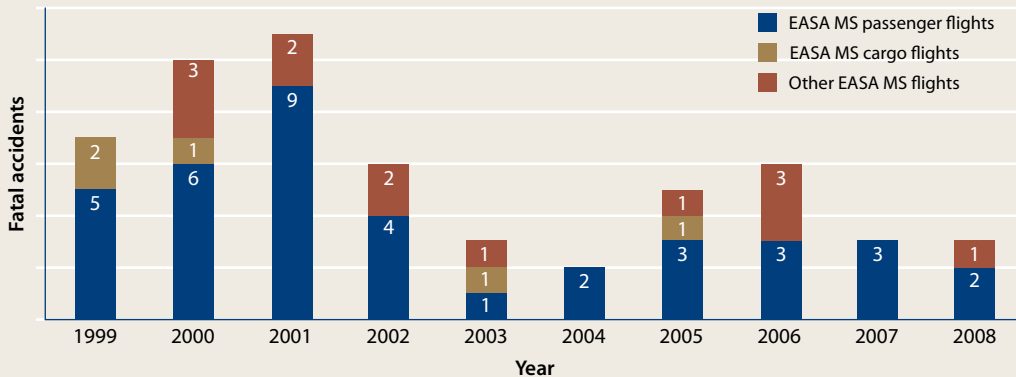


EASA = European Aviation Safety Agency; MS = member state

Source: European Aviation Safety Agency

Figure 2

Fatal Accidents by Type of Operation, EASA Member States



EASA = European Aviation Safety Agency; MS = member state

Source: European Aviation Safety Agency

Figure 3

been as high as 16 percent in 2001 and 14 percent in 2006 (Figure 2).

During that same 1999–2008 decade, the number of fatal accidents involving EASA airplanes varied among passenger, cargo and “other” operations such as on-demand and positioning flights (Figure 3). In 2008, a third involved cargo operations; in 2007, none; in 2006, half. Because of the small numbers, the review cautions that these may be random variation.

Among the worldwide fatal accidents, excluding EASA airplanes, the review suggests

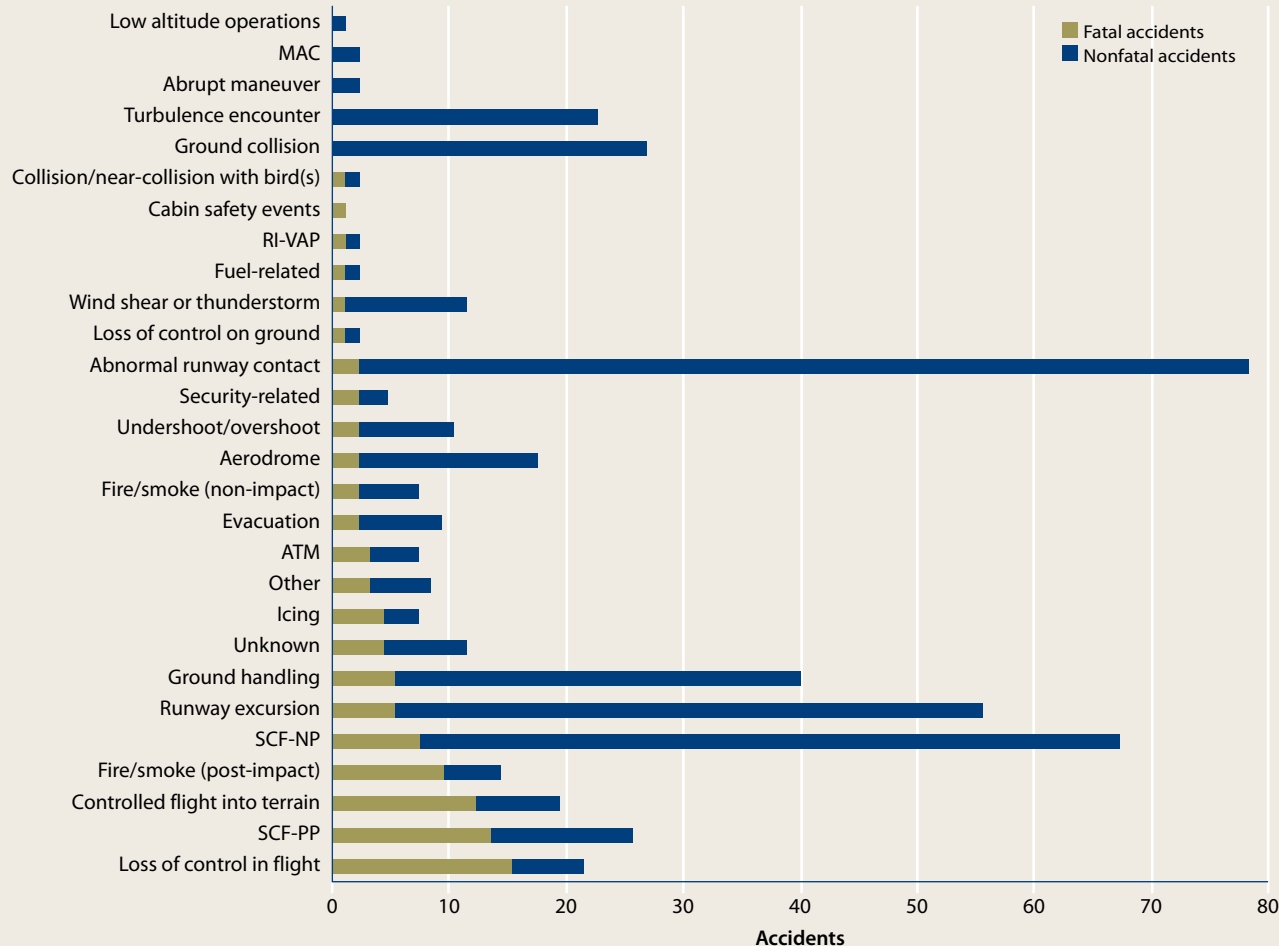
that “passenger commercial air transport flights appear to have a declining proportion in the total number of fatal accidents.” It says that “other” commercial air transport operations “have an increasing proportion of the total. ... It is worth noting that the proportion of accidents in this category is significantly higher than the proportion of aircraft conducting such operations.”

