Aircraft Purchase Analysis

Business Problem

Determine which aircraft are the lowest risk for the company.

The potential risks of aircraft.

Purchasing and operating airplanes for commercial and private enterprises

Data

National Transportation Safety Board (NTSB) Aviation accident Database

1962 to 2023

Types of Injuries

Fatal — Death within 30 days

Serious — Hospitalization for 48 hrs. within **(7 days from the accident).** Bone fracture **(any bone, and fracture).** Severe hemorrhaging Second or third degree burns.(5% of the body surface)

Minor — Injury not categorized within the other parameters

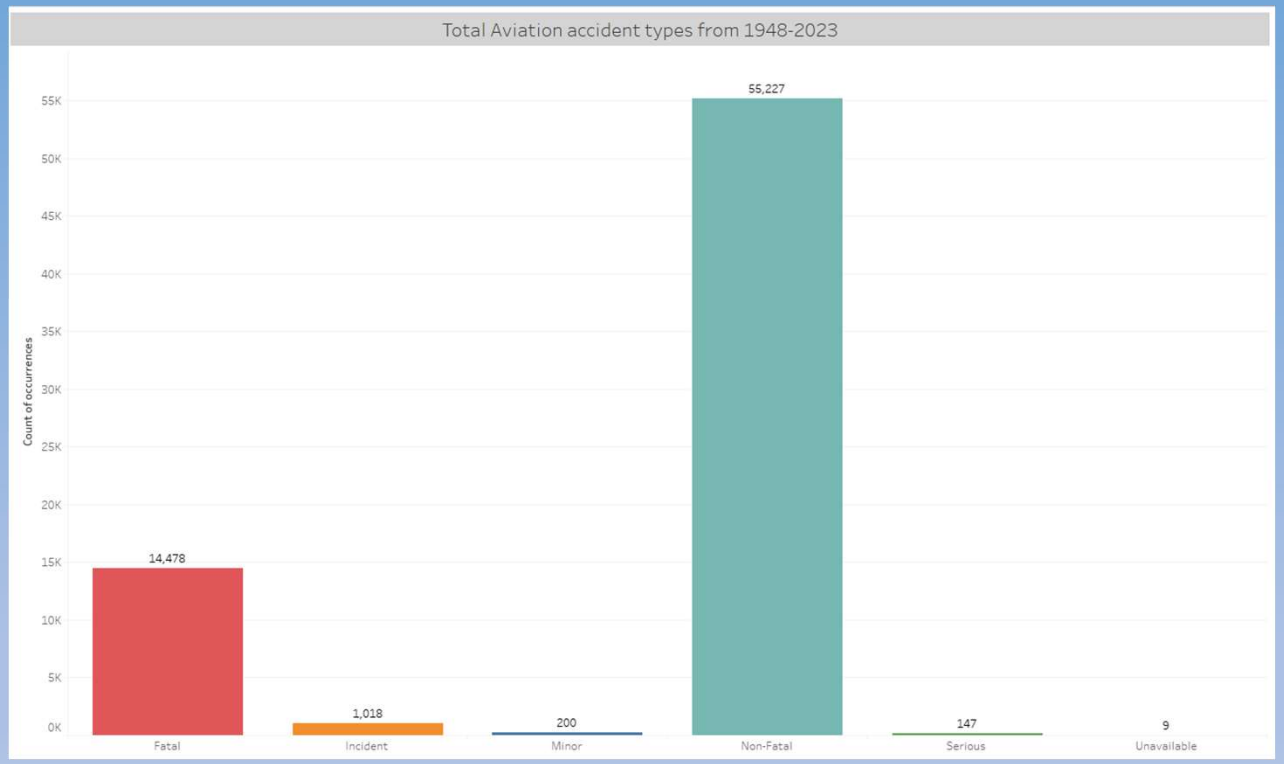
Incident — Affects or could affect safety of operation

