Aviation Data Analysis

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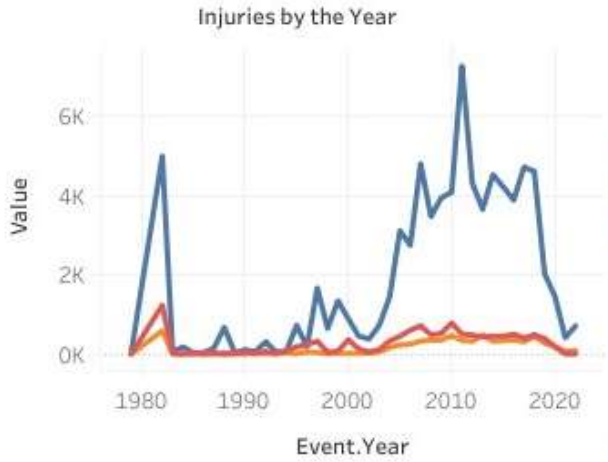
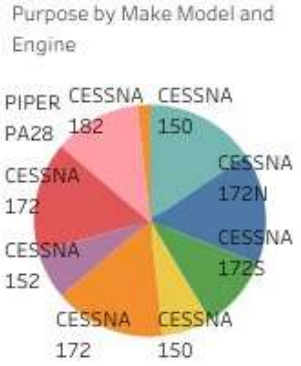
Dec. 24,2023

Aviation Dashboard





Summary

Descriptive analysis of the Aviation accident data demonstrated :

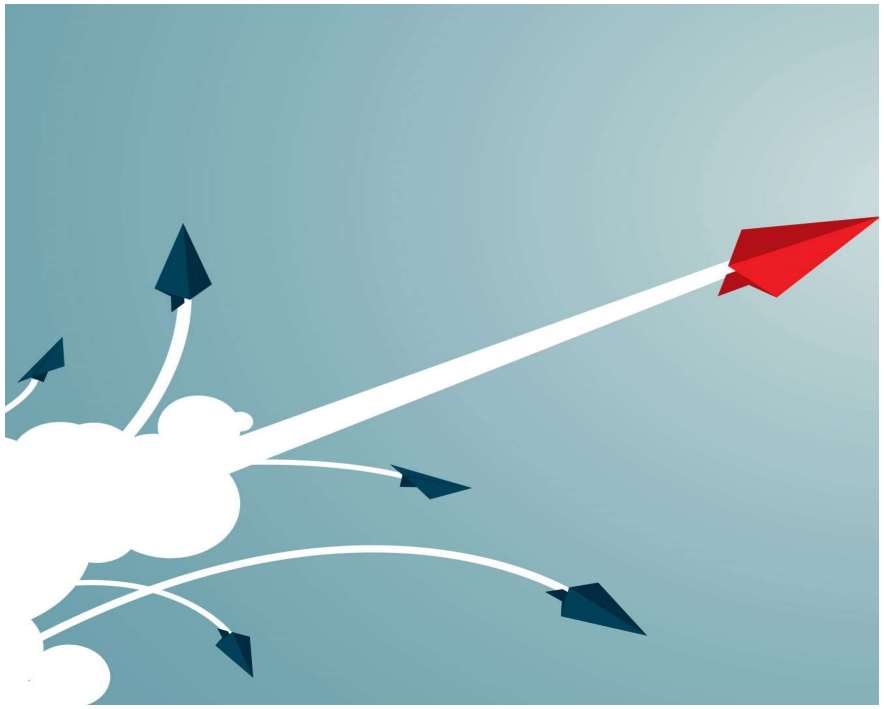
- Aircraft Make Category: Boeing produces the least risky aircraft.
- Aircraft Models: The Boeing 737 has the highest count of individuals without injuries.
- Aircraft Engine Types: Turbo Fan engines have the highest count of uninjured individuals.
- Primary Purpose of Flight (Business Enterprise): Personal and Instructional purposes are the most common. Cessna aircrafts are frequently used for these purposes.
- United States: It has the highest number of uninjured individuals in aviation accidents.

Outline

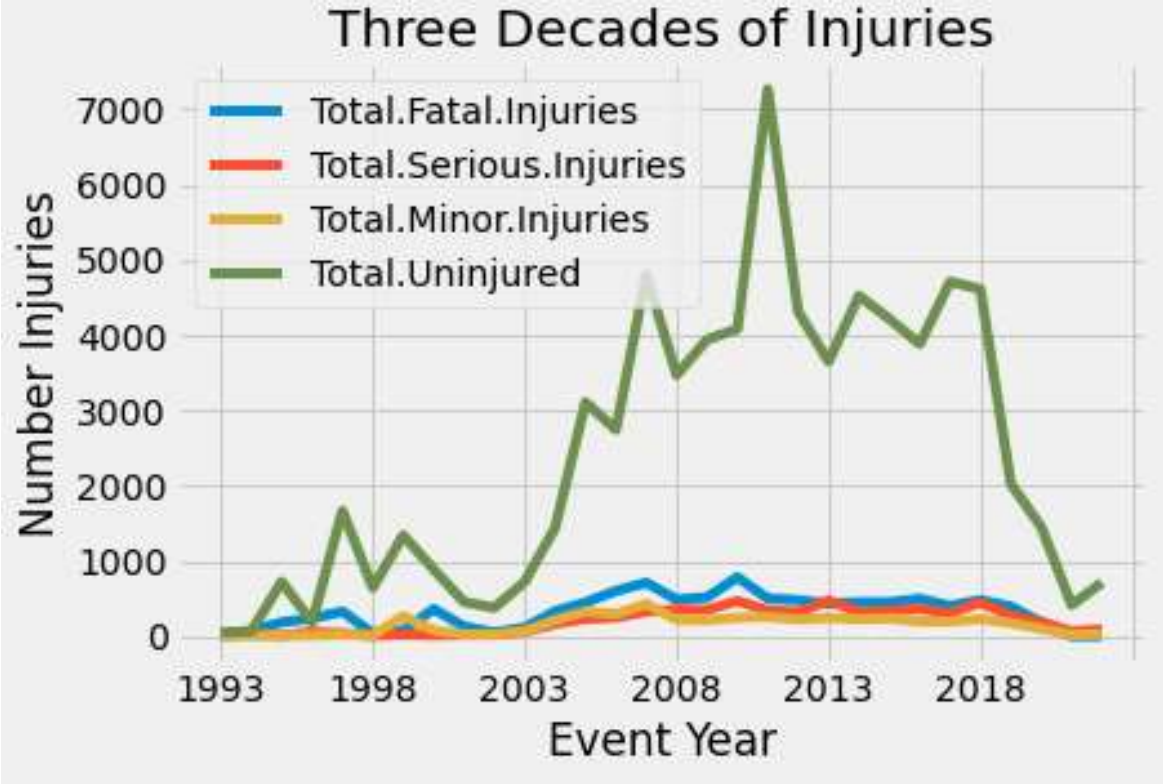
- Business Problem
- Data and Method
- Results
- Conclusions

