

2007 Accident Totals Improve for EASA Member State Aircraft

Fatal cargo flight accidents have decreased in recent years.

BY RICK DARBY

The accident rate for large commercial air transport aircraft registered in European Aviation Safety Agency (EASA) member states decreased from an average of four accidents per 10 million flights to an average of three per 10 million flights during the past decade, EASA reports.^{1,2} But runway excursions have been involved in an increasing percentage of accidents, the agency says, based on data supplied by member states as required by International Civil Aviation Organization (ICAO)

Annex 13, *Aircraft Accident and Incident Investigation*.

There were 34 accidents involving EASA member state-registered aircraft in 2007, 10 percent more than the annual average for the 1996–2005 period but fewer than the 39 in 2006 (Table 1). Fatal accidents in 2007, though, were half the number recorded in 2006 and half the 1996–2005 average. The 25 on-board fatalities in 2007 were 17 percent of the corresponding number for the previous year and 32 percent of the average for the 1996–2005 period.

The rate of fatal accidents per 10 million flights for EASA member state aircraft in scheduled passenger operations was lower than that of non-EASA aircraft in all years of the 1998–2007 period (Figure 1).

“It is observed that during 2001, the rate of fatal accidents increased significantly above the decade average,” the report says. “During that single year, six accidents — involving scheduled passenger operations — occurred which

Accidents and Fatal Accidents, EASA Member State Aircraft

Period	Number of Accidents	Fatal Accidents	On-Board Fatalities	Ground Fatalities
1996–2005 (average)	31	6	79	1
2006 (total)	39	6	146	0
2007 (total)	34	3	25	1

EASA = European Aviation Safety Agency

Source: European Aviation Safety Agency

Table 1

represent more than a quarter of all accidents in the decade. These accidents [involved] a Britten-Norman Islander with eight fatalities, a de Havilland DHC-6-300 with 20 fatalities, an Avro RJ100 with 24 fatalities, an Antonov An-28 with two fatalities, a CASA CN-235 with four fatalities and a Boeing 777-200 with one fatality.”

The three 2007 fatal accidents involved a Fokker 100 with one ground fatality, a de Havilland DHC-6-300 with 20 fatalities and a Beech 90 King Air with five fatalities. The latter two accidents occurred outside the European Union, in French Polynesia and Ukraine, respectively.

Although the small number of fatal accidents means that caution should be used in drawing conclusions about trends, the analysis of fatal accidents by type of operation shows a decline in cargo fatal accidents in recent years — one in the 2004–2007 period, compared with three in 1998, five in 1999 and four in 2002 involving EASA member state aircraft (Figure 2).

The report analyzed accidents involving EASA member state aircraft according to categories established by the Commercial Aviation Safety Team/ICAO Common Taxonomy Team (CICTT) to facilitate uniform accident and incident reporting (Figure 3, p. 52).³

The categories with the highest number of fatal accidents are controlled flight into terrain (CFIT); loss of control in flight; and system or component failure or malfunction, related to the engine/powerplant (SCF-PP). Among nonfatal accidents, the most prevalent categories are abnormal runway contact; system or component

failure or malfunction, non-powerplant (SCF-NP); and runway excursion.⁴ A single accident can be assigned to more than one category if multiple causal factors are present.

“To further analyze accident category trends over the most recent years, SCF-PP and SCF-NP were combined into one category related to technical problems,” the report says. The categories with the greatest number

