Is It Safe?

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How safe is it to fly?

Measure of Safety Performance Over a Past Period:

Death Risk Per Randomly Chosen Flight

Question:

If a person chooses a flight at random from among those of interest (e.g. UK domestic jet flights over the period 1990-99), *what is the probability that she will not survive it*?

This "death risk per flight" statistic has <u>some conceptual advantages:</u>

- **Ignores length and duration of flight, which are virtually unrelated to mortality risk**
- **Weights each crash by the *percentage* of passengers killed**
- **Easy to calculate and understand**

First-World Domestic Jet Services

Death Risk per Flight, 1990-99:

1 in 13 million

At a mortality risk of *1 in 13 million* per flight, a passenger who took one flight per day would on average travel for *36,000* years before dying in a plane crash.

Passenger Mortality Risk for Various World-wide Jet Services, 1990-99

Type of Service	Death Risk per Flight
First-World Domestic	1 in 13 million
International within First World	1 in 6 million
International Between First And Developing Worlds	1 in 1 million
Within Developing World	1 in 500,000

But what about the *first half decade* in this century (2000-2004)?

(Funny you should ask.)

Accidental Death Risk Per Flight for Domestic Jet Services, 2000-2004

United States **0** **(!!)**

Rest of First World **0** **(!!)**

(70 million flights performed)

Accidental Death Risk for Various World-Wide Jet Services, 2000-2004

Type of Service	Death Risk per Flight
First-World Domestic	*absolute zero*
International within First World	**1 in 7 million**
International Between First And Developing Worlds	**1 in 1.5 million**
Within Developing World	**1 in 1.5 million**

(A world of improvement!)

What about Prop Planes?

Death Risk per Flight, First-World Domestic:

1990-99	***1 in 2.5 million***
2000-04	***1 in 5 million***

Death Risk per Jet Flight *Between First World City and Developing World City* On Two Groups of Airlines, 2000-04

First-World Carrier	***1 in 1.5 million***
Developing-World Carrier	***1 in 1.5 million***

Thus, on the routes on which First and Developing World airlines compete, the difference in their safety records *withers away.*

Of course:

We lost it all on a Tuesday in September.

Overall Death Risk per Domestic US Jet Flight

1990-99	***1 in 15 million***
2000-04	***1 in 10 million***

All the safety gains over 2000-04 were erased when four planes crashed in the 9/11 catastrophe.

*It isn't clear that the **best analytic thinking** has gone into US decisions about aviation security.*

Some Aviation Security Measures that have Been Abolished Since 9/11:

- *Photo ID at Boarding Gate*
- *Questions to Passengers about Luggage*
- *30-Minute Rule on DCA Flights*
- *Positive Passenger Bag Match*

One could well argue that none of these abolitions would pass a cost-benefit test.

Moreover, emergency planning for terrorist attacks that might be imminent may fall far short of the ideal.

So, where are we?