

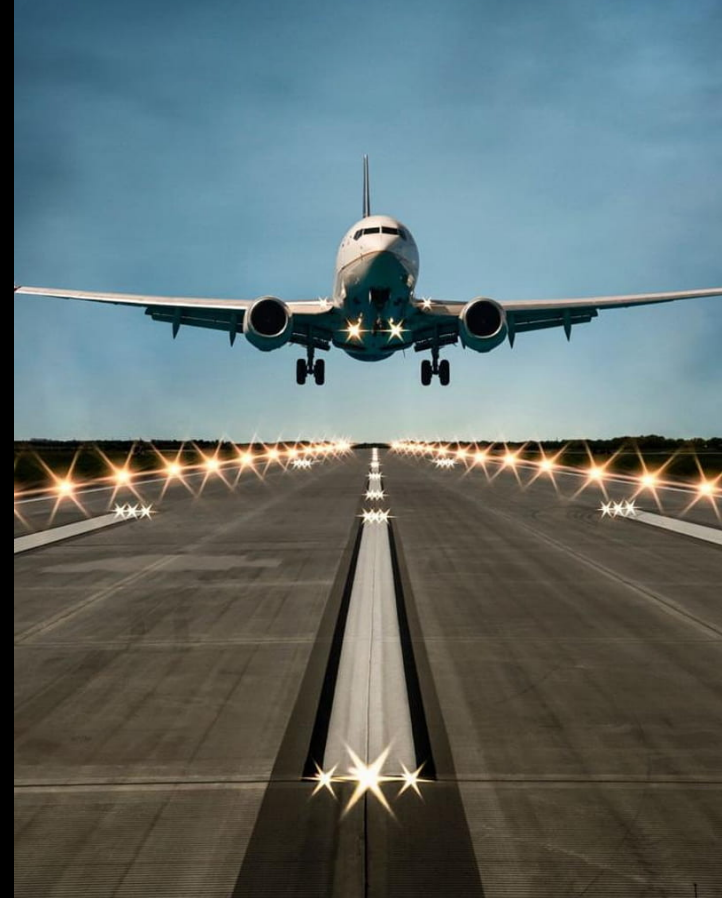


Is Boeing the safest airplane?

Michael Kearns

Introduction

- **Problem:** Which airplanes will have the lowest to risk for the company?
- **Solution:** Determine which plane has the lowest fatality rate per crash.



The data

- Dataset from the National Transportation Safety Board
- Data ranges from 1962 - 2023

| | Event.Id | Investigation.Type | Accident.Number | Event.Date | Location | Country | Latitude | Longitude |
|---|----------------|--------------------|-----------------|------------|-----------------|---------------|-----------|------------|
| 0 | 20001218X45444 | Accident | SEA87LA080 | 1948-10-24 | MOOSE CREEK, ID | United States | NaN | NaN |
| 1 | 20001218X45447 | Accident | LAX94LA336 | 1962-07-19 | BRIDGEPORT, CA | United States | NaN | NaN |
| 2 | 20061025X01555 | Accident | NYC07LA005 | 1974-08-30 | Saltville, VA | United States | 36.922223 | -81.878056 |
| 3 | 20001218X45448 | Accident | LAX96LA321 | 1977-06-19 | EUREKA, CA | United States | NaN | NaN |
| 4 | 20041105X01764 | Accident | CHI79FA064 | 1979-08-02 | Canton, OH | United States | NaN | NaN |

Note: Not all columns are shown.

