Aviation Accident Dashboard Based on NTSB Data

This project presents a Power BI dashboard that visualizes aviation accident data from the National Transportation Safety Board (NTSB) in the United States.

Purpose of This Project

The dashboard is designed for pilots, aviation professionals, and safety analysts to explore key factors that contribute to aviation accidents. Through comprehensive visualizations of historical data, users can identify safety issues, detect risk patterns, and gain actionable insights that may help prevent future incidents. The interactivity of Power BI allows deep exploration of various dimensions—such as aircraft maintenance and pilot experience—ultimately supporting a safer aviation environment.

Source Data

The NTSB aviation accident database includes records of civil aviation accidents and selected incidents from 1962 to the present, covering the U.S., its territories, and international waters. Foreign investigations with NTSB participation are also included.

For this project, only U.S. accident data from 2008 onward is used.

- Source: NTSB Aviation Accident Database
- avall.zip is used for this project NTSB dataset download page

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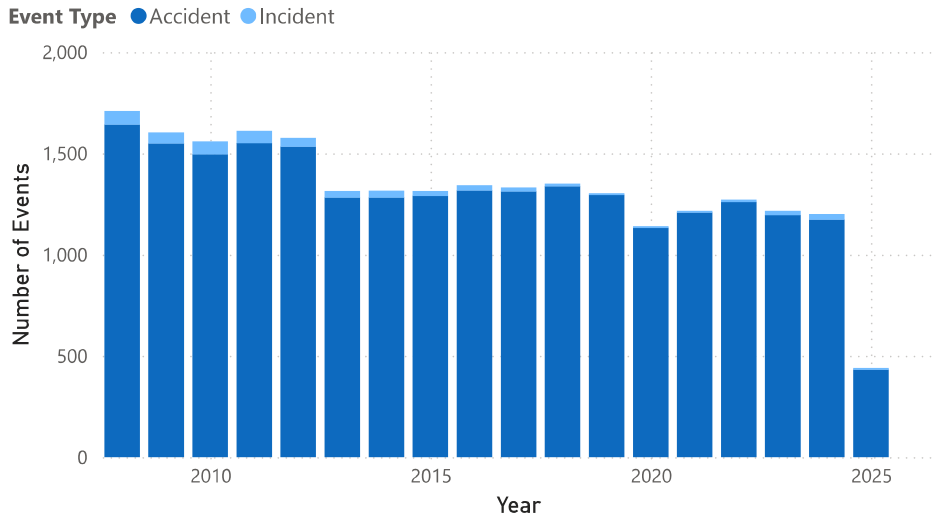
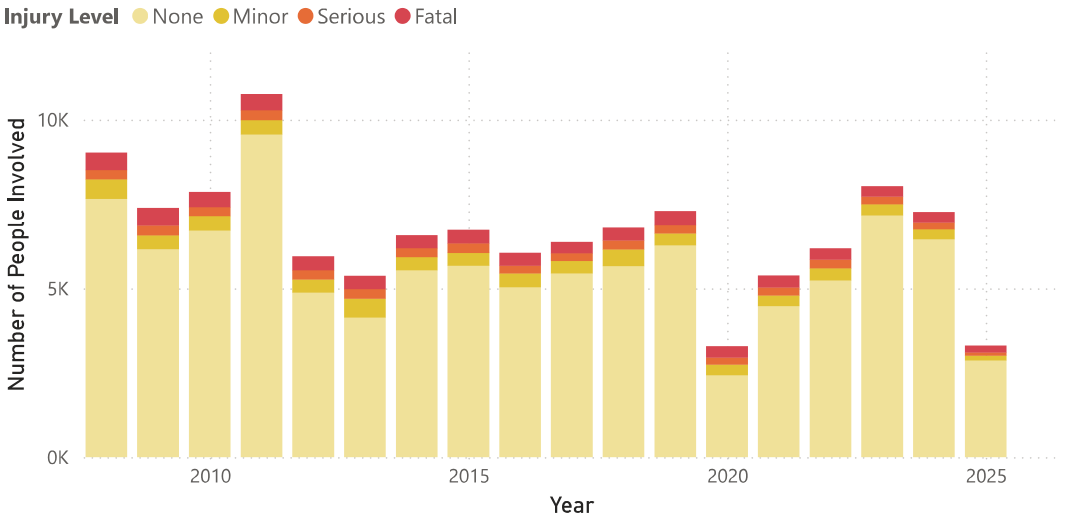
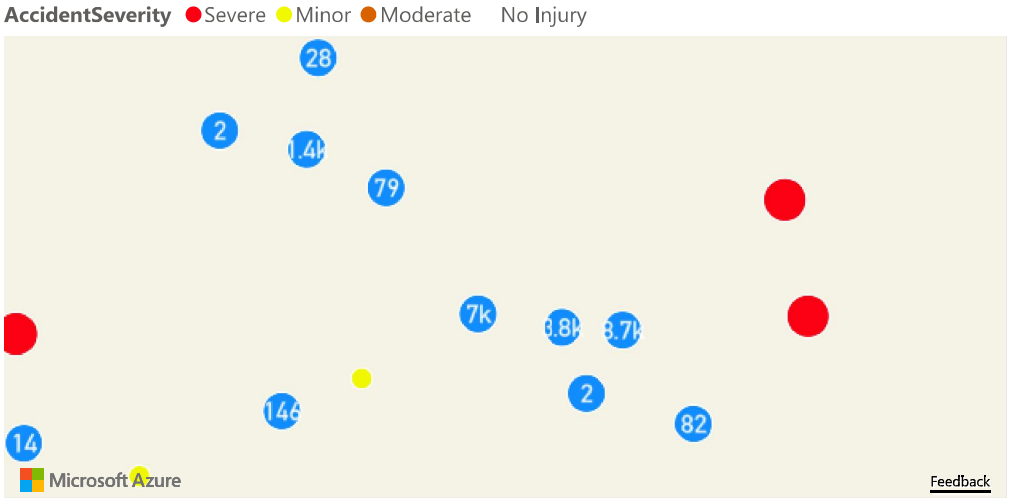
Trend of Accidents and Incidents



