

Horizon Enterprise Aircraft Assessment Insights

The background features a dark blue grid. A white line chart with circular markers is overlaid on the grid, showing a fluctuating trend. Below the line chart, there is a bar chart with numerous vertical bars of varying heights, also in a lighter blue shade.

Presentation Overview

1. Overview
2. Business Understanding
3. Data Understanding
4. Data Analysis
5. Recommendations
6. Next Steps



Overview

This project analyzes aviation accidents since 1962, focusing on civil aviation incidents in the U.S., its territories, and international waters.

The insights will help Horizon Enterprise identify safe, low-risk aircraft for Horizon Ventures, minimize operational risks, enhance reputation, and support safer fleet acquisitions for expansion into the aviation industry.

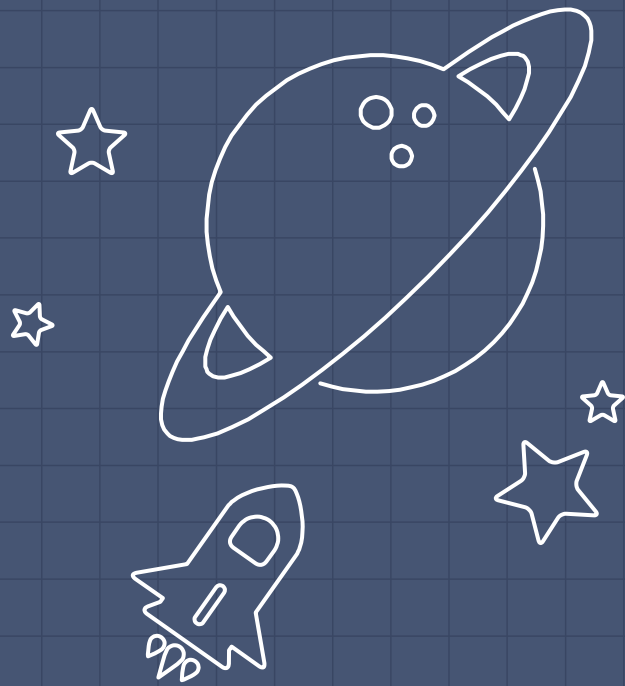
A decorative background graphic at the bottom of the slide, consisting of a series of vertical bars of varying heights and a line graph with circular markers overlaid on them.

Business Understanding

Horizon Enterprises is seeking to expand into the Aviation and Aerospace Industry, specifically the Aircraft Operations and Fleet management as a means of diversifying their portfolio. The goal is to ensure business continuity, minimize financial risks, and optimize fleet performance.



Data Understanding



Aviation Datasets

Aviation Data

The NTSB aviation accident database contains information from 1962 and later about civil aviation accidents and selected incidents within the United States, its territories and possessions, and in international waters.