Business Problem

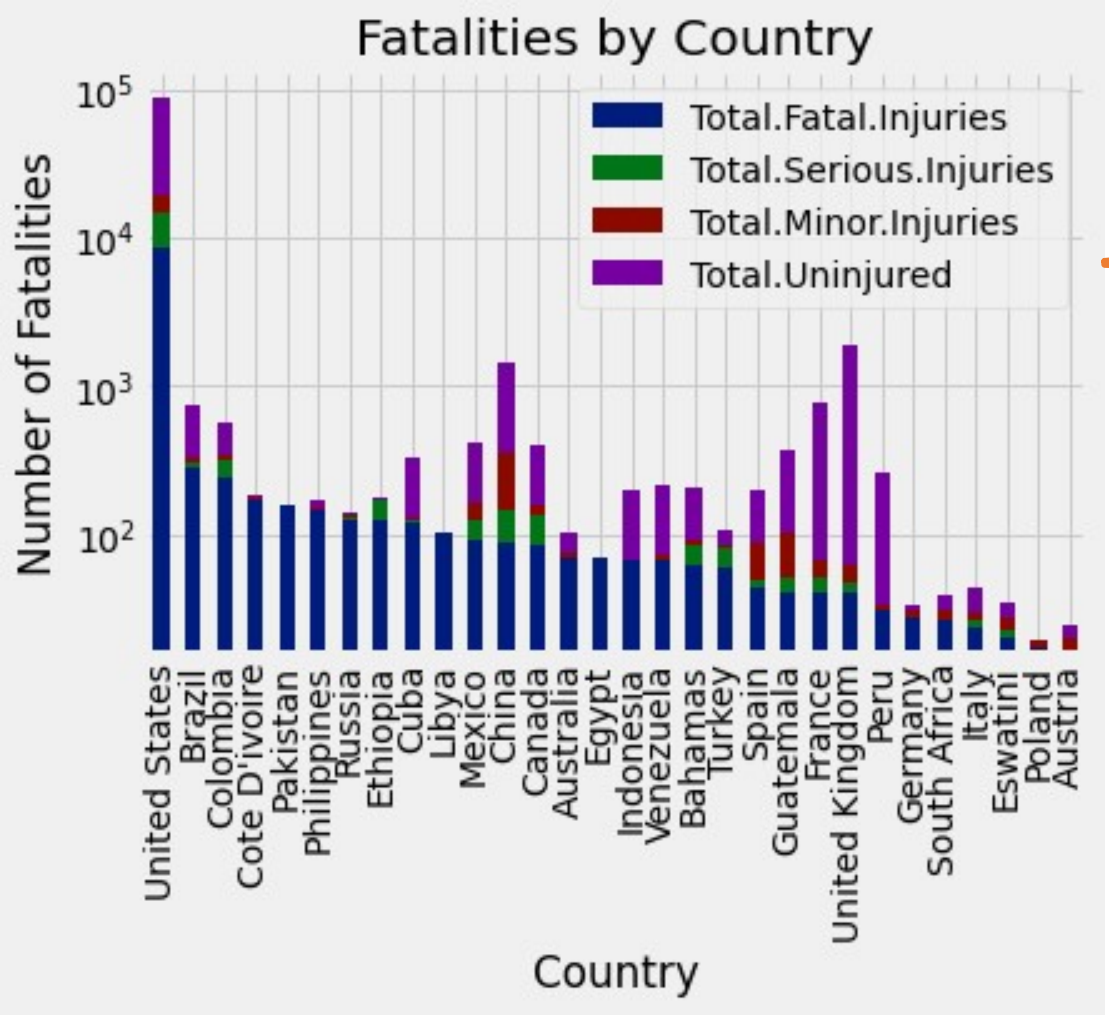
- Lowest risk aircraft
- Least human consequences
- Business enterprise - Primary purpose of flight



Data and Method

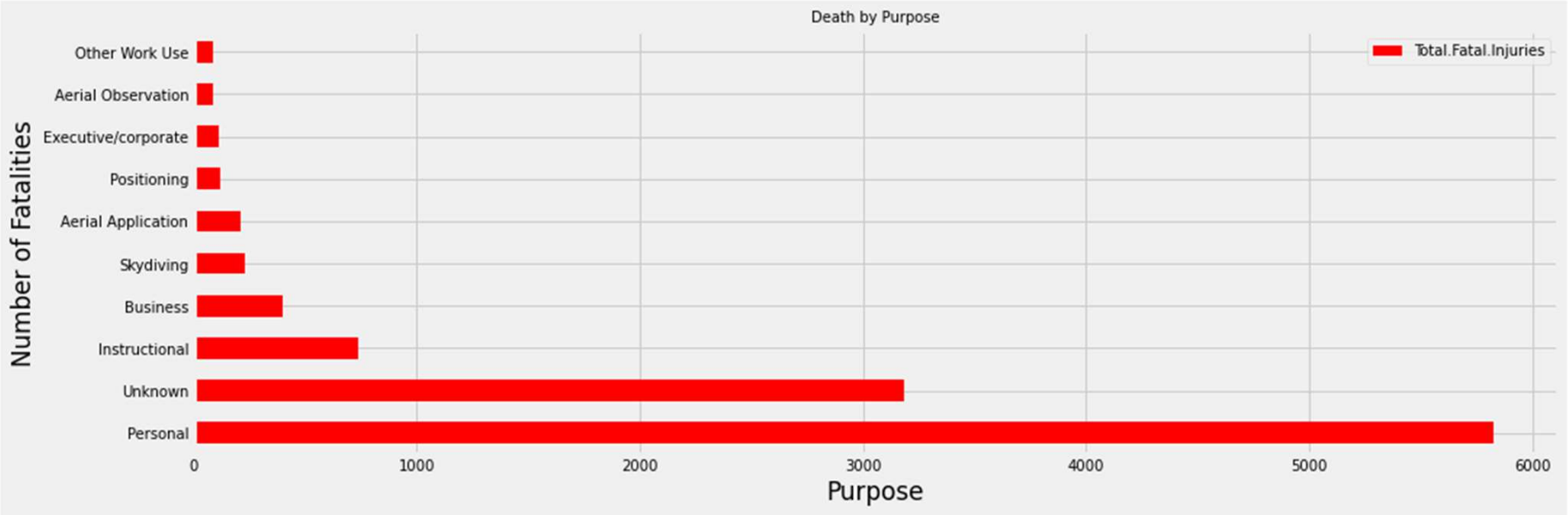


- **Human Cost by Year**
- Fatalities peaked in 2010
- Uninjured individuals increased peaking in 2011..
- Ratio of 8.8 uninjured to every fatality



Data and Method

- **Community Consequences**
- United States: most accidents followed by a distanced Brazil.
- United States :highest rate of fatalities, injuries and non-injured,
- 100% of Lebanon's and 97% Libya's records are fatalities