Trend of Injury and Fatallity



Accident Map



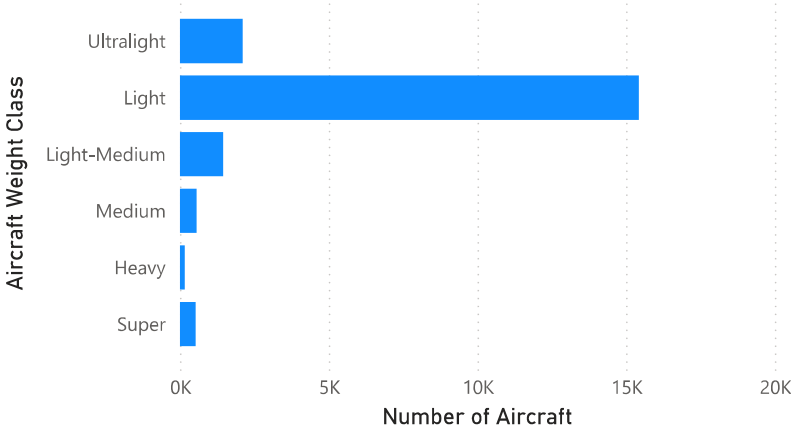
Recent 5 Major Accidents

Accident Date	Detail Report
19/09/2024 12:00:00 AM	United Airlines (UA) flight 2428 received a traffic alert and collision avoidance system (TCAS advisory (RA) while descending to flight level FL310 when enroute to San Francisco Internat (SFO), San Francisco, California. Two passengers were seriously injured, and two cabin crewr sustained minor injuries as a result of the aircraft response to the TCAS alert. The flight was scheduled domestic passenger flight from Newark Liberty International Airport (EWR), New Jersey to SFO. UA2428 was instructed by air traffic control to descend and maintain FL310 for their arrival About 500 ft above level off at FL310, the crew received a TCAS traffic alert "traffic, traffic" f crossing 1,500 feet below to which, the first officer, as pilot flying, reduced vertical speed or control panel in response. A TCAS RA then immediately annunciated for the same traffic. Th flying responded by disengaging the autopilot and auto throttle and pitched the aircraft up the pitch guidance on the primary flight display. Flight data show pitch increased by about second and the aircraft descent arrested. Vertical acceleration ranged from 2.3 to 0.6 (g) ov during the maneuver. The seatbelt sign had been turned on in the cabin shortly prior to the TCAS annunciation, h

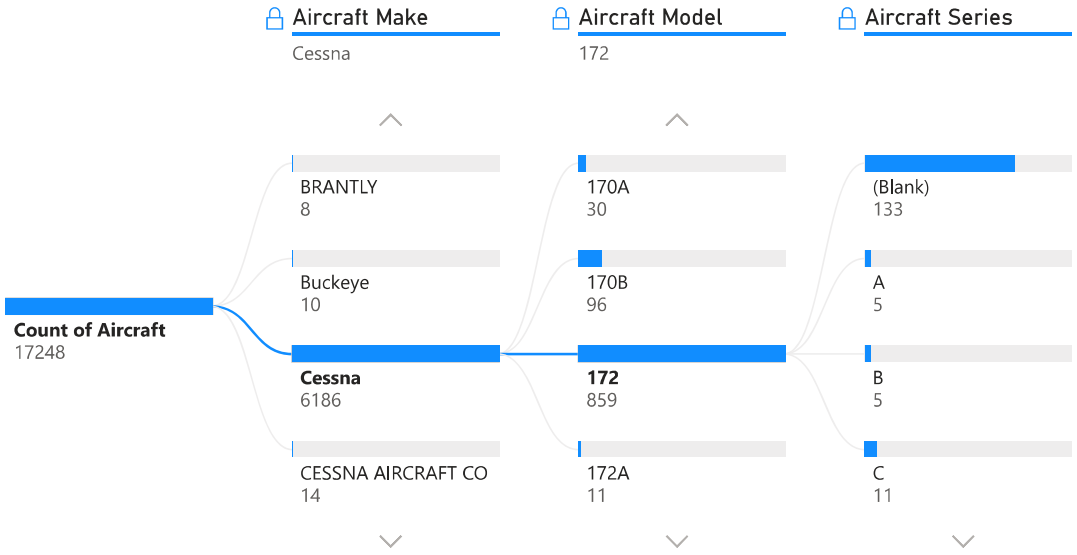
Aircraft Type Breakdown

Aircraft category	Number of aircraft
	715
Airplane	24839
Balloon	190
Blimp	1
Glider	421
Gyrocraft	159
Helicopter	3131
Powered-Lift	6
Ultralight	30
Unknown	19
Total	**29511**

