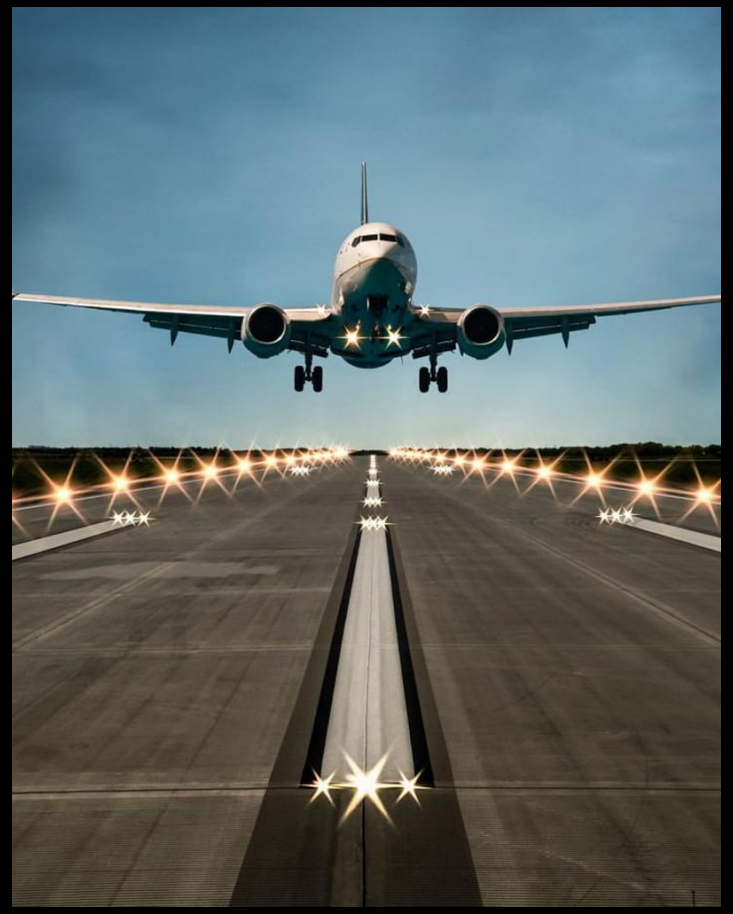
Is Boeing the safest airplane?

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

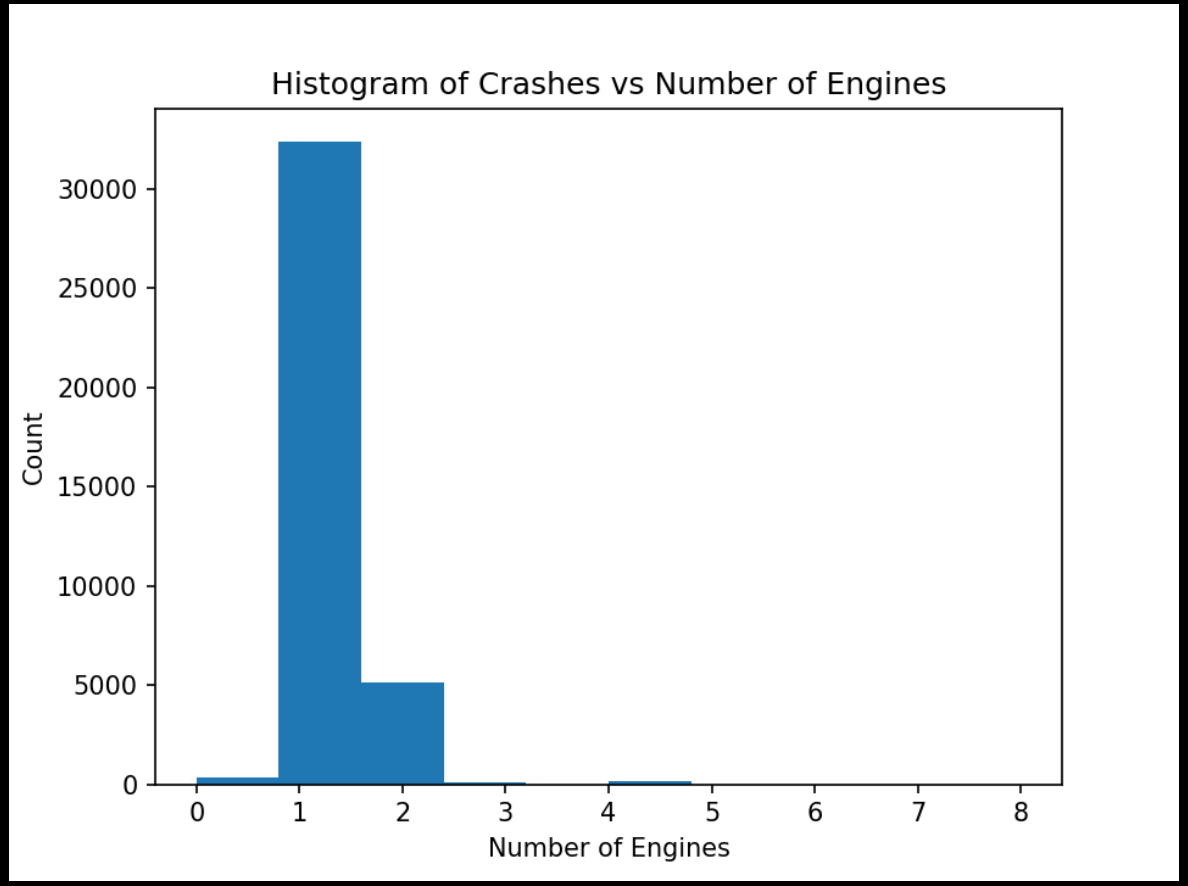
- Primary Variables from the dataset:
  - Make
  - Model
  - Number of Fatal Injuries
  - Number of Engines