The review analyzed fatal and nonfatal accidents involving EASA airplanes according to causal categories developed by the Commercial Aviation Safety Team/International Civil Aviation Organization Common Taxonomy Team (CICAT) to facilitate uniform accident and incident reporting

(Figure 4).⁴ A single accident could be assigned to more than one category if it was considered to have multiple causal factors.

The categories associated with the highest number of fatal airplane accidents in the 1999–2008 stretch were “loss of control in flight,” “powerplant system or component failure or malfunction” — hereafter called “component failure” — and “controlled flight into terrain.” For total accidents, the most frequent associated categories were “abnormal runway contact,” “non-powerplant component failure,” “runway excursion” and “ground handling.”

Accident Categories, EASA Member State Airplanes, 1999–2008



ATM = air traffic management/communication, navigation and surveillance; EASA = European Aviation Safety Agency; MAC = airprox/terrain avoidance and warning system alert/loss of separation/near-midair collision/midair collision; RI-A = runway incursion — animal; RI-VAP = runway incursion — vehicle, aircraft or person; SCF-NP = system/component failure or malfunction (non-powerplant); SCF-PP = system/component failure or malfunction (powerplant)

Note: Categories were established by the Commercial Aviation Safety Team/International Civil Aviation Organization Common Taxonomy Team. An accident could be assigned to more than one category.

Source: European Aviation Safety Agency

Figure 4

Accidents, EASA Member State Helicopters

Period	Number of Accidents	Fatal Accidents	On-Board Fatalities	Ground Fatalities
1997–2006 (average)	8	3	12	0
2007 (total)	7	1	7	0
2008 (total)	8	2	4	0

EASA = European Aviation Safety Agency

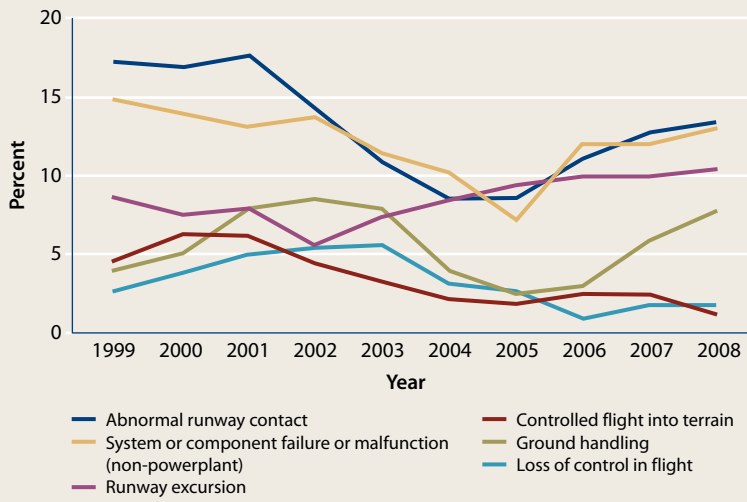
Source: European Aviation Safety Agency

Table 2

In recent years, the trend lines show an increase in “abnormal runway contact,” “non-powerplant component failure,” “ground handling” and “runway excursion” (Figure 5, p. 52).