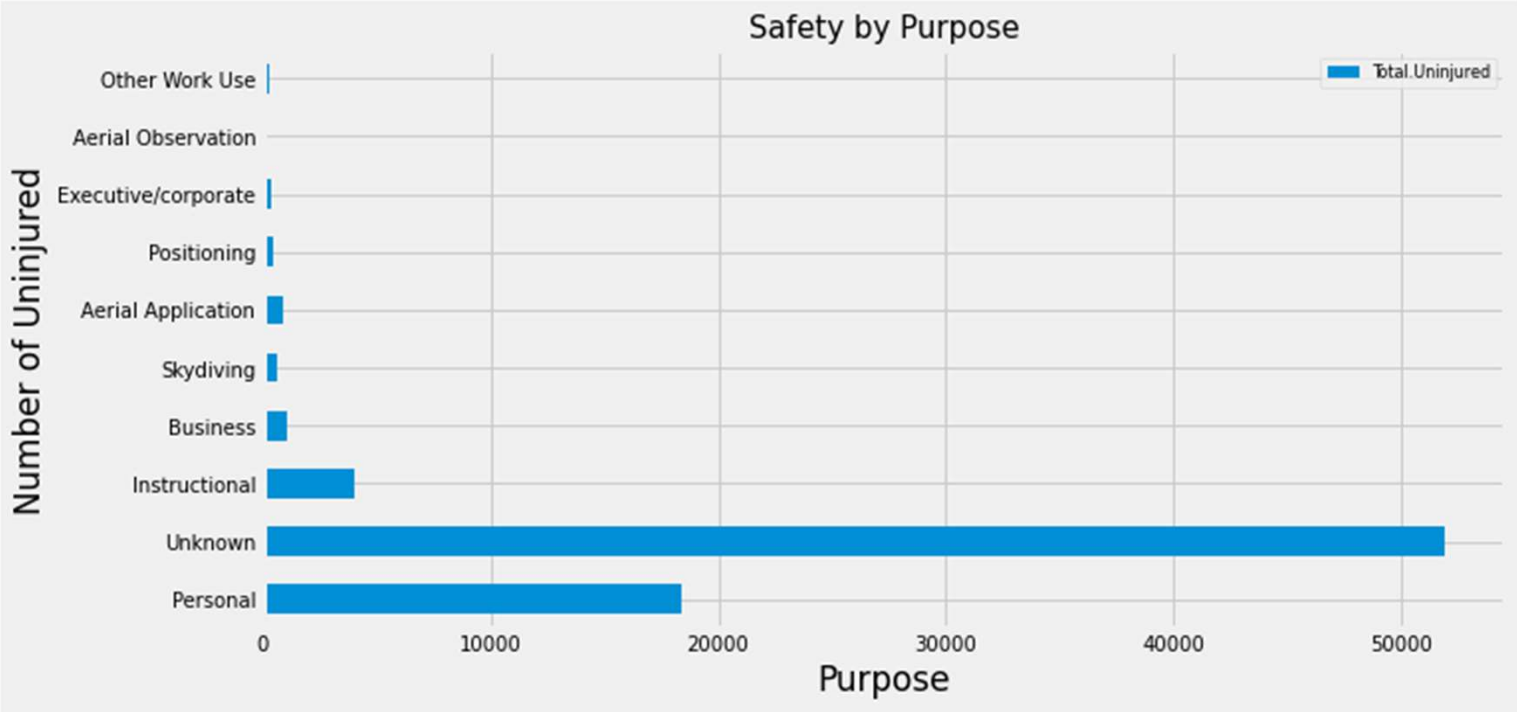
Data and Method

Personal and Social Consequences

Highest fatality rates

- Personal
- Instructional
- Unknown
- Skydiving

Data and Method

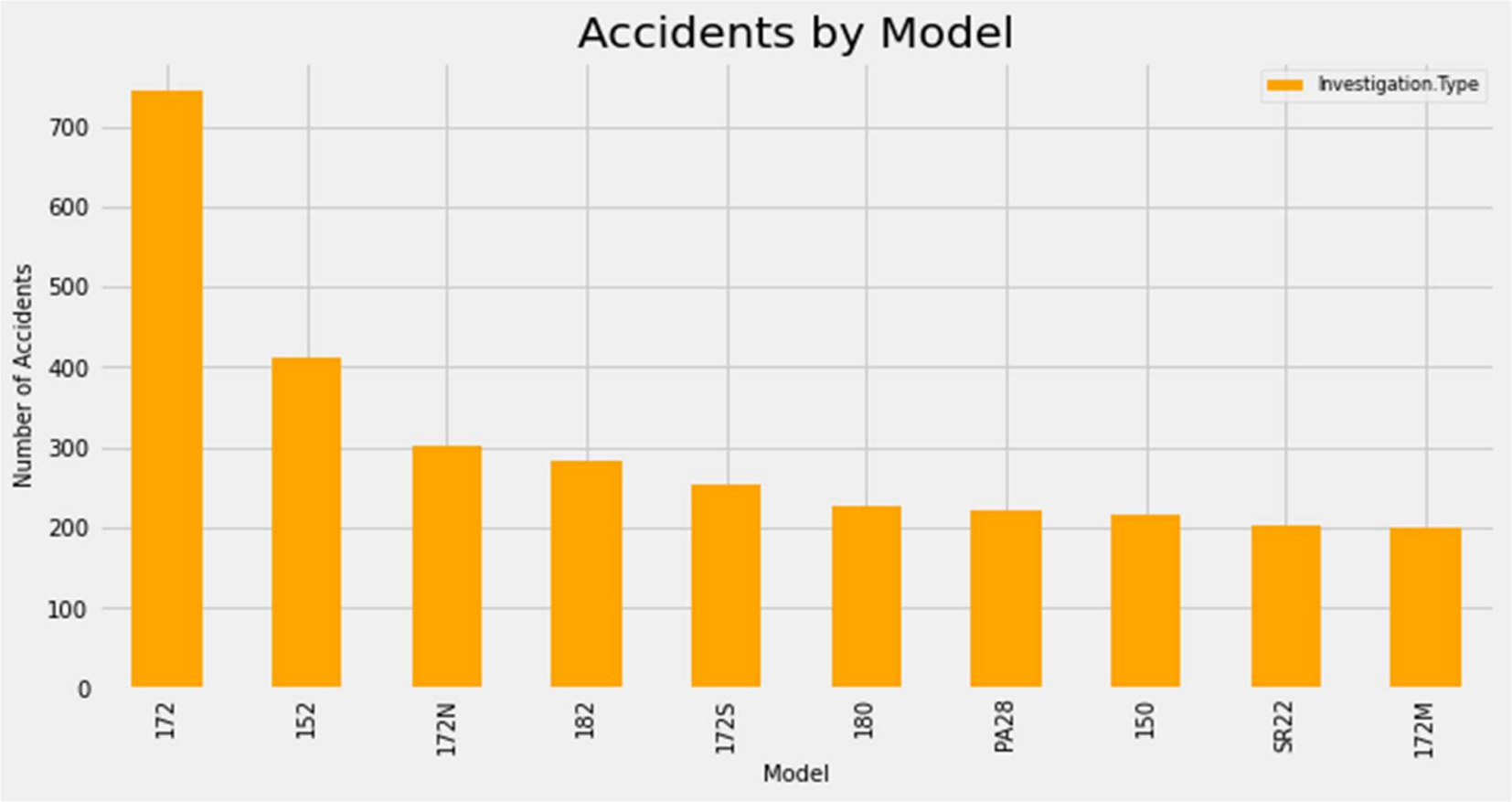


Personal and Social Consequences