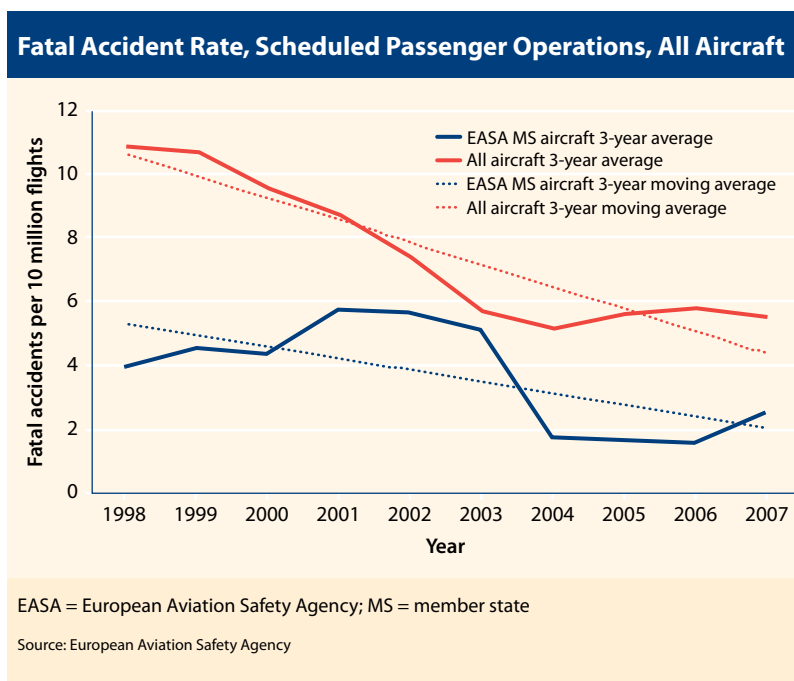


Figure 1

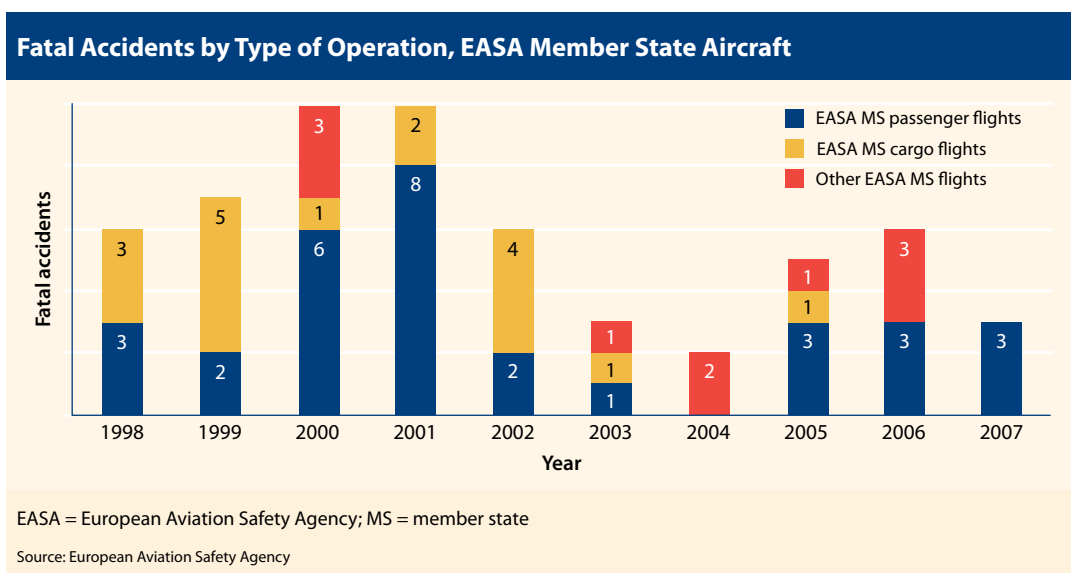
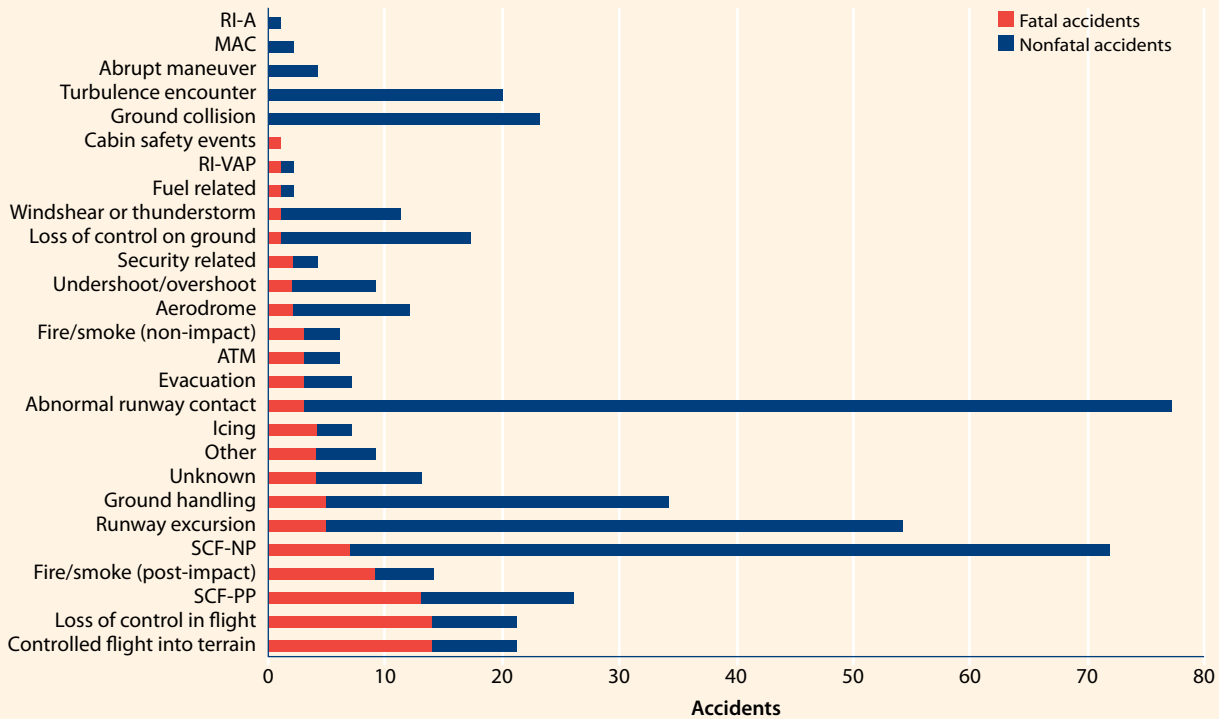


