

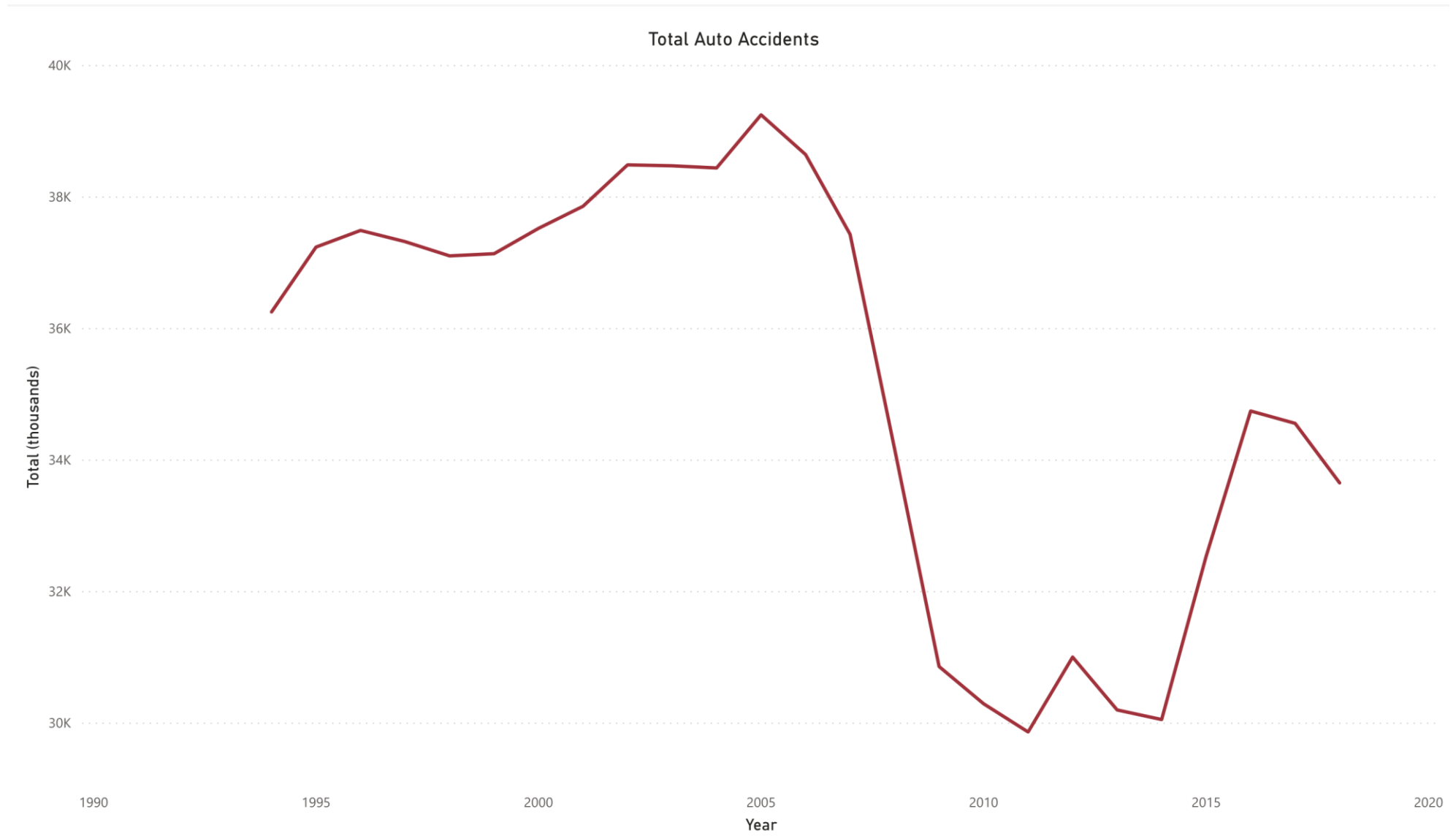


# TRAVEL SAFETY

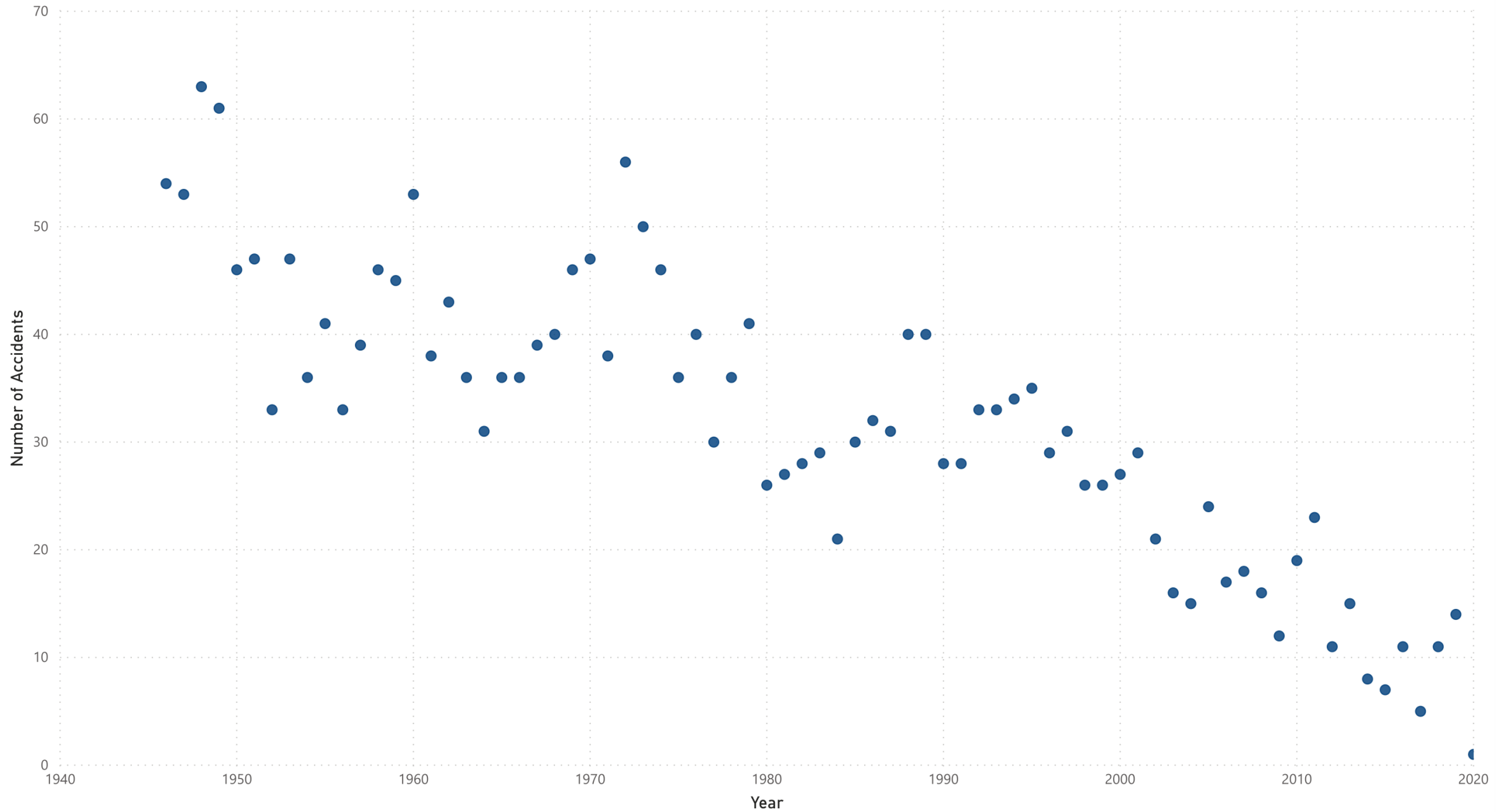


