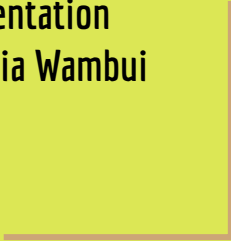




Aircraft Risk Analysis Dashboard

Non-Technical Business Presentation
Presented by: Sylvia Wambui



Project Overview.

This project aims to analyze aviation-related risks using historical aircraft incident and accident data.

We've designed an interactive dashboard to help stakeholders identify trends and make informed safety decisions

Business Context: Why This Project Matters

Aviation safety is a key concern for operators, regulators, and the public.

Understanding causes and patterns behind aircraft incidents supports better risk mitigation.

This analysis helps prioritize areas for safety improvements, crew training, and policy updates.

Data Sources Used

Primary Dataset: Aviation Incident and Accident Reports

Format: CSV

Key Fields:

- Date of Occurrence
- Aircraft Category
- Injury Severity
- Weather Conditions
- Broad Phase of Flight

Data Cleaning and preprocessing were performed using Python (Pandas).

Analysis Process

Data Cleaning – Removed nulls, filtered irrelevant rows

Exploratory Data Analysis – Visualized trends in accidents by category, location, and phase of flight

Dashboard Design – Built an interactive Tableau dashboard with filters and visuals

Business Recommendations – Derived from key insights in data

Injury Severity vs Aircraft Category

Fatal Injuries by Aircraft Category.

Aircraft Category



Aircraft Category

- Null
- Airplane
- Balloon
- Blimp
- Glider
- Gyrocraft
- Helicopter
- Powered Parachute
- Powered-Lift
- Rocket
- ULTR
- Ultralight
- UNK
- Unknown
- Weight-Shift
- WSFT

