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# A Method of Identification of a Failed Engine in Twin-Engine Turboprop Aircraft: A Survey

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# A METHOD OF IDENTIFICATION OF A FAILED ENGINE IN TWIN-ENGINE PROPELLER AIRCRAFT – A SURVEY

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## INTRODUCTION

- From 1985 to 1997, among all documented in-flight engine shutdowns, wrong engine included almost 50% for turboprop and 30% for turbojet aircraft (Sallee & Gibbons, 1999)
- 40% of interviewed twin-engine helicopter pilots admitted confusing engine throttle in an emergency at least once (Wildzunas et al., 1999; as cited in Aviation Safety Council, 2016)
- Under stress, people tend to rationalize expected outcome, even if it does not correlate with reality, thus justifying erroneous decisions (Kontogiannis & Malakis, 2008)
- Decision-making is especially critical on takeoff, when time is of the essence
- “Dead foot – dead engine” is currently used for identification of a failed engine

## REFERENCES:

Available on handout

## METHOD

A survey was created to acquire more information on wrong identification of a failed engine in twin-engine turboprop aircraft

- The survey was created through SurveyMonkey
- The survey consisted of 10 questions
- Participants were sampled from one U.S. airline that operates twin-engine turboprop aircraft
- Link to the survey was distributed via email

## RESULTS

- 49 airline pilots completed the survey
- Average experience flying twin-engine turboprops – 9 years and 6,300 flight hours
- Almost 23% admitted having problems identifying a failed engine at least once in simulator training
- Pros: most respondents found the method redundant and accurate
- Cons: most respondents found the method time-consuming and having a likelihood of error
- **29% of respondents agreed that there could be a better method of identification of a failed engine**

## DISCUSSION

- Pilots were experienced in flying turboprop twins
- Almost 1/3 of pilots agreed that there could be a better method, which shows that the current method might not be very effective
- Most pilots practice this method only during the simulator and rarely use it. This could be the explanation as to why they consider it systematic and accurate

## CONCLUSION

- The results of this study correlate with previous findings
- This survey was part of a larger study aimed at testing an alternative method of identification of a failed engine
- For further research, it is suggested to collect data from a bigger sample, as well as from pilots operating other aircraft types