Highest rates of Uninjured individuals

- Personal
- Instructional
- Business

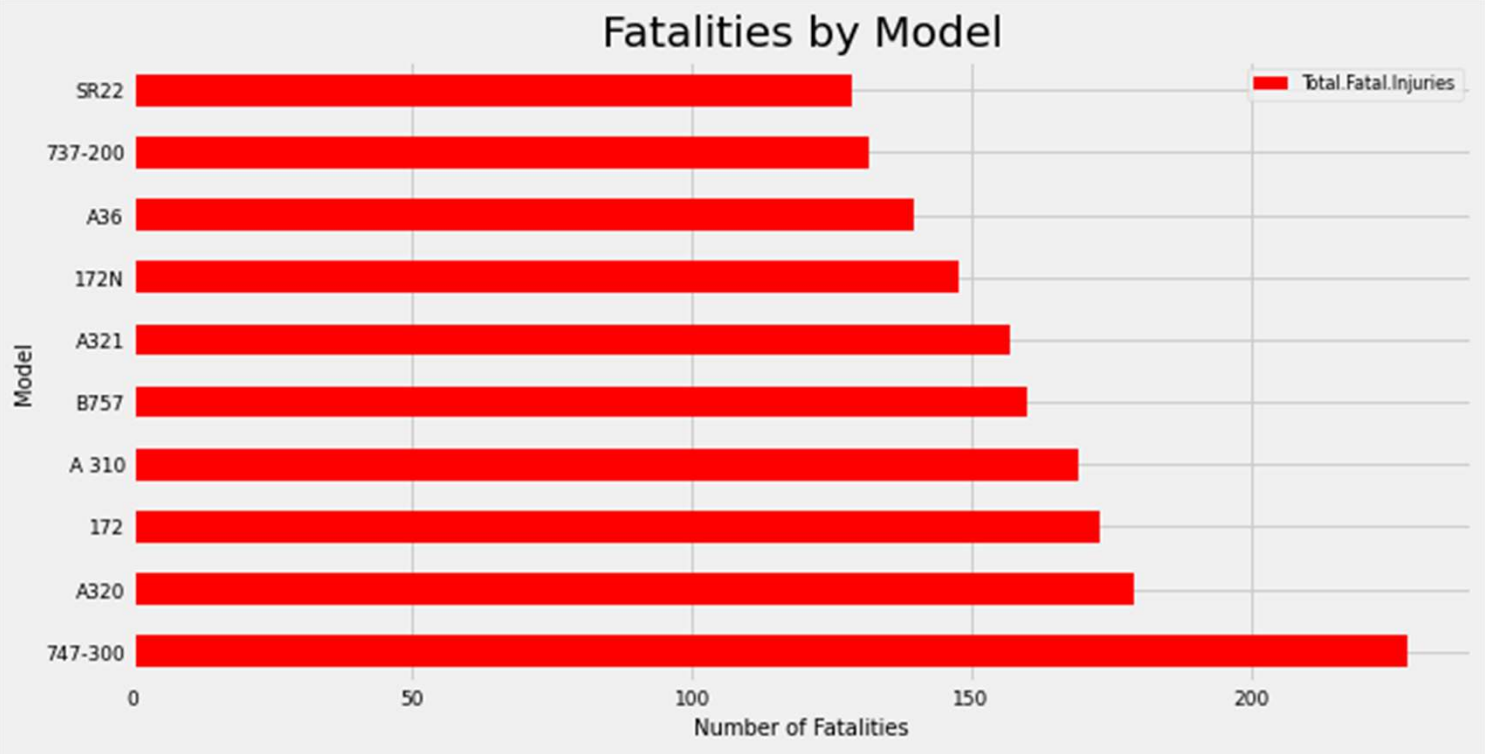
Data and Method



Highest accident rates

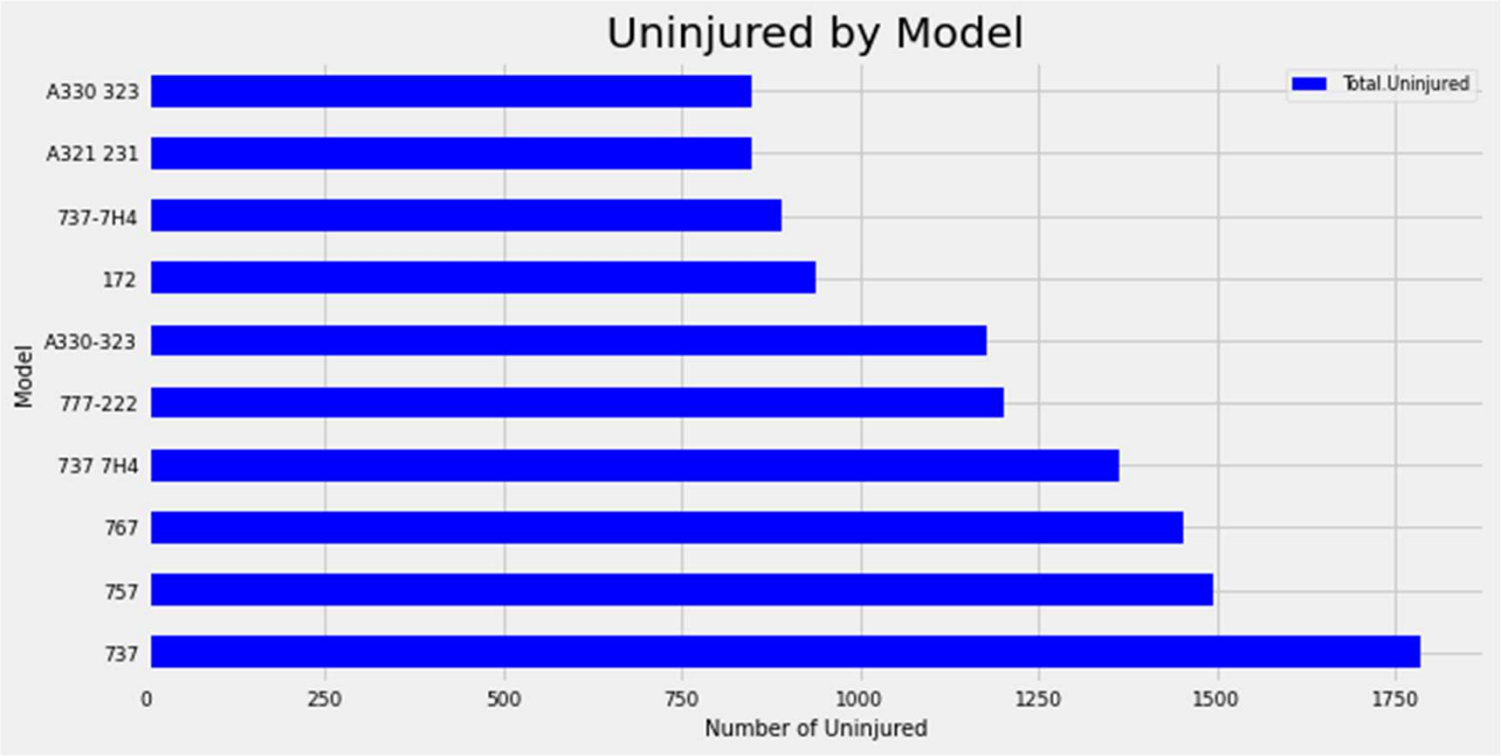
- 172,
- 152,
- 182,
- 172N,
- 172s.