Analysis

- Descriptive Statistics is used to determine findings, i.e. Mean

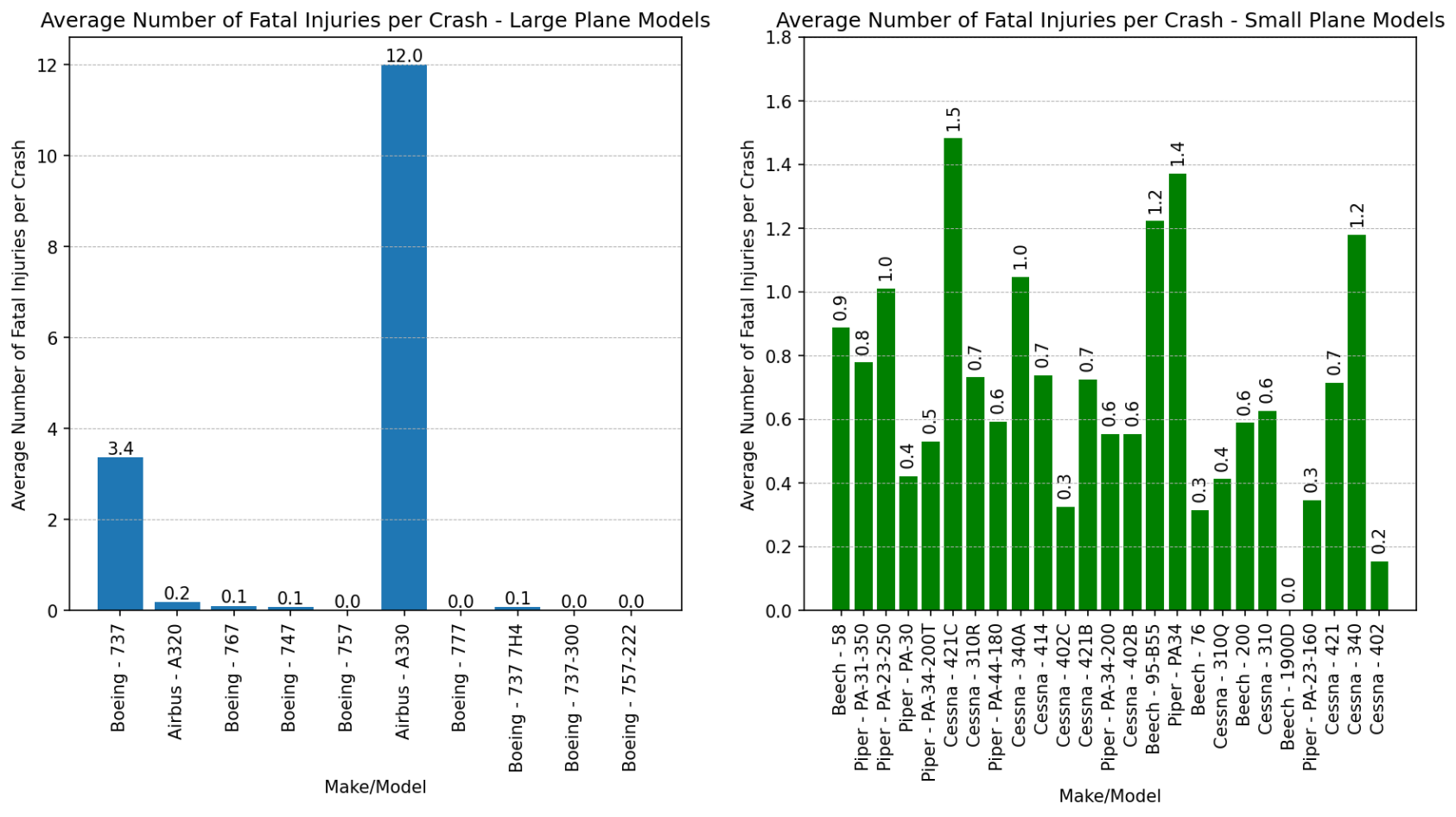
- Steps Taken:
  - Remove data older than 30 years old
  - Standardize “Make” data
  - Sort Data into primary small and large plane by “Make”

