Cleaning & Analysis of National Transportation Safety Board Data on Accidents

BY SEGO MICH

Business Overview

My company is expanding into new industries to diversify its portfolio and is exploring the purchase and operation of airplanes for both commercial and private use.

I have been tasked with identifying potential risks associated with aircraft and determining which options pose the lowest risk for this new business venture.

My findings will then be translated into actionable insights to guide the head of the new aviation division in making informed decisions about aircraft purchases.

Python Libraries Used

Data Manipulation

- Numpy
- Pandas

Data Visualization

- Matplotlib
- Seaborn

Objectives

Main objective

- To help decide which aircraft to purchase and operate airplanes for commercial and private enterprises.

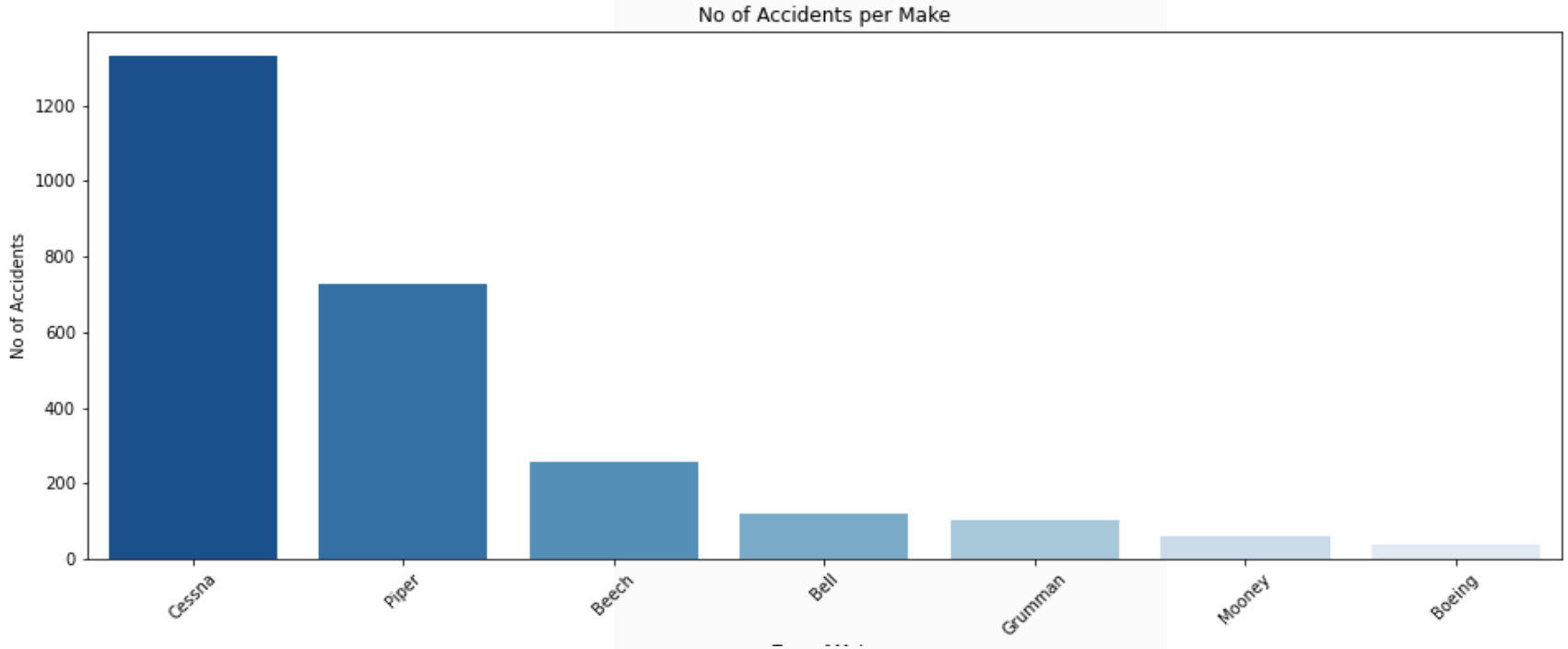
Specific objectives

To find a correlation and visualize between

- make and mode and their risks
- the type of aircraft category and their risks
- The type of engine and no of engines and their risks.

