

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

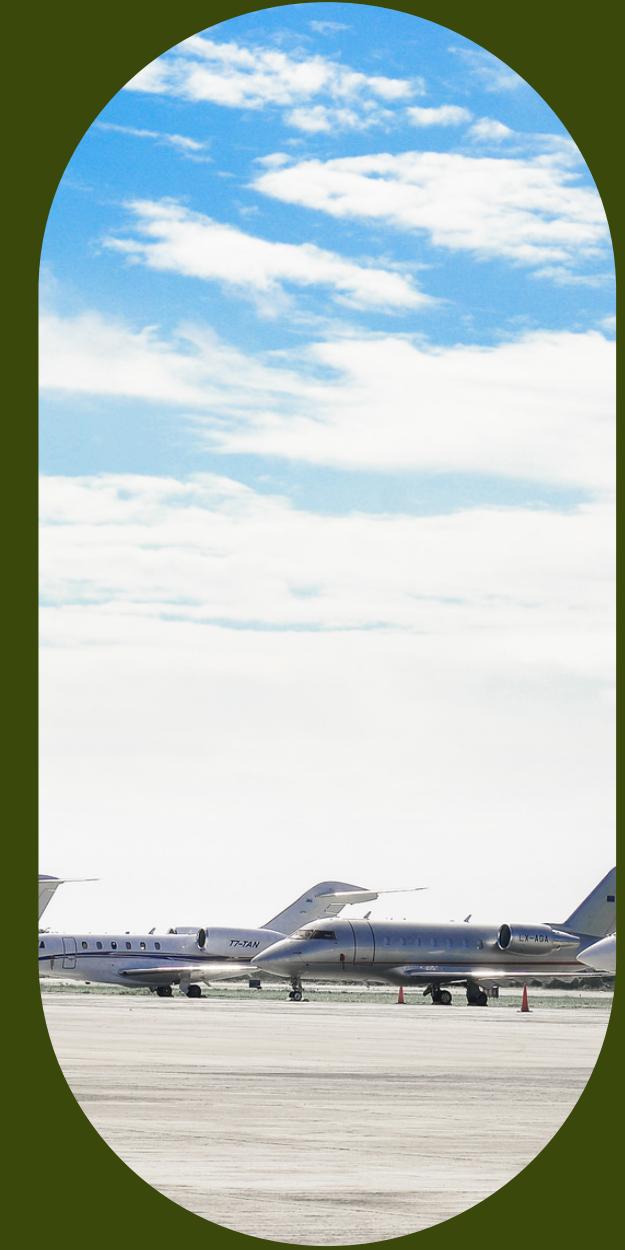
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**Business
Problem**



