Safe way to travel

In the light of recent media reporting which is raising question on air safety. These reports primarily quoting recent airline crashes and claiming that air is no longer a safe way to travel.
Being a data science student I tried to dig into available statistics of past 10 years air crashes along with road fatalities.
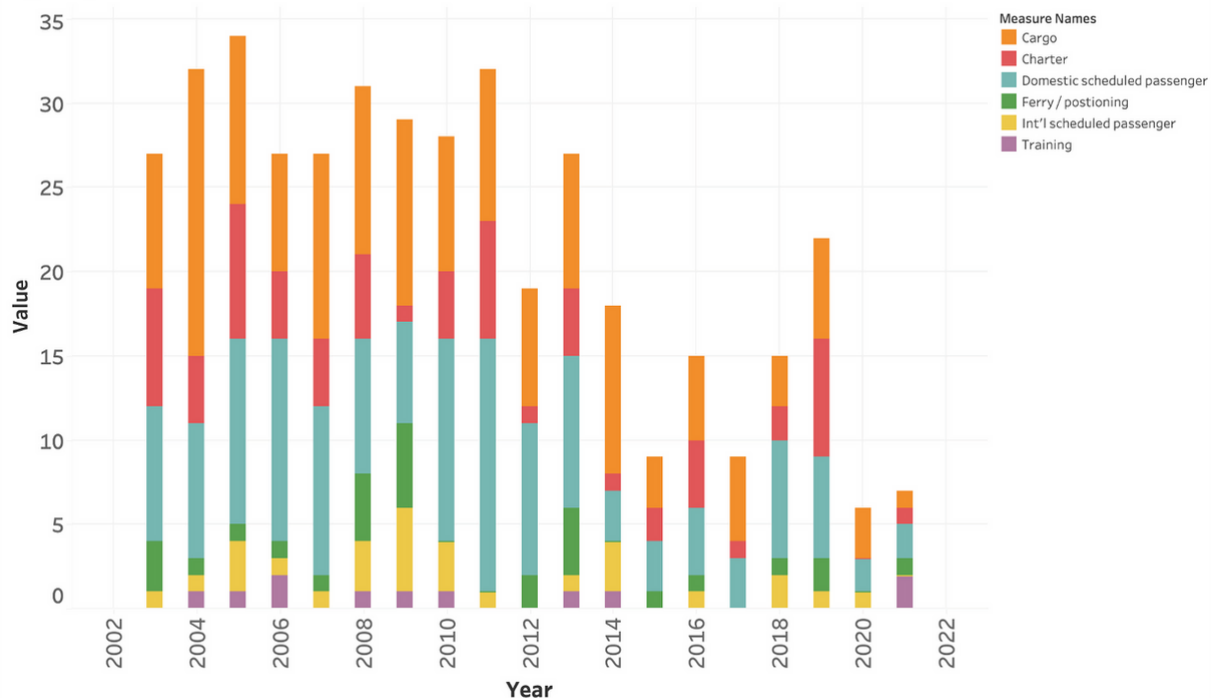
This is unfortunate that media reports completely ignored volume of air travel and did not consider fatalities happening in other mode of travel , primarily road travel.

I will begin with presenting some infographics to my readers to understand the facts

1. Flight Accidents/Fatalities by Nature

   Looked into fatalities between year 2003 – 2021 and found that other than passenger carrier, there are other nature of the flights like Cargo/Training/ Charter/ Ferry had more than 50% fatalities. There are 386 fatalities where Cargo/Training/Charter/Ferry contributes to 220 such fatalities.

Source : **Aviation Safety Network**
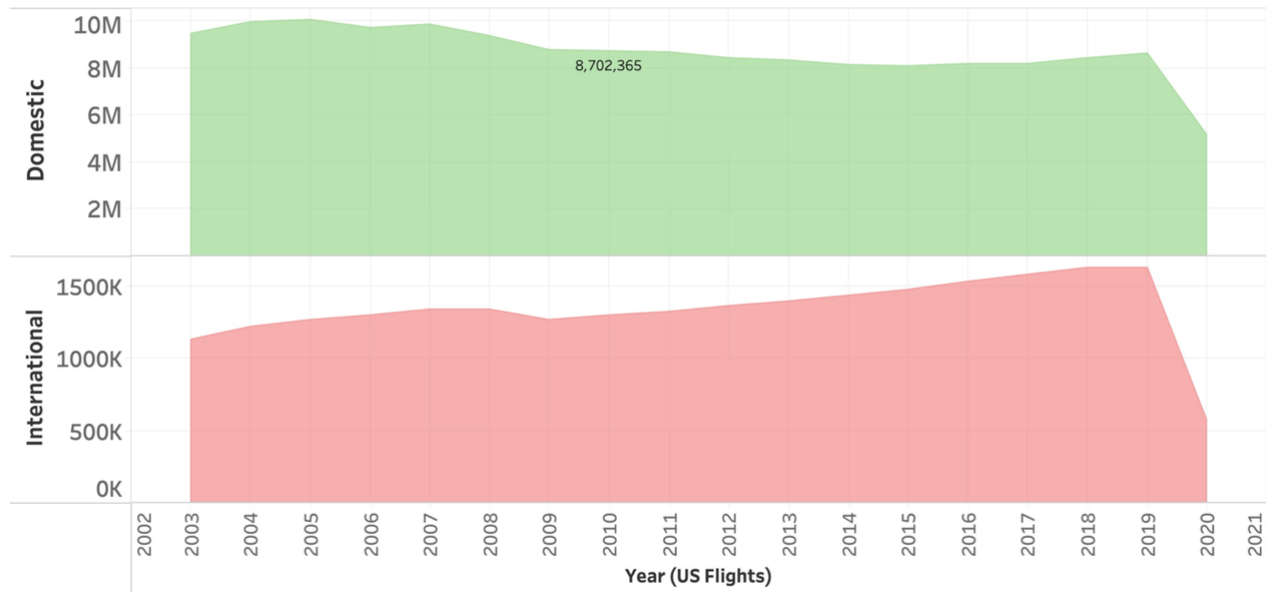FlightsByNature

