

Analysing Aviation Accidents Trends



A dramatic scene of an aircraft crash in a forest. A large fire is burning, with thick, billowing white and grey smoke rising into the air. The background is filled with dark, dense trees. The overall atmosphere is somber and urgent.

Aviation accidents.

Though infrequent but have high fatality rates and long_term impacts

The objectives include:

1. How have accidents trended over time?
2. Which operators and aircraft types are most involved?
3. What countries report the most accidents?
4. How do fatalities vary by year and operator?
5. What was the cause of the accident?

Data overview and cleaning

Dataset had 23,000+ records from 1919-2023

The key columns were: date, year, type, operator, country, location, category of accidents and the fatalities.

The data had lots of null values especially for the fatalities which might mean the numbers were unknown.

Removed some entries which i wouldn't need in the visualization.

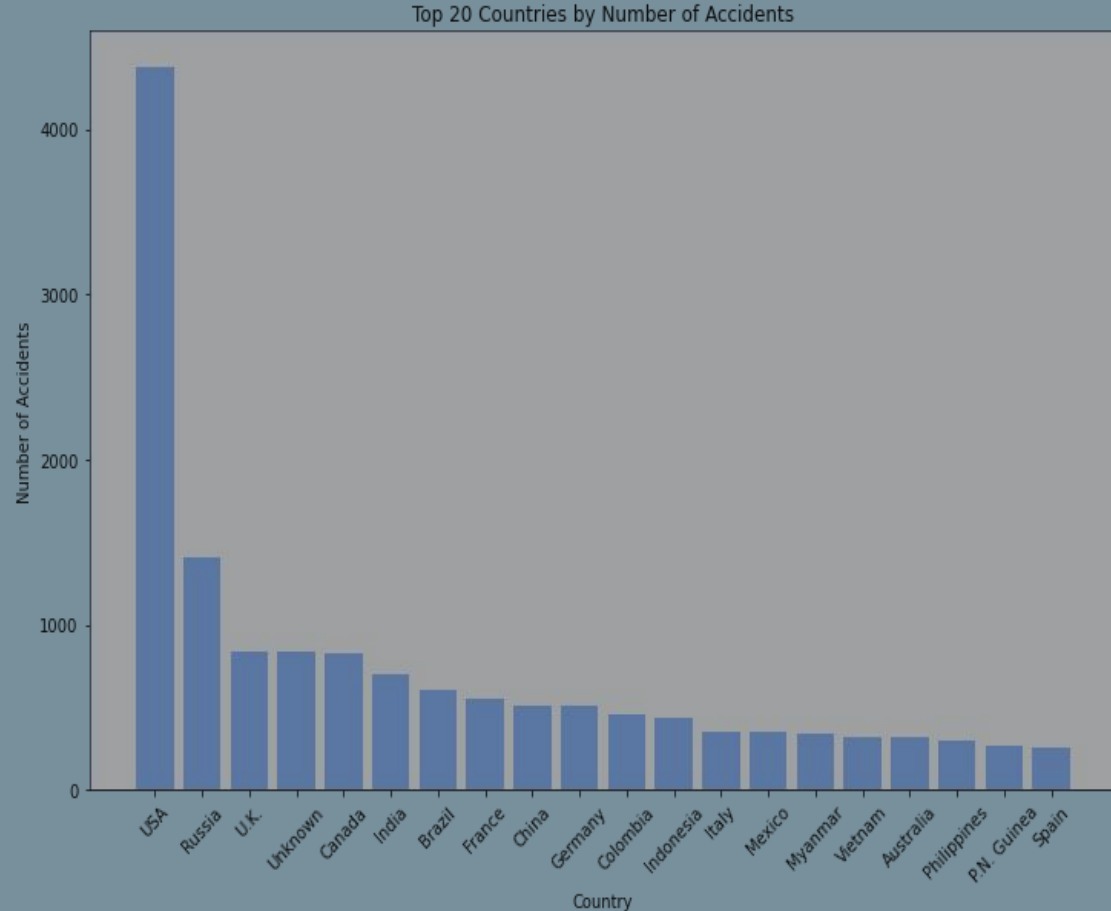
Replaced the null values with unknown where needed and converted some columns to other data types.