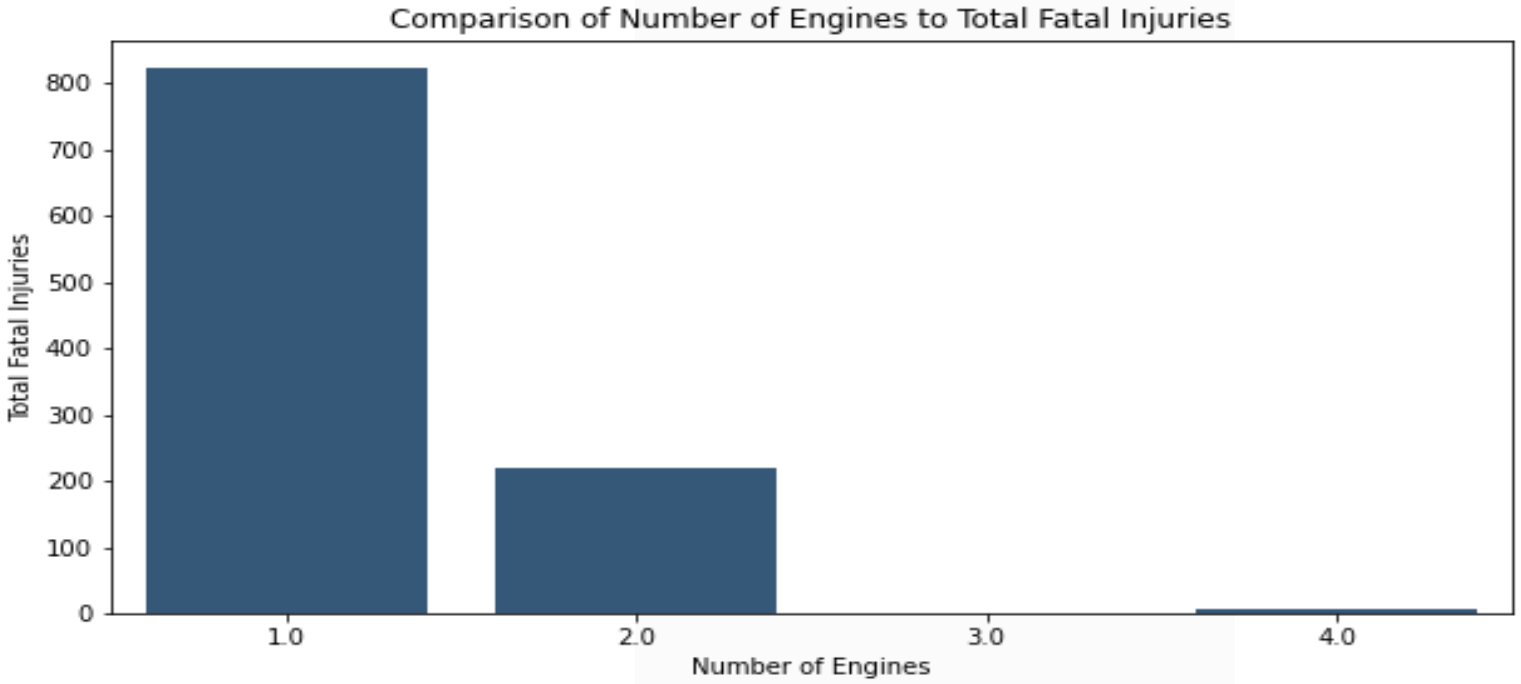
Number of Accidents per Make

Cessna has most accidents while Boeing has least



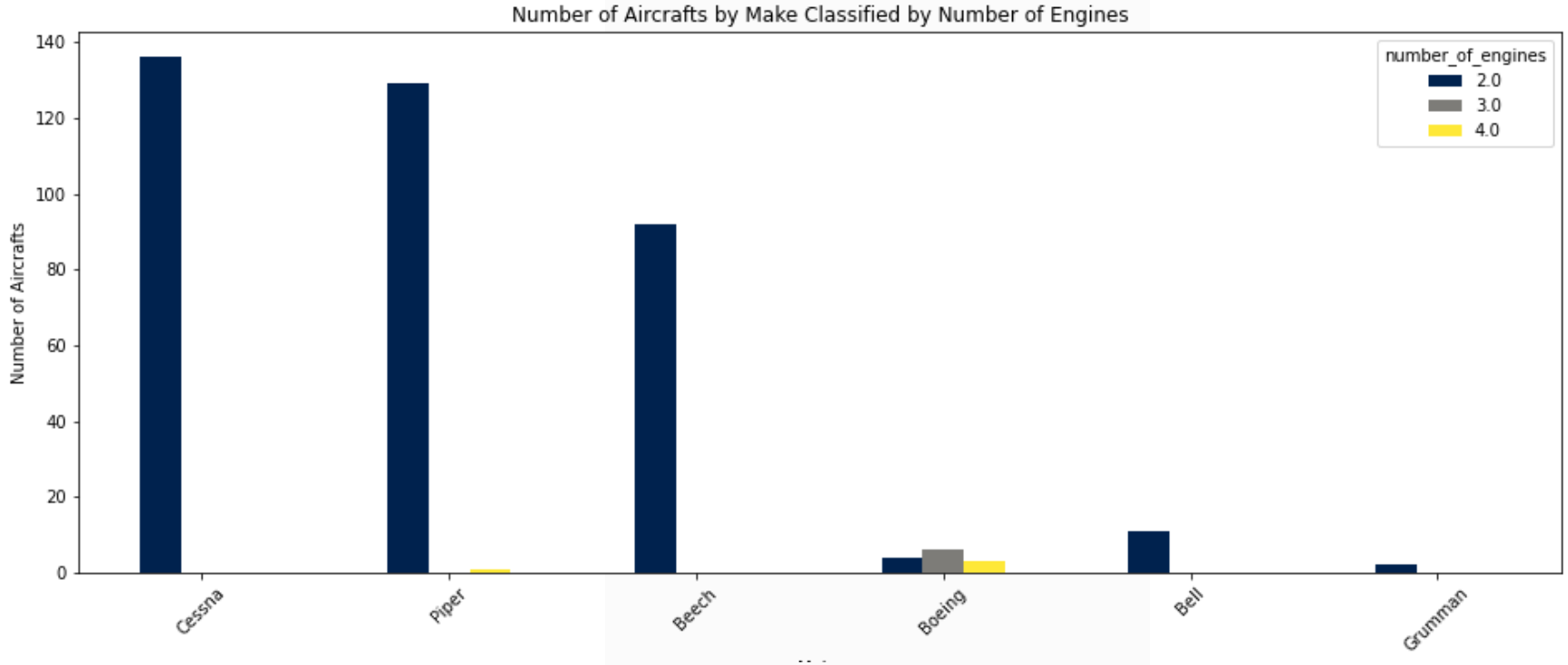
Comparison of Number of Engines to Total Fatal Injuries

