**Project 1 Milestone Report**

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ACIS 5504: Information Systems Design and Database Concepts

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**Aviation Accident Database**

**Introduction:**

In commercial Aviation, safety is critical to the day-to-day operation of air travel. The National Transportation Safety Board (NTSB) plays an essential role in aviation safety by investigating aviation accidents, determining the cause and providing important safety recommendations to prevent the same accident from occurring. To enhance the efficiency and effectiveness of these investigations, as well as provide investigators, reliable information and data that will streamline decision-making, there is a pressing need for a comprehensive and well-structured aviation accident database. This database will serve as a central repository for all information related to aviation accidents, allowing for effective decision making, analysis, and reporting.

**Purpose of Database:**

The primary purpose of the aviation accident database is to provide a centralized system for storing and retrieving detailed information about aviation accidents. It will serve multiple stakeholders, including NTSB investigators, aviation safety analysts, airline companies, and regulatory bodies such as the Federal Aviation Administration (FAA). By consolidating all relevant data into a single platform, the database will enable users to access, make effective decisions, analyze, and share information more efficiently. Additionally, users will be able to identify trends in the data, such as the most common causes of accidents.

**Objectives of the Database:**

1. Improve Effectiveness and Efficiency of Investigations
2. Reduce Investigators Workload through Streamlining Report Generation
3. Provide Statistics for NTSB to make Reliable Recommendations
4. Allow NTSB to Make Improvements to Investigative Processes

The database will have 4 main objectives in mind. The most essential aspect will be focused on improving the efficiency of investigations. Investigators will be able to quickly reach conclusions and close an investigation faster by using data from the database to assist in their investigations. Additionally, it will help investigators make critical recommendations for safety by using the data and statistics from these accidents, and these recommendations will be much more accurate as well as reliable since they are using statistics from these cases. It also helps with reporting, by providing investigators with a point of reference that can be provided quickly when generating reports rather than them having to look through data on a paper sheet from a particular file in a warehouse. Lastly, this database can potentially give the NTSB room to make improvements to investigative procedures by providing investigators with enhanced data retrieval processes, long term data storage, an audit trail that tracks investigators' actions within the database, as well as the ability to perform predictive modeling and risk assessment.

**Expected Outcomes:**

1. Faster Investigation Process
2. Better Decision Making
3. Improvements to Report Generation
4. Enhance Public Trust and Transparency

By providing the NTSB with a much needed database, the investigation process can be streamlined given a set of data with common causes for each accident and allows the investigators to determine the cause of the accident quickly and effectively. Additionally, this also leads to improved decision making because knowledge of prior accidents, patterns and trends can help the NTSB make important decisions and recommendations to further keep the public safety. In turn, this enhances public trust and transparency, as accurate reporting and diligent actions to ensure effective communication can significantly bolster public confidence. Also, reports generated by the investigators will be quick but also be improved in terms of data, statistics and resources as well as providing investigators an important point of reference.

**Conclusion:**

The implementation of a comprehensive aviation accident database is not just a technological upgrade for the NTSB; it’s a critical step forward in enhancing aviation safety and operational efficiency. By serving as a central repository for detailed accident information, the database will significantly improve the effectiveness of investigations, allowing the NTSB to identify accident causes more quickly and accurately. This will lead to more reliable safety recommendations, ultimately helping to prevent future accidents and save lives.

Moreover, the streamlined processes for report generation and decision-making will reduce the workload on investigators, enabling them to focus on critical analysis rather than time-consuming data retrieval. The ability to track trends, perform predictive modeling, and assess risks will also empower the NTSB to continuously refine their investigative methods, ensuring that they remain at the forefront of aviation safety.

By fostering transparency and enhancing public trust, the database will reinforce the NTSB’s reputation as a leading authority in aviation safety. In summary, this database is an essential tool that will not only support the NTSB in fulfilling its mission but also contribute to the broader goal of ensuring safer skies for all.

**ER Model:**

A black and white image of a diagram

Description automatically generated with medium confidence

**Data Dictionary**

* AccidentA screenshot of a computer

  Description automatically generated
* Aircraft

**A screenshot of a computer

Description automatically generated**

* Airline

**A screenshot of a computer

Description automatically generated**

* Investigator

A screenshot of a computer

Description automatically generated

* Accident Cause

A screenshot of a computer

Description automatically generated

* Safety Recommendation

A screenshot of a computer

Description automatically generated

* Passenger

A screenshot of a computer

Description automatically generated

* Maintenance Record

A screenshot of a computer

Description automatically generated

* Risk Assessment

A screenshot of a computer

Description automatically generated

* Air Traffic Control

A screenshot of a computer

Description automatically generated

* Pilot

A screenshot of a computer

Description automatically generated

* Flight Details

A screenshot of a computer

Description automatically generated

* Weather Conditions

A white screen with text

Description automatically generated with medium confidence

* Safety Implementation

A screenshot of a computer

Description automatically generated

* Investigative Report

A screenshot of a computer

Description automatically generated