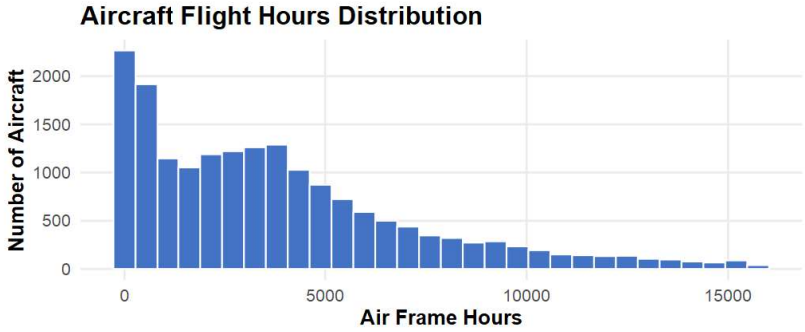
Breakdown by Weight Class



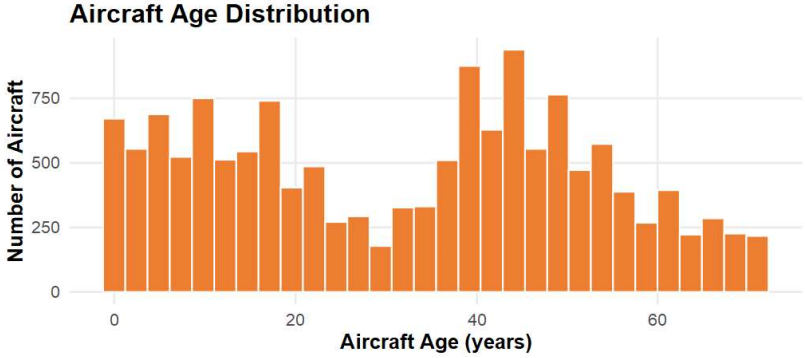
Accident Aircraft by Make and Model



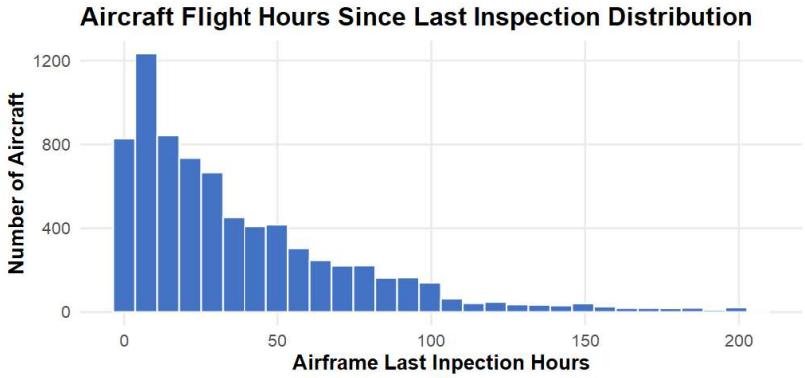
Aircraft Flight Hours Distribution



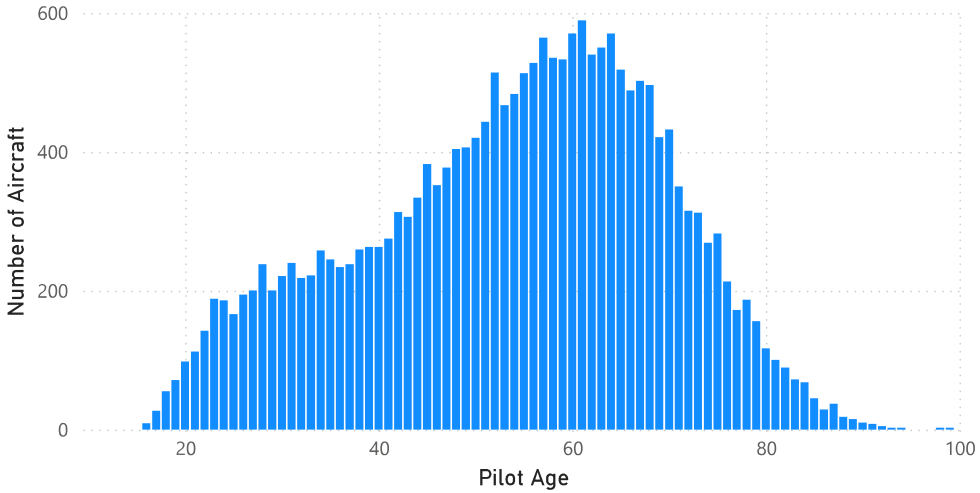
Aircraft Age Distribution