Figure 2

Accident Categories, EASA Member State Aircraft



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: An accident could be assigned to more than one category.

Source: European Aviation Safety Agency

Figure 3

of accidents assigned are runway excursion, system or component failure or malfunction, abnormal runway contact, and ground handling, with the CFIT percentage shown for comparison (Figure 4).

“Although accidents categorized under CFIT overall have a declining trend, they are presented in this review due to related safety actions taken in recent decades,” the report says. Runway excursions show an overall upward trend. An accident could be assigned to multiple categories, so a runway excursion might be more a result than the main causal factor in an accident, but that was true throughout the study period, so the trend has face validity.

The report looked at helicopter accidents separately (Table 2). The number of accidents in

Accidents, EASA Member State Helicopters

Period	Number of Accidents	Fatal Accidents	On-Board Fatalities	Ground Fatalities
1996–2005 (average)	7	3	11	0
2006 (total)	15	4	13	0
2007 (total)	7	1	7	0

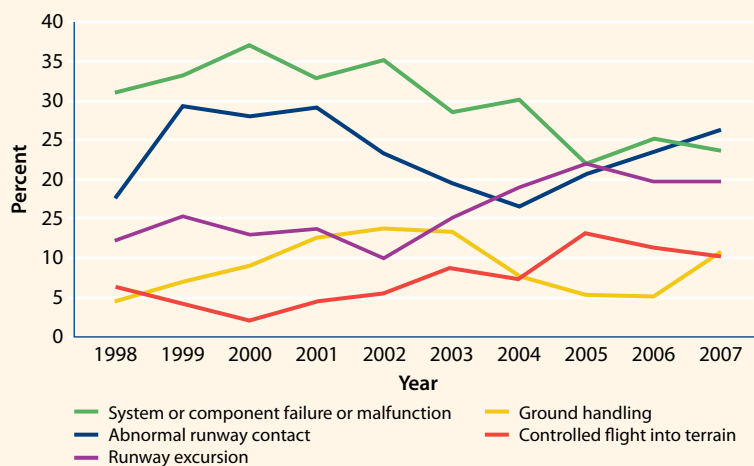
EASA = European Aviation Safety Agency
Source: European Aviation Safety Agency

Table 2

2007 was 53 percent less than in 2006, although it matched the 1996–2005 average.