1st Finding



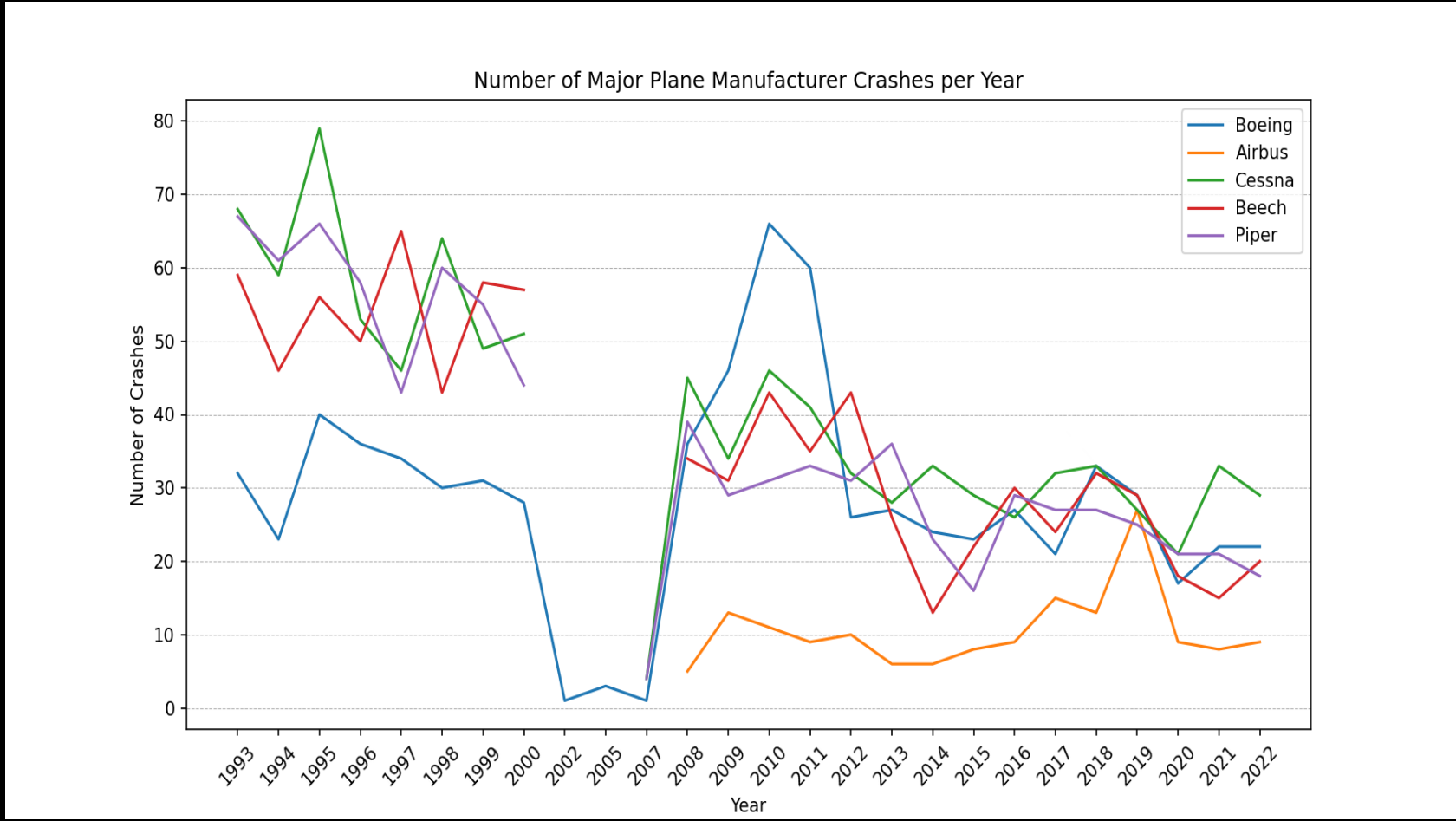
- 85% of crashes have 1 engine or less

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 eveyr 10 years.

The next steps

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