Aviation incidents from

1948 - 2023

Type of Injuries

Fatal	17,584
Serious	151
Minor	204
Non Fatal	65,746
Incident	1,390



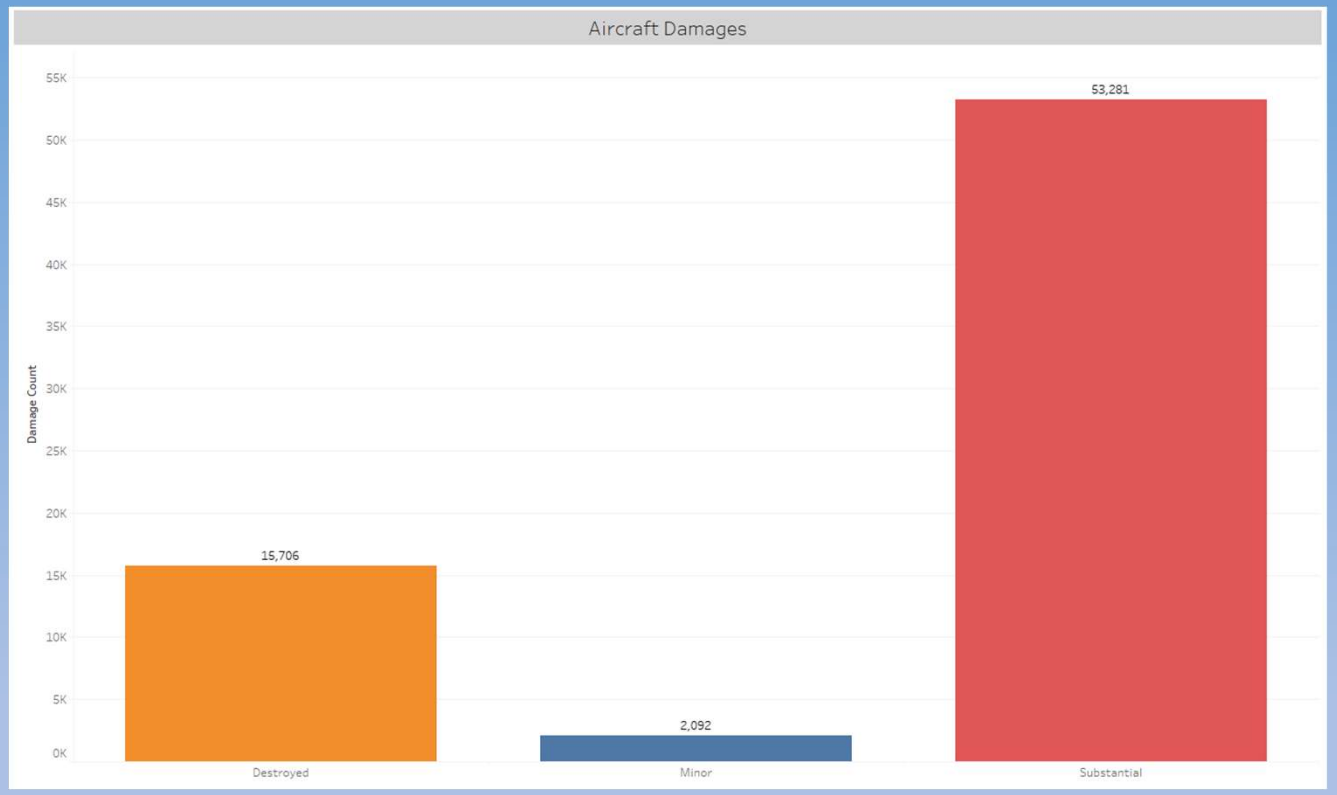
Aircraft Damages

Amount of occurrences

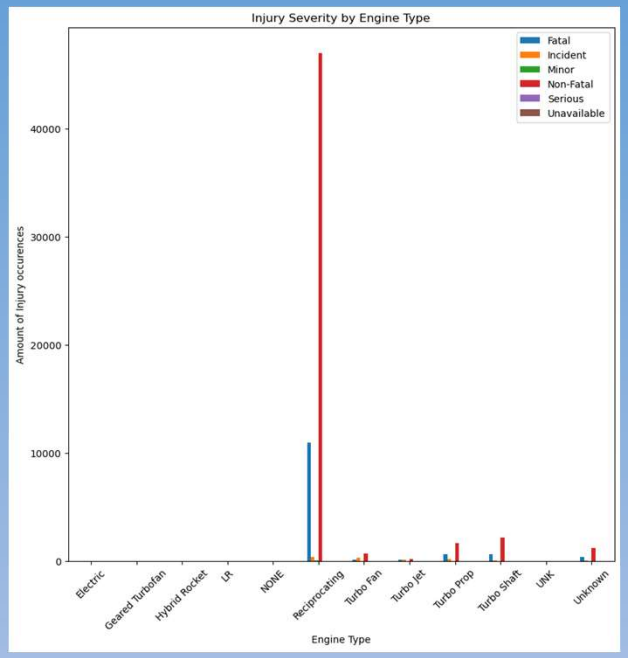
Destroyed 18,550

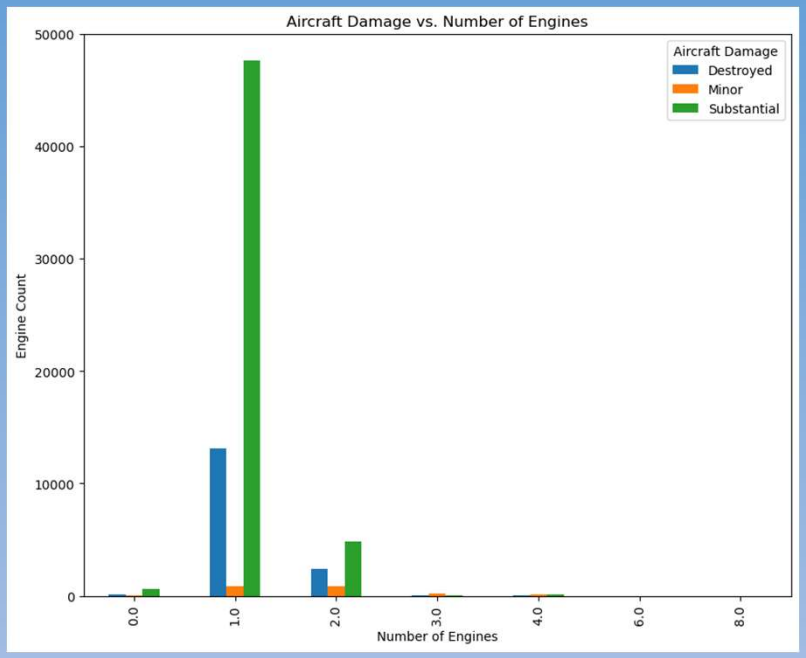
Substantial 63,943

Minor 2,579



Aircraft damage and injury based on engine type and number of engines





Five types of engines currently used

