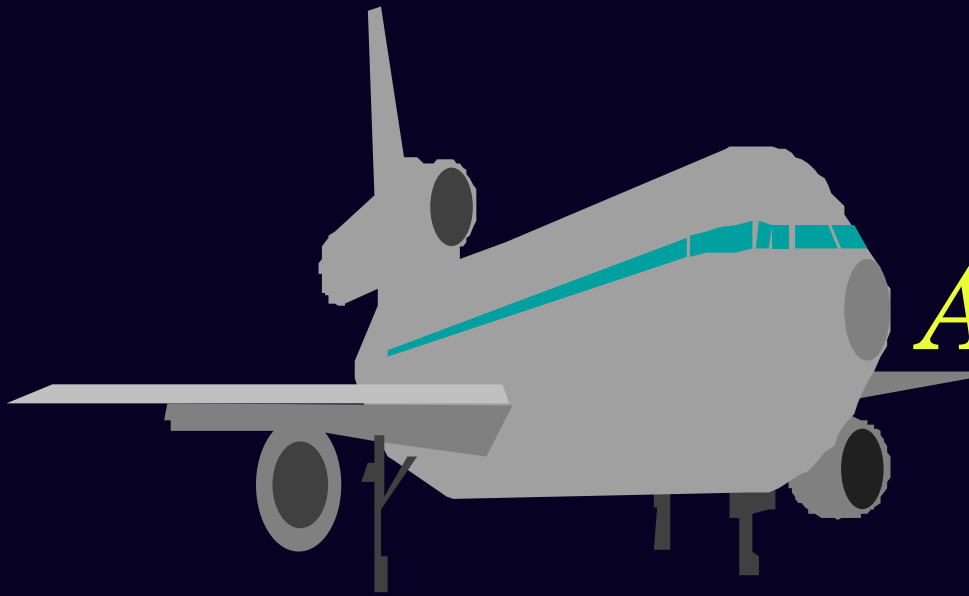


*Aviation Safety in Developing Countries:
A Statistical Perspective*



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*We restrict our attention
here to **scheduled jet
passenger flights.***

*How safe is it to fly in
Developing Countries?*

*Well, how should we
measure aviation safety?*

*Given that a passenger's greatest fear is of being killed in a plane crash, there is **a natural interest** in statistics about the likelihood of that outcome.*

*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. Indian domestic jet flights over the period 1990-99), what is the probability that she will not survive it?

Accidental Death Risk per Flight, Developing-World Jet Passenger Services, 1960-2005

<u><i>Period</i></u>	<u><i>Death Risk per Flight</i></u>
<i>1960-69</i>	<i>1 in 100,000</i>
<i>1970-79</i>	<i>1 in 200,000</i>
<i>1980-89</i>	<i>1 in 400,000</i>
<i>1990-99</i>	<i>1 in 500,000</i>
<i>2000-05</i>	<i>1 in 2 million</i>

*At a mortality risk of **1 in 2 million** per flight, a passenger who took one flight per day would on average travel for **5500** years before dying in a plane crash.*

*The **statistical significance** of this pattern of “continuous improvement” is beyond question, as is the **discontinuous jump** from the 1990’s to 2000-05.*

*However, the Developing World **Has Always Trailed** the Developed World in Jet-
Passenger Mortality Risk:*

Death Risk per Flight:

<u><i>Period</i></u>	<u><i>Developing World</i></u>	<u><i>Developed (First) World</i></u>
<i>1960-69</i>	<i>1 in 100,000</i>	<i>1 in 700,000</i>
<i>1970-79</i>	<i>1 in 200,000</i>	<i>1 in 2 million</i>
<i>1980-89</i>	<i>1 in 400,000</i>	<i>1 in 4 million</i>
<i>1990-99</i>	<i>1 in 500,000</i>	<i>1 in 10 million</i>
<i>2000-05</i>	<i>1 in 2 million</i>	<i>1 in 30 million</i>

*Do these last differences
difference mean that, given a
choice between flying a First
World airline and a
Developing World one, one
should opt for the former?*

*Death Risk per Jet Flight **Between First World City and Developing World City** On Two Groups of Airlines, 2000-05:*

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.

(This has happened before. See Barnett and Wang (2000).)

*So where do we
go from here?*