Aircraft with number_of_engines = 1 is high risk and with 3 engines is low risk



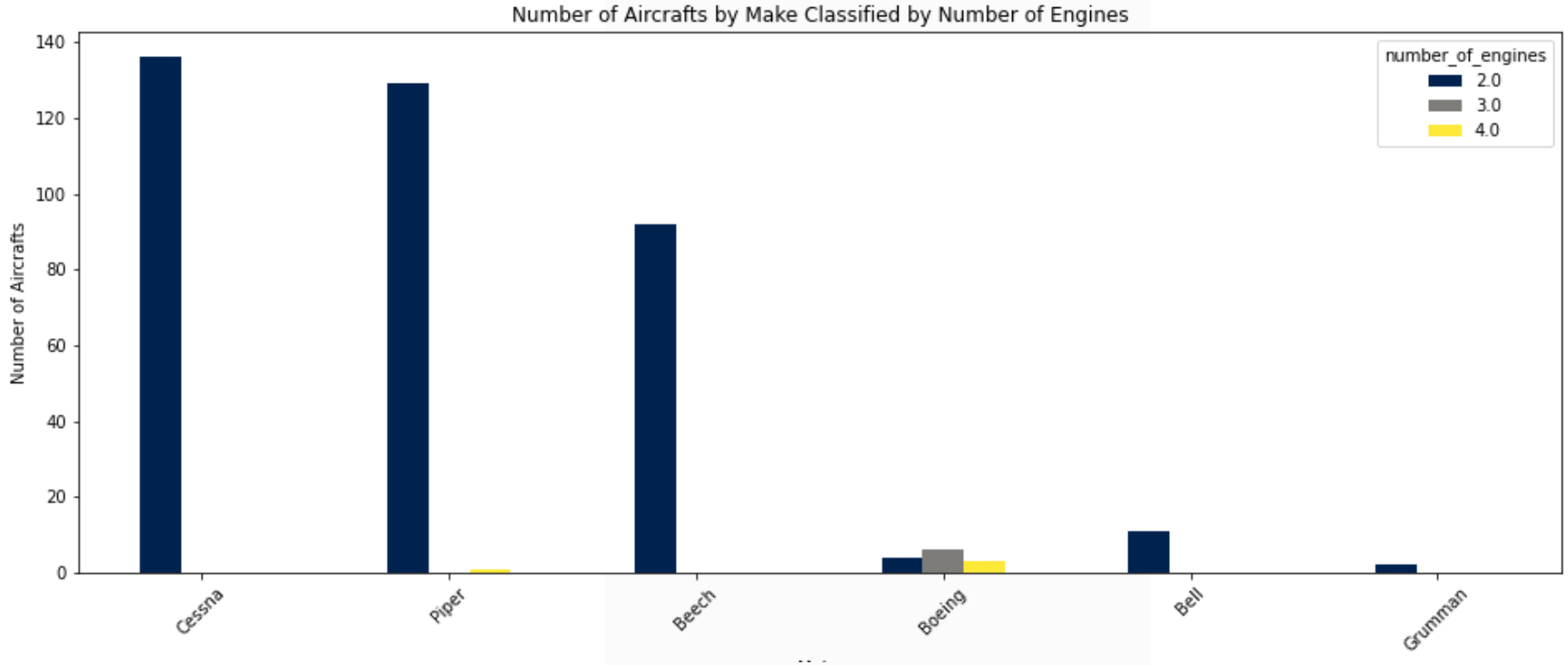
Number of Aircrafts by Make Classified by Number of Engines