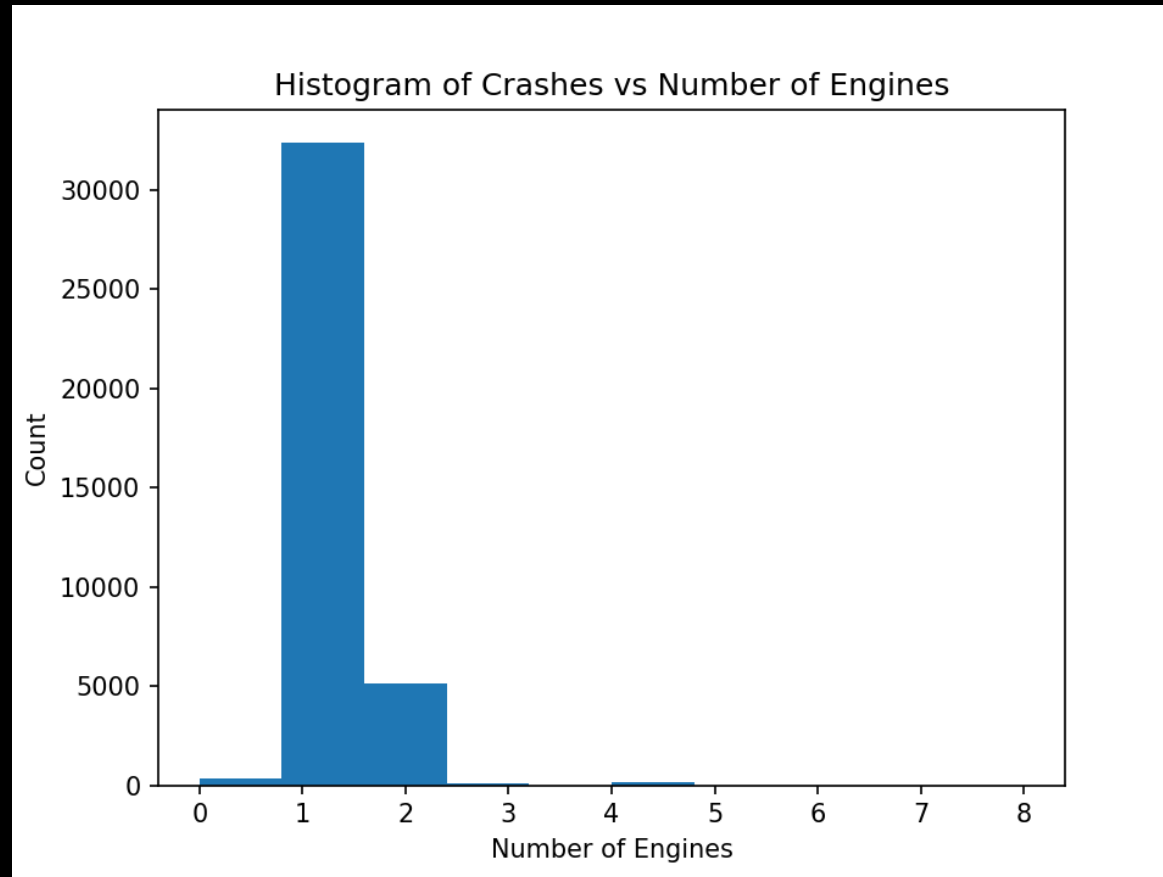
What's important

- Data from the last 30 years
- Primary Variables from the dataset:
 - Make
 - Model
 - Number of Fatal Injuries
 - Number of Engines