The Trends

What countries report the most accidents?

The graph shows the top 20 countries with the highest number of accidents.

USA had the highest number of accidents with more than 4000 accidents over the years.

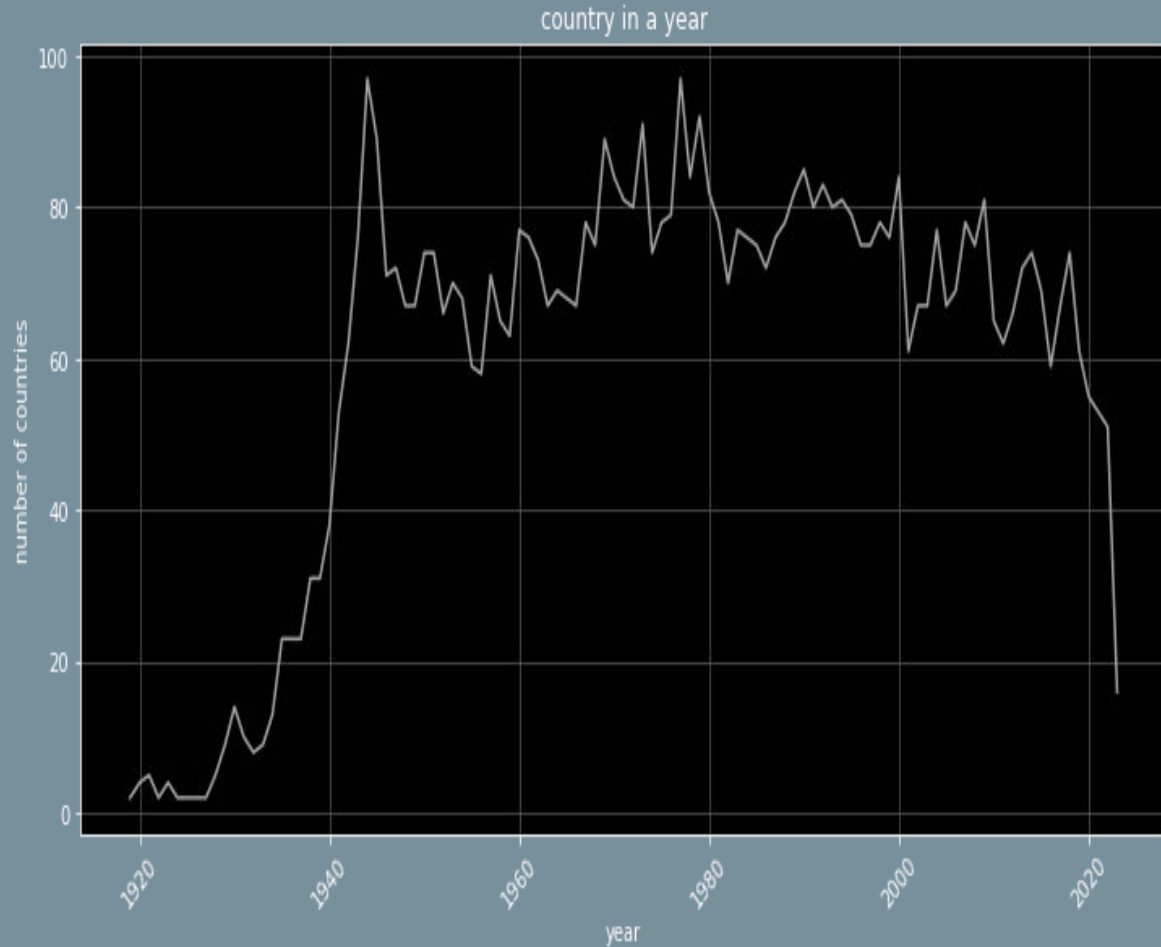


Accidents occurrence in the years

How the accidents trended over time.

The graph shows an increase of accident in the first years.