US State Codes

Contains the US State name and the abbreviation of them

Aviation Dataset Columns

Categorical Data

Event Id

Investigation Type

Accident Number

Event Date

Location

Country

Latitude

Longitude

Airport Code

Airport Name

Injury Severity

Aircraft damage

Aircraft Category

Registration Number

Make

Model

Amateur Built

Engine Type

FAR Description

Schedule

Purpose of flight

Air carrier

Weather Condition

Broad phase of flight

Report Status

Publication Date

Numerical Data

Number of Engines

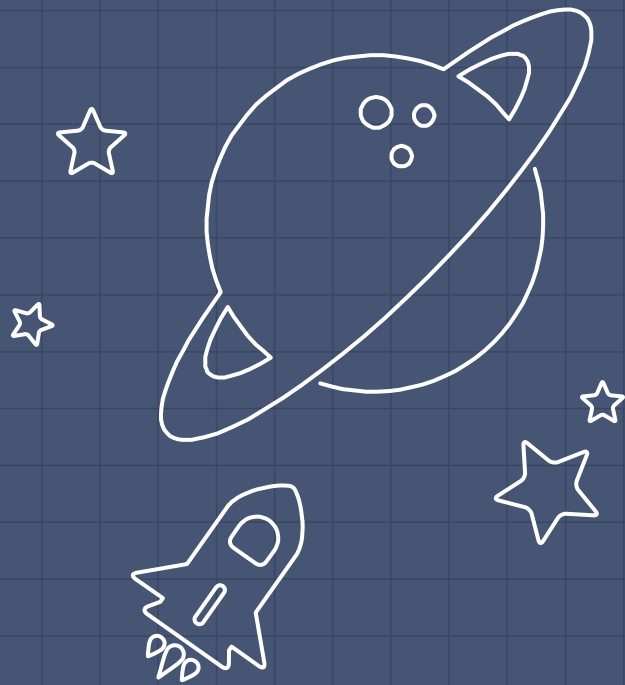
Total Fatal Injuries

Total Serious Injuries

Total Minor Injuries

Total Uninjured

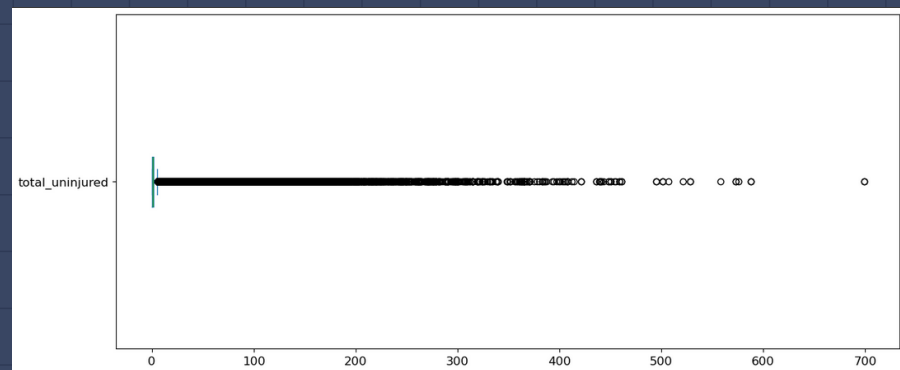
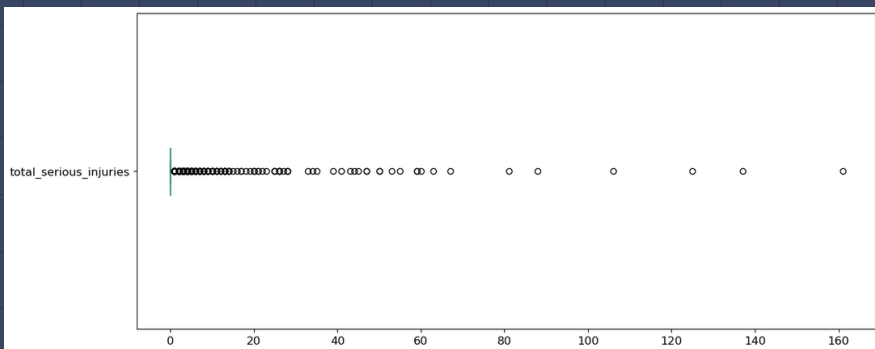
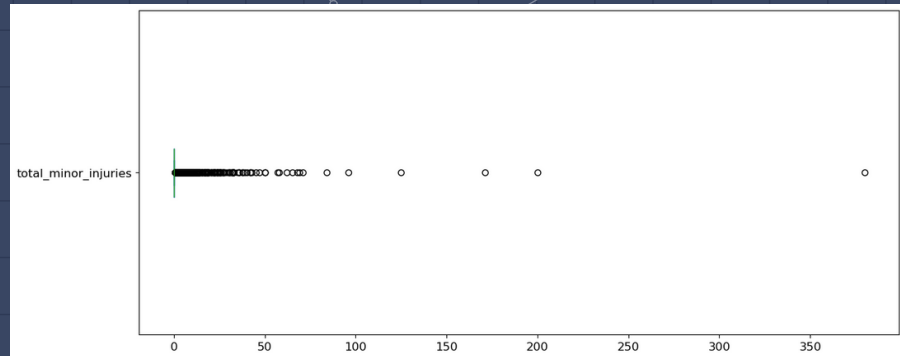
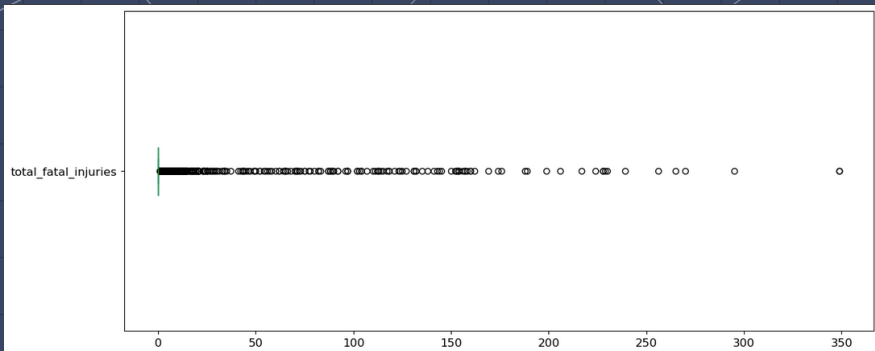
Data Analysis



