

Separation Maintained

No loss-of-separation incidents in U.K. commercial aviation in 2006 involved risk of collision.

BY RICK DARBY

The 2006 rate of “risk-bearing” aircraft proximity incidents — airproxes — in U.K. commercial air transport, in which aircraft separation was compromised, was the lowest in a decade.¹ The most common causal factor in those airproxes was attributed to air traffic controllers, according to a newly released report by the U.K. Airprox Board (UKAB).²

In 2006, there were no Risk Category A, “risk of collision” airproxes, in this industry sector (Table 1). It was the first time since 2003

that no Category A airproxes occurred. Six events fell into Risk Category B, “safety not assured,” in which “the safety of the aircraft was compromised.” That number was the lowest in the period beginning in 1997. Categories A and B combined are known as “risk-bearing” airproxes.³

The UKAB found no “common thread” among the six Category B events. One occurred over Scotland, the others over various parts of England. “In airspace terms, two of the six airprox [incidents] occurred

| No “Risk of Collision” Airproxes in 2006 | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|
| U.K. Commercial Air Transport Airproxes by Risk Category, 1997–2006 | | | | | | | | | | |
| Risk Category | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Category A | 9 | 1 | 4 | 6 | 0 | 1 | 0 | 1 | 1 | 0 |
| Category B | 20 | 14 | 12 | 8 | 14 | 7 | 12 | 7 | 7 | 6 |
| Category C | 67 | 82 | 83 | 85 | 65 | 70 | 54 | 67 | 78 | 68 |
| Category D | 0 | 1 | 0 | 1 | 4 | 4 | 0 | 4 | 1 | 0 |
| Total | 96 | 98 | 99 | 100 | 83 | 82 | 66 | 79 | 87 | 74 |

Category A = risk of collision; Category B = safety not assured; Category C = no risk of collision; Category D = risk not determined

Source: U.K. Airprox Board

Table 1

in terminal control areas and one each on an airway; an ADR [advisory route]; [and] in Class D and Class G airspace,” the report said.⁴ “The conclusion is that such wide variability does not point to a common theme with the need for concerted action in a particular area of operations.”

Figure 1 and Table 2 show the airprox rates for 1997 through 2006. The 2006 rate of 0.37 risk-bearing airproxes per 100,000 flight hours is a decrease from 0.52 in the previous year, an improvement of 29 percent. The rate had been as high as 2.46 per 100,000 flight hours in 1997.

Of the 74 total airproxes involving at least one commercial air transport aircraft in 2006, the most common causal factor — “did not separate/poor judgment” — was attributed to controllers. Table 3 (p. 52) lists causal factors assigned four or more times.⁵

The second most frequent causal factor, “sighting report,” was considered irrelevant. The report said, “An informal definition of this causal factor might be ‘without the slightest doubt a Risk Category C airprox.’”

The third- and fifth-ranked causal factors were significant in terms of industry concerns about “infringements” of airspace and level busts, respectively, the report said.

The UKAB investigates airproxes involving general aviation and military aviation aircraft, including helicopters, as well as commercial air transport. Table 4 (p. 52) shows total airproxes by civil and military aircraft involvement. The