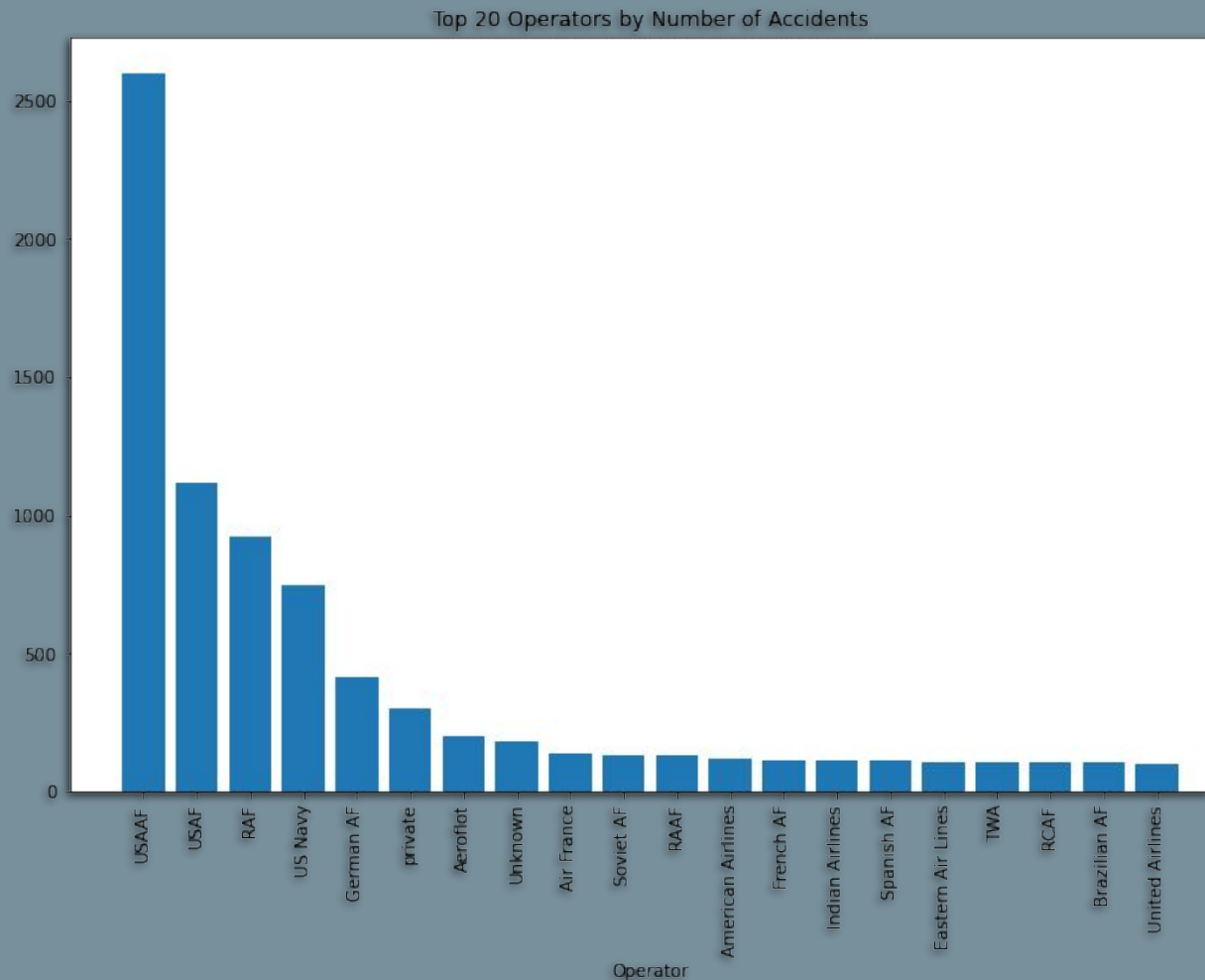
From 2020 the number of accidents have reduced from 70 to less than 20.



Top operators with the number of accidents

USAAF has the highest number of accidents throughout the years.

USAAF has also the highest number of fatalities due to the higher number of accidents followed by USAF.