KEY STEPS



Filling Missing Values



Selected Variables

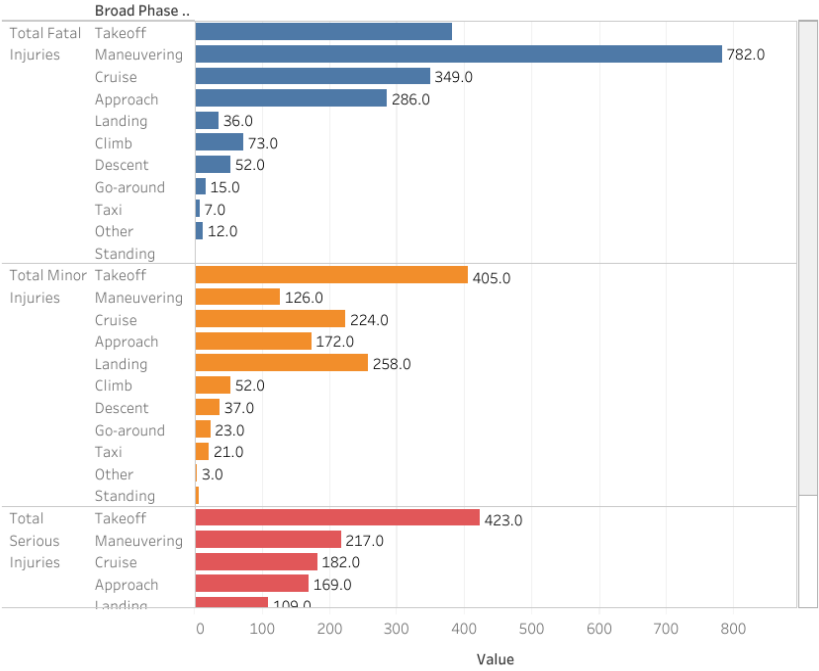
Event id	Amateur built
Investigation type	Number of engines
Event date	Engine type
location	Purpose of flight
country	Total fatal injuries
Injury severity	Total serious injuries
Aircraft damage	Total minor injuries
Aircraft category	Total uninjured
Make	Weather condition
Model	Broad phase of flight