Data and Method



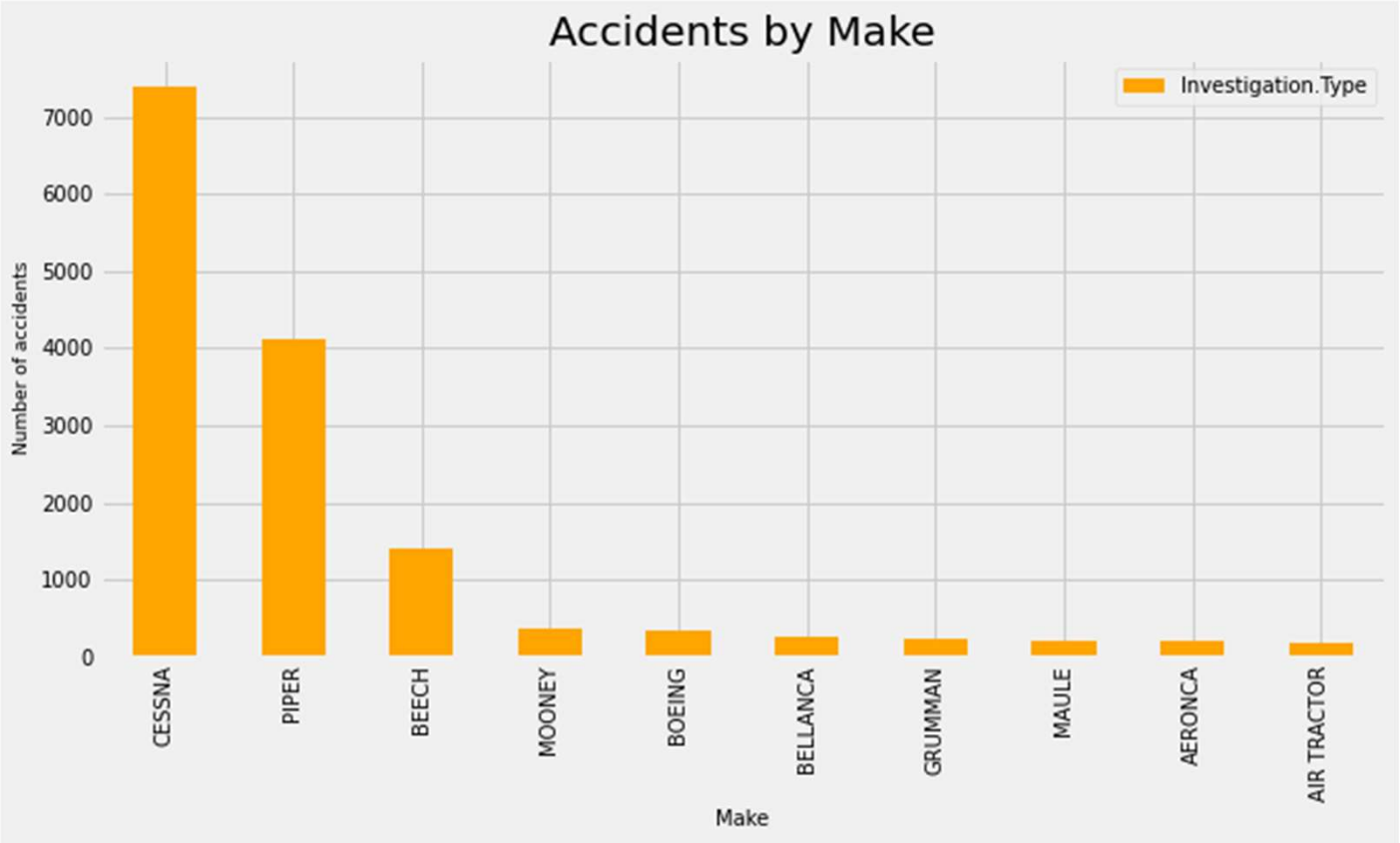
Model 747-300 recorded the most fatalities