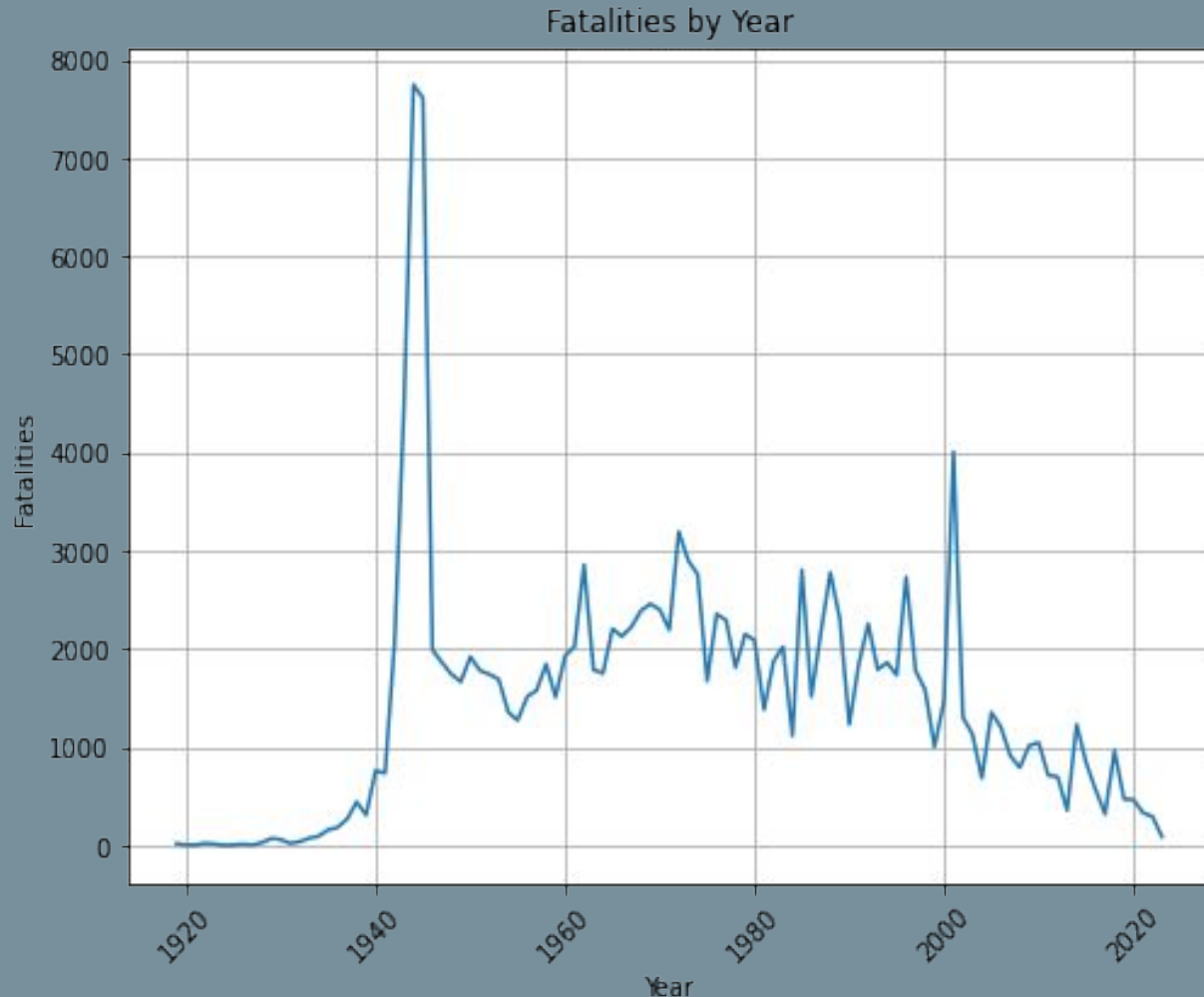
Fatalities by Year

How do fatalities vary by year?

The fatalities decreased in the years.

From 1940 the number of fatalities increased but the number started decreasing in the 1944.

From 2002 the number has decreased.



