Aircraft Safety Analysis Report 2025

Aviation Accident Data Review and Recommendations

Project Overview

- **Objective:** Identify safest aircraft for new aviation business venture.
- **Dataset:** Aviation accident reports (88,889 records)
- **Focus Areas:**
  - Aircraft Make and Model
  - Purpose of Flight
  - Number of Engines
  - Aircraft Damage

Key Metrics Analyzed

- **Total Accidents**
- **Fatality Rate**
- **Safety Score**
- **Damage Type** (Minor vs Substantial vs Destroyed)

Safest Aircraft Models

- **Top Performers:**
  - Low fatality rates
  - High accident survival rates
- **Examples:**
  - [List a few specific Make-Model combinations from analysis]

Purpose of Flight Analysis

- **Lowest Risk Purposes:**
  - Personal and Instructional Flights
- **Highest Risk Purposes:**
  - Aerial Application, Air Taxi

Number of Engines vs Risk

- **Single-Engine Aircraft:**
  - Higher frequency of accidents
- **Multi-Engine Aircraft:**
  - Lower fatality rates
  - Better redundancy and safety in failures

Aircraft Damage vs Risk

- **Minor/Substantial Damage:**
  - Most accidents
- **Destroyed:**
  - Strong correlation with fatal injuries

Aircraft Make and Damage Type

- **High-Risk Makes:**
  - Certain makes associated with more 'Destroyed' outcomes
- **Safer Makes:**
  - Makes more often involved in minor/substantial damage only

Recommendations

- **Invest in:**
  - Aircraft makes and models with proven low fatality rates
  - Multi-engine aircraft for operational flights
- **Focus on:**
  - Personal and Instructional flight operations
- **Maintenance Priority:**
  - Early repair and maintenance to prevent extensive damage

Final Thoughts

- A data-driven aircraft selection will lower operational risks.
- Ongoing monitoring of accident data is key for continued safety improvement.

Thank You!

- **Questions & Discussion**