BIRD STRIKES DATA ANALYSIS (2000-2011)

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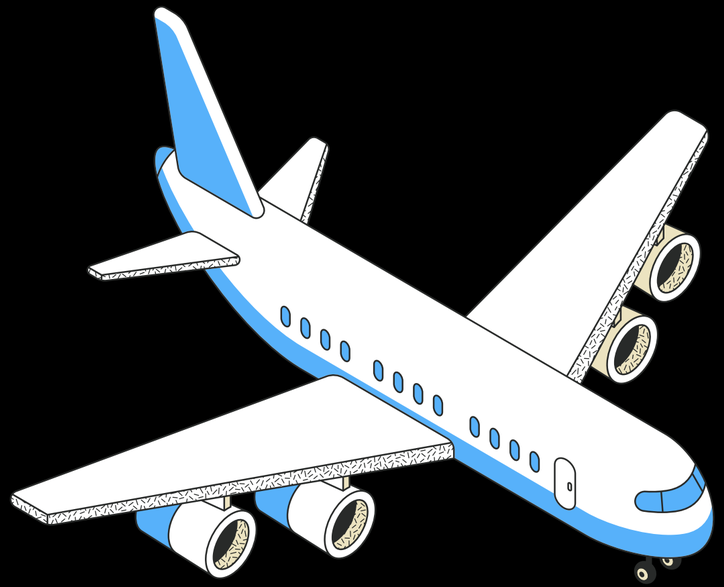
Fradel and Spies

AGENDA

- Introduction: Problem statement and objectives.
- Data Overview: Dataset source and key features.
- Key Metrics & Visualizations:

1. Number of Bird Strikes per Year
2. Airline & Airport Analysis
3. Yearly Costs Incurred
4. Altitude and Flight Phases
5. Pilot Warnings & Safety Measures

- Power BI Dashboard Design: Features and navigation.
- Conclusion: Key takeaways.



PROBLEM STATEMENT

Understanding the Impact of Bird Strikes on Aviation Safety

- Bird strikes are a significant hazard to aircraft safety.
- In particular, take-off, landing, and low altitude phases are most vulnerable.
- Financial and operational consequences include damages and flight delays.
- Objective: Analyze bird strikes from 2000-2011 to identify trends, risks, and improvement opportunities.