Data and Method



Model 737 has the highest number of non-injuries to individuals

Data and Method

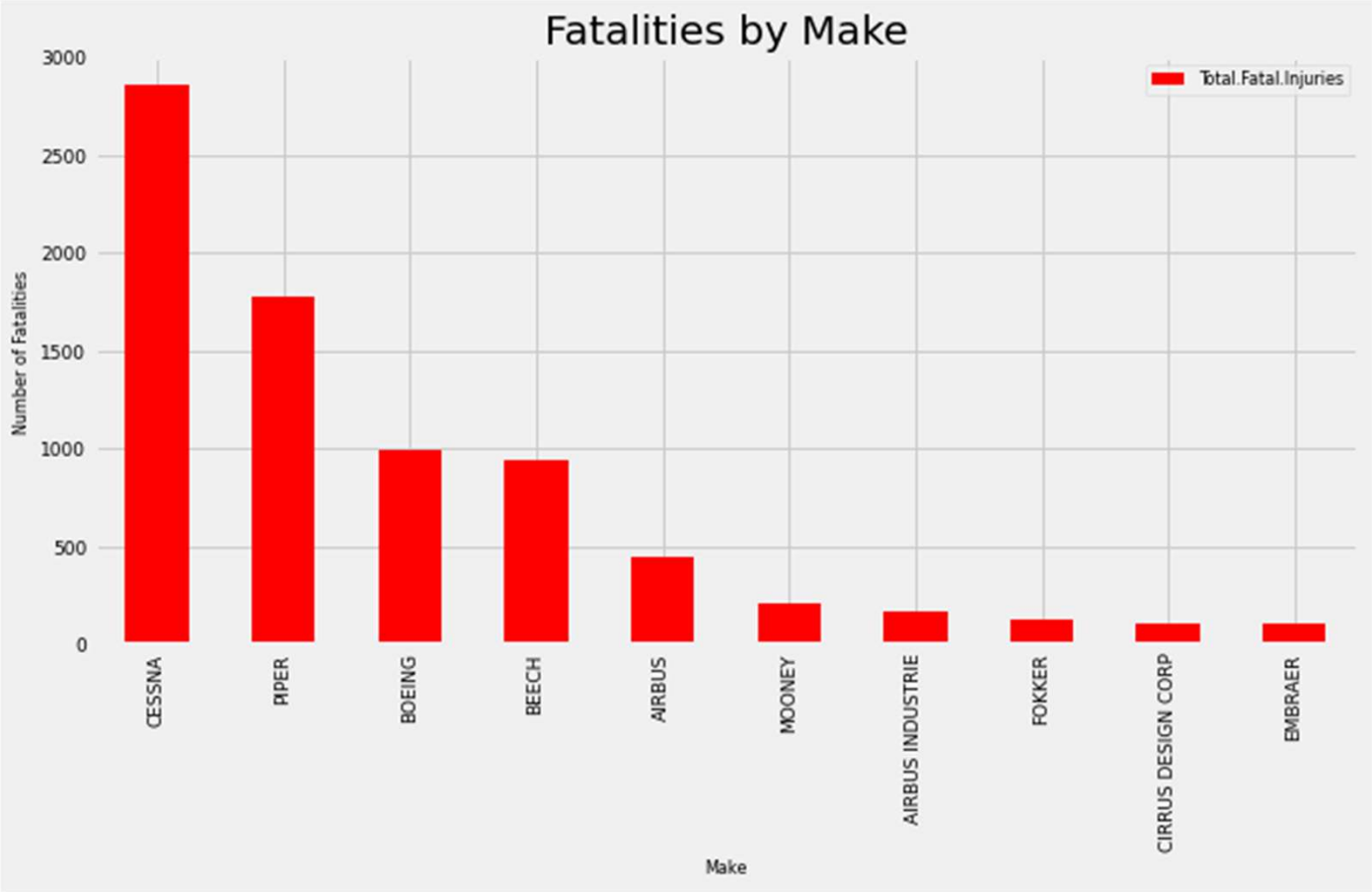


Impact on lives

Highest accident rates

- Cessna
- Piper,
- Beech,
- Mooney,
- Boeing

Data and Method

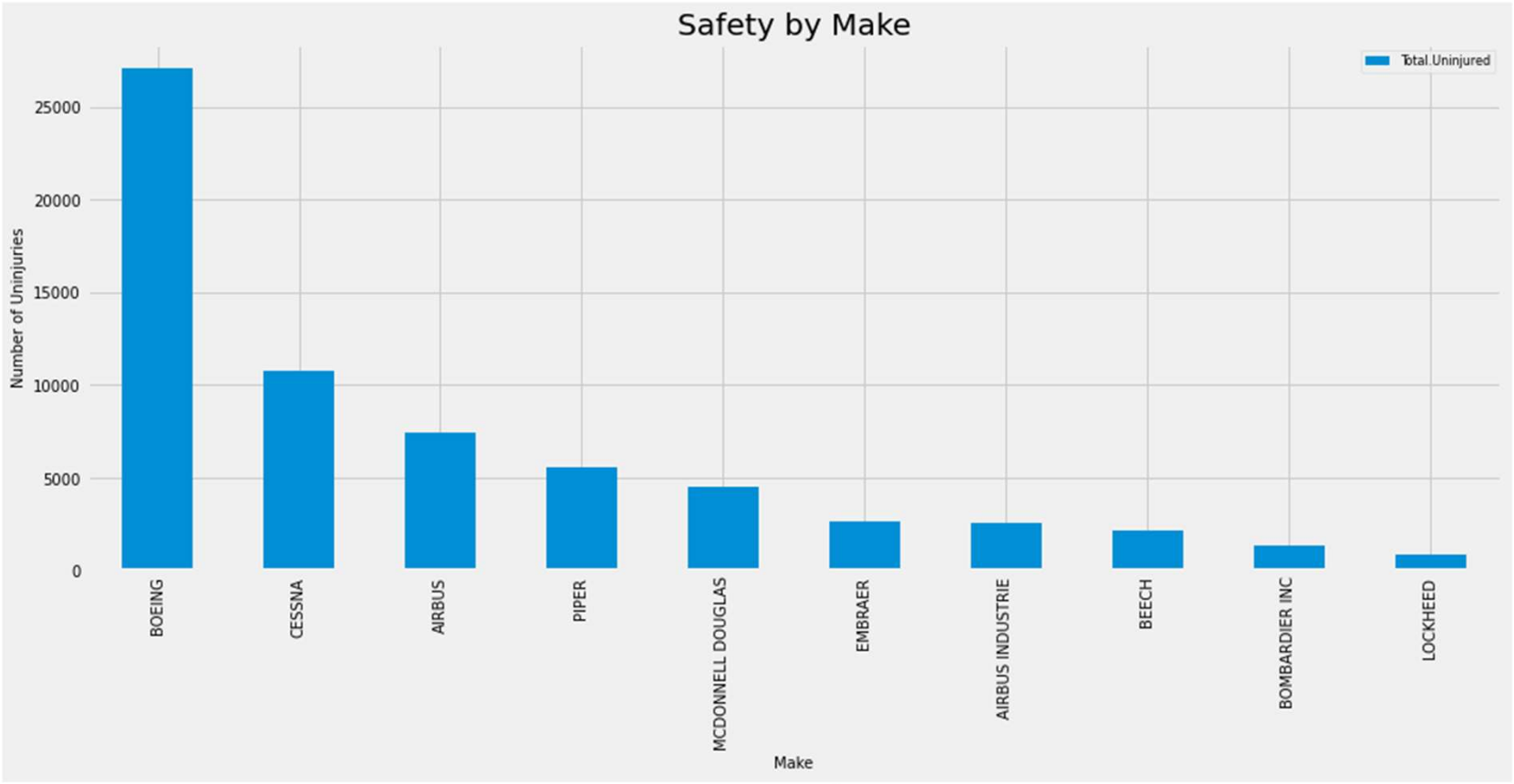


Impact on lives