# GENERAL INFORMATION

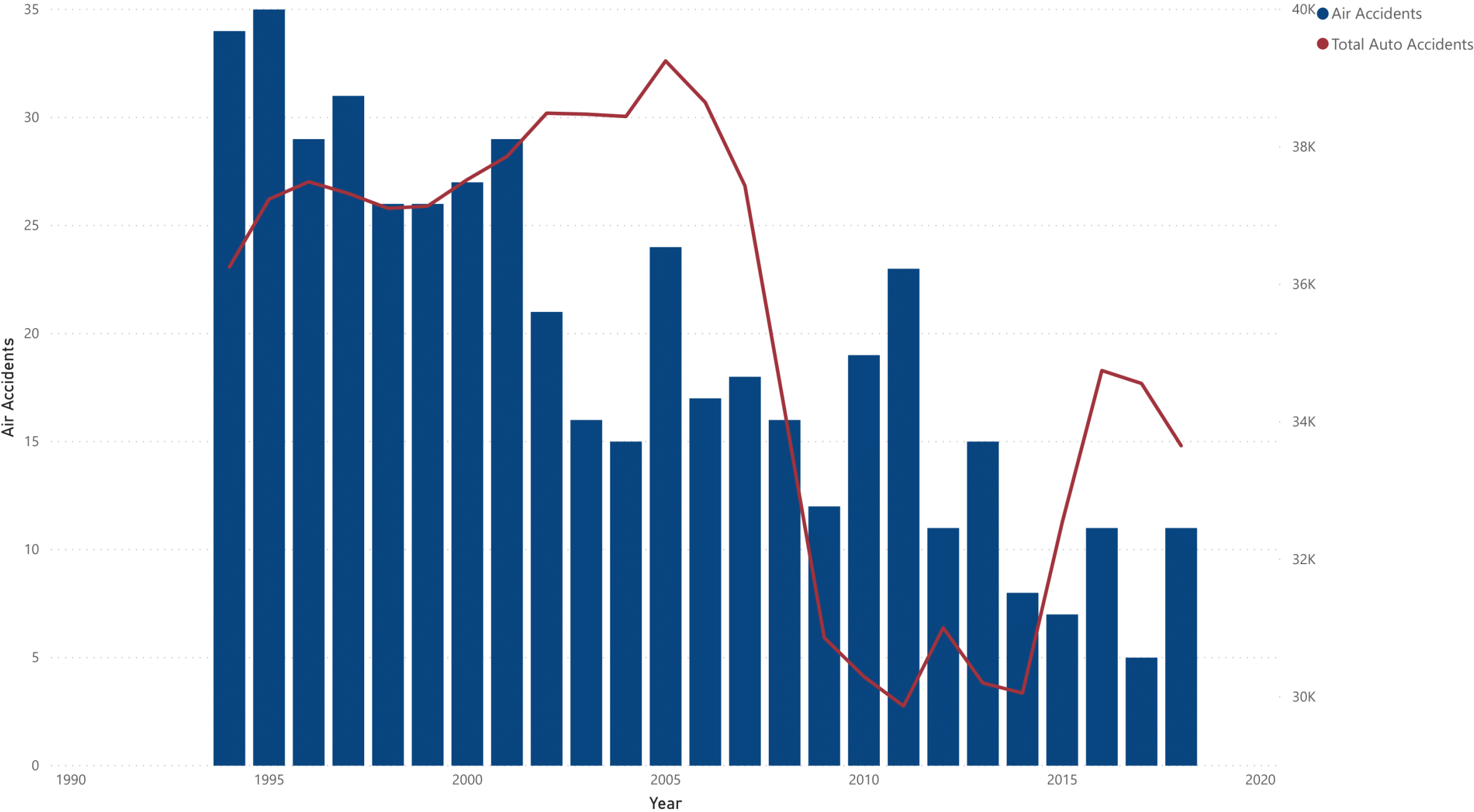
- Two primary modes of travel were reviewed: Auto and Air
- Visual representation of accidents and revenue data included over the years of 1985-2018



