Aircraft Safety Analysis

Overview and Recommendations

Summary

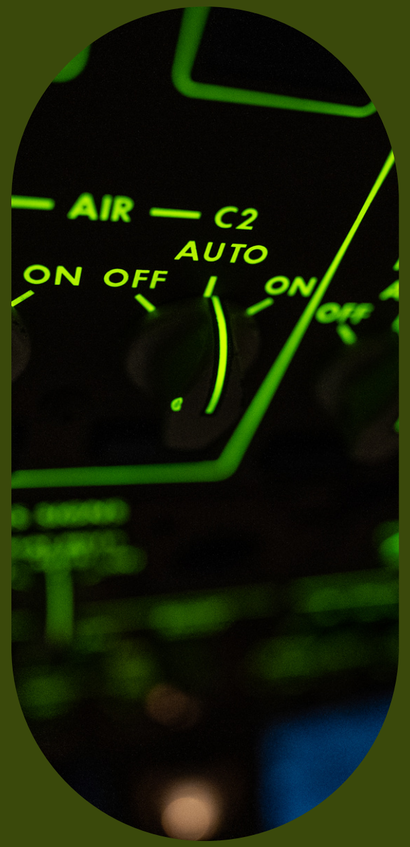
Descriptive analysis of aviation accident data from the National Transportation Safety Board provides a path to the safest aircraft investments.