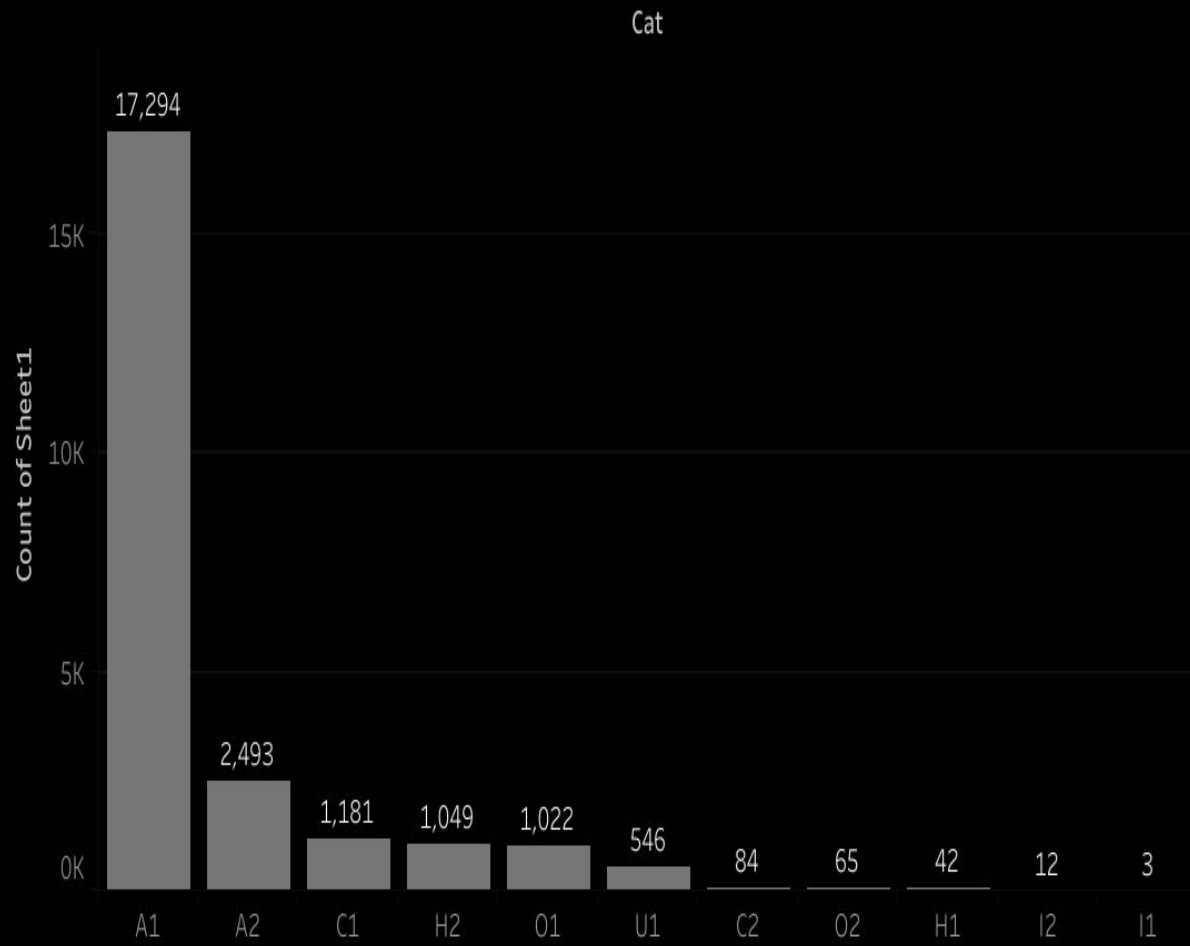
Fatalities per category

What was the cause of the accident?

The highest cause of accident was normal accident could be caused by the plane or pilots or natural factor.

Followed by criminal sabotage and hijacking.

Fatalities per category



Recommendations and Conclusions

Recommendations:

Stricter oversight for high-incident operators.

Improve safety measures in countries with recurring accidents.

Ongoing safety training and maintenance protocols for frequently used aircrafts.

More security and checking before boarding planes to avoid hijacking incidents.



Conclusions:

Aviation accidents have decreased over the years.

Fatalities are concentrated in fewer but severe incidents.

Certain operators and aircraft types appear more frequently.