Analysis

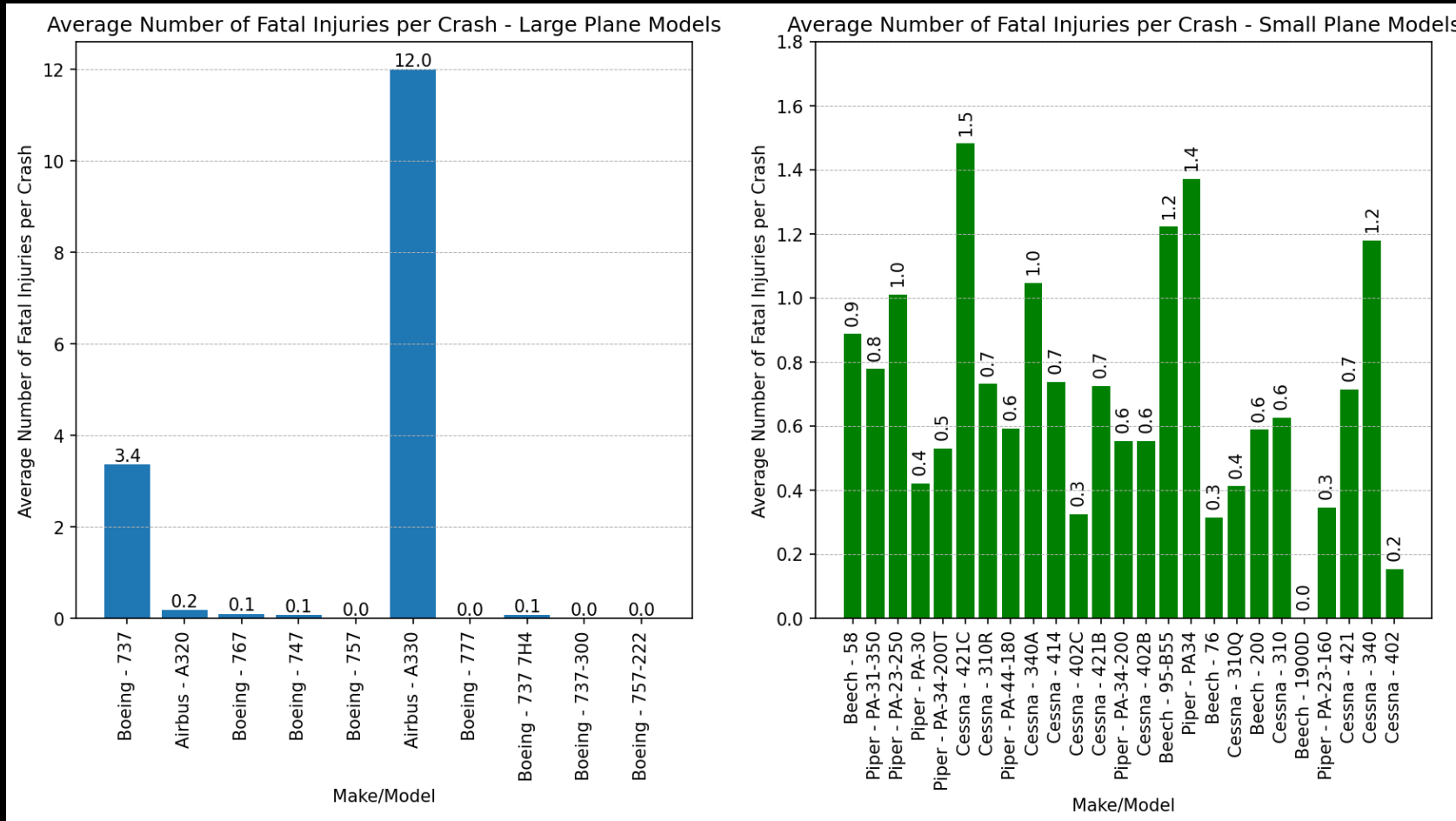
- Descriptive Statistics is used to determine findings, i.e. Mean
- Steps Taken:
 - Remove data older than 30 years old
 - Standardize “Make” data
 - Sort Data into primary small and large plane by “Make”