Aircraft with Make recommended is either Cessna, Piper or Beech



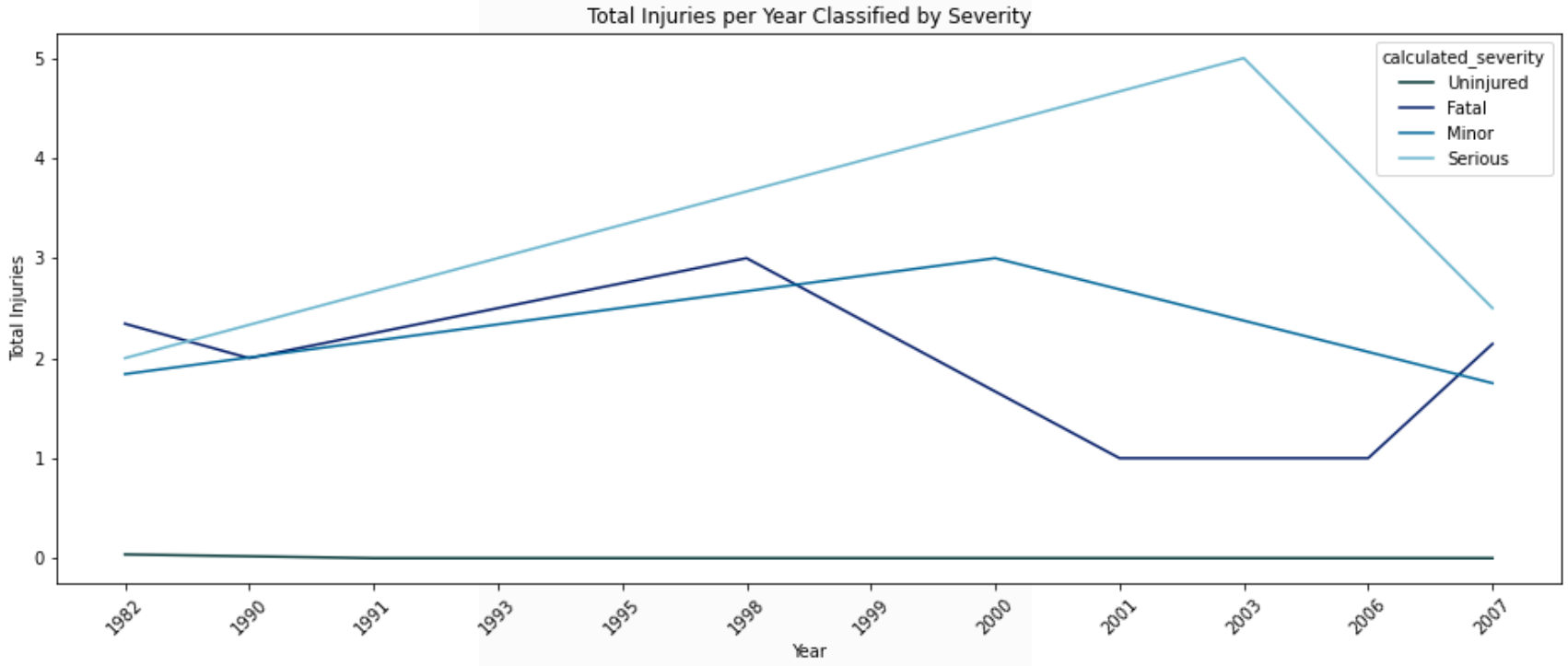
Total Uninjured to Number of Engines

Engines with 2 injuries caused less harm.