Highest fatalities

- Cessna,
- Piper,
- Boeing,
- Beech

Data and Method

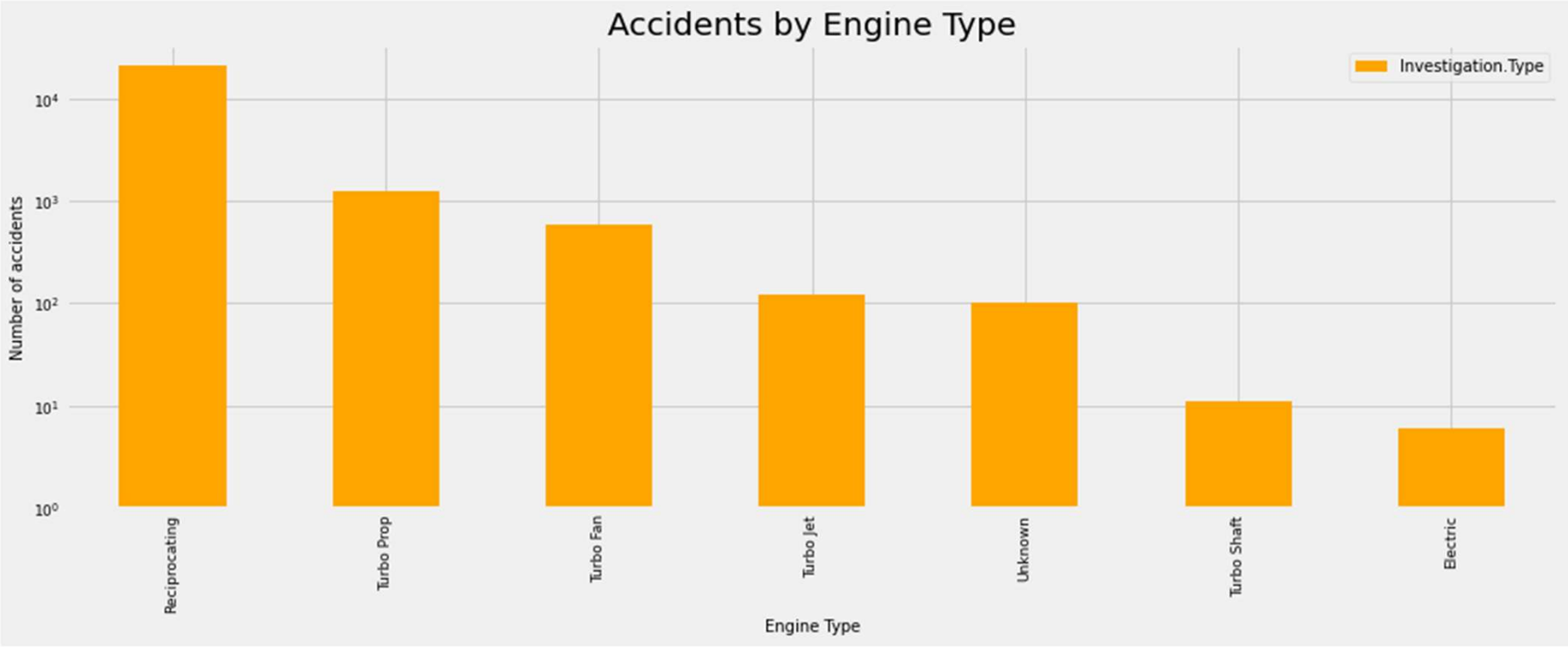


Impact on lives

Most uninjured

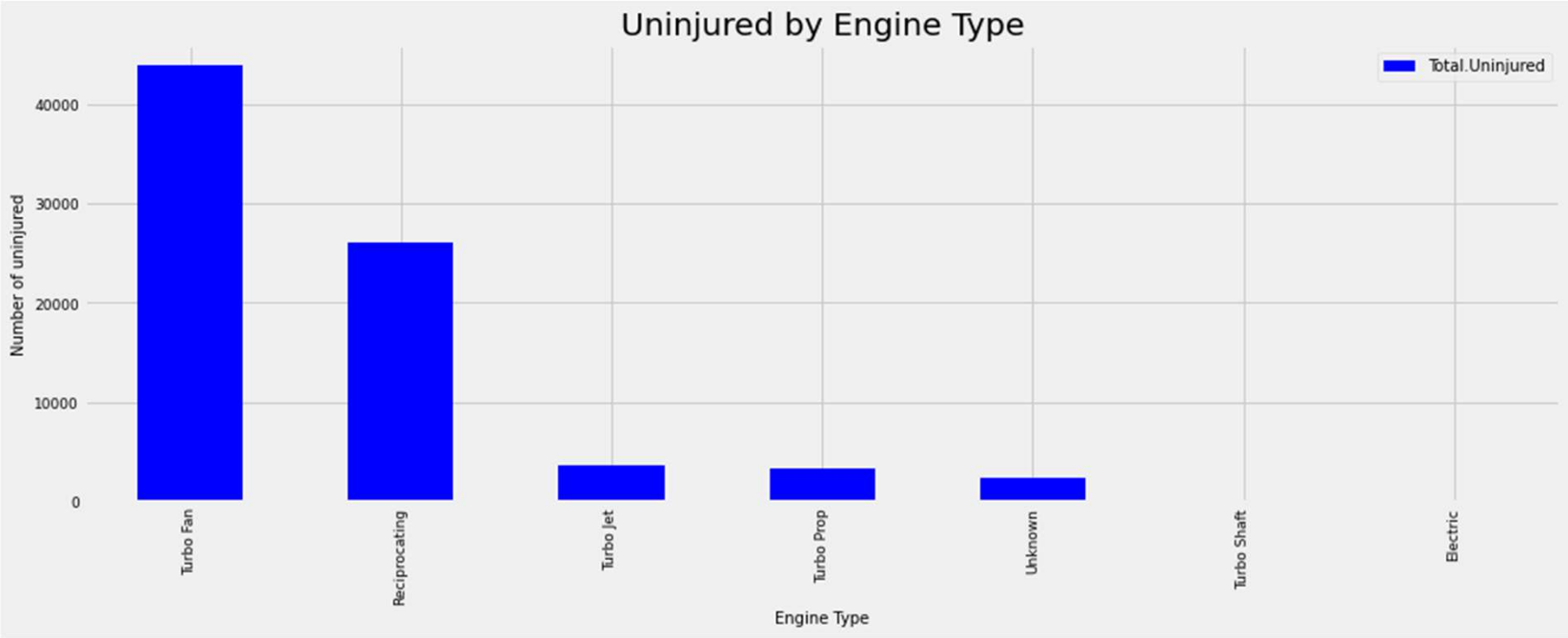
- Boeing

Data and Method



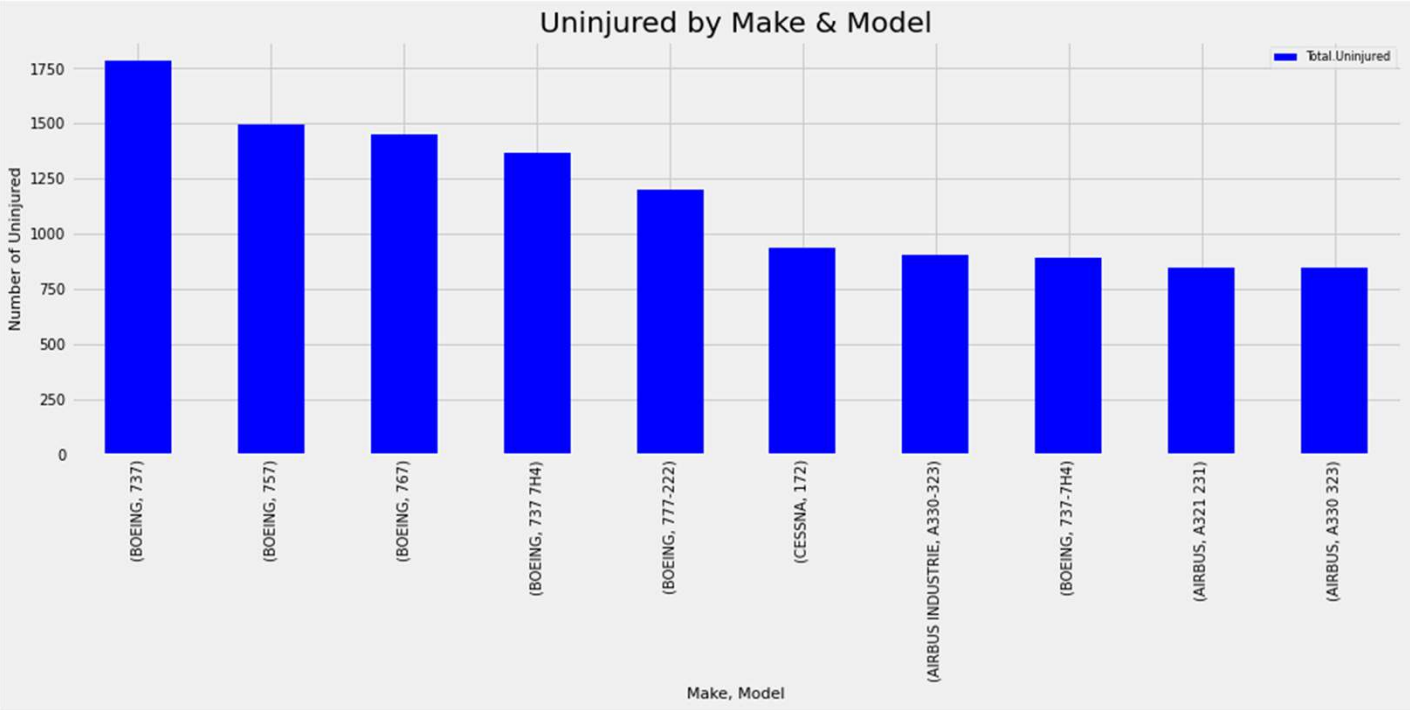
Reciprocating engines: highest number of accidents

