EMBRY-RIDDLE
Aeronautical University™
SCHOLARLY COMMONS

Publications

4-6-2017

General Aviation Hypoxia and Reporting Statistics

Timothy B. Holt
Embry-Riddle Aeronautical University, holtt@erau.edu

Jacqueline Luedtke
Embry-Riddle Aeronautical University, jackie.luedtke@erau.edu

Claire Schindler
Embry-Riddle Aeronautical University

General Aviation Hypoxia and Reporting Statistics

Holt, T.B.; Luedtke, J.R.; Schindler, C.G.

Embry-Riddle Aeronautical University - Prescott, Arizona
National Conference for Undergraduate Research

Background

"All too often, pilots tell me they don't need physiological training because they don't fly that high. The statement points out the general feelings of a large majority of the aviation population. I suppose then the burning question is 'why do we still have aircraft accidents?'" (Boshers, 2015). To this day there are no statistics on how often general aviation pilots experience hypoxia during everyday operations. General aviation pilots (i.e. non-commercial operations) were chosen for this study because:

- Little regulation regarding flight physiology training
- General attitude of invulnerability towards hypoxia
- No requirement to report hypoxia or similar events

Objective

This study addresses the fact that most pilots do not survive their hypoxic event and those that do, do not report it, leaving the aviation community with no statistics of how these incidents may happen. The focus of this study is the unreported statistics of altitude, experience, symptoms and control to determine the effect of hypoxia on the general aviation community. These results will help the general aviation community have a caring concern towards flight physiology training. The key elements of this study were:

- Level of pilot experience
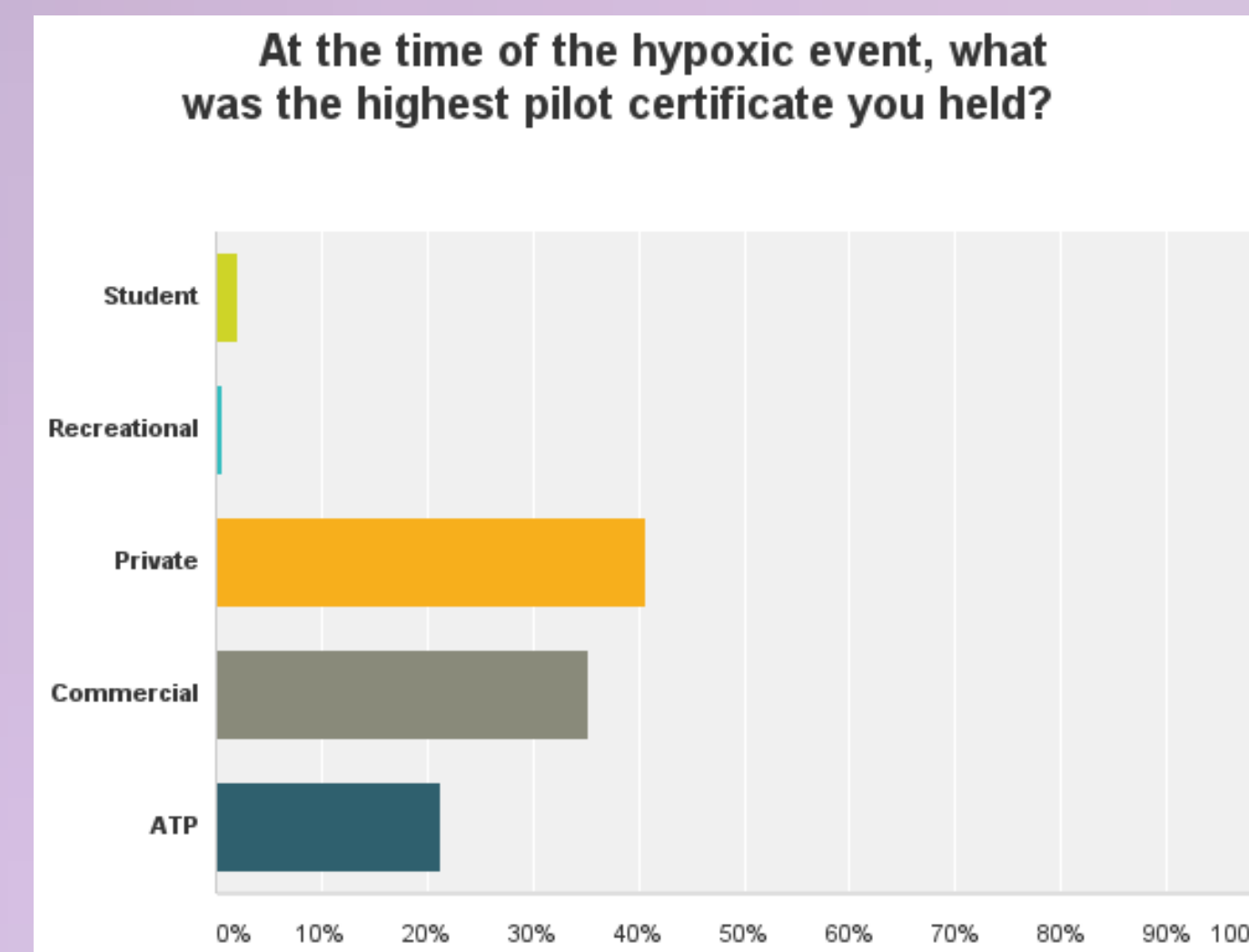- Altitude hypoxia was experienced
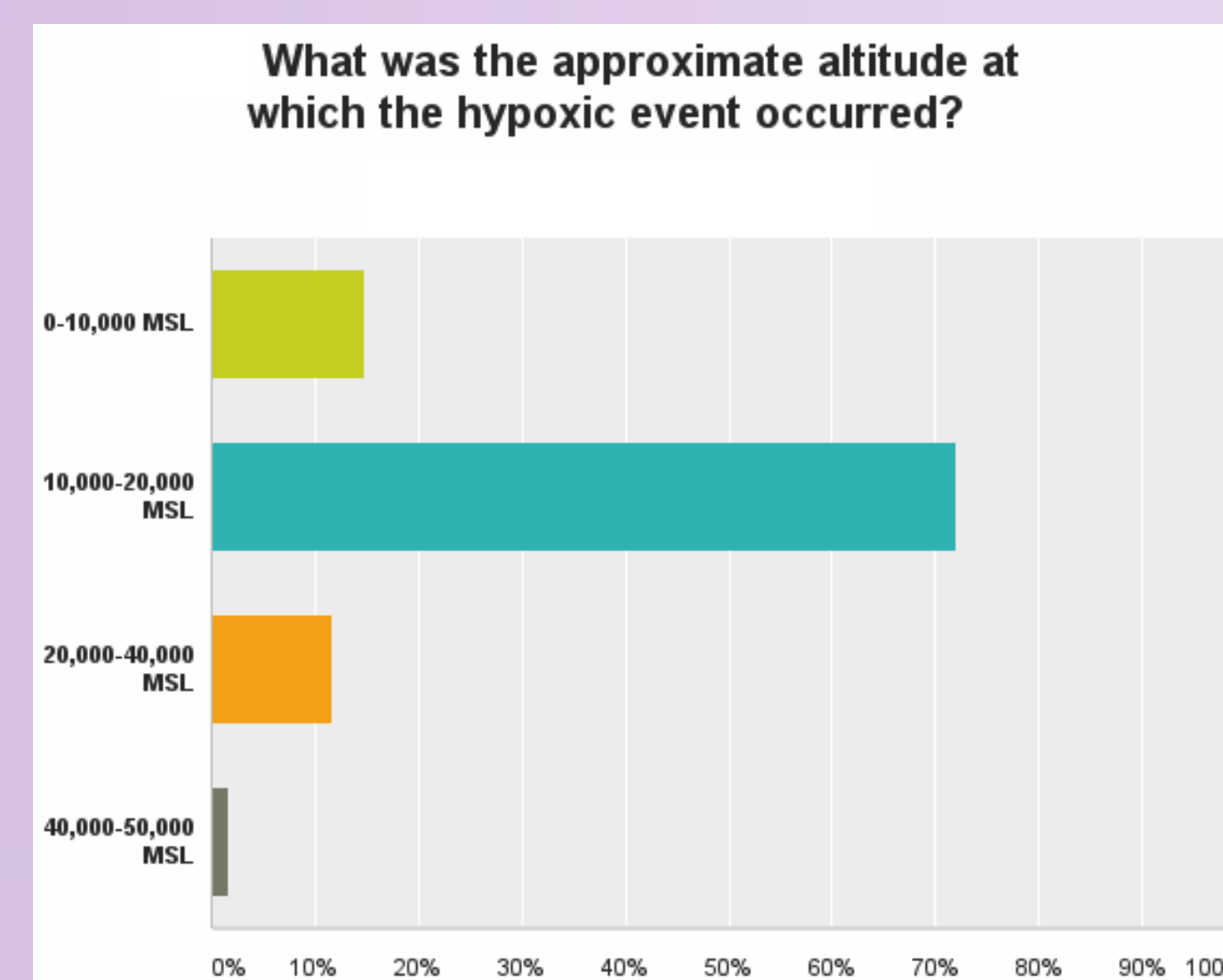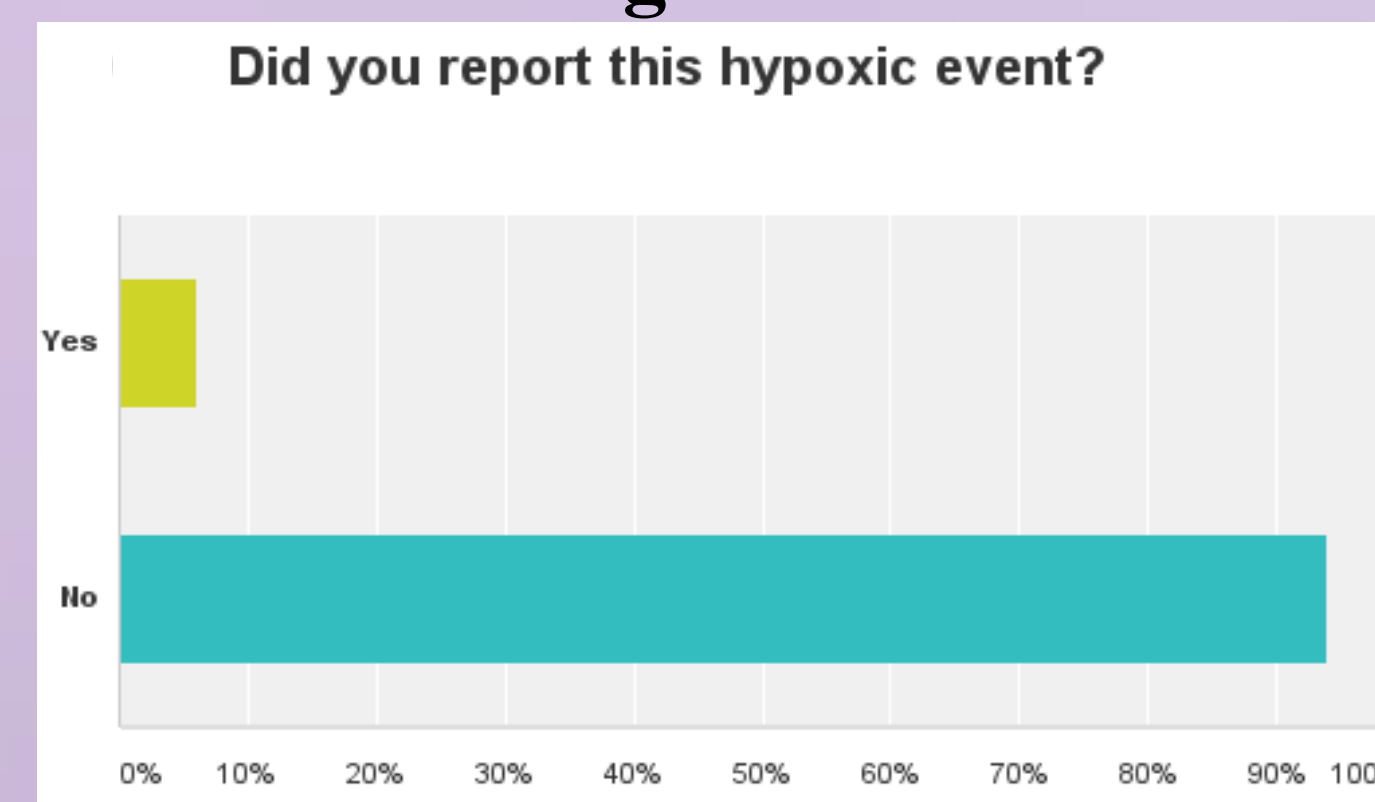- Whether or not it was reported

Figure 1

Figure 2

Figure 3

Figure 4

Methods

15-survey questions were formulated and reviewed through an IRB process to be published in Survey Monkey. Participants agreed to being of at least 18 years of age to participate in the study, and to have their results shared. Questions delved into experience, training, events, and reporting. No demographic information was collected.

- Survey distributed via email by Curt Lewis and the Aircraft Owners and Pilots Association (AOPA)
- Survey open for 2 and a half months
- 343 responses
- Results were compiled and analyzed

Conclusions

Results showed that hypoxia was fairly common even at altitudes of 10,000 feet or less, showing general aviation pilots can be victims of hypoxia (Figure 1). Other results showed that although a large number of these pilot were fairly proficient (Figure 2), they still experienced hypoxia and did not report it to any authority (Figure 3). Lastly, it can be seen that a large number of participants thought something should be done about better flight physiology training, specific to hypoxia (Figure 4).

Acknowledgements

References

- Boshers, L. (2015, July 21). Airman Education Programs.