The plots of Cargo, Charter, Domestic scheduled passenger, Ferry / postioning, Int'l scheduled passenger and Training for Year. Color shows details about Cargo, Charter, Domestic scheduled passenger, Ferry / postioning, Int'l scheduled passenger and Training.

2. **Volume of Flights**

There is an average **10 millions**+ per year flights in US region alone (domestic & International combined). I consider it an important data point to factor for air fatality ratio.

This is the most ignored statistic after road fatalities. We are looking at domestic and international flights operating in US region alone.   Imagine the volume of flights across the world. Based on "Airline Safety Report 2020" from IATA , average rate of air accidents are   1.38 accidents per million flights.

Source : **Bureau of Transportation Statistics**
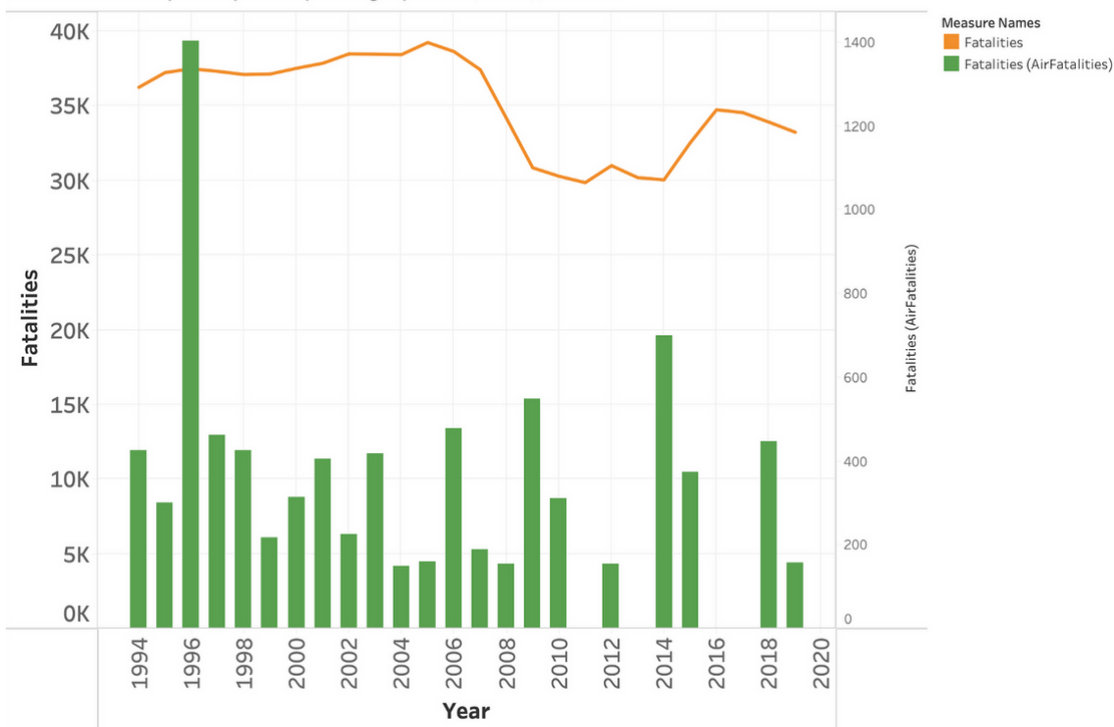**US Flights Domestic vs International**

The plots of sum of Domestic and sum of International for Year (US Flights).

3. Comparison with Road Fatalities

This is pretty obvious that road fatalities are way higher sand completely incomparable to air fatalities. Leaving few exceptions like 1996 or may be few more following years in early 2000 . road fatalities have been always around 35K.

Road vs Air Fatalities
Source : Fatality Analysis Reporting System (FARS), FHTSA

The trends of Fatalities and Fatalities (AirFatalities) for Year. Color shows details about Fatalities and Fatalities (AirFatalities).

Basis of my analysis was to understand following points:

1. What is the trend of air fatalities / accidents over last 20 years?

2. What are the various categories / mode / nature /location of the flights?

3. What is the actual volume of flights to compare, and bench mark the fatality percentage?

4. Most importantly, frequency/severity in comparison to other means like road travel.

Considering all the aspects of the study it seems that media outlets are probably biased and completely baseless.

I encourage my readers to consider following references to conduct their own fact check :

https://aviation-safety.net/statistics/

https://www.transtats.bts.gov/Data_Elements.aspx?Data=1

https://www.iata.org/en/pressroom/pr/2021-03-25-01/