**Data
Analysis**



Recommendations

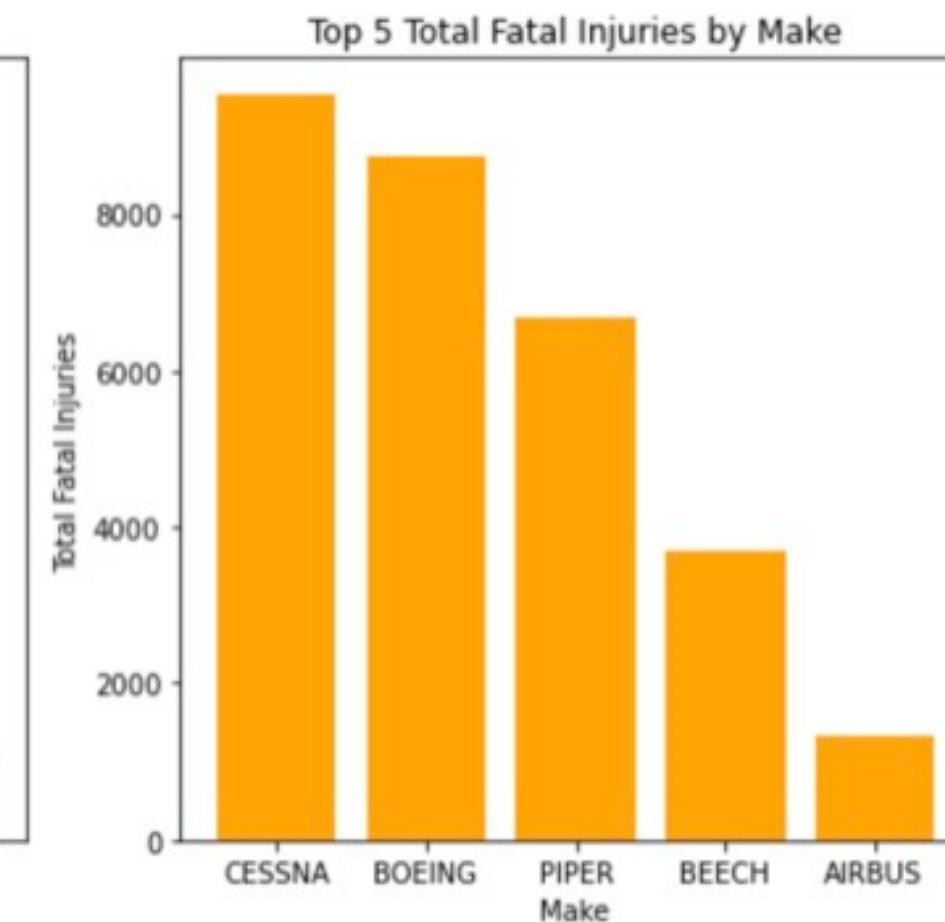
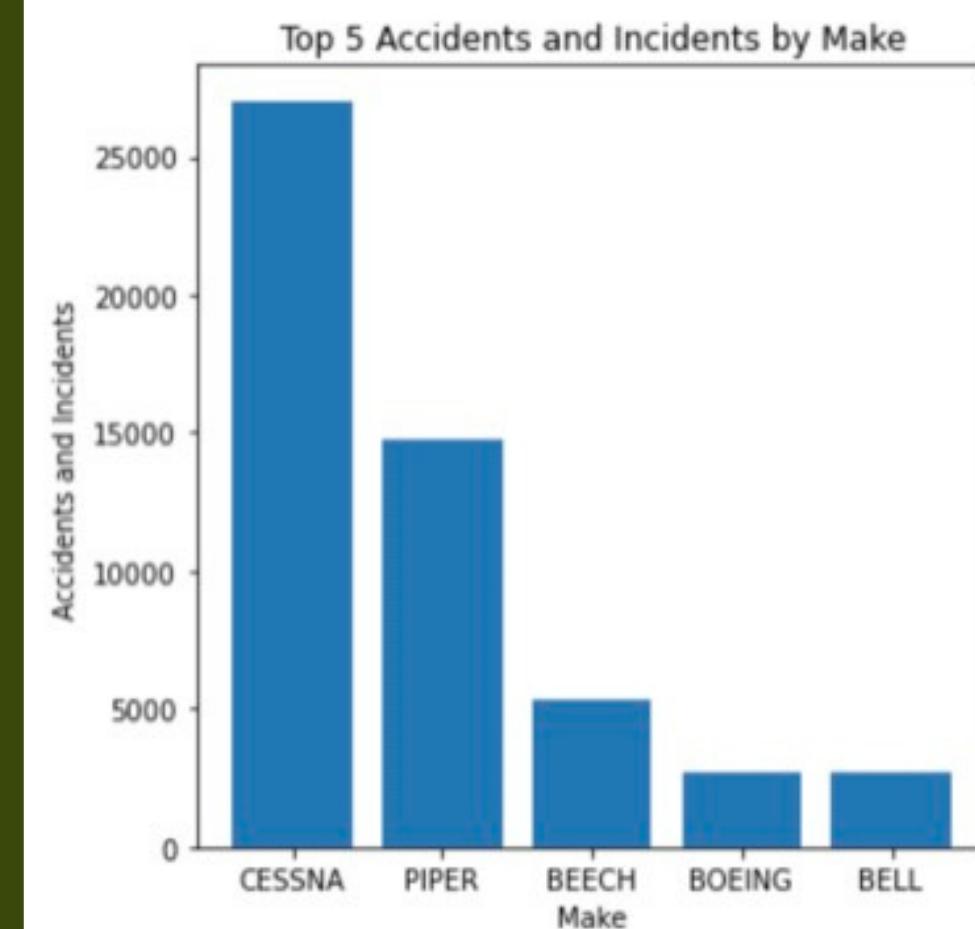
Business Problem