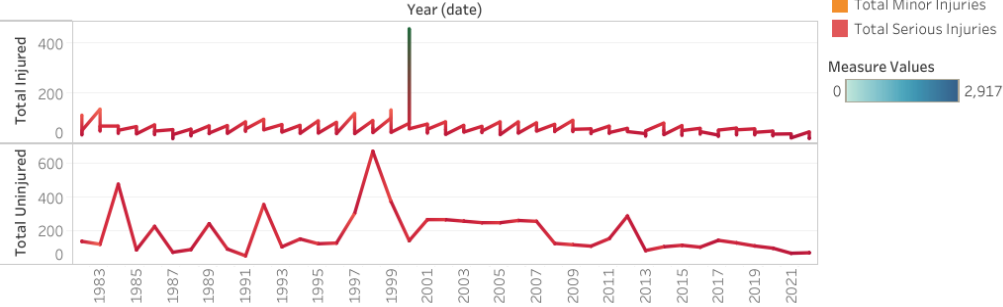
Aircraft Accident Analysis

AIRCRAFT ACCIDENT ANALYSIS

INJURY SEVERITY BY BROAD BASE OF FLIGHT



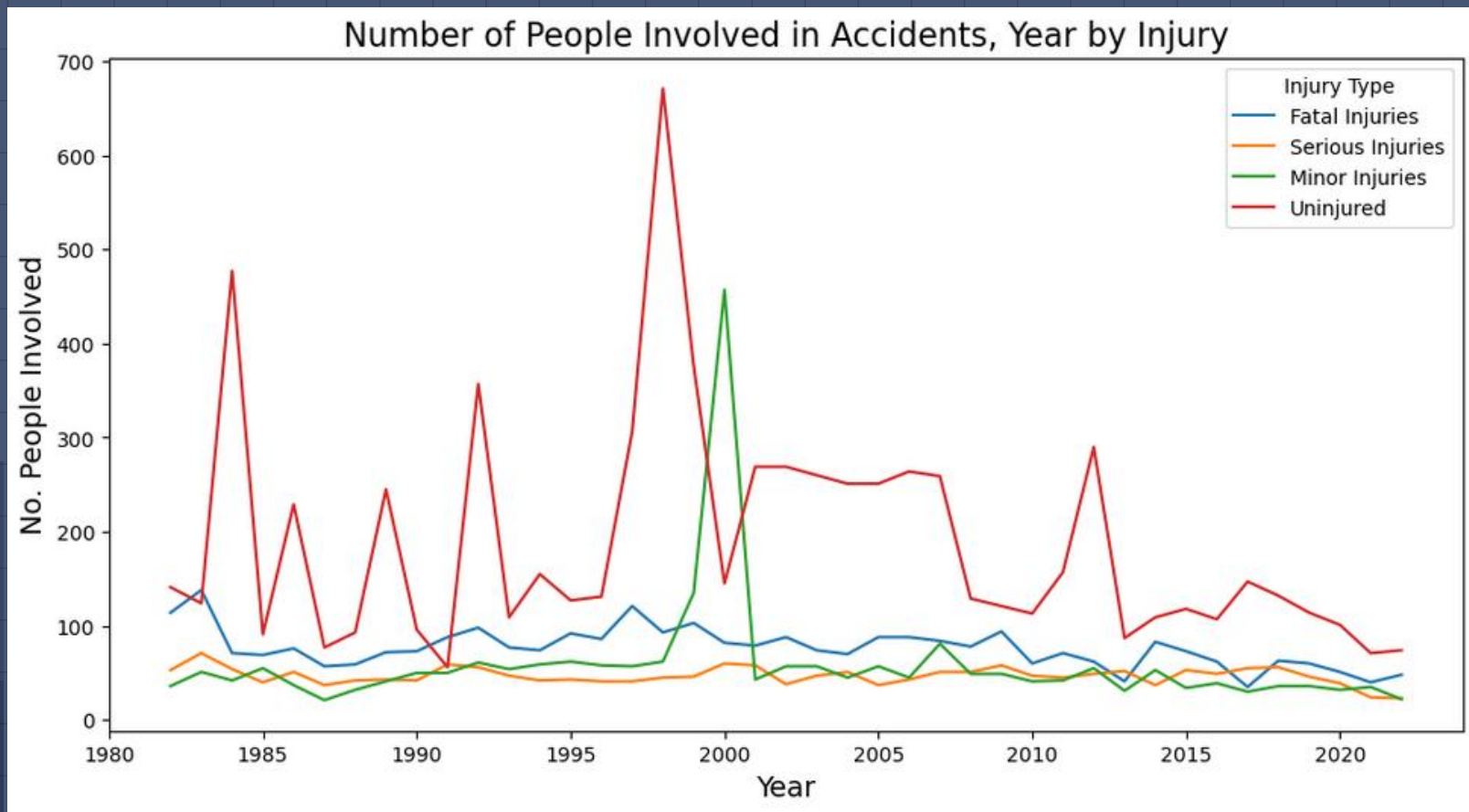
NUMBER OF PEOPLE IN ACCIDENTS PER YEAR



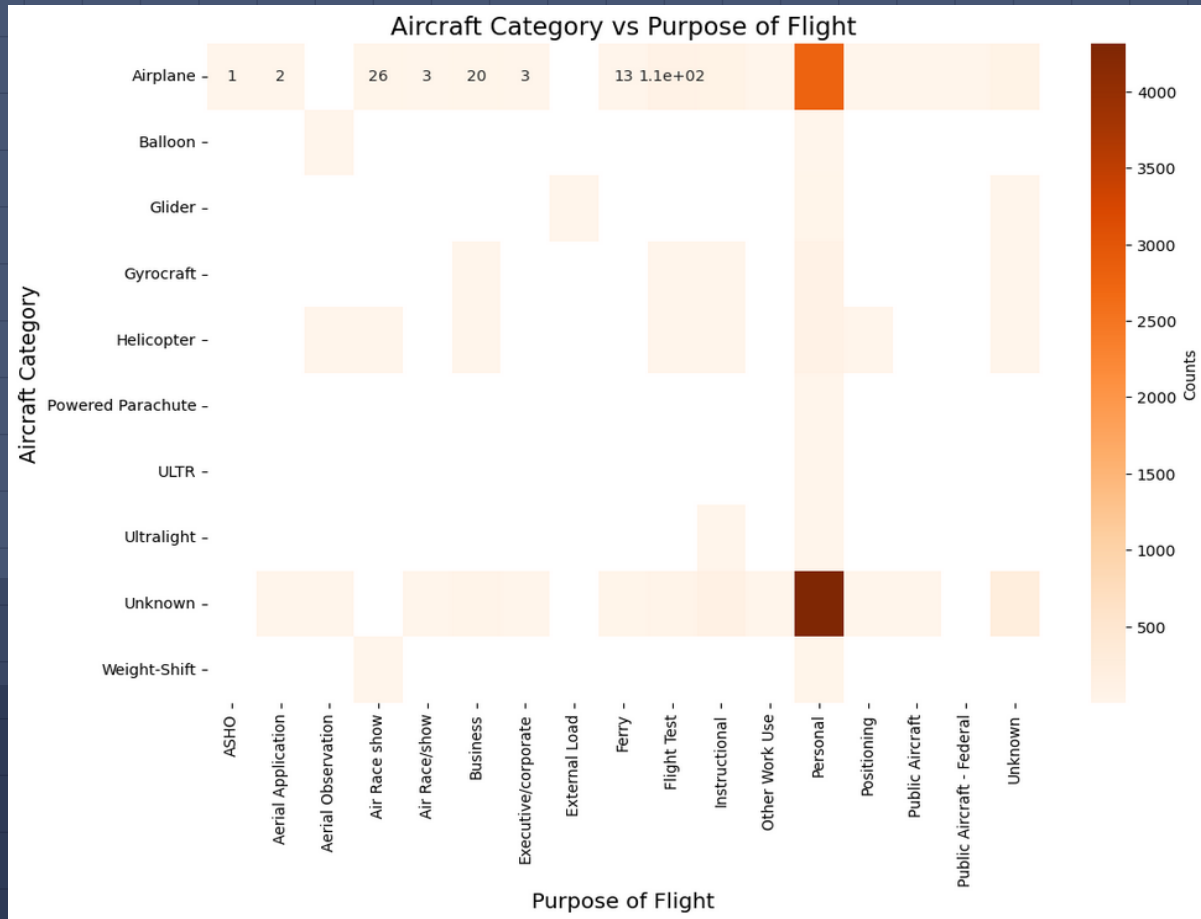