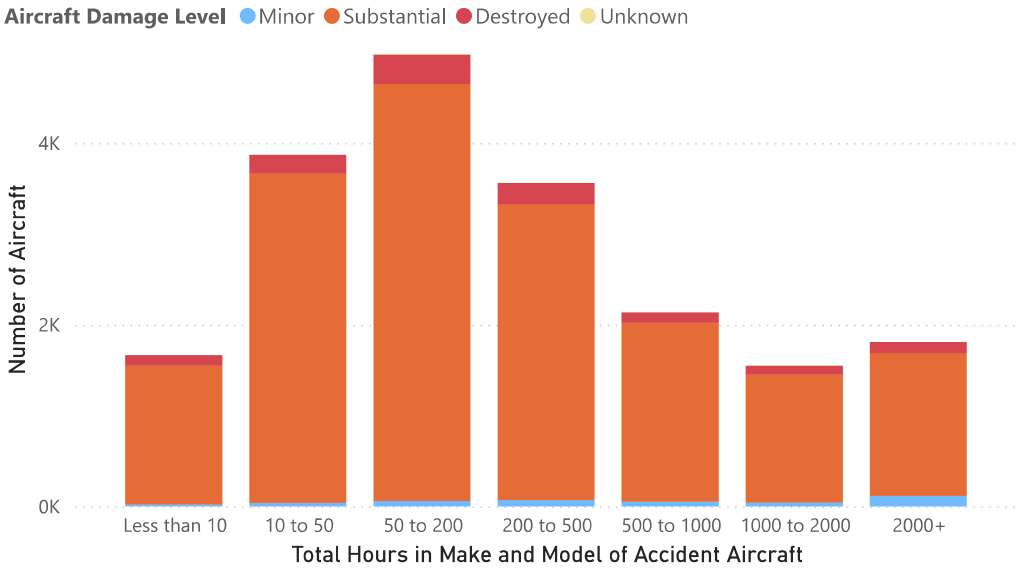
Aircraft Flight Hours Since Last Inspection Distribution



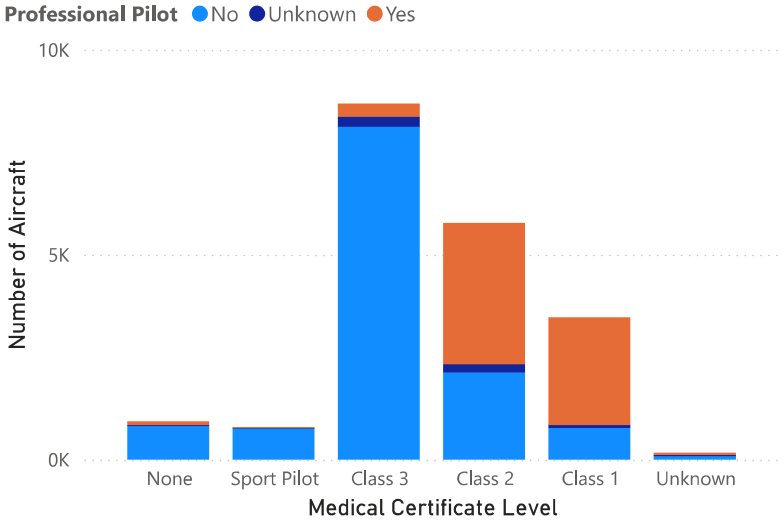
Pilot Age Distribution



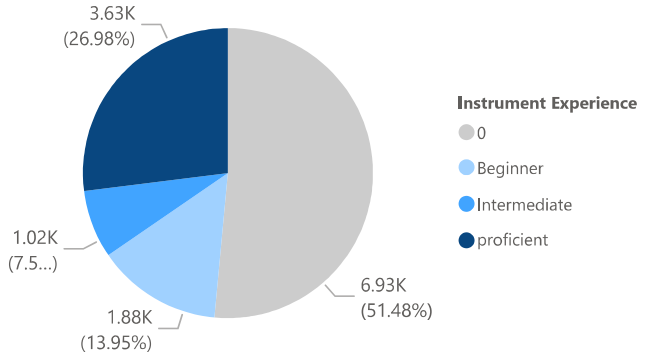
Accident Breakdown by Pilot Experience Level of Accident Aircraft Model