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



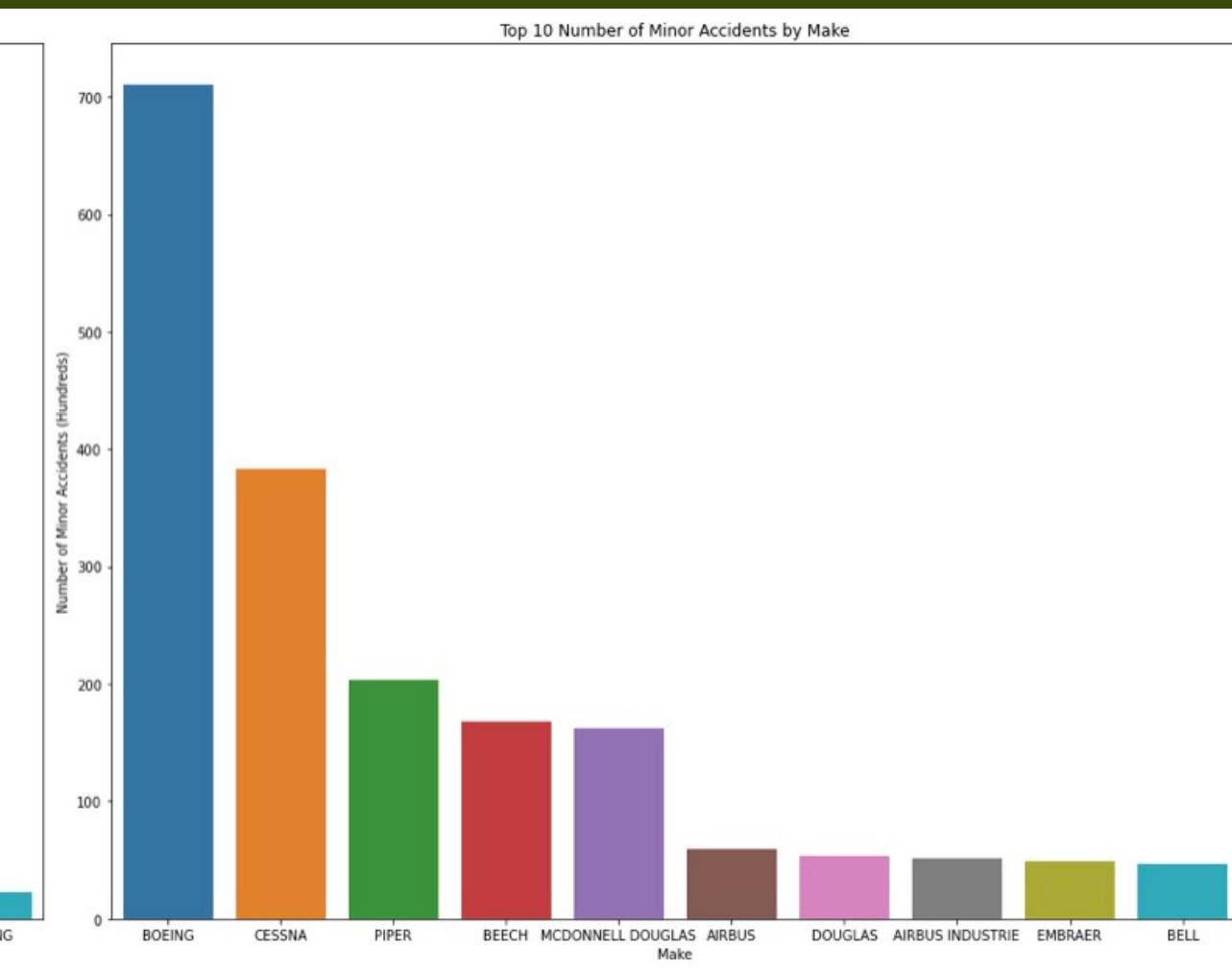