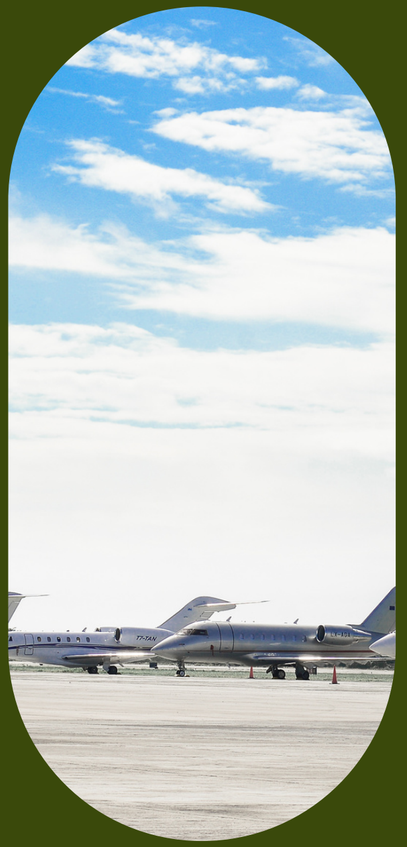
Frequency of Accidents

Magnitude of injuries and fatalities

Correspondence of accidents with aircraft make and engine size

Table Of Contents



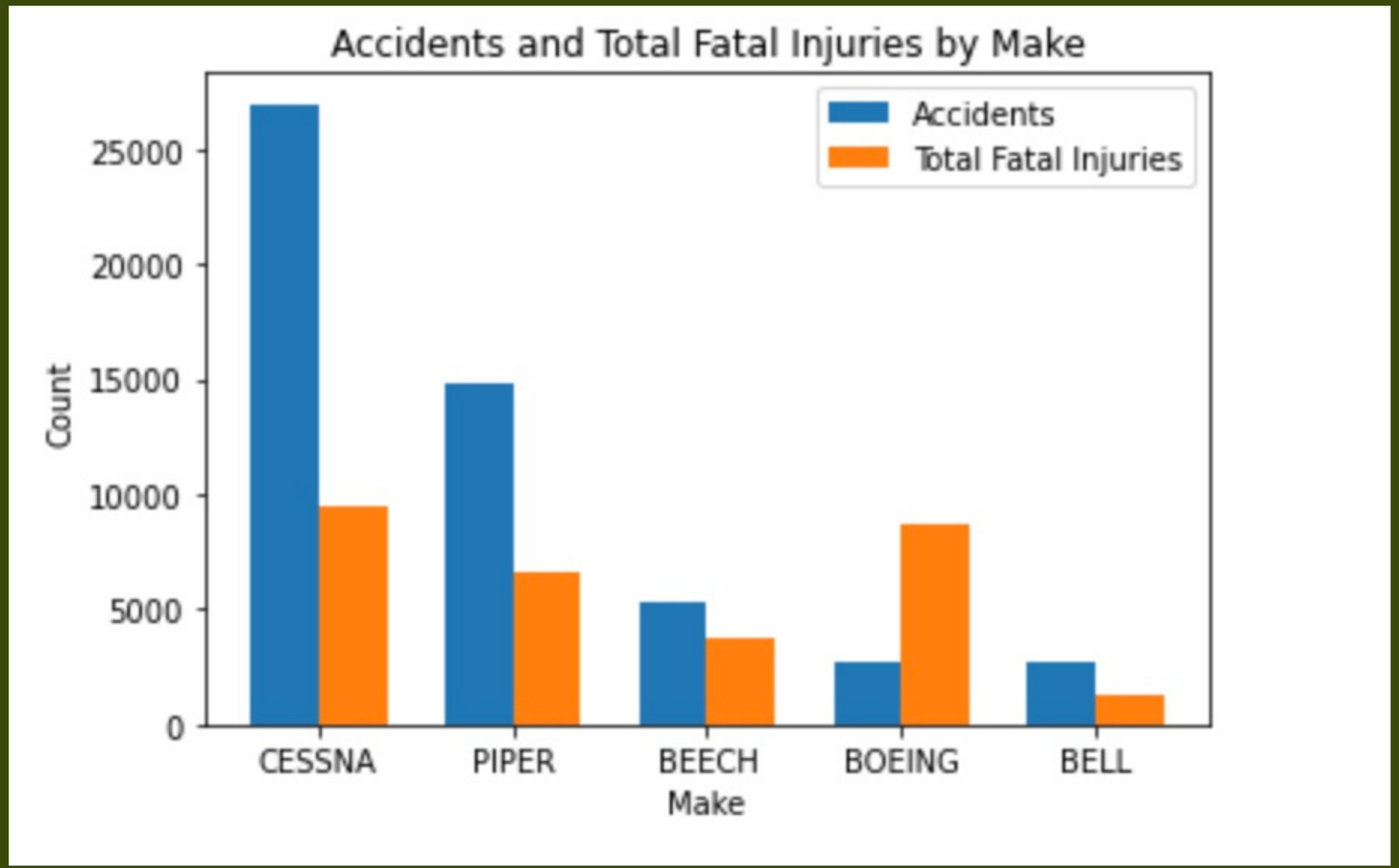


Business Problem

- Purchase and operate airplanes