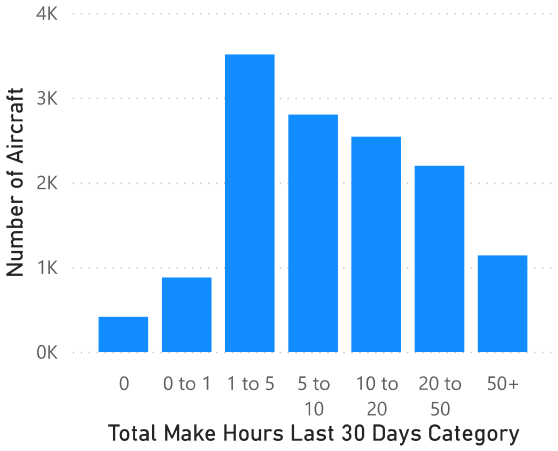
Breakdown of Accident by Pilot Medical Certificate and Profession



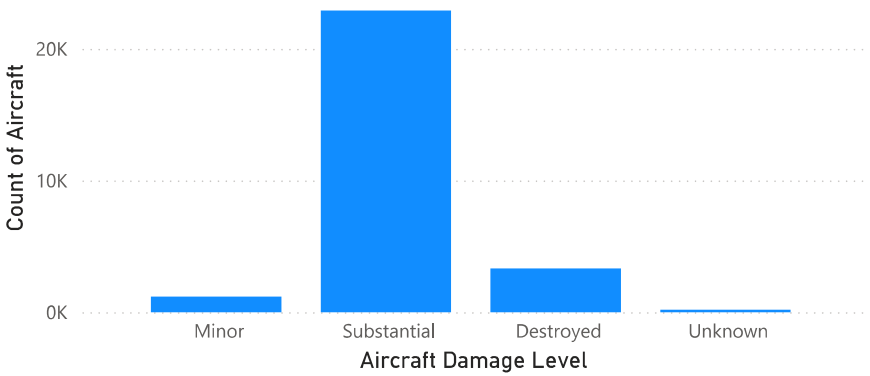
Accident Breakdown by Pilot's Instrument Flying Experience



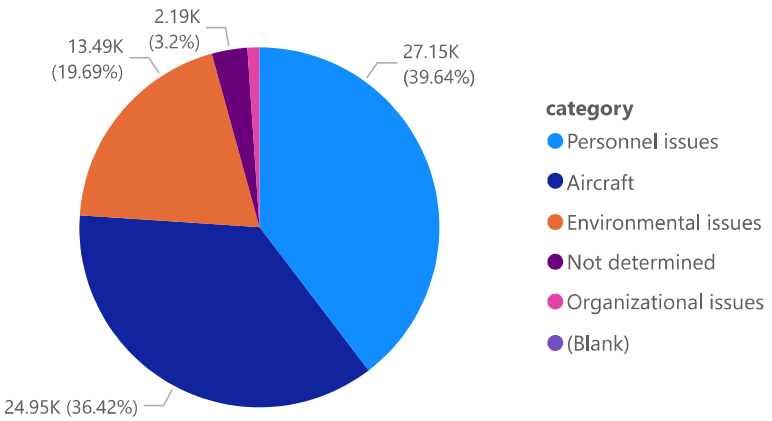
Accident Breakdown by Pilot Flight Hours of Accident Aircraft Model within Last 30 Days



Distribution of Damage Level



Breakdown of Accident by Causes



Causing Factor | NA | Non Causing Factor

Breakdown of Accident by Phase of Flight