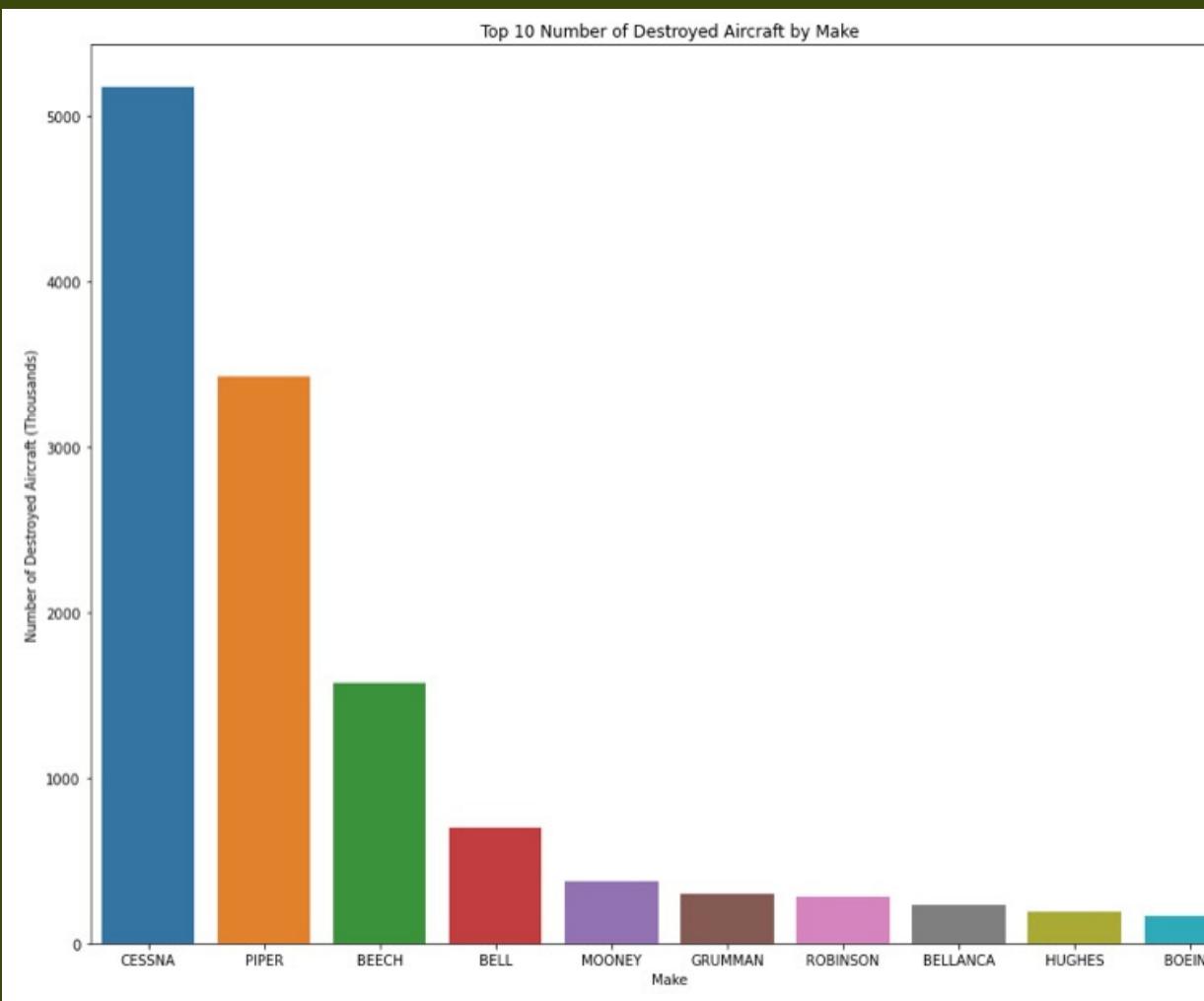
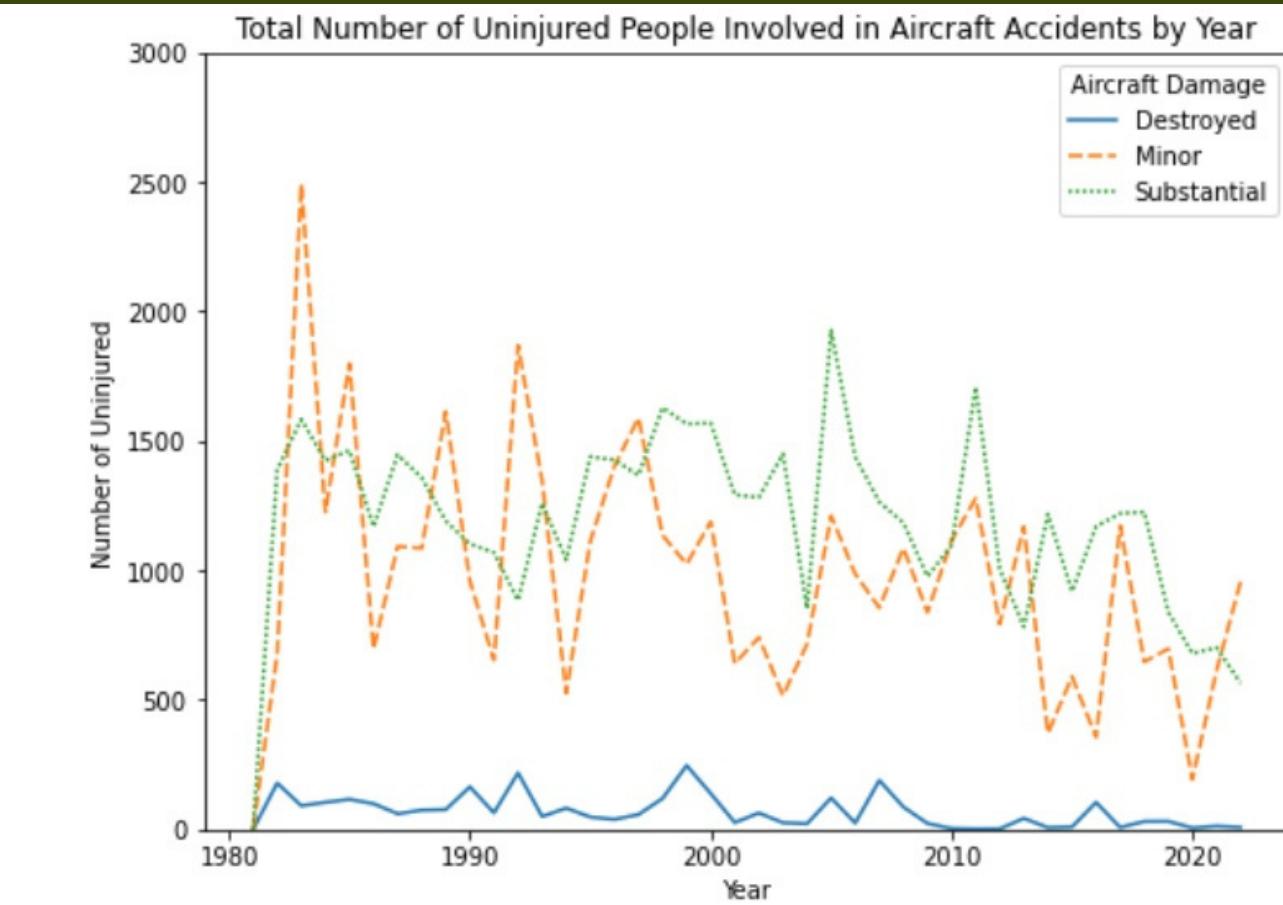
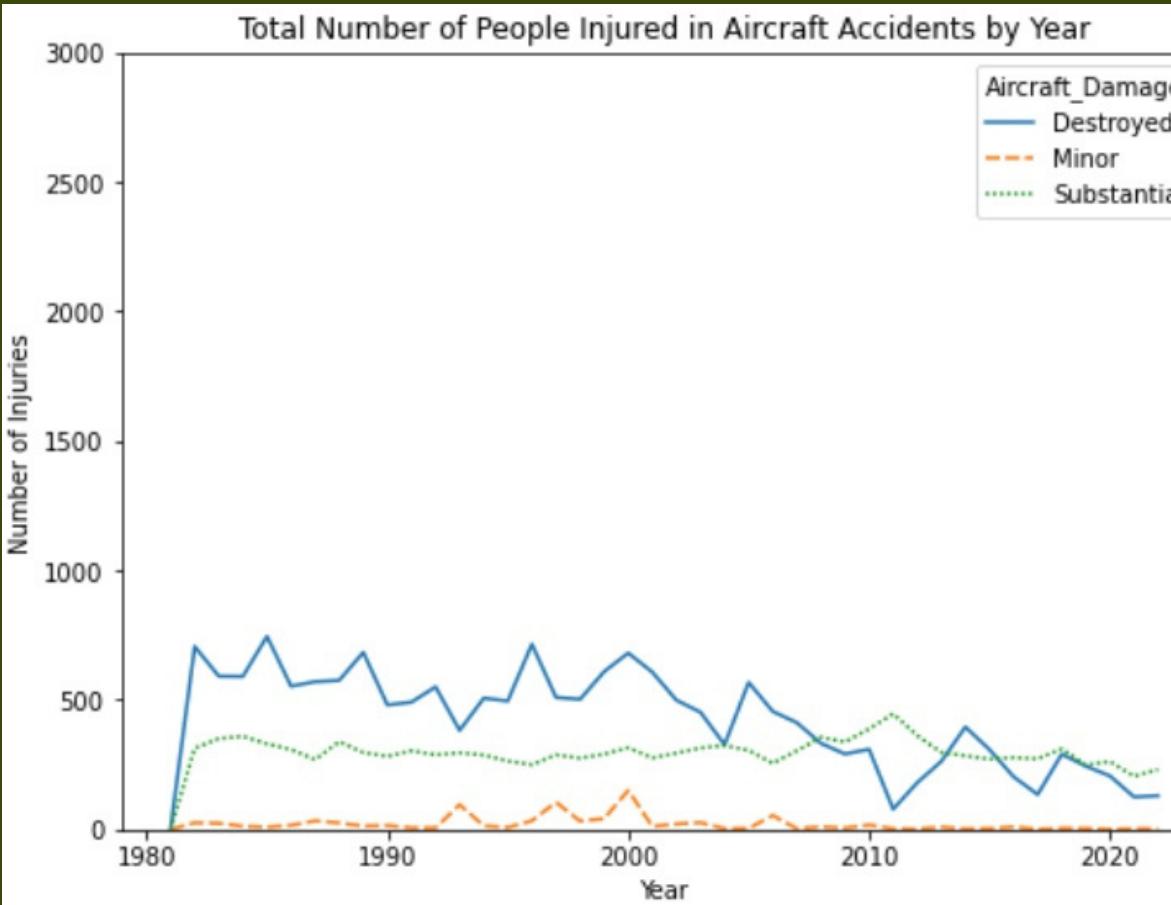
Data & Methods