SEVERITY OF INJURIES BY COUNTRY



People Involved in Accidents, Year by Injury

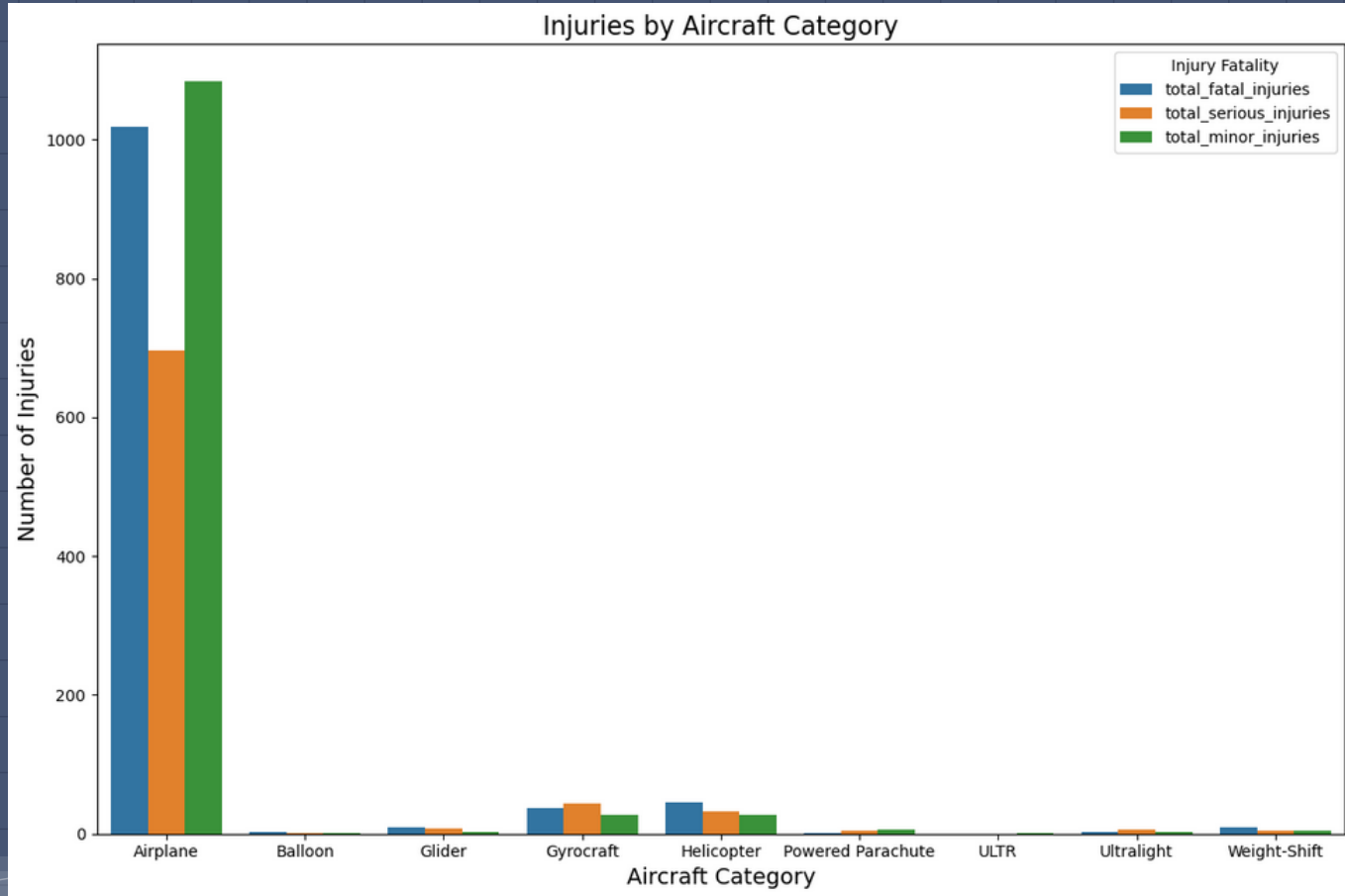