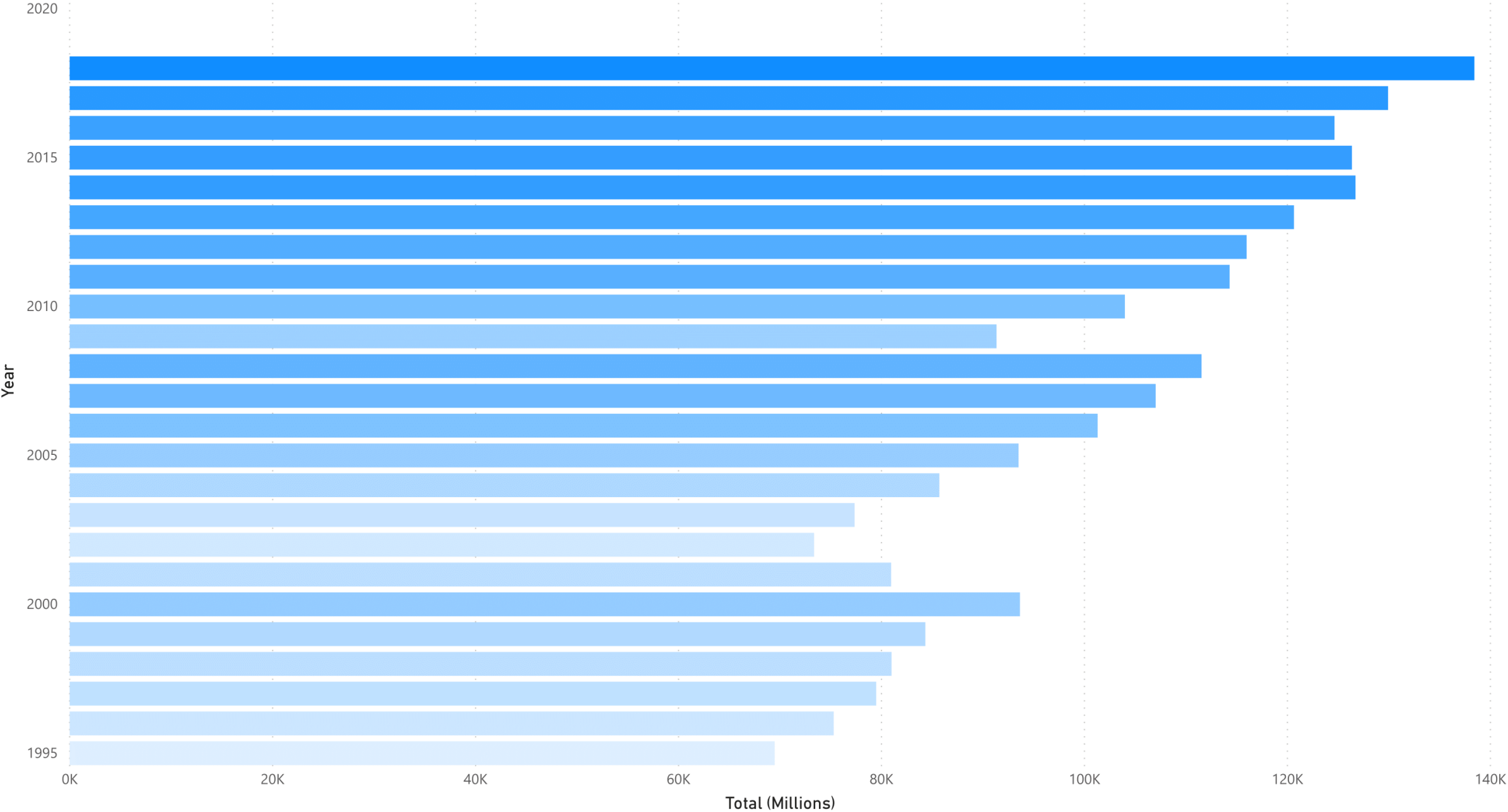
Airline Accidents



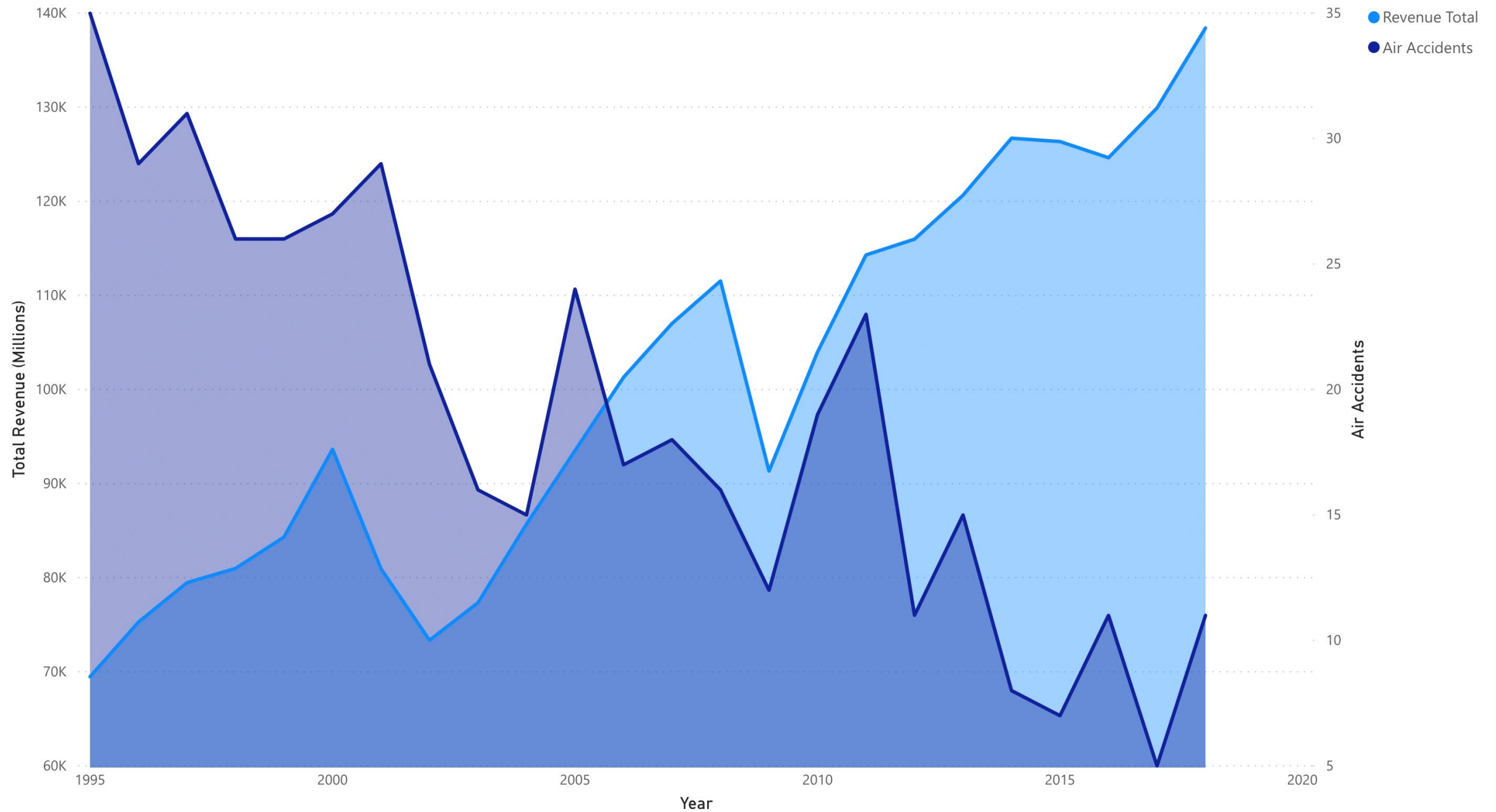
Airline Accidents vs Auto Accidents

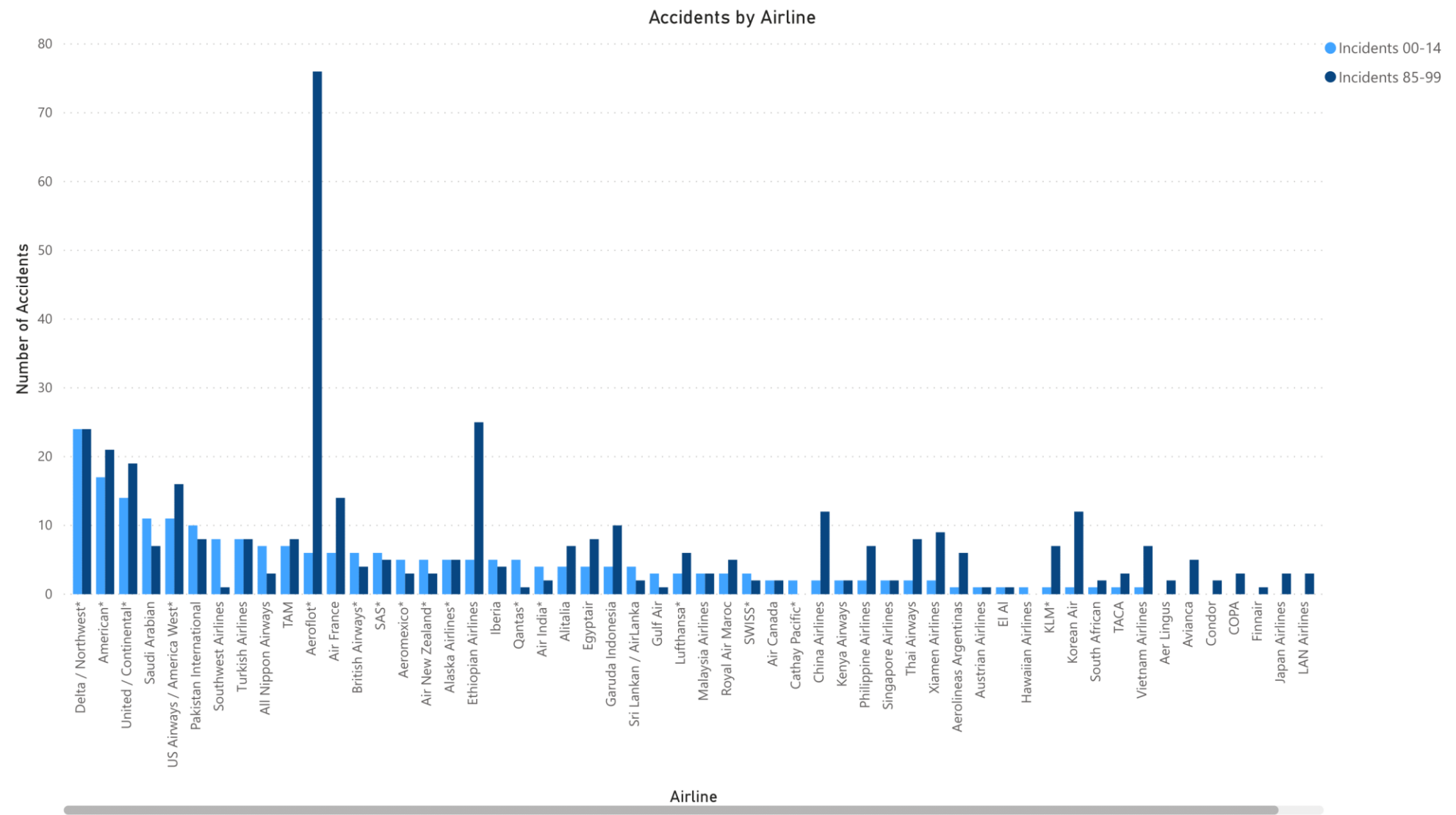


Total Passenger Revenue



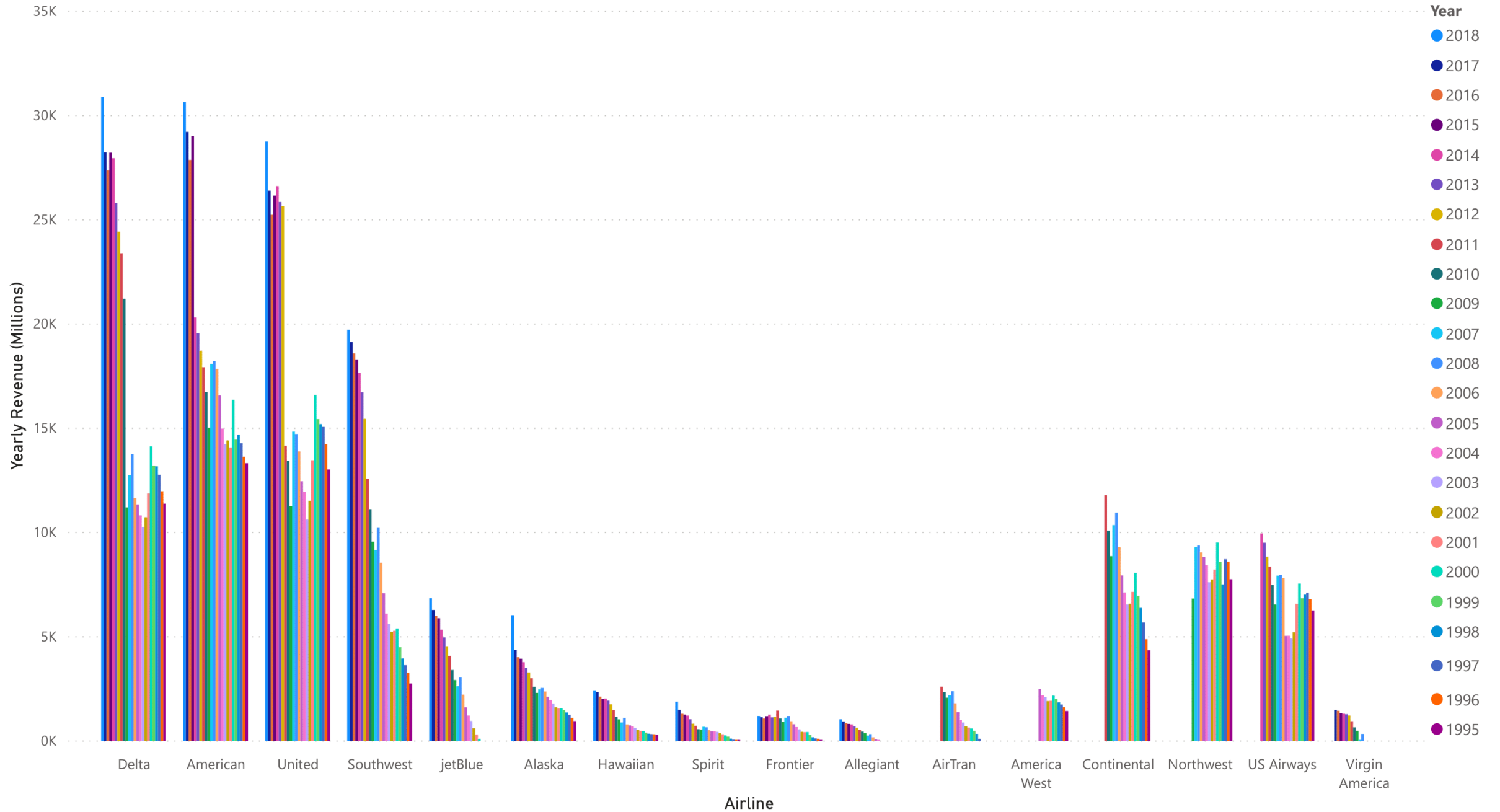
Total Revenue vs Total Accidents (Airline)







Yearly Revenue



# FINDINGS

- Auto accidents per year are significantly higher than airline accidents. While there was a dip in numbers in 2008, they began to peak again in 2015.
- Airline accidents have decreased over the years. There is a trend with airlines such as Ethiopian Airlines, Aeroflot, Air France, China Airlines, and Korean Air in which saw a higher number of incidents from 1985-1999; however, they the same airlines saw a decrease from 2000-2014.
- Delta Airlines has seen a steady rate of accidents over the years of 1985-1999 as well as 2000-2014 and American only has a slight decrease for the later years.
- Overall, the number of airline accidents has decreased over time. As the number of incidents has decreased, the passenger revenue for air travel has continued to increase apart from the years 2002 and 2008.
- With all airlines, we can see that the revenue in 2018 is significantly higher than in 1995.

The airline industry has changed over the years. Many airlines are still around while others are no longer. Through my research this time, I focused more on the revenue brought in as well as the individual airlines. I included additional graphs regarding the airline industry as a whole and compared it to the accident amount for automobiles. Over the years, the trends with many of the airlines is a decrease in incidents outside of Delta. With Delta we see the number of incidents has been consistent. This is shown on slide 8 of the presentation with a bar chart.

