Arline Safety Dashboard - Summary

Goal of this exercise is to prepare a single page dashboard with visualizations for at least 6 metrics.

Data Sources:

1. Main data: Airline Safety

   Data for 56 airlines that were in the global top 100 as of December 2012 and which have operated continuously since Jan. 1, 1985.

   Data Details:

Column	Details
airline	Airline (asterisk indicates that regional subsidiaries are included)
avail_seat_km_per_week	Available seat kilometers flown every week
incidents_85_99	Total number of incidents, 1985–1999
fatal_accidents_85_99	Total number of fatal accidents, 1985–1999
fatalities_85_99	Total number of fatalities, 1985–1999
incidents_00_14	Total number of incidents, 2000–2014
fatal_accidents_00_14	Total number of fatal accidents, 2000–2014
fatalities_00_14	Total number of fatalities, 2000–2014

2. Supplemental data: Auto Fatalities

   Data showing number of people killed and injured in fatal collisions.

   Data Details:

Colum	Details
Year	Year of incident
Killed	Number of fatalities

3. Supplemental data: Airline Fatalities

   Data showing number of people killed in fatal crashes.

   Data Details:

Column	Details
Year	Year of incident
Fatalities	Number of fatalities

4. Supplemental data: Combined Fatalities

   Data showing the number of people killed due to both auto and airline crashes in an year.

   Data Details:

Column	Details
Year	Year of incident
Fatalities	Number of fatalities
Category	Category of the crash - airline/auto

Dashboard Details:

Overview:

From dashboard perspective, I have considered the primary goal to show the trend of the airline crashes to show that the airline travel is safe today compared to early days of airline travel. I have also used auto crash data to show how low the airline crash fatalities are compared to the auto crash fatalities.

After preparing the dashboard I have run it through the color blindness simulator to ensure the data is readable by a color blind person as well.

Below are details about several statistics included in the dashboard.

1. Two Line charts - I have used two line charts, one for showing the trend of airline crash fatalities, and the 2nd one to show the trend of auto crash fatalities. Both of these trends are by year, using

the historic data from source 4 mentioned above. I have used trend line to show the trend clearly.

2. One Stacked bar chart - I have used stacked bar chart to show the top 10 airlines based on the fatalities count, considering the total number of fatalities from 1985-2014.
3. Two Scatter plots - I have used scatter plots to show the relation between the fatalities before 2000 vs, fatalities after 2000, and fatal incidents before 2000 vs. fatal incidents after 2000. I have noticed that there is no correlation that can be established for fata incidents, which makes sense to some extent as each crash is different and can lead to different number of fatalities depending on conditions. But, we can establish come correlation between the fatal incidents themselves, so the airlines that had incidents before 2000 continued to have incidents in the recent years as well after 2000.
4. Two metric cards - These are used to reflect the average number of fatalities happened per year from auto crashes compared to the average number of fatalities happened per year from the airline crashes.

References:

- airline_fatalities.xlsx - Downloaded from http://www.baaa-acro.com/statistics/death-rate-per-year, found from one of the supporting links provided.
- auto_Fatalities.XLS - Downloaded from https://cdan.nhtsa.gov/SASStoredProcess/guest, found from one of the supporting links provided.
- Color blindness simulator - https://www.color-blindness.com/coblis-color-blindness-simulator/