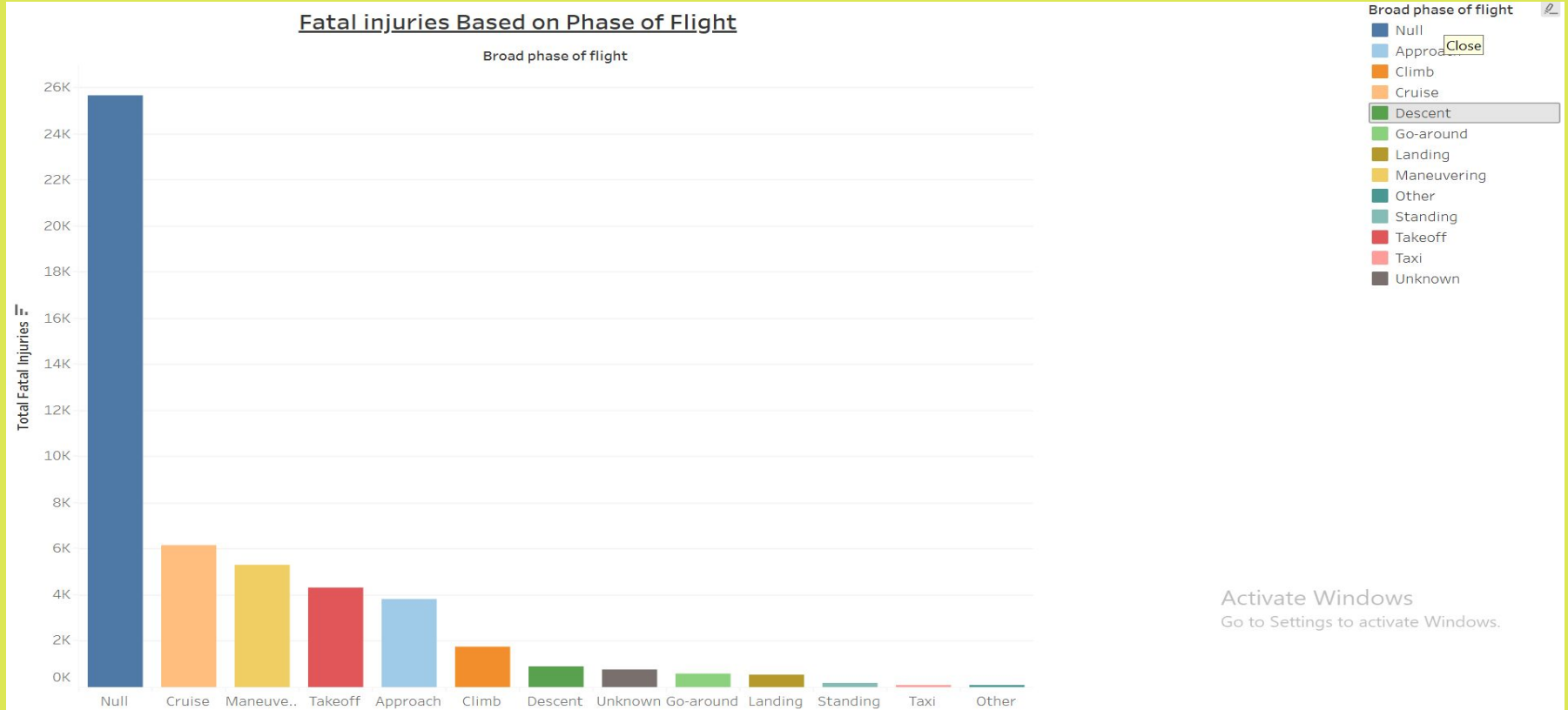
Close

Activate Windows
Go to Settings to activate Windows.

Insight:

General Aviation aircraft had the highest number of **fatal** and **serious** incidents. Focused safety training and inspections are recommended in this category.

Accidents by Broad Phase of Flight

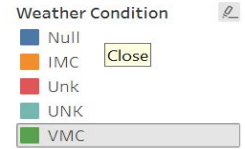
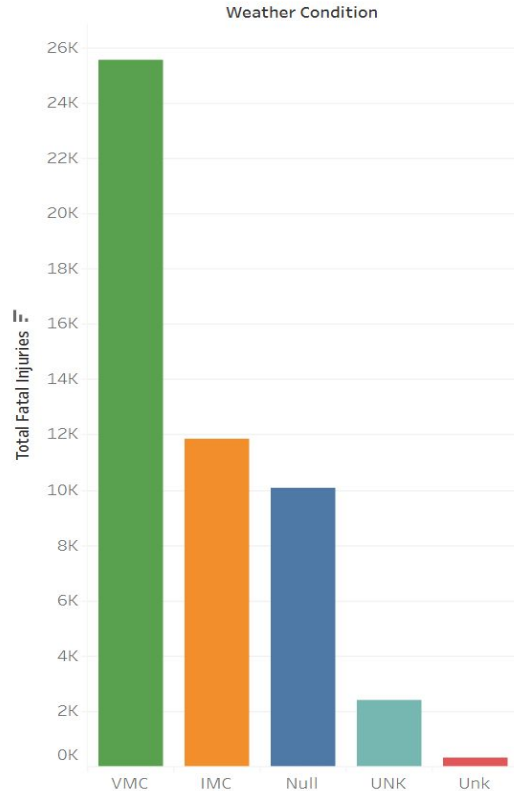


Insight:

Most incidents occur during **landing** and **approach** phases. Training and simulation exercises should target these high-risk moments.

Weather Conditions Impact

Fatal Injuries Based on Weather Conditions



Activate Windows
Go to Settings to activate Windows.

Insight:

Visual Meteorological Conditions (VMC) still show a high number of accidents, suggesting **pilot error** plays a major role even in good weather. Emphasize decision-making skills.

Business Recommendations

- Prioritize safety inspections and training for General Aviation aircraft
- Implement additional safety protocols during landing and approach
- Introduce pilot decision-making workshops even under good weather conditions

Future Improvements

Incorporate real-time weather and flight data

Expand to global datasets for broader comparison

Collaborate with aviation authorities for deeper insights and validation

Thank You

Let's continue building safer skies through data-driven insights.

Questions? I'm happy to answer!

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