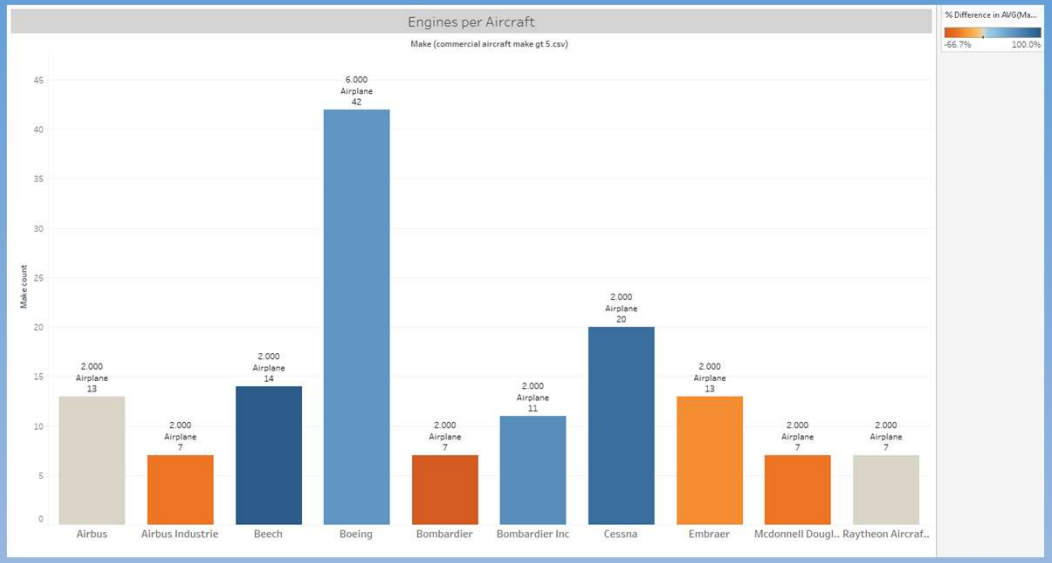
1. Reciprocating Engine
2. Turboprop Engine
3. Turboshaft Engine
4. Turbojet Engine
5. TurboFan Engine

***Non-fatal incidents occur more with reciprocating engine type**

The number of engines ranges from 1.0 – 8.0

- Aircraft with 1.0 engines create substantial damage.
- Aircraft with 2.0 or more engines, damage drops significantly.
- We'll focus on aircraft that fall into the non-fatal/minor category with engines that have 2.0 or more engines