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



Data & Methods cont.

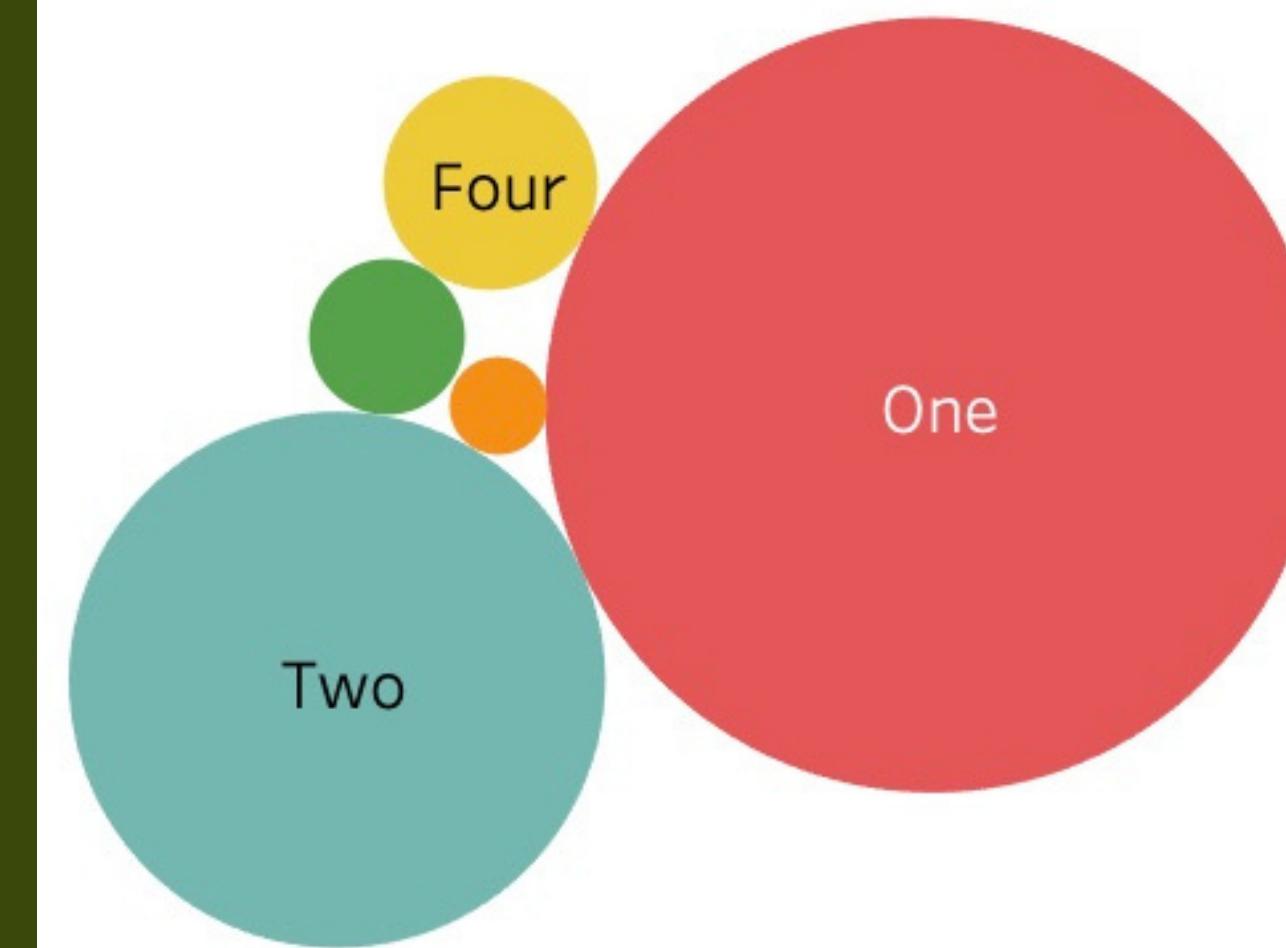
- Aircraft destruction and passenger injury data by year
- Includes top ten make companies and type of injury