1st Finding



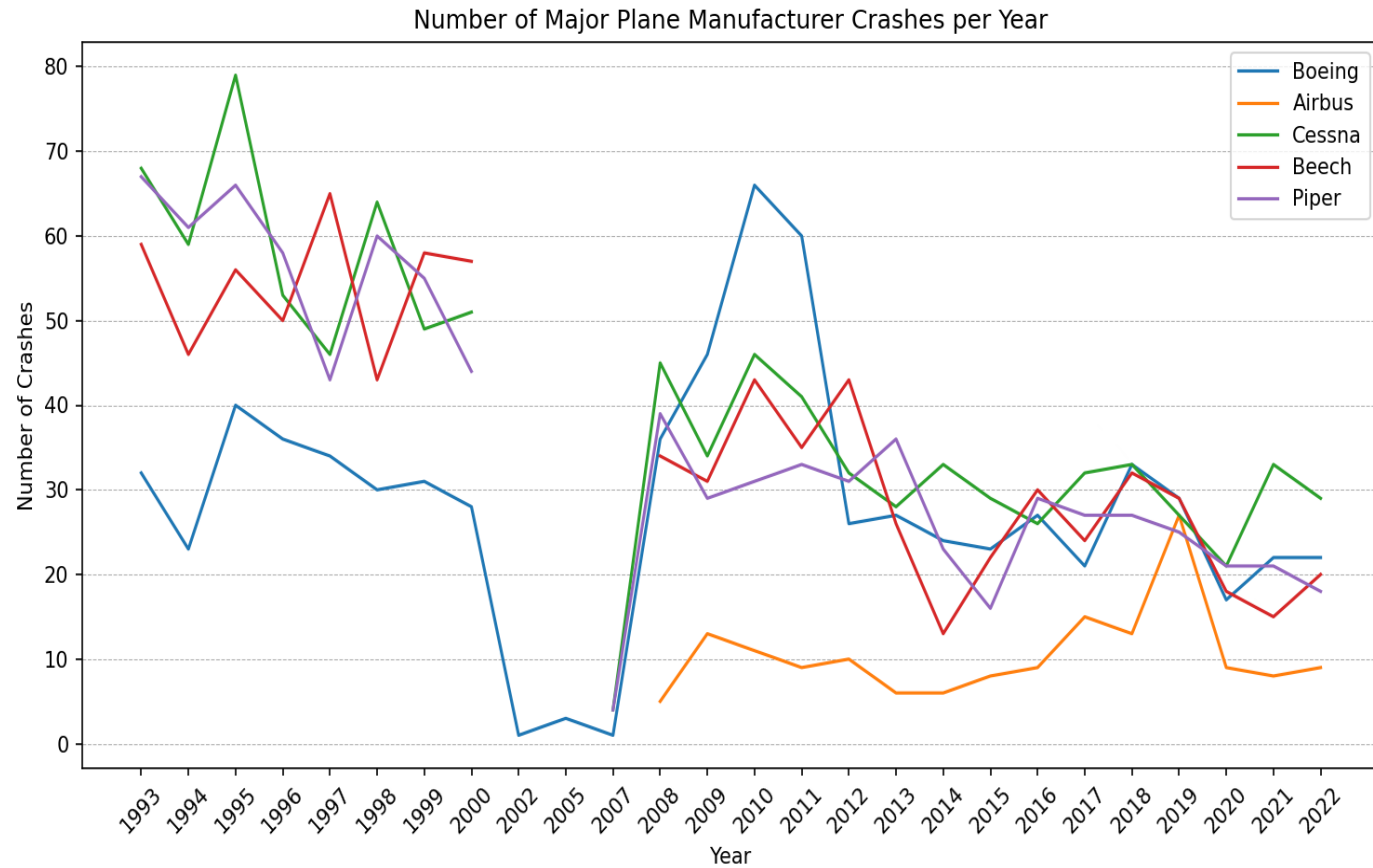
- 85% of crashes have 1 engine or less

2nd Finding



- Large vs Small planes
- Sorted by Make/Model types with the most number of accidents

3rd Finding



- Few or no accidents were reported between 2000 - 2008

Recommendations

1. Do NOT purchase airplanes with less than 2 engines.
2. Large planes: Boeing 757 or Airbus A319
Small planes: Beech 1900D or Cessna 40
3. Conduct safety review of company planes every 10 years.

The next steps

- What are financial impacts?
- Where should our operations be?