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Cockpit Text Communications: Evaluating the Efficiency and Accuracy

Adam J. Ziemba

Donald A. Petrin

Richard O. Fanjoy

Thomas Q. Carney

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Cockpit Text Communications:

Evaluating the Efficiency and Accuracy of Different Keyboards

Adam J. Ziemba BS, Donald A. Petrin MS, Richard O. Fanjoy PhD, and Thomas Q. Carney PhD

Purdue University

Overview

- Literature Review
- Research Problem/Question
- Methodology
- Results
- Discussion of Results
- Conclusions

Data Communications

- A move from voice communications to text communications
- A text reference does not have to be remembered
- Fewer human errors and faster response times

Keyboards In The Cockpit

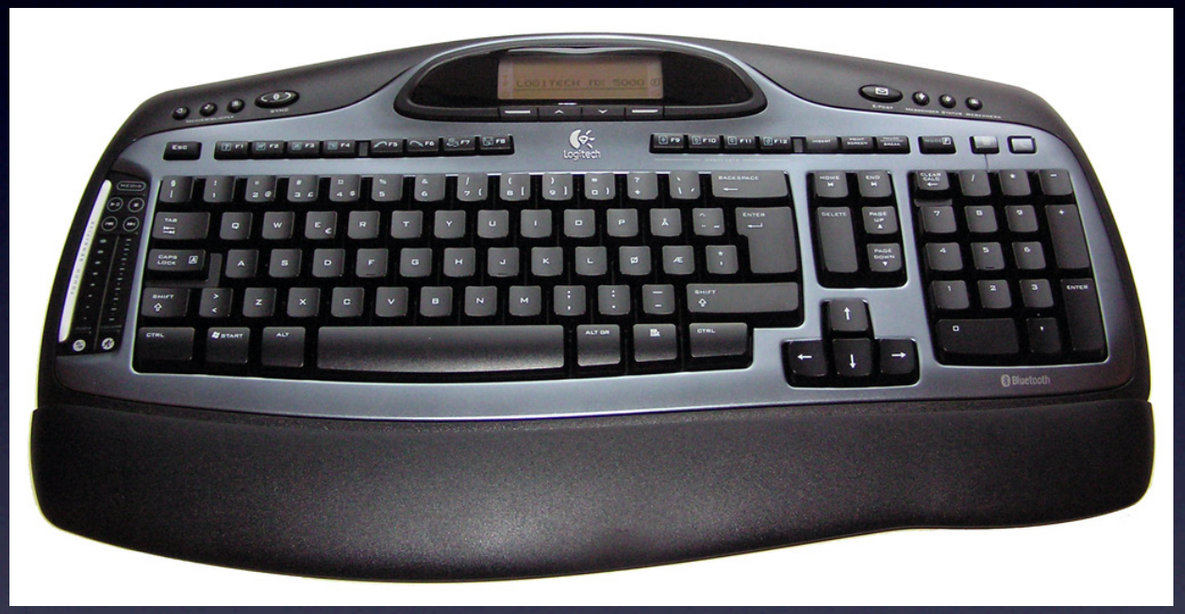
Research Problem/Question

- Which size of two-handed, QWERTY keyboard would be the most efficient and accurate for use in aviation communications and FMS input?