- Optimize safety
- Ensure highest quality

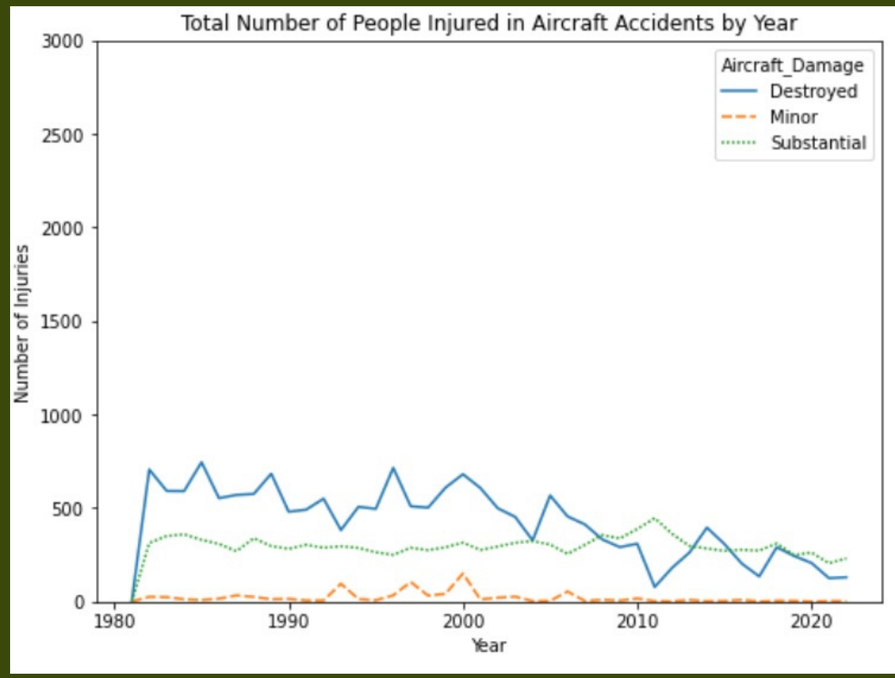
Data & Methods

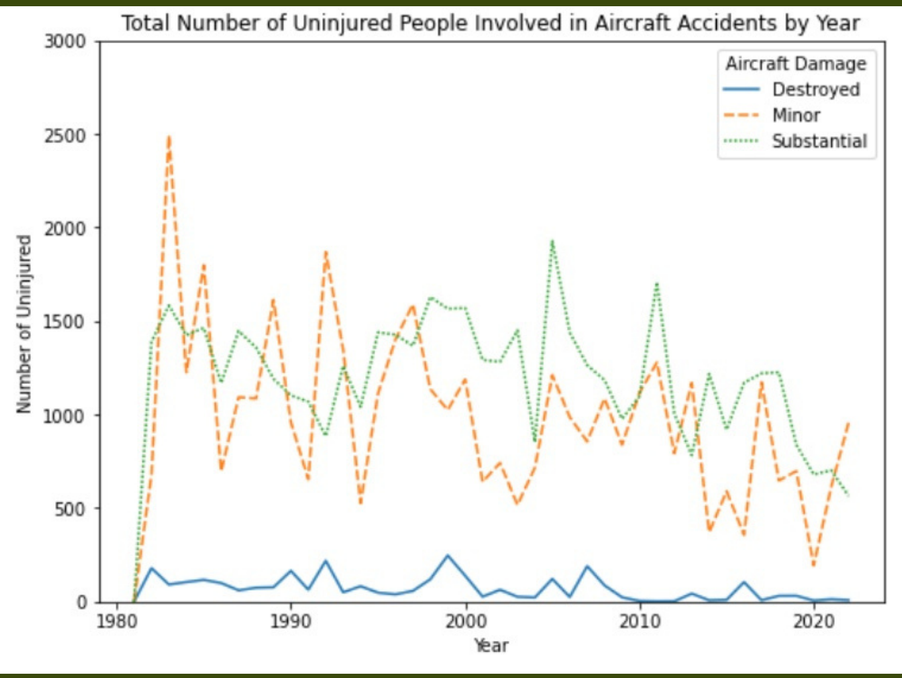
- Top five make companies' data from 1980-present
- Includes total accidents and fatalities



Data & Methods cont.