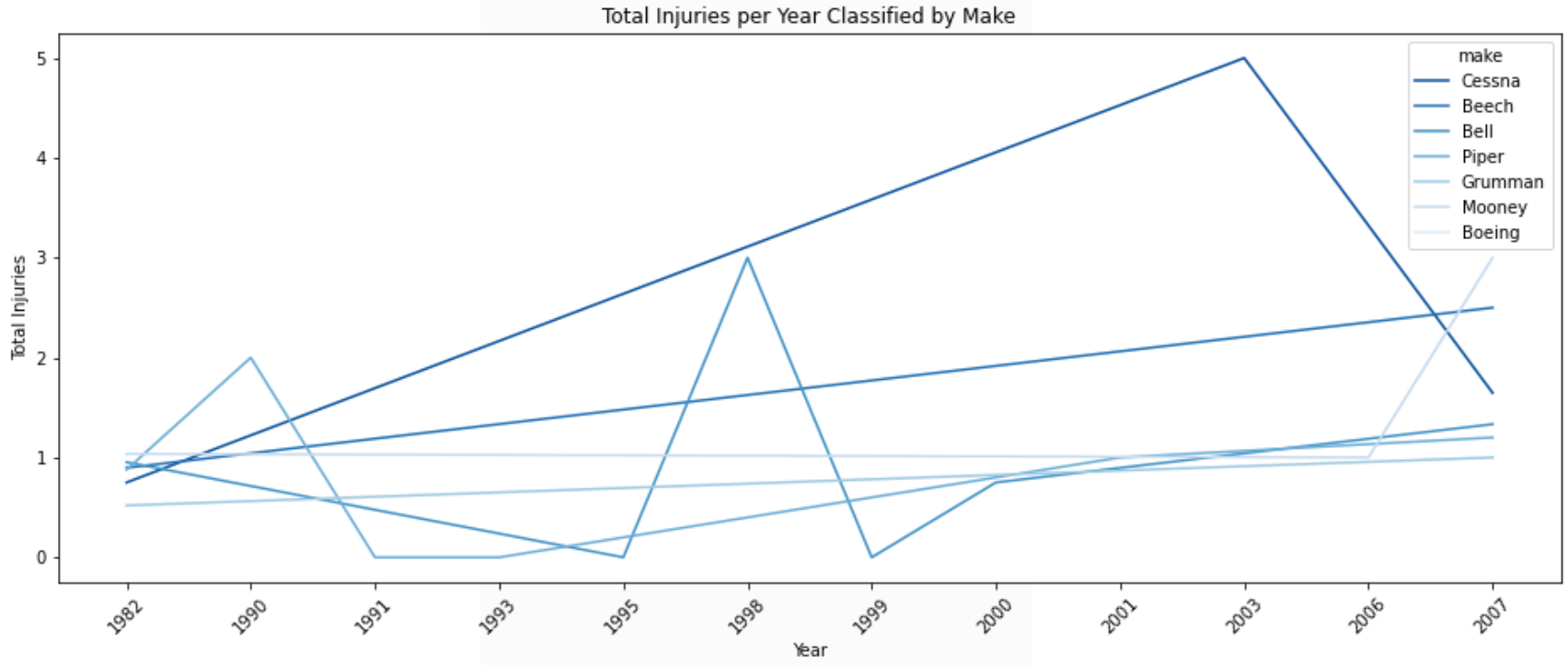
Total Injuries per Year Classified by Severity

There is increase of accidents over the years with severity getting worse



Total Injuries per Year Classified by Make

There is increase of accidents for all the aircraft make. Cessna has however from around 2003 has experienced a decline.



Recommendations/Next Steps

- Cessna has the highest number of accidents, while Boeing has the fewest.
- Single-engine aircraft pose higher risks, whereas three-engine aircraft are safer.
- Aircraft from recommended makes include Cessna, Piper, and Beech.
- Two-engine aircraft cause fewer injuries.
- Accidents have been increasing over the years, with severity worsening.
- Accidents have risen for all aircraft makes, but Cessna has shown a decline since around 2003.

Thank you

QUESTIONS?