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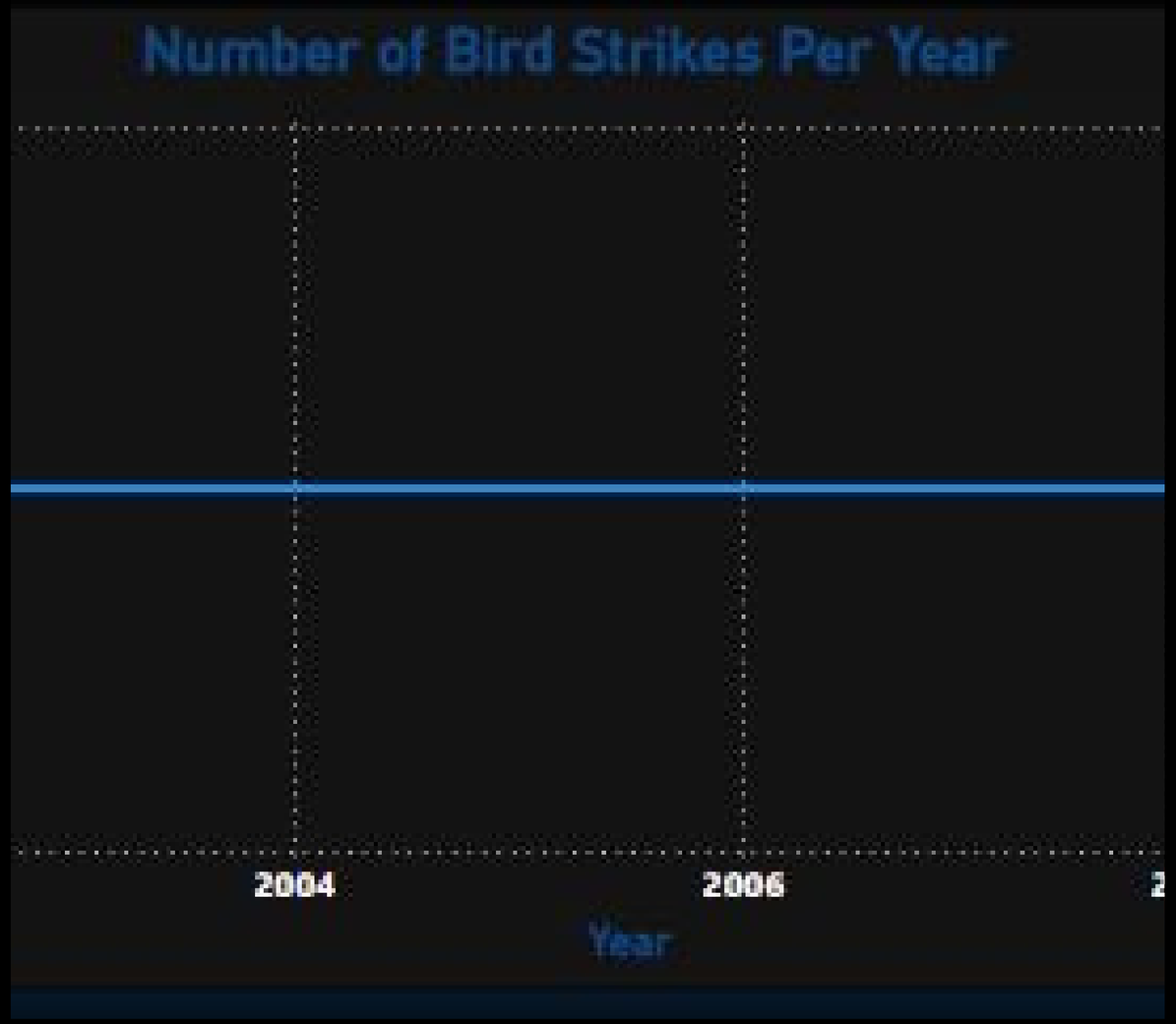
DATA OVERVIEW

FAA Bird Strikes Dataset Overview

- Data collected by FAA from 2000-2011.
- Key fields:
- Incident Date
- Altitude of Aircraft
- Airline and Airport Information
- Financial Costs
- Flight Phase & Pilot Informed
- Number of Records: X incidents
- Data Source: Federal Aviation Administration (FAA)