Aircraft Category vs Flight Purpose



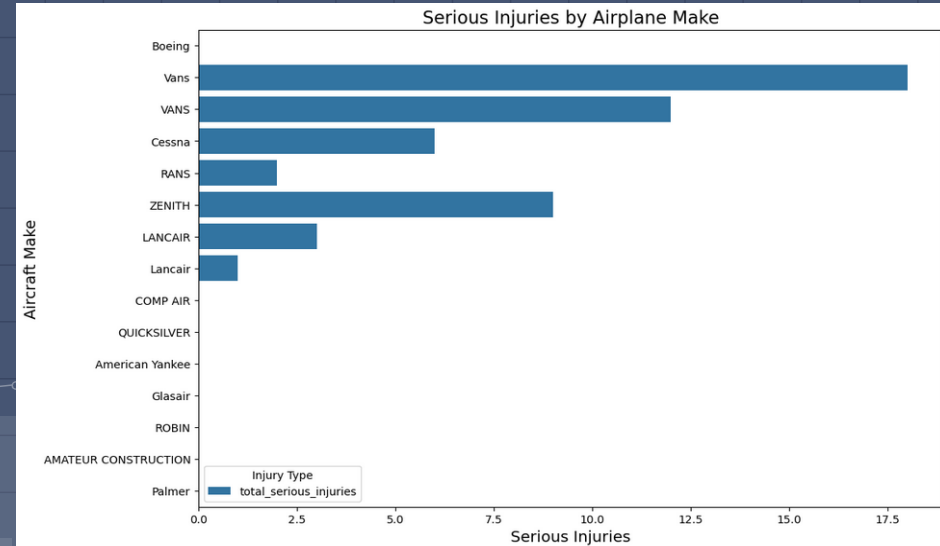
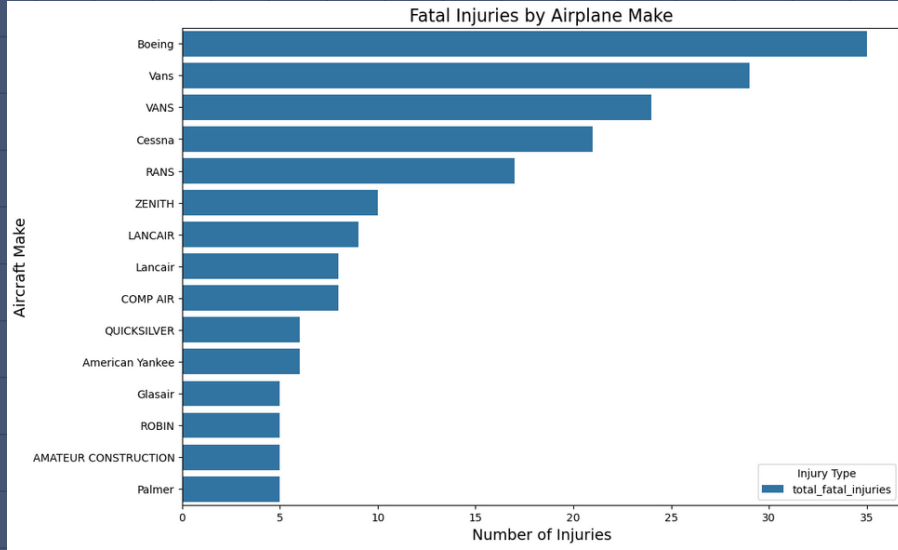
Injuries By Aircraft Category

