2.3 Project Task 2: Executive Summary

Is Flying Still Safe?

A Look at Historical and Recent Data and Impacts on the Airline Industry

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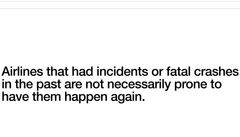
Historical Data: Airline Incidents and Fatal Accidents

Airline Safety Comparisons: Incidents

Airline Safety Comparisons: Fatal Accidents



Historical Data: Key Findings

Incident Rates are Decreasing

43% ▼

Decrease in total airline incidents from 1985-1999 and 2000-2014

Source: Aviation Safety Network

Fatal Accident Rates are Decreasing

70% ▼

Decrease in total airline fatal accidents from 1985-1999 and 2000-2014

Source: Aviation Safety Network

Airlines that had incidents or fatal crashes in the past are not necessarily prone to have them happen again.

Source: Aviation Safety Network

Recent Events Impacting Safety

Boeing 737 MAX Aircraft Deaths

346

Total deaths from two different flights less than six months apart leading to aircraft being grounded

Source: https://en.wikipedia.org/wiki/Boeing_737_MAX

Comparison Data: Airplane and Auto Fatalities

Airplane and Auto Fatalities: 2000-2014

Airplane and Auto Fatalities: 2000-2014

0.5% Airplane

99.5% Automobile

Total fatalities: 579,655

Source: Aviation Safety Network, NHTSA

Executive Summary

Introduction

Because of recent unfortunate airline crashes, numerous media outlets have begun promoting statistics stating that flying is no longer a safe way of traveling. News and media outlets have bombarded the public with statistics and figures about airline safety trends, and are reporting, overall, that things do not look good for the industry. Flying was previously thought of as the safest way to travel — particularly when compared to automobiles — and is now being presented to the public as one of the most dangerous. With that in mind, a study was undertaken to look into historical data of airline and automobile incidents, crashes, and fatalities, and also to dig deeper into the underlying factors of the most recent airline crashes, to truly understand if what is being presented by the media is accurate.

Data Methods

What I wanted to do with the executive summary was continue the findings that were previously created for the internal team and presented in the dashboard information, and make improvements based upon feedback. The information presented in the executive summary slide presentation is based upon data from the airline safety dataset provided by the Aviation Safety Network (30 years worth of airline incident, accident, and fatality information). Using that information I wanted to see if it could find any trends looking at the data in two different chunks of time, each of 15 years. Regarding the more recent events of Boeing's 737 MAX aircraft and its MCAS problems, I wanted to highlight the issues with that particular aircraft and explain that that aircraft and its issues are the primary impetus for the outcry in the media. Last, and most importantly, I wanted to do a comparison of fatality data from airlines and automobiles, using a supplemental data set from the NHTSA for the automobile fatality information.

Visualizations

I presented to the internal group with raw, factual information from data from ASN and NHSTA, and presented it using bar charts in a monochromatic hue to ensure accessibility and to emphasize the magnitude of the data. After feedback, the visualizations for the executive summary continue to use the same monochromatic color scheme, and there is continued use of bar charts due to their simplicity; however, I also use the key performance indicator (KPI) in a few spots (and appropriate color) to really drive home some key metrics. These are presented only after the data it is reinforcing has been introduced in previous slides. The KPI slides are intended to make a big impact; they are the conclusion of the findings provided in succinct fashion and feature color for extra emphasis.

The first grouping of visualizations I chose to use are there to show — if any — correlation could be made to airline incidents and accidents from 1985-1999 and 2000-2014. The goal was to see if the same exact airlines made the list of the top 10 for each 15 year chunk, and also to see if anything else stood out.

Another visual I wanted to specifically use was a quick chart showing the deaths from Boeing's 737 MAX aircraft. The fatalities from this particular aircraft came from two different flights less than six months apart, each from different airlines. Their common bond is the flaw in the aircraft's hardware and software system (MCAS) that automatically control the pitch of the aircraft if it detects a stall position. Not long after the second crash of a 737 MAX aircraft, the entire fleet was grounded.

The last visual, and the primary graphic, is one that compares total fatalities from flying and from driving. The difference is striking.

Findings

Based upon the findings, despite recent fears of flying, with the exception of a faulty hardware and software system on one particular aircraft (Boeing's 737 MAX), traveling by plane is still extremely safe compared to other methods of travel.

Airlines that had incidents or fatal crashes in the past are not necessarily prone to have them happen again. Also, the data shows that the number of incidents and fatalities over 30 years have dropped quite a bit, and they are not particular to one geographic location, though there is evidence that airlines from developing countries are more prone to incidents, accidents, and fatalities.

Comparing the fatalities of airline travelers and those in automobiles provides a rather telling statistic: Between the years of 2000 and 2014, the total number of fatalities from airline and auto crashes was 579,655. Of that number, **airline fatalities make up half of one percent** of that total.

Flying continues to be one of the safest methods of getting from one location to another.