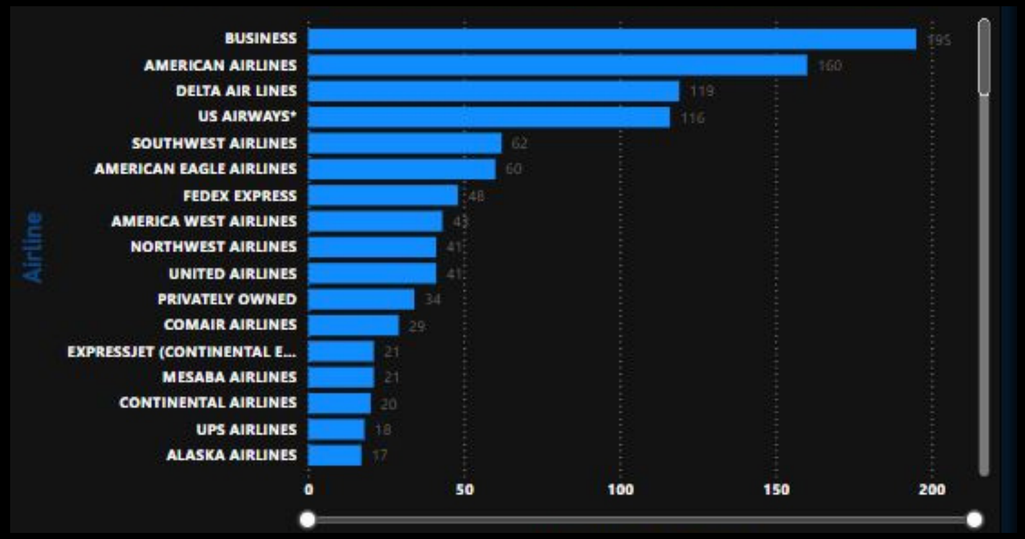


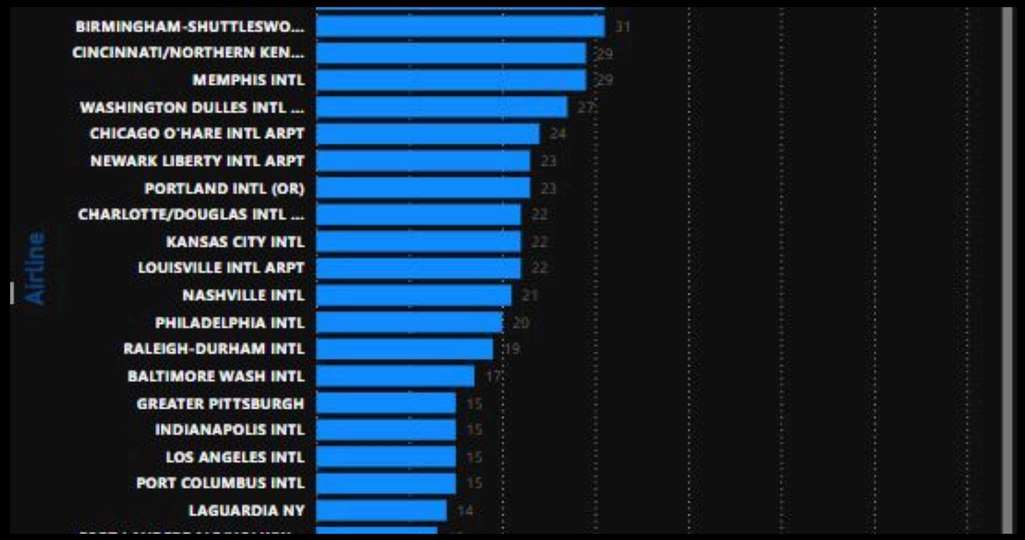
KEY METRICS - YEARLY ANALYSIS

- A line graph showing the number of bird strikes per year.
- Insights:
- Are bird strikes increasing or decreasing over the years?
- Any spikes during certain years due to external factors?

KEY METRICS - AIRLINES & AIRPORTS

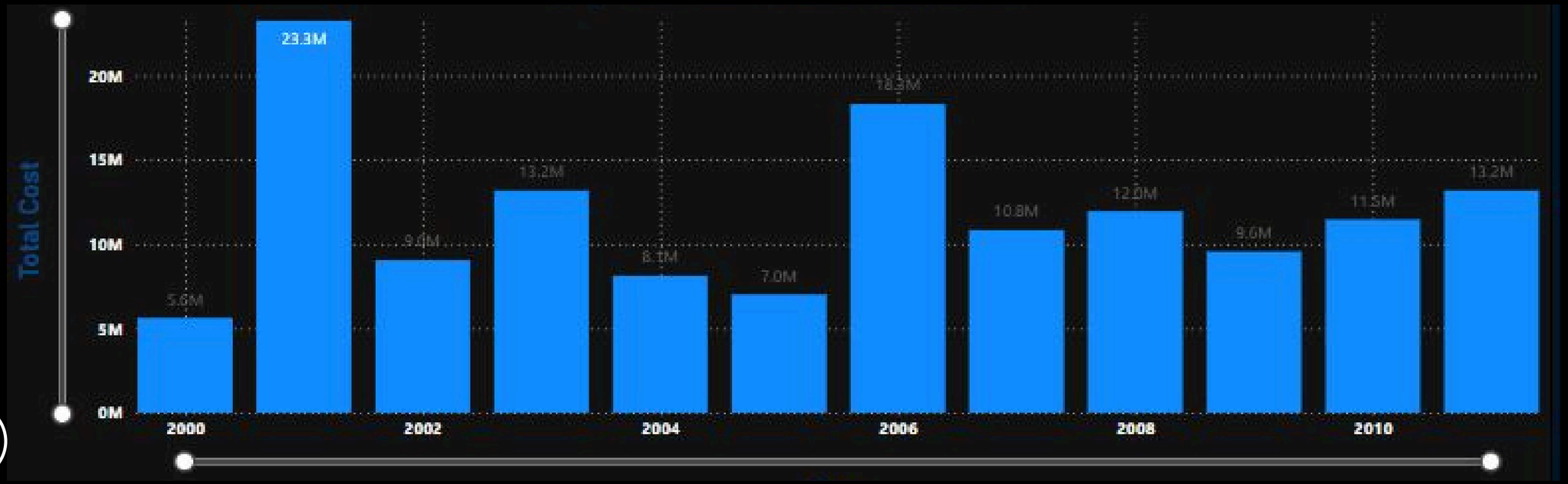
- Analysis of airlines and airports with the highest incidents of bird strikes.
- Identify major hotspots for bird strikes.
- Visual: Bar chart of top 10 airlines and top 50 airports.
- Insight: Which airlines are at higher risk? Does geography affect the frequency of strikes?

