

# U.S. Airline Safety – Statistics in Perspective

## Executive Summary

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### Introduction

Following the favorable reception of the Dashboard, presented to internal data science management, it was requested that an Executive Summary report be created for presentation to senior leaders that are invested in the portrayal of the industry and the airline. In addition, care has been taken to ensure the data and analysis is ethical, honest, and substantiated by independent data sources.

### Analysis

Numerous websites were explored for data regarding air travel incidents and fatalities over the past two decades—2000 through 2019. In addition, for comparison, statistics on traffic fatalities in the United States were also extracted. Specifically, in the interest of shareholders, Net Profit data was also included in part of the Summary.

One statistic that the media has focused on is that the absolute number of airline accidents have trended upwards, slightly, from 2017 through 2019. However, the volume of airline departures has also increased. Therefore, relying on absolute numbers in this case is misleading. Looking instead at a trendline over the past two decades indicates a steady decline when the metric analyzed is accidents as a percentage of departures.

Additional data for this Summary, that was not included in the original dashboard and also highlights the continuing downward trend of airline accidents, was extracted from the Aviation Safety Network website:

- Airline Accidents, 1946 through 2017
- Airliner Accidents per 1 Million Flights, 1997 – 2017

### Summary

In contrast to the sensational reports by the media, factual evidence supports declining accidents in air travel. Another continuing conclusion—corroborated by data analysis—is that air travel is far safer than on the roads and highways of the U.S. Lastly, according to the Airlines for America website, net profit is trending upwards in recent years.

### References

Departures: <https://www.airlines.org/dataset/annual-results-u-s-airlines-2/#>

Accidents & Casualties: <http://www.baaa-acro.com/statistics>

Airline Safety: <https://github.com/fivethirtyeight/data/tree/master/airline-safety>

Traffic Fatalities: [https://en.wikipedia.org/wiki/Motor\\_vehicle\\_fatality\\_rate\\_in\\_U.S.\\_by\\_year](https://en.wikipedia.org/wiki/Motor_vehicle_fatality_rate_in_U.S._by_year)

Net Profit: <https://www.airlines.org/dataset/annual-results-u-s-passenger-airlines/#>

Github repository: <https://github.com/dkinneyBU/DSC640>