# The Birthday Paradox: An Application to the USA's No-Fly List

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Data coincidences are an important aspect of our digital age. An example of this is the US No Fly List. Over 90,000 names are on the No Fly List. Given that more than 8 million people fly each day in the US, what is the chance that one of those passengers is detained by security only because they share a name with someone on the list? The ramifications for the innocent passenger can be significant. A comparable situation is the Birthday Paradox. To demonstrate this a random group of 75 birthdays were examined and it was verified that there is a 50% probability that out of any grouping of 23 random birthdays, at least 2 birthdays will coincide. This principle was then expanded to a more complex issue of name coincidences. The 2000 U.S. Decennial Census, the Social Security Administration, and the TSA No-Fly List were the sources of information for calculating the probabilities of any individual having a particular name. The probabilities that were associated with names also found on the No-Fly list were then summed. This represents the likelihood of a person being given a name that is also on the No-Fly list. Being alert to these probabilities could smooth the process of security in U.S. airports.

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