Fatal accident numbers in the most recent year were a fourth of those in 2006 and a third of the average in 1996 through 2005. Between 1998 and 2007, there were 26 fatal accidents

Percentage of Accidents in Top Four Categories and CFIT Category, EASA Member State Aircraft, 1998–2007



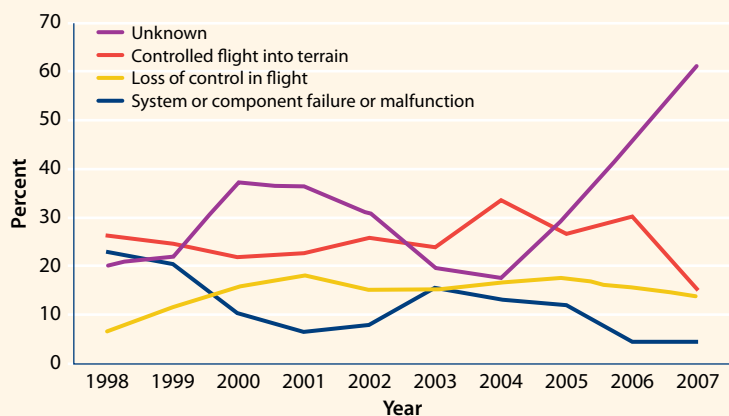
EASA = European Aviation Safety Agency

Note: An accident could be assigned to more than one category.

Source: European Aviation Safety Agency

Figure 4

Top Four Helicopter Fatal Accident Categories, Worldwide, 1998–2007



Source: European Aviation Safety Agency

Figure 5

involving an EASA state-registered helicopter, the report said, adding, “When looking at the three-year moving average, it appears that the number of fatal accidents has increased in the second half of the decade.”

The greatest number of fatal accidents — 16 of the 26, or 62 percent — involving EASA state-registered helicopters was in emergency

medical services (EMS) operations. That was a higher percentage of fatal accidents than for passenger, ferry/positioning and other operations. Worldwide, the percentage of EMS fatal accidents was considerably less. No flight hours data were available, however, so it is possible that EMS flights in EASA state-registered aircraft had greater exposure than those from many other areas.

Among helicopter fatal accidents to which categories have been assigned, CFIT ranked highest, followed by loss of control in flight. In recent years, CFIT has trended slightly downward (Figure 5). The sharp rise in the “unknown” category for 2004–2007 is probably a reflection of uncompleted accident investigations, the report says.

“Work with the data shows that the CICTT occurrence category taxonomy has limited usefulness when applied to helicopters,” the report says. “New approaches will need to be developed to better trace the safety concerns in this segment of the aviation system. Consideration must be given to develop specific categories for such operations.” Although the data are complete insofar as states have reported accidents to ICAO in accordance with Annex 13, “checks have revealed that not all states report in full and in time to ICAO,” the report says.

Notes

1. The report, *Annual Safety Review 2007*, is available via the Internet at <easa.europa.eu/ws_prod/g/doc/COMMS/Annual%20Safety%20Review%202007_EN.pdf>.
2. EASA member states are the 27 European Union states plus Iceland, Liechtenstein, Norway and Switzerland. Data in this article concern aircraft with a maximum certified takeoff weight of more than 2,250 kg/5,000 lb.
3. The period from which data were drawn is presumably 1998–2007, although the report does not specifically say so.
4. Recent ASW articles about the Runway Safety Initiative and runway excursions include “Safety on the Straight and Narrow,” “Margin for Error” and “Never Cross Red” (8/08) and “Snowed” (9/08).