The charts were all chosen based on the data I chose. The line graph for total number of auto accidents is how I thought it was most clearly displayed that there is a drastic decrease over the years of 2005-2010; however, it then fluctuates and continues to rise. Taking the line chart and combining it with a bar chart for airline accidents is shown with a dual axis. This was chosen to show the difference in accident numbers. For airlines, we see numbers under 100 and for auto, there are numbers in the thousands. The colors were kept consistent with red for auto accidents in both graphs and a dark blue for airline accidents. The colors are easy to read when used together and they are also more adaptable for everyone.

The scatterplot for airline accidents shows with a dark blue color to keep consistency. The colors being the same allow for the viewer to know when they see it, they can think of the same idea. The plot shows the downward flow of accidents throughout the years for accidents for airlines. The scatterplot allows to see the trend and see the spots where the numbers have peaked in certain years such as around the 1970s and 2011.

Looking at total passenger revenue, I went with the horizontal bar chart with a fading of blue color. The lighter blue is a way to show the revenue portion for airlines. The fading on the horizontal bar chart shows the lighter colors as years with lower revenue and the darker shows the higher revenue. Combining the total revenue with total airline accidents in an area chart shows us how much the two overlap while also showing that as the airline accidents have been decreasing over years, the total passenger revenue has been increasing. On the dual axis we can see the amount of revenue on the left with the accidents on the right. There are portions on either side of the x axis for years that show the higher accident numbers from 1995-2003 and again in 2005; however, on the other side, we can see the revenue numbers climb above that after 2005-2018.

The final graph shown is very busy. This shows the variety of years with the select airlines for total passenger revenue. While busy with colors, each one represents a year and the separation of airlines makes it categorized. The bar chart was chosen as a clear way to show how the revenue has been higher in later years, even with each airline.

The presentation would be given in such a way to provide facts and show them as well. Each airline with statistics has been represented and an overview would be provided. The comparison between auto accidents with airline over the years would be shown to compare and provide more concrete fact to why air is still the safest way to travel over auto. My findings provided on the presentation would be given as follows:

- Auto accidents per year are significantly higher than airline accidents. While there was a dip in numbers in 2008, they began to peak again in 2015.

- Airline accidents have decreased over the years. There is a trend with airlines such as Ethiopian Airlines, Aeroflot, Air France, China Airlines, and Korean Air in which saw a higher number of incidents from 1985-1999; however, they the same airlines saw a decrease from 2000-2014.
- Delta Airlines has seen a steady rate of accidents over the years of 1985-1999 as well as 2000-2014 and American only has a slight decrease for the later years.
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- With all airlines, we can see that the revenue in 2018 is significantly higher than in 1995.

With the data and visualizations provided, I can show that the amount of accidents compared to revenue is going in the right direction. This is beneficial to bring to shareholders as well to show the profit margin is headed in the right direction.

The airline industry is always going to have hurdles to overcome, especially with the media. The idea is to stay ahead of it and go against the claims with more prominent facts and figures as shown in the presentation. Many of us travel everyday in cars and I know that for me, I see a lot of accidents for many different reasons including those that are avoidable. If one was given the choice of driving on a busy interstate with thousands of accidents each year or air travel with less than 30 accidents each year, the choice goes to air travel.

#### References:

Accidents and fatalities per year. (n.d.). Retrieved from

[https://docs.google.com/spreadsheets/d/1SDp7p1y6m7N5xD5\\_fpOkYOrJvd68V7iy6etXy2cetb8/edit](https://docs.google.com/spreadsheets/d/1SDp7p1y6m7N5xD5_fpOkYOrJvd68V7iy6etXy2cetb8/edit)

Airline Data Project. (n.d.). Retrieved from

<http://web.mit.edu/airlinedata/www/Traffic&Capacity.html>

Data.world. (2018, July 12). Airplane Crashes 1908-2009 - dataset by hhaveliw. Retrieved from

<https://data.world/hhaveliw/airplane-crashes-1908-2009>

Fivethirtyeight. (2018, February 09). Fivethirtyeight/data. Retrieved from

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

National Highway Traffic Safety Administration. (n.d.). FARS Encyclopedia. Retrieved from

<https://www-fars.nhtsa.dot.gov/Trends/TrendsGeneral.aspx>

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GitHub:

<https://github.com/knmoses/DSC-640---Data-Presentation-and-Visualization>