

Aircraft Safety Analysis Report 2025

Aviation Accident Data Review and Recommendations

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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**