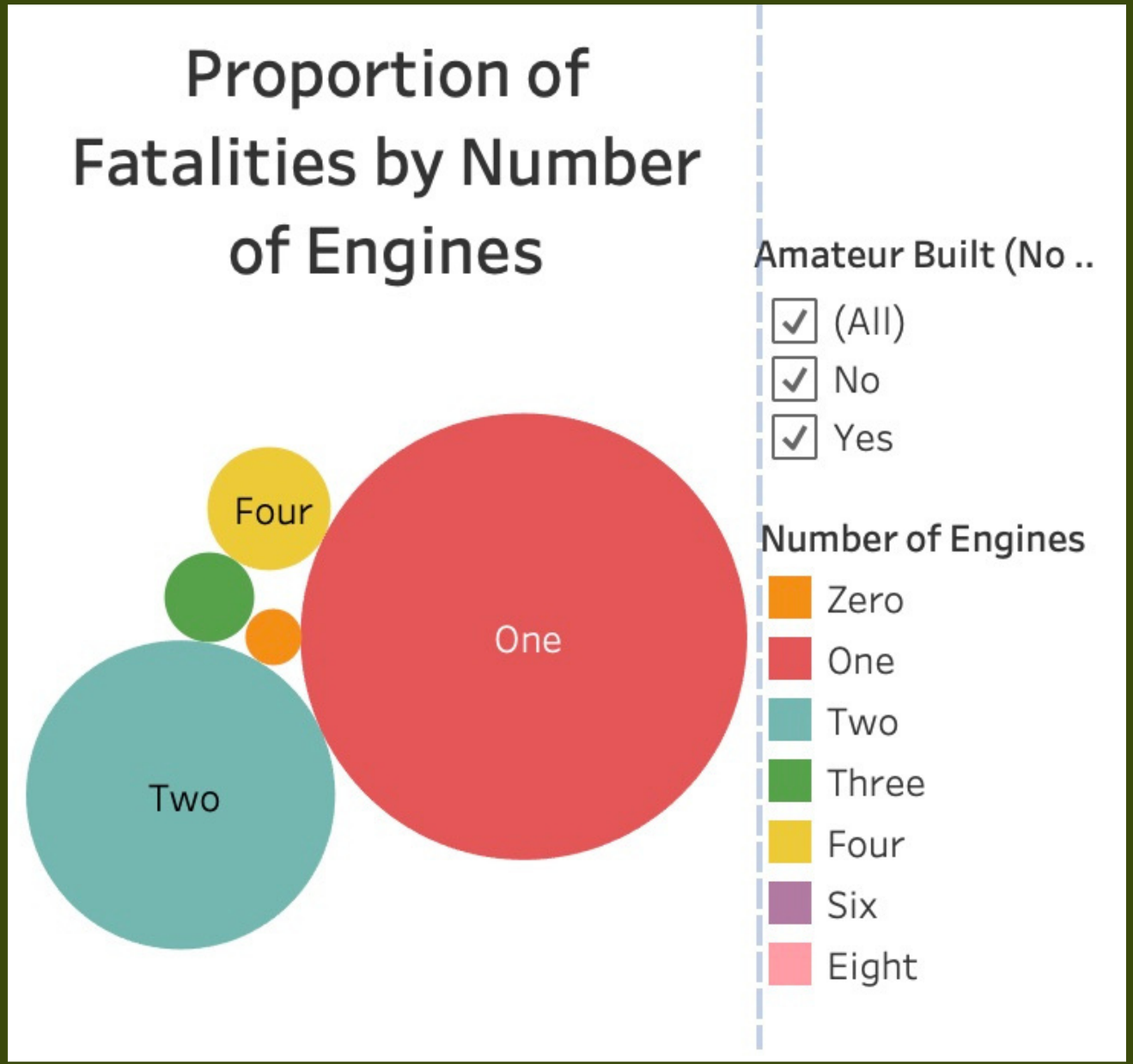
- Number of injured people vs number of uninjured people by year
- Separated by severity of aircraft damage





Data & Methods cont.

- Proportion of total fatalities separated by number of engines
- Includes whether or not aircraft was amateur built

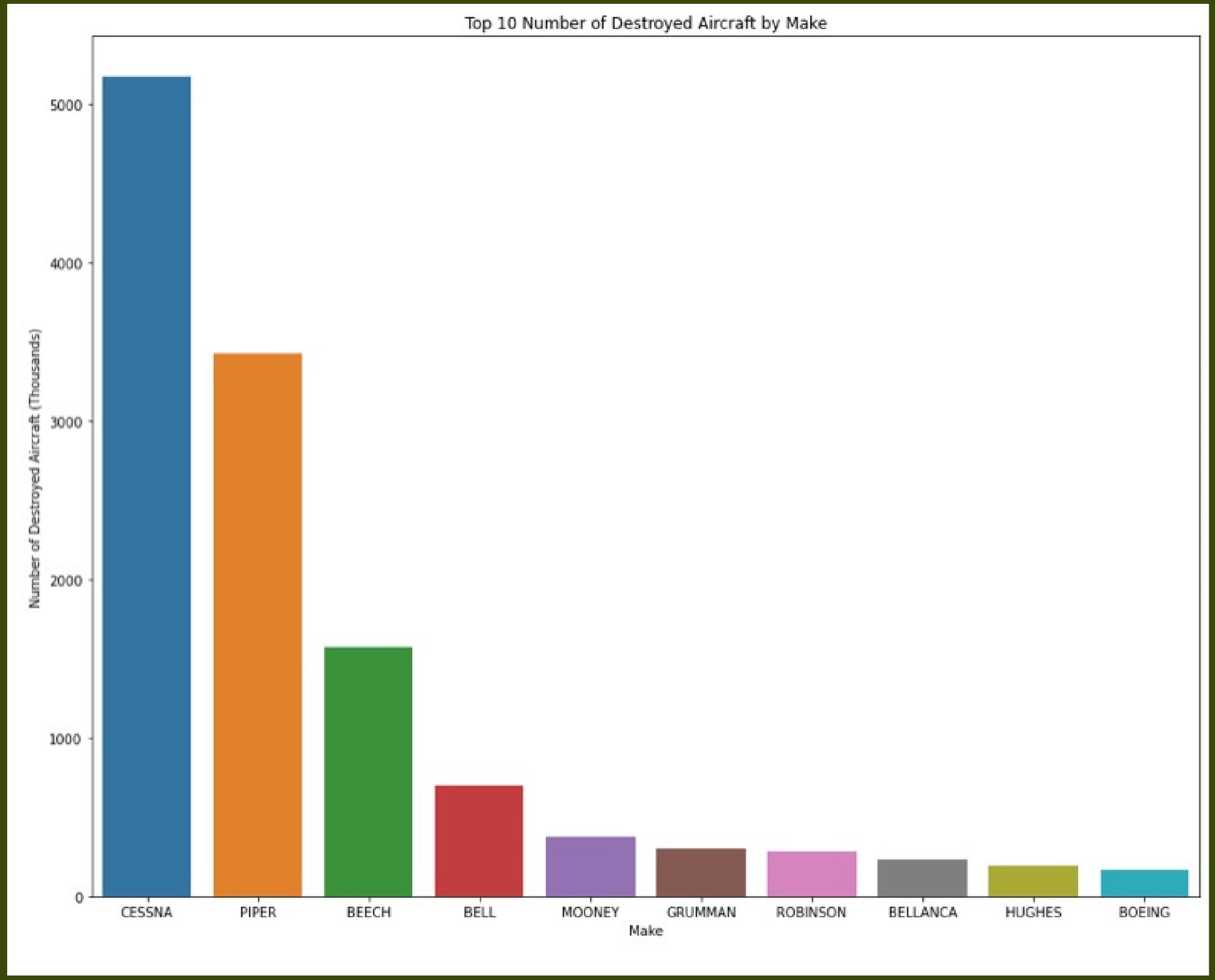


Results

- Cessna has the most reported accidents and fatalities
- Despite placing fourth in accidents, Boeing nearly ties Cessna in total fatalities and its accident to fatality ratio is the worst of any top company
- Strong correlation between fatalities and smaller number of engines
- Most fatalities caused by one engine aircraft, both amateur and non-amateur built

Results cont.

- Strong correlation between fatalities and complete destruction of aircraft
- Cessna has the most destroyed aircraft
- Bellanca & Hughes have far less destructive accidents



Conclusions

- Avoid Cessna and Boeing
- Avoid aircraft with less than six engines
- Focus on companies with less destructive accidents like McDonnell Douglas and Bell

Next Steps

- Investigate the typical number of engines on larger companies' aircraft

- Determine the overall number of aircraft designed by companies like Cessna and their typical flight path, as this may explain their number of accidents

Thank you!

- Questions?
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