The safety review says, “In many cases, runway excursions are consequential events in accidents, and therefore, a large number of accidents are assigned this category. There has been an increase in the rate of accidents associated with ‘flight preparation, loading or ground servicing.’ ... Accidents attributed as ‘controlled

Accident Category Rates, EASA Member State Airplanes, 1999–2008



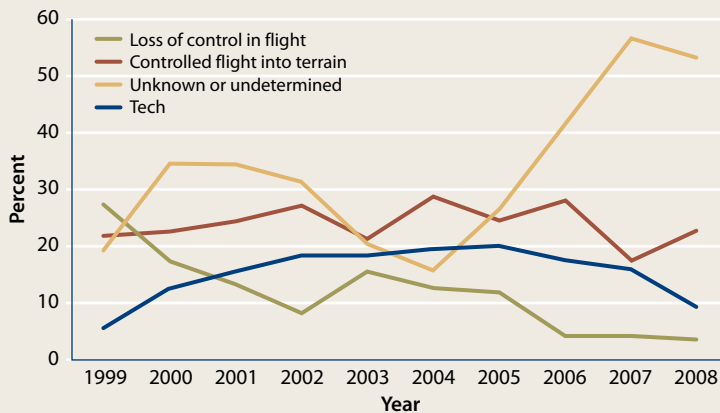
EASA = European Aviation Safety Agency

Note: Categories were established by the Commercial Aviation Safety Team/International Civil Aviation Organization Common Taxonomy Team. An accident could be assigned to more than one category.

Source: European Aviation Safety Agency

Figure 5

Top Four Helicopter Fatal Accident Categories, 1999–2008



EASA = European Aviation Safety Agency

Note: Data include EASA-registered and Non-EASA-registered helicopters in commercial transport operations. “Tech” is a combination of powerplant and non-powerplant component failures.

Source: European Aviation Safety Agency

Figure 6

flight into terrain’ appear to have an overall decreasing rate.”

In 2008, there were eight accidents involving EASA helicopters, two of them fatal (Table 2, p. 51). Both were increases over 2007.

Fatal accidents involving EASA helicopters represented 12 percent of all helicopter accidents in 2008. That compared with 33 percent in 2005, 21 percent in 2006 and 7 percent in 2007.

The top CICTT category associated with all helicopter accidents — fatal and nonfatal — was “other,” which the safety review says were mainly collisions with objects on the ground during takeoff and landing.⁵ The categories, developed for accidents involving large commercial airplanes, had no specific designation for such events. “Loss of control in flight” and “powerplant component failure” were the next most commonly assigned categories.

For all fatal helicopter accidents, the most frequently cited category was “unknown,” which the safety review ascribed to insufficient reporting. “Controlled flight into terrain” was next most frequent, followed by “loss of control in flight” and “other.”

“Powerplant” and “non-powerplant component failure” were combined into a single category called “tech” for a trend analysis of the top four categories (Figure 6). “Loss of control in flight” and “tech” have been in a down trend beginning in 2006. “Controlled flight into terrain” shows no discernible overall trend during the 10-year period beginning in 1999.

Notes

1. The report, *Annual Safety Review 2008*, is available via the Internet at <www.easa.europa.eu/essi/documents/AnnualSafetyReview2008_en.pdf>.
2. EASA member states are the 27 European Union states plus Iceland, Liechtenstein, Norway and Switzerland. Data in this article concern commercial transport aircraft with a maximum certified takeoff weight of more than 2,250 kg/5,000 lb. State of registry, rather than accident location, determines inclusion in the data.
3. For simplicity, aircraft registered in an EASA member state are called EASA airplanes and EASA helicopters in the following text.
4. The CICTT categories are given in Appendix 2 of the safety review and are online at <www.intlaviation-standards.org>.
5. The data are presumably for the 1999–2008 period, although this is not specifically stated.