**Executive summary for Airline Travel Safety Comparison Report**

Based on the data and preliminary analysis, I have put together a summary of how does accident and fatality involving airline look compared to other modes of transport.

The mode of travel I have considered are:

**Highways:**

Passenger car occupants

Motorcyclists

Truck occupants

Bus occupants

Pedestrians

Pedal cyclists

**Railroad:**

Train accidents

Highway-rail grade crossing

Trespassers

**Water:**

Passenger vessel

Freight vessel

Industrial/Other

Recreational boating

And of course:

**Air:**

U.S. air carrier

Commuter carrier

On-demand air taxi

General aviation

Approach that I have followed to compare the fatalities caused by each of the mode mentioned above is:

1. Performed a high level comparison of fatalities across these modes.
2. Perform comparisons between Rail road and Flight fatalities.
3. Perform comparison between Flight and water.
4. Perform comparisonbetween Flight and highways.
5. Given most of the highway fatalities are resulted due to car crashes, performed comparisonsbetween Flight and CAR at different slices.
6. Check how often can one meet with a fatal accident while travelling by a CAR vs Flight.

**Data Sources:**

I have managed to get the airline safety data containing number of accidents and fatalities in airline from 1997 to 2019.

**Source for airline fatality and accident data:**

<https://injuryfacts.nsc.org/home-and-community/safety-topics/airplane-crashes/>

After doing some transformation with available data I could get below metrics:

|  |  |
| --- | --- |
| **Metrics** | **Description** |
| Year | Year of occurrence |
| Deaths\_by\_car\_crash | Total number of fatality by car accidents |
| Car\_Crashes | Number of car crashes |
| Fatalities\_Per\_Million\_VMT | Fatalities per million miles by car |
| Car\_crash\_per\_Million\_VMT | Crashes per million miles by car |
| All\_Airline\_Accidents | Total number of Airlines accidents |
| On\_board\_fatalities | Number of fatalities by Airline accidents |
| Total\_accident\_rate\_per\_million\_miles\_flown | Fatalities per million miles by airlines |

In order for us to compare the crash and number of fatalities by Car vs Airlines, I will plot the number of crash by car and Airline on same graph. Similar pattern will be followed for other metrics as well.

**Data for all modes:**

<https://www.bts.gov/content/transportation-fatalities-mode>

**Summary of the analysis has been provided in the presentation.**