Data & Methods cont.

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

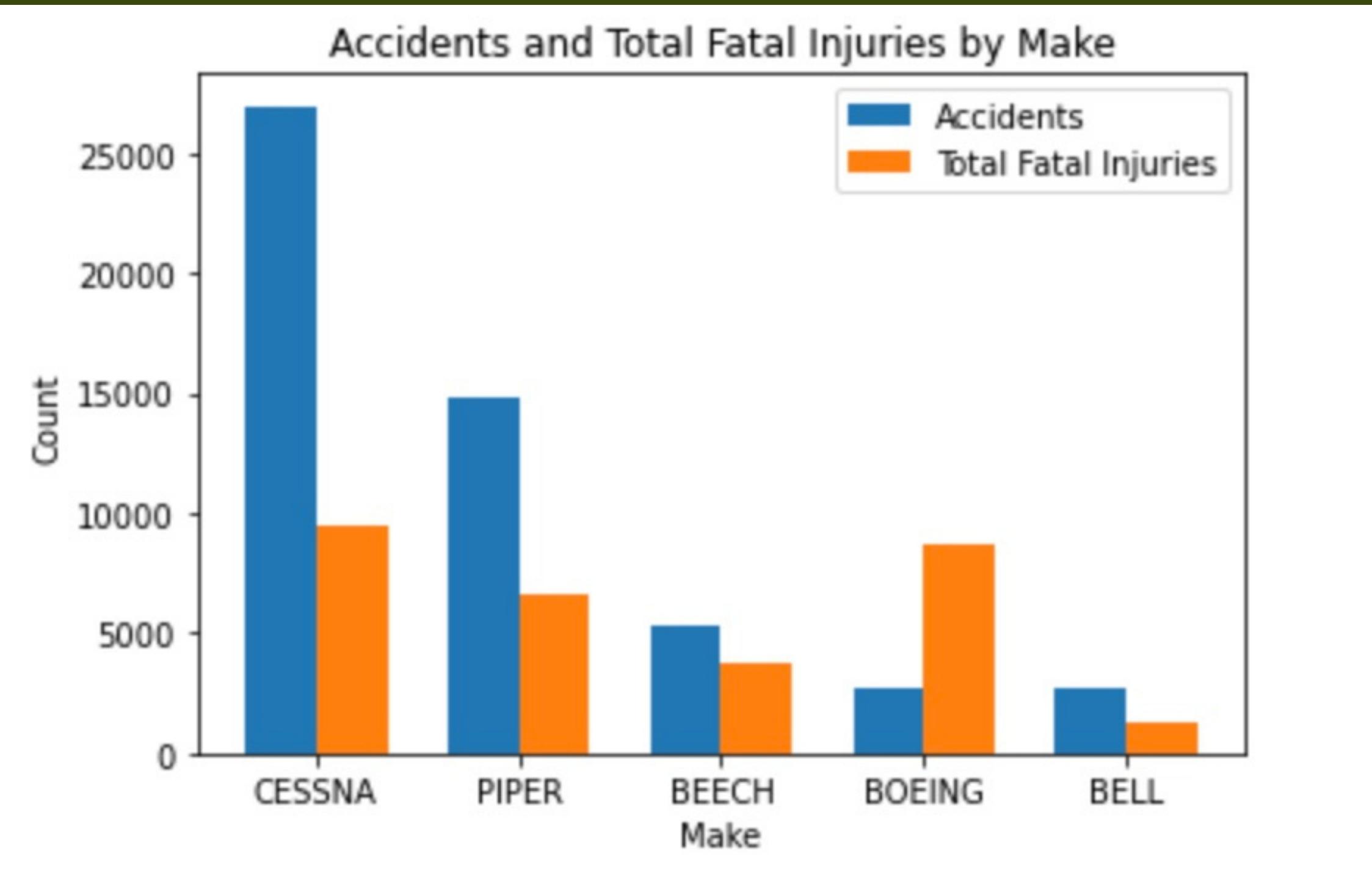
Proportion of Fatalities by Number of Engines



Amateur Built (No ..)	(All)
No	<input checked="" type="checkbox"/>
Yes	<input checked="" type="checkbox"/>

Number of Engines	Zero
One	<input checked="" type="checkbox"/>
Two	<input checked="" type="checkbox"/>
Three	<input checked="" type="checkbox"/>
Four	<input checked="" type="checkbox"/>
Six	<input checked="" type="checkbox"/>
Eight	<input checked="" type="checkbox"/>