15



Injuries by Airplane Make

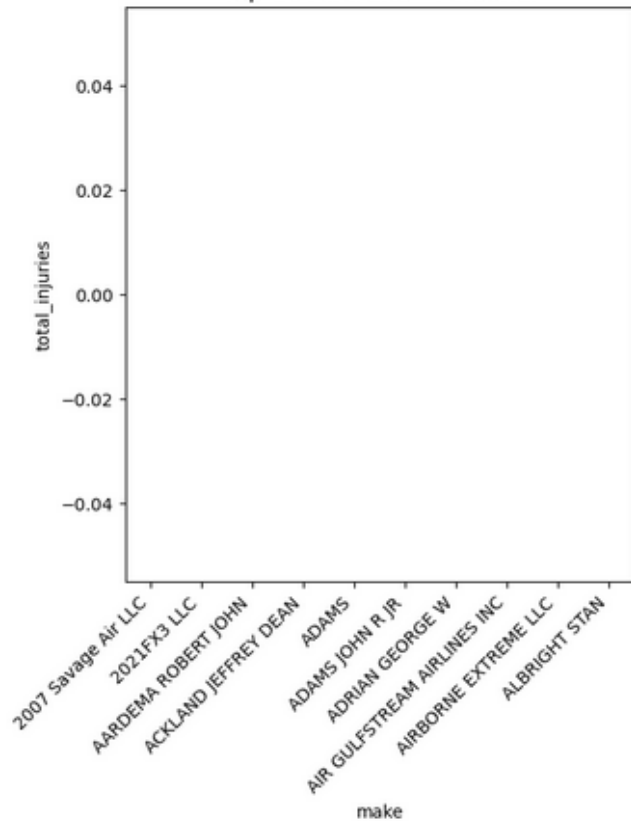
16



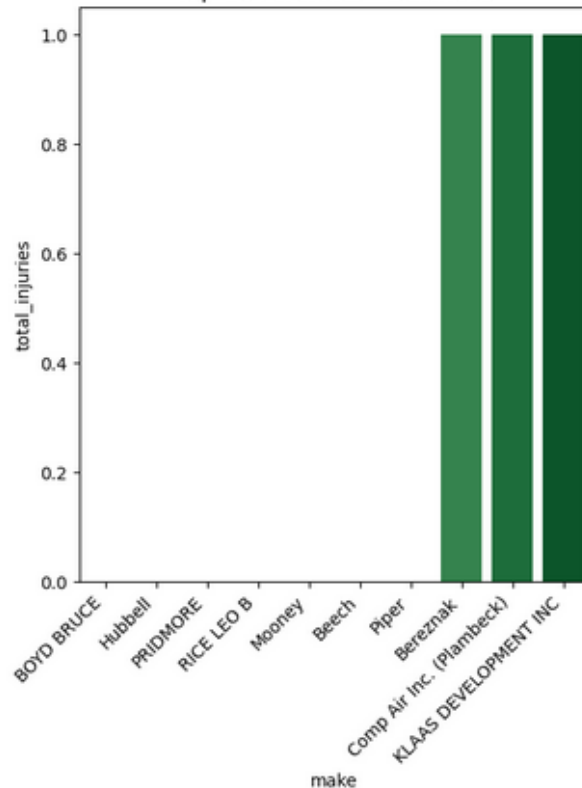
Aircraft makes & purpose of flight against with least injuries.

17

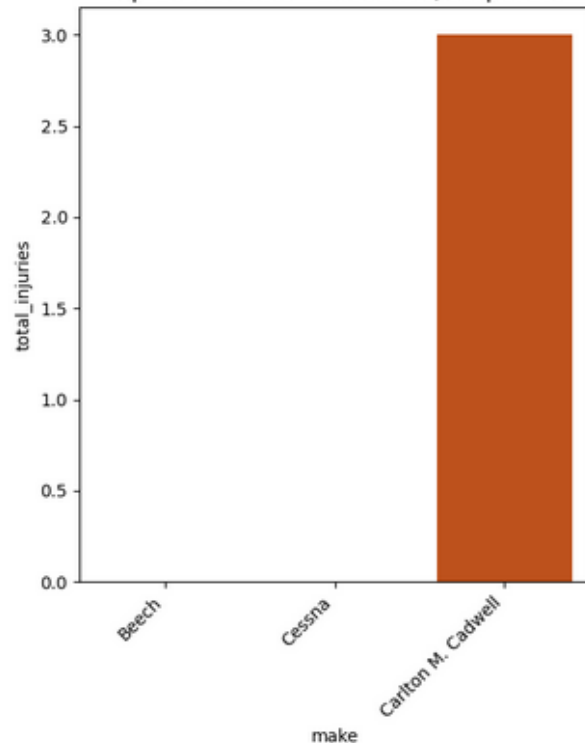
Top 10 Aircrafts - Personal



Top 10 Aircrafts - Business



Top 10 Aircrafts - Executive/Corporate



A close-up, slightly blurred photograph of a stack of newspapers. The top newspaper's masthead 'WORLD BUSINESS' is clearly visible in bold black letters. Below it, the page number 'B3' is printed. Some headlines are partially legible, such as '...countries have' and '...Gen. Tha'. The background shows more layers of newspapers, creating a sense of depth. A blue grid pattern is overlaid on the entire image.

Recommendations & Next Steps.

Recommendations

Horizon Enterprise should prioritize airplanes, as they dominate the dataset in frequency and relevance.

1. For Executive/Corporate flights, the Beech 18 and Cessna stand out with the lowest accident rates and high frequency.
2. For Business flights, the safest and most common makes include BOYD BRUCE, Hubbell, PRIDMORE, RICE LEO B, Mooney, Beech, Piper, Bereznak, Comp Air Inc. (Plambeck), and KLAAS DEVELOPMENT INC.
3. For Personal flights, the least injury-prone and widely used makes are 2007 Savage Air LLC, 2021FX3 LLC, 5 RIVERS LLC, 781569 INC, AARDEMA ROBERT JOHN, ABBETT GERRY, ABBEY VICTOR, ACKLAND JEFFREY DEAN, ACRO, and ADAMS.

Next Steps

More data could enable to make more informed choices especially with regards to

1. Total Cost of Purchasing and Operating the Aircraft
2. Number of Passengers it Carries: Additional data on the seating capacity and passenger demand

THANKS!

Any questions?

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