Engines with minor and non-fatal aircraft

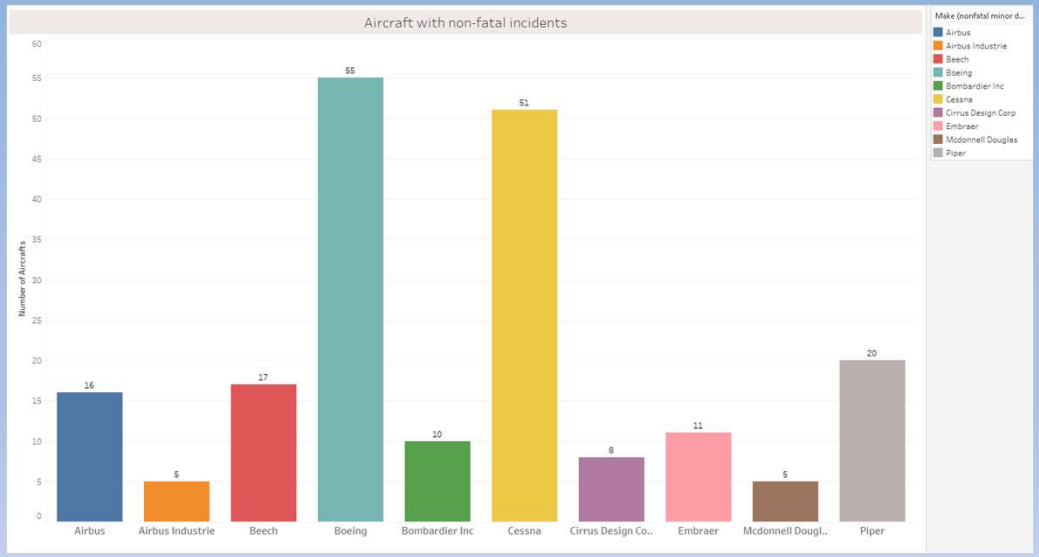


Top Engines per aircraft

Airbus: 20 (2.0 engines)

Boeing: 42 (4.0 and 2.0 engines)

Cessna: 20 (2.0 engines)



Manufacturers with Minor and Non-Fatal Incidents

Airbus: 21

Boeing: 55

Cessna: 51

Conclusion

Three best choices

Commercial:

BOEING

Private:

CESSNA

Commercial/Private:

Airbus

*Bonus aircraft:

Private:

Piper