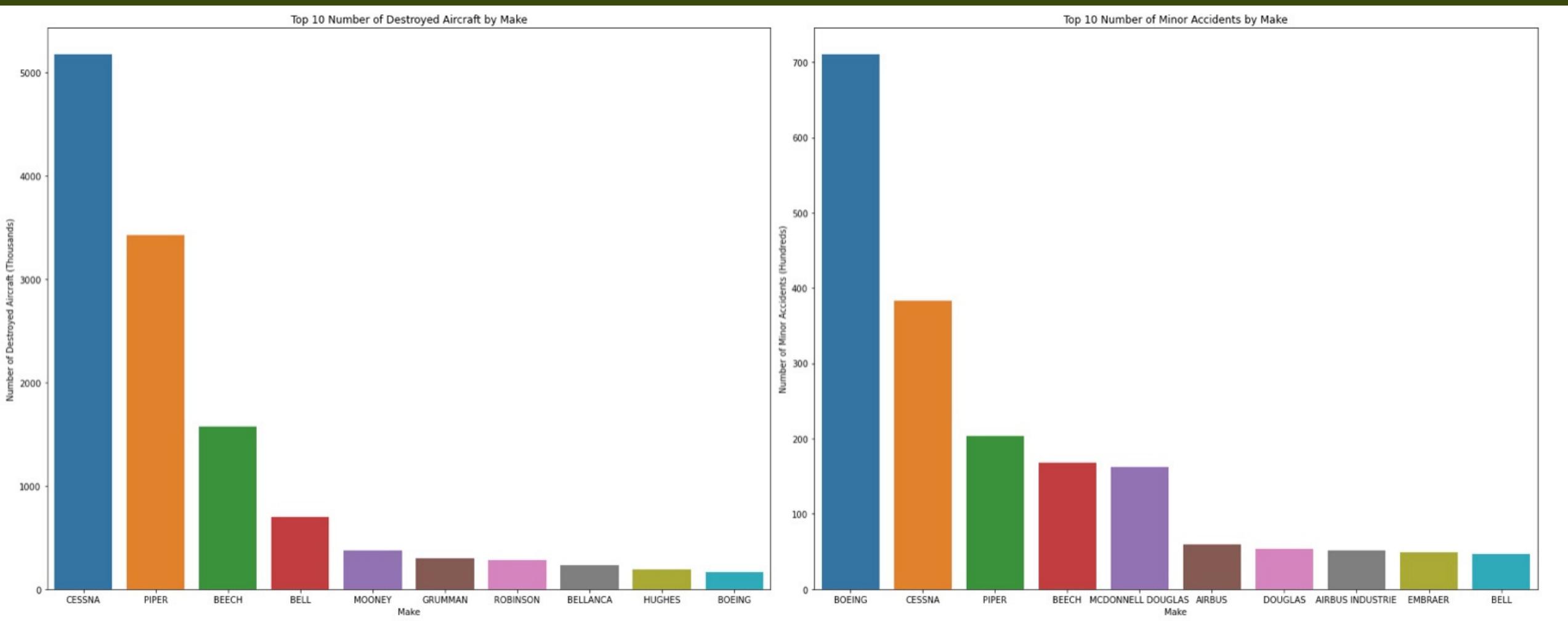
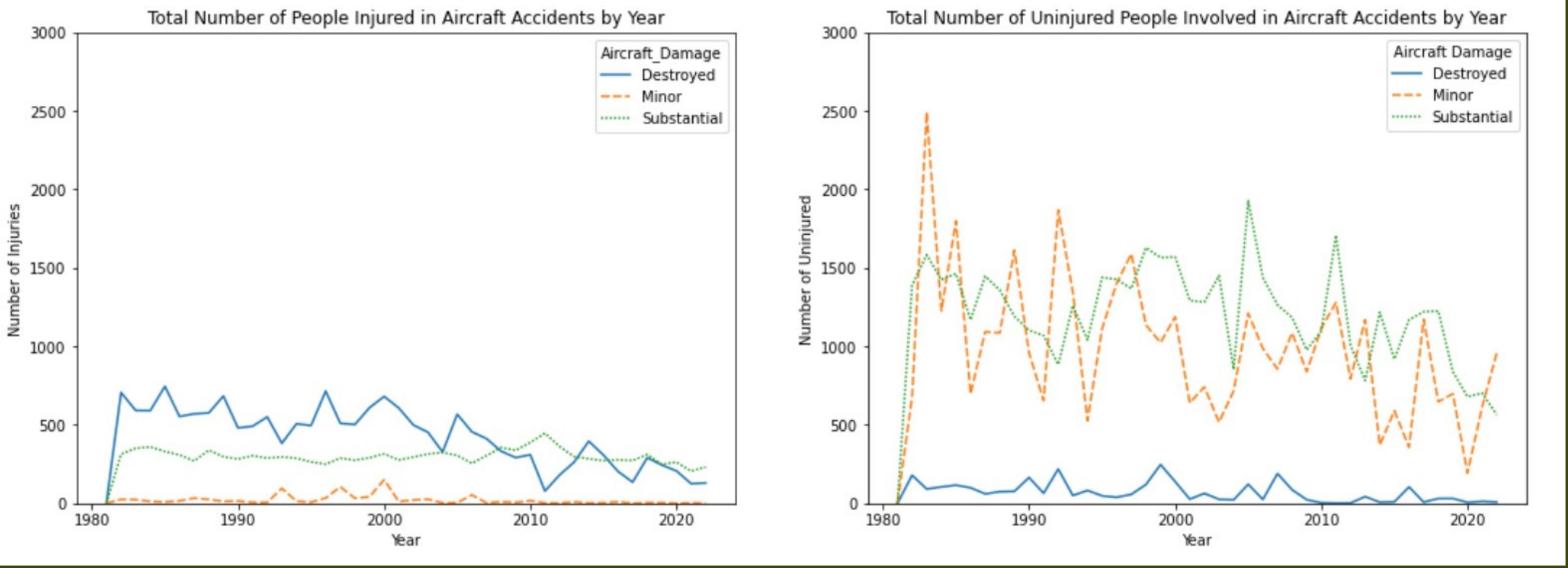
Results