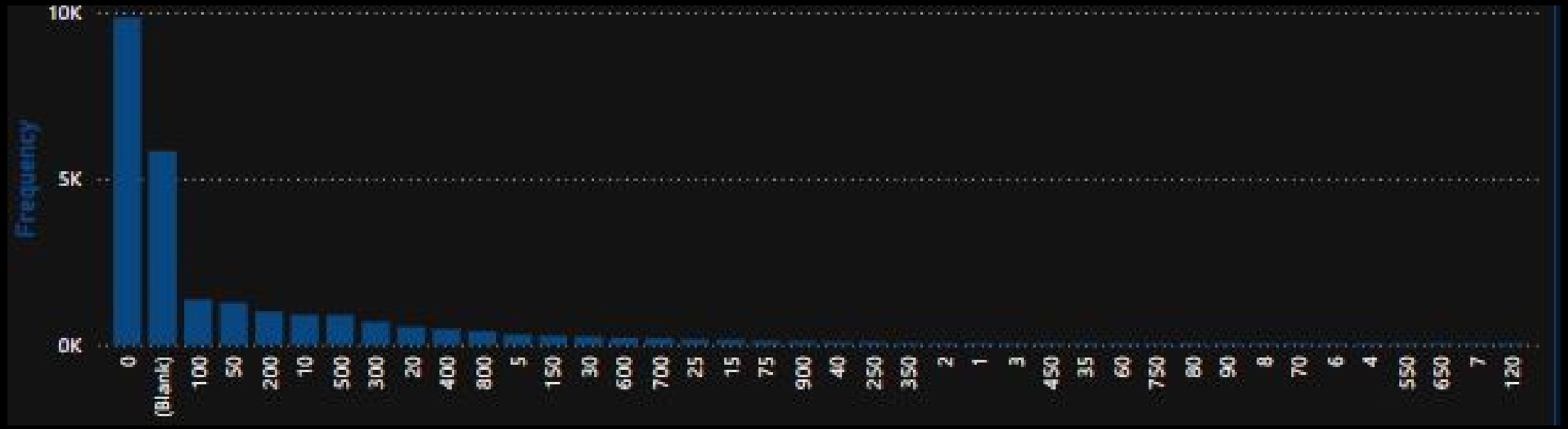




KEY METRICS - YEARLY COST INCURRED

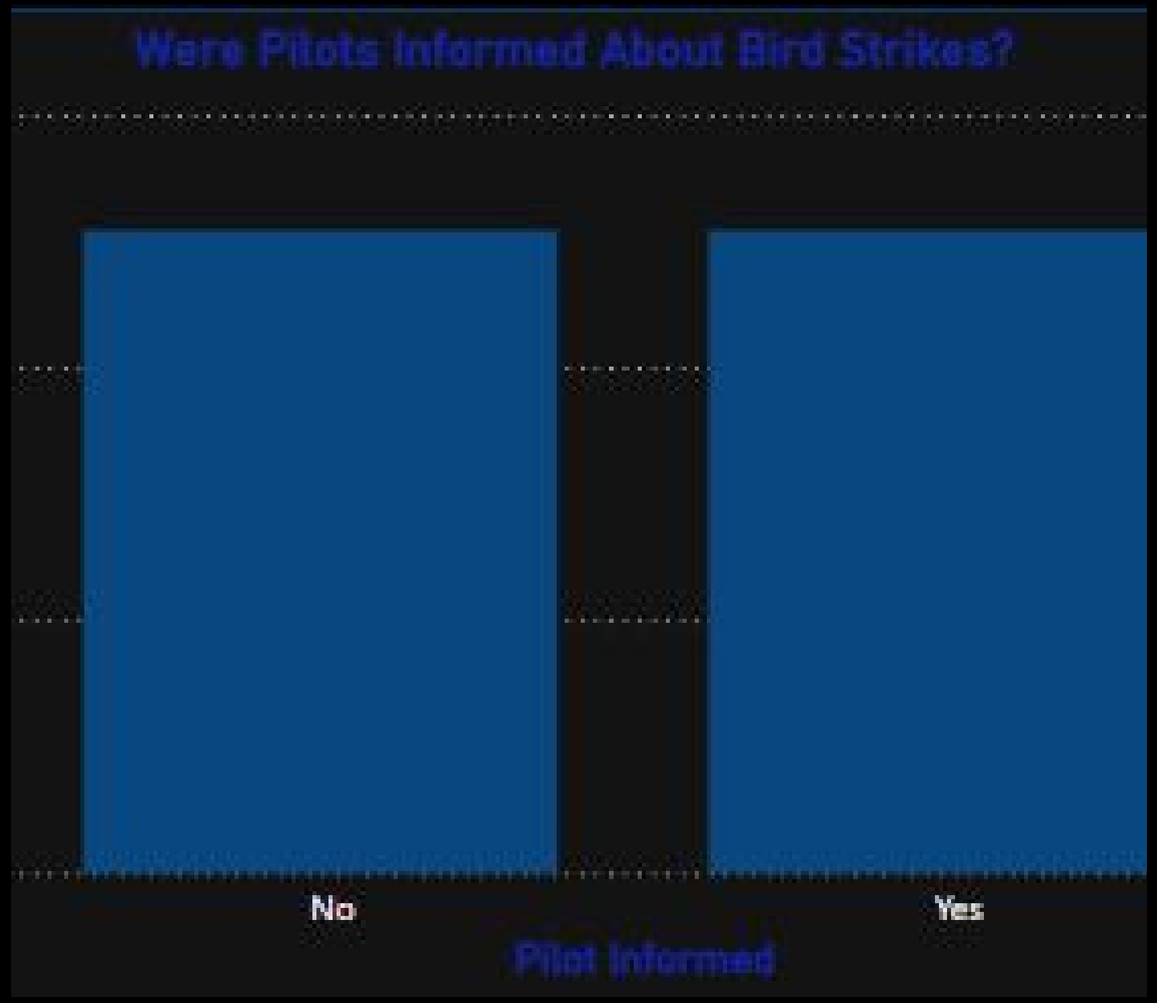
- Total and yearly financial costs due to damage from bird strikes.
- Breakdown of costs in different years.
- Visual: Bar chart showing the yearly costs incurred.
- Insight: Highlight any high-cost years and relate it to strike frequency or severity.





ALTITUDE AND PHASE OF FLIGHT ANALYSIS

- Analysis of average altitude during bird strikes and during which phase of flight they occur.
- Phases: Take-off, Climb, Descent, Approach, Landing.
- Visual: Bar chart showing average altitude vs. flight phase.
- Insight: Are there certain phases where bird strikes are more common?



KEY METRICS - PILOT WARNINGS & SAFETY MEASURES

- Analysis of whether pilots were informed or warned about birds prior to the strike.
- Comparison of safety measures and the outcomes of informed vs. uninformed pilots.
- Visual: Pie chart or bar chart indicating the percentage of strikes where pilots were informed.
- Insight: How effective are pre-warning systems in preventing bird strikes?

CONCLUSION

- Trends: Bird strikes have a consistent pattern based on time of year and flight phases.
- Financial Impact: High costs incurred, especially in specific years.
- Risk Factors: Certain airlines and airports are more prone to bird strikes.
- Recommendations:
- Enhance bird detection systems.
- Increase pilot warnings for high-risk areas.
- Implement stricter safety protocols during vulnerable phases of flight.