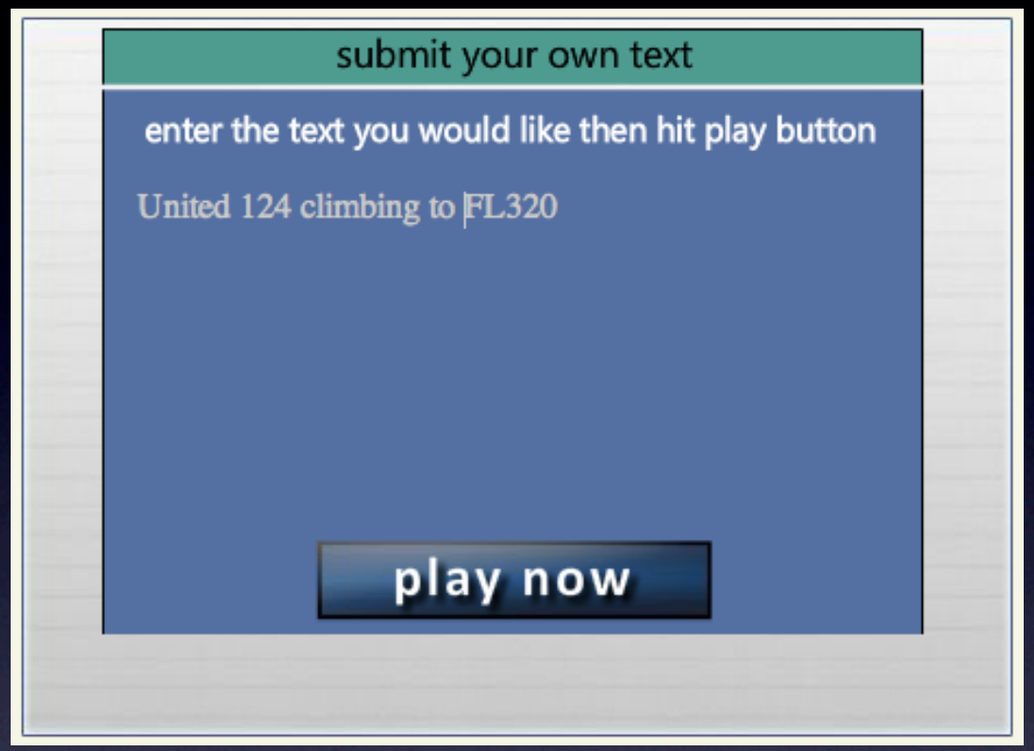
Methodology

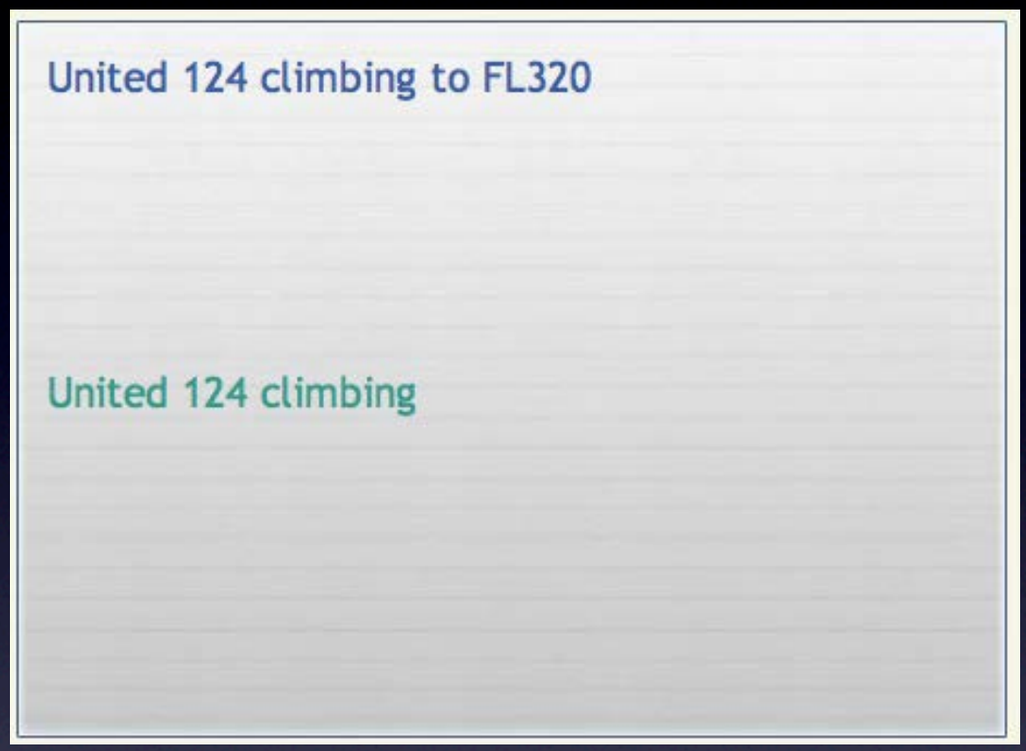
- 10 student participants with at least a Private Pilot Certificate
- Large, medium, and small keyboard
- Custom Typing Test
- Descriptive Statistics Analysis

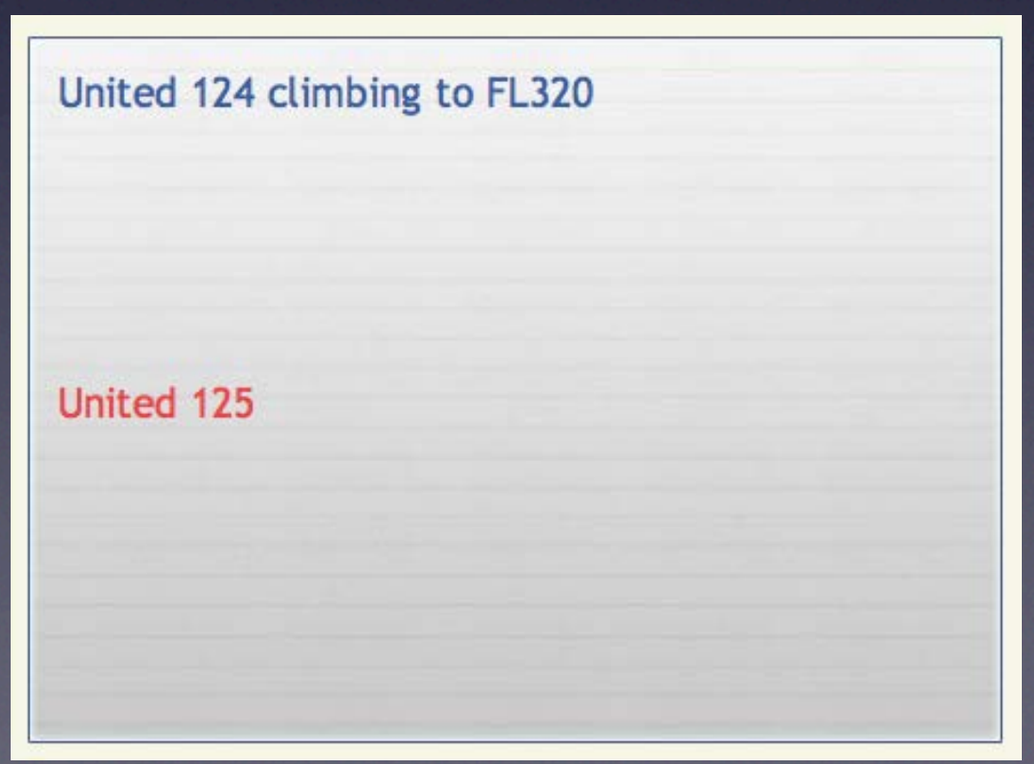
Keyboards



