The Comparative Benefits of EFBs and Paper Documents in the Cockpit 2016-2022

Megan Mitchell and Thomas Strybel, PhD
Department of Psychology
College of Liberal Arts

Introduction
- In aviation, the Pilot in Command (PIC) is in charge of gathering required materials such as performance calculations, charts, and other documents critical to flight in what is referred to as a “flight bag” (Fitzsimmons, 2002).
- Due to the volume of documents which can weigh up to 35 pounds, many pilots utilize electronic flight bags (EFBs) (Stribbe, 2013).
- A previous archival study from 1995 through 2015 found significant human factors issues with EFBs that include a lack of training, inhibited access to information, and distraction/workload (Sweet, 2016).
- Recently many companies such as Airbus have made the use of EFBs part of their standard operating procedures (Electronic Flight Bag, the New Standard, 2021).
- The proposed archival study aims to compare the hazards and benefits of carrying EFBs to the hazards and benefits of carrying paper documents in the cockpit utilizing the National Aeronautics and Space Administration (NASA) Aviation Safety Reporting System (ASRS) from 2016 through 2022 with the increased use of EFBs.

Methods
- Reports will be gathered from NASA ASRS Database from January 2016 through December 2022 Containing the terms “EFB”, “iPad”, “Jeppesen”, “Electronic”, “Paper”, “TAC Chart”, or “Sectional Chart” in the narrative.
- Subject matter experts (two professional pilots) will validate report categorization.
- Chi-squared tests of independence and post-hoc tests will be conducted to analyze the data.
- Preliminary Results
- Most issues with missing or incorrect information and access to information
- Due to the volume of documents which can weigh up to 35 pounds, many pilots utilize electronic flight bags (EFBs) (Stribbe, 2013).

Preliminary Discussion
- Common problems pilots are experiencing with EFBs
  - Inconsistencies between information provided in EFBs and paper documents
  - iPads freezing causing inability to access information
  - iPads losing battery charge during flight
  - EFB mount causing inaccessibility in the Cockpit
- Common problems pilots are experiencing with paper documents
  - Failure to locate required documents onboard the aircraft
  - Inconsistencies between information provided in paper documents and published documents

Objectives
- Gather data on EFB use in current conditions during actual flight
- Identify problems pilots are experiencing while using EFBs
- Identify problems pilots are still experiencing while using paper documents
- Produce results that may be used to influence government aviation regulations, company policies, and EFB development in the future

References and Acknowledgements

Contact
For Questions or Comments, Contact: Megan Mitchell
megan.mitchell01@student.csulb.edu