Data and Method



Turbo Fan: highest count of uninjured individuals

Results

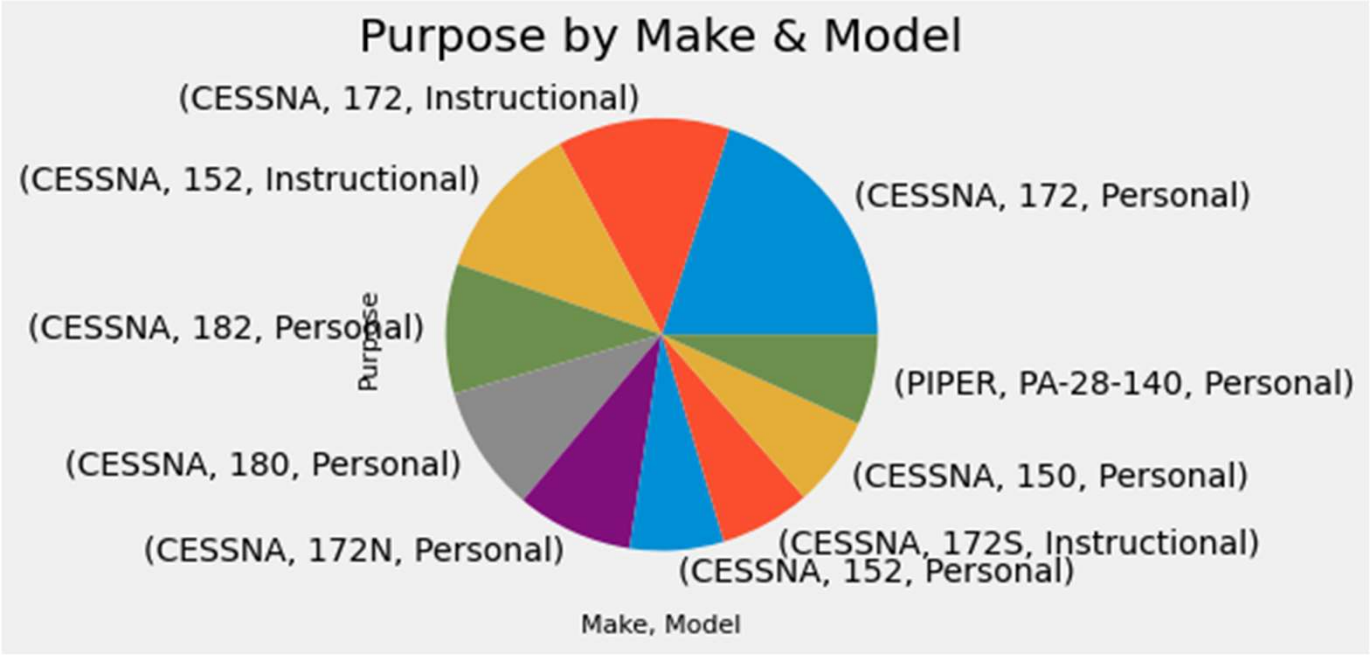


Consequences on human lives

Safest Make and Model

- BOEING
  - 737
  - 757
  - 767
  - 737- 7H4
  - 777-222
- Cessna
  - 172

Results



Impact on lives

Cessna models

- Personal
- Instructional

Conclusions

- Aircraft Make Category: Boeing produces the least risky aircraft.
- Aircraft Models: The Boeing 737 has the highest count of individuals without injuries.
- Aircraft Engine Types: Turbo Fan engines have the highest count of uninjured individuals.
- Primary Purpose of Flight (Business Enterprise): Personal and Instructional purposes are the most common. Cessna aircraft are frequently used for these purposes.
- United States: It has the highest number of uninjured individuals in aviation accidents.

Next Step

- Incorporate more variables to assess risk by airplane
- Examine factors such as geography and weather patterns to enhance analysis
- Predict undesirable outcomes by primary purpose of flight
- Use inferential statistics for more in depth analysis

Questions

Thank You!

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Column Name	Short Description	Meaning
InvestigationType	Type of Event	Refers to a regulatory definition of the event severity. The severity of a general aviation accident or incident is classified as the combination of the highest level of injury sustained by the personnel involved (that is, fatal, serious, minor, or none) and level of damage to the aircraft involved (that is, destroyed, substantial, minor, or none). The
EventDate	Event Date	The date of the event. Dates are be entered in the format: MM/DD/YYYY
Country	Event Country	The country in which the event took place.
AircraftCategory	Aircraft Category	The category of the involved aircraft. In this case, the definition of aircraft category is the same as that used with respect to the certification, ratings, privileges, and limitations of airmen. Also note that there is some overlap of category and class in the available choices.
Make	Aircraft Manufacturer's Full Name	Name of the manufacturer of the involved aircraft.
Model	Aircraft Model	The full alphanumeric aircraft model code, including any applicable series or derivative identifiers. For example, a 200 series Boeing 737 is entered as 737-200.
PurposeOfFlight	Type of Flying (Per_Bus / Primary)	If the accident aircraft was operating under 14 CFR part 91,103,133, or 137, this was the primary purpose of flight.

Reference

Risk & Insurance. (2021.). A True InsurTech Story: How Arch's Accident and Health Business Unit is Using Technology to Streamline the Quote-Bind-Issue Process. Retrieved from https://riskandinsurance.com/sponsored-a-true-insurtech-story-how-archs-accident-and-health-business-unit-is-using-technology-to-streamline-the-quote-bind-issue-process

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