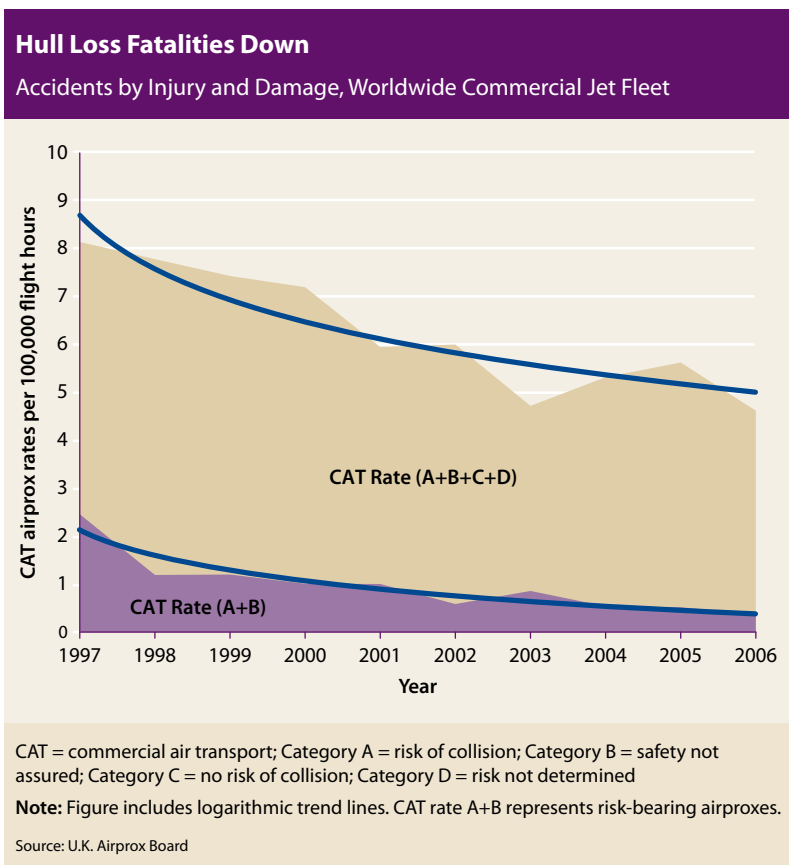


Figure 1

report says that the reduction in civil-military aircraft encounters in 2006 is “of particular note,” with the 46 in 2006 in contrast to an annual average of 72 in the prior years of the period, 1997–2005. The year 2006 ended with a total of 159 airproxes, compared with the previous five-year average of 198, a 20 percent reduction. ●

| Airprox Rate Down | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| U.K. Commercial Air Transport Airproxes per 100,000 Flight Hours, 1997–2006 | | | | | | | | | | |
| Rate | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Risk category A + B | 2.46 | 1.19 | 1.20 | 1.01 | 1.00 | 0.59 | 0.86 | 0.54 | 0.52 | 0.37 |
| Risk category A + B + C + D | 8.14 | 7.78 | 7.43 | 7.20 | 5.95 | 6.00 | 4.72 | 5.32 | 5.63 | 4.62 |
| Flight hours (thousands) | 1,179 | 1,259 | 1,332 | 1,389 | 1,395 | 1,366 | 1,398 | 1,485 | 1,546 | 1,602 |

Category A = risk of collision; Category B = safety not assured; Category C = no risk of collision; Category D = risk not determined
Note: Flight hours are supplied by the U.K. Civil Aviation Authority and Eurocontrol.
Source: U.K. Airprox Board

Table 2

Separation Loss Most Common Factor

Most Common Airprox Causal Factors, U.K. Commercial Air Transport, 2006

| Rank | Causal Factor | Total | Attributed to |
|------|---|-------|---------------|
| 1 | Did not separate/Poor judgment | 19 | Controller |
| 2 | Sighting report | 9 | Other |
| 3 | Penetration of CAS/SRZ/ATZ without clearance | 8 | Pilot |
| 4 | Not obeying orders/Not following advice from ATC | 7 | Pilot |
| 5 | Climbed/Descended through assigned level | 7 | Pilot |
| 6 | Inadequate avoiding action/Flew too close | 6 | Pilot |
| 7 | Did not adhere to prescribed procedures | 4 | Pilot |
| 8 | Did not pass or late passing of traffic information | 4 | Controller |
| 9 | Controller perceived conflict | 4 | Controller |

CAS = controlled airspace; SRZ = special rules zone; ATZ = aerodrome traffic zone; ATC = air traffic control

Note: An airprox could be assigned more than one causal factor.

Source: U.K. Airprox Board

Table 3

Fewer Civil-Military Airproxes in 2006

U.K. Airprox Totals by User Category, 1997–2006

| User Category | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Civil-civil | 115 | 129 | 113 | 100 | 97 | 109 | 87 | 109 | 99 | 95 |
| Civil-military | 78 | 53 | 81 | 78 | 73 | 77 | 67 | 69 | 74 | 46 |
| Military-military | 14 | 16 | 13 | 18 | 20 | 31 | 23 | 22 | 8 | 13 |
| Other | 1 | 3 | 1 | 2 | 5 | 4 | 4 | 7 | 7 | 5 |
| Totals | 208 | 201 | 208 | 198 | 195 | 221 | 181 | 207 | 188 | 159 |

Source: U.K. Airprox Board

Table 4

Notes

1. The U.K. Civil Aviation Authority (CAA) defines an airprox as “a situation in which, in the opinion of a pilot or a controller, the distance between aircraft as well as their relative positions and speed [were] such that the safety of the aircraft involved [were] or may have been compromised.” Airproxes in the data occurred in U.K. airspace and included airplanes and helicopters.
2. U.K. Airprox Board (UKAB). *Analysis of Airprox in UK Airspace*. Report no. 17, July 2006–December 2006. Available via the Internet at <www.airprox-board.org.uk/default.aspx?catid=423&pagetype=68&gid=430>. Although the report provides an update that includes the second half of 2006, it compares the entire year 2006 with previous years.

- The UKAB is an independent organization jointly sponsored by the CAA and the Ministry of Defence.
3. Other risk categories are C, “no risk of collision,” and D, “risk not determined.” Risk Category D comprises incidents in which there is insufficient, or conflicting, evidence that precludes determining the degree of risk.
 4. An advisory route is defined as “a designated route along which air traffic advisory service is available.” Class D in the United Kingdom is controlled airspace. Class G is uncontrolled airspace.
 5. An airprox could have more than one causal factor, and the 74 commercial air transport airproxes were assigned 126 causal factors.