- 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

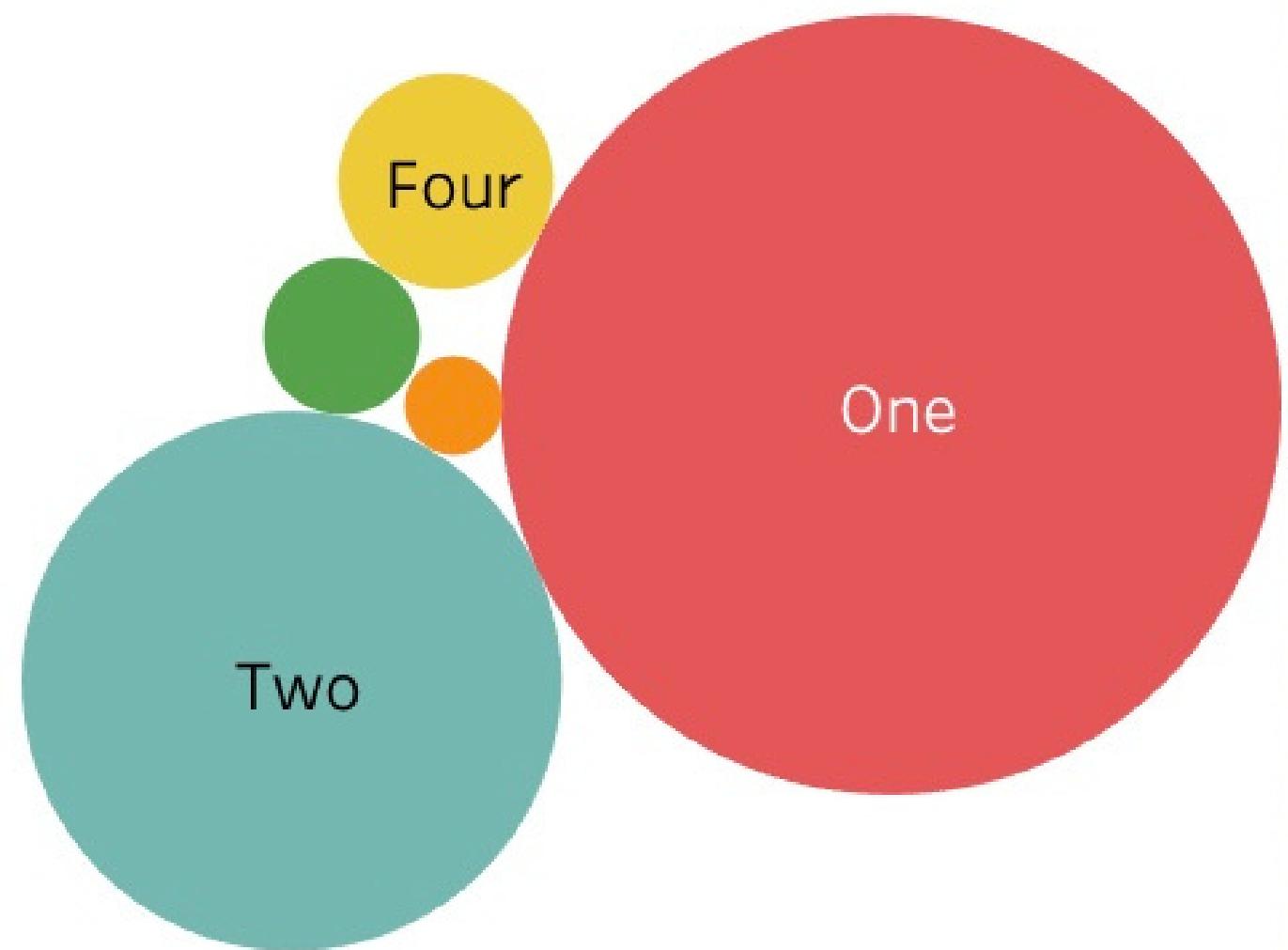
Results cont.

- Strong correlation between fatalities and complete destruction of aircraft



- Cessna has the most destroyed aircraft while Boeing has the highest number of minor accidents
- McDonnell & Douglas have far less destructive accidents

Proportion of Fatalities by Number of Engines



Amateur Built (No ..)

- (All)
- No
- Yes

Number of Engines

- █ Zero
- █ One
- █ Two
- █ Three
- █ Four
- █ Six
- █ Eight

Results cont.

- Strong correlation between fatalities and smaller number of engines
- Most fatalities caused by one engine aircraft, both amateur and non-amateur built

Conclusion & Recommendations

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





Thank you!

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