Caroline Gleb, Luis Morales, Jiyeon Son, Tim Tilney, Reid Uyehara, Erica Diels
Department of Aeronautical Science, Embry-Riddle Aeronautical University, Prescott, AZ

Attitudes Toward the Practical Incorporation of Scenario Based Training (SBT) into a Commercial Pilot Training Syllabus: A Preliminary Study

Background

As aviation moves into its second century, aircraft accidents still occur, though at a very low rate. With that said, the rate of pilot-related accidents in General Aviation (GA) has not decreased when compared against the rate of mechanical-related accidents in GA. According to the 2010 Nall Report, the number of GA aircraft accidents that were pilot-related made up for 73.9% (857 accidents), mechanical-related accidents made up for 15.0% (174 accidents) and other unknown causes made up for 11.1% (129 accidents) of all accidents that year (Kenny, 2011). According to Kenny (2011), “Most pilot-related accidents reflect specific failures of flight planning or decision-making or the characteristic hazards of high-risk phases of flight.” As pilot-related accident rates continue to be higher than mechanical-related accidents, exploration and experimentation is being conducted to look for new ways to address this issue.

Methods

Current attitudes towards the addition of Scenario Based Training into a typical Commercial Pilot Airplane Training Syllabus will be examined. Attitudes of past, current and future commercial pilot applicants such as ERAU flight instructors, faculty and students will be evaluated through the use of a qualitative, 12 question survey. Below is an example of the survey.

Sample Survey (Pending IRB Approval)

1. In your opinion is all training done by the instructor the same?
   - Yes
   - No

2. In your opinion are SBTs (simulated training) important for training pilots?
   - Yes
   - No

3. For you, the FITS training program creates
   - A sense of goal
   - A sense of purpose
   - A sense of need

4. Scenario Based Training (SBT) methods should be used for both basic instruction and evaluation in a commercial pilot rating mission.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

5. Flight Instructors should receive SBT training.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

6. SBT should be incorporated into all phases of flight training such as flight hours, exams, and simulator sessions.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

7. Potential benefits of SBT are better for students who have had previous flight experience.
   - Strongly Agree
   - Agree
   - Disagree
   - Strongly Disagree

8. Student_assigned_kid

Future Directions

- Examine preliminary survey results for the purpose of refining questions and more specific demographic questions to increase the range of responses.
- Move the study from investigating attitudes towards incorporating Scenario Based Training into a Commercial Pilot Training Syllabus into investigating attitudes towards incorporating Scenario Based Training into flight training in general.
- Further exploration into utilization of Scenario Based Training in flight training

References


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Pilot vs. Mechanical Related Accidents in General Aviation

Data from the 2010 Joseph T. Nall Report shows General Aviation accidents from 2001-2010 comparing pilot induced accidents and mechanical induced accidents.

One Method to Address Pilot-Related Accident Rates is Scenario Based Training

- Scenario Based Training is a training system that is structured to use real-world scenarios to meet flight training standards in an operational environment.

Effectiveness of Scenario-Based Training

- Studies have been conducted which show that students trained using Scenario Based Training (SBT) outperformed students trained with traditional Maneuver Based Training (MBT)
- Middle Tennessee State University (MTSU). Students in the SBT program completed training in 45 less hours than MBT students
- University of North Dakota (UND). SBT students demonstrated higher performance on stage checks and Aeronautical Decision Making (ADM)
- The Federal Aviation Administration (FAA). The FITS training program creates a scenario-based, learner-focused training materials that encourage practical application of knowledge and skills

The Underutilization of Scenario Based Training

- The current FAA Practical Test Standards (PTS) is maneuver based
- In an effort to promote SBT curriculum, the FAA is working on revising the current PTS to incorporate more scenarios and pilot decision-making
- FAA handbooks such as the Aviation Instructors Handbook, Pilot’s Handbook of Aeronautical Knowledge and The Airplane Flying Handbook encourage the use of SBT but offer very little guidance on how to implement SBT
- After reviewing several 14 CFR Part 61 and Part 141 Commercial Pilot Airplane Training syllabi, it is evident that MBT is still the more prevalent method of instructing

Attitudes Toward Scenario Based Training

- The reason SBT is underutilized may be because of the attitudes, lack of knowledge and misconceptions of flight instructors and students towards SBT

Effects of Scenario Based Training (SBT) on exam performance of flight students in comparison to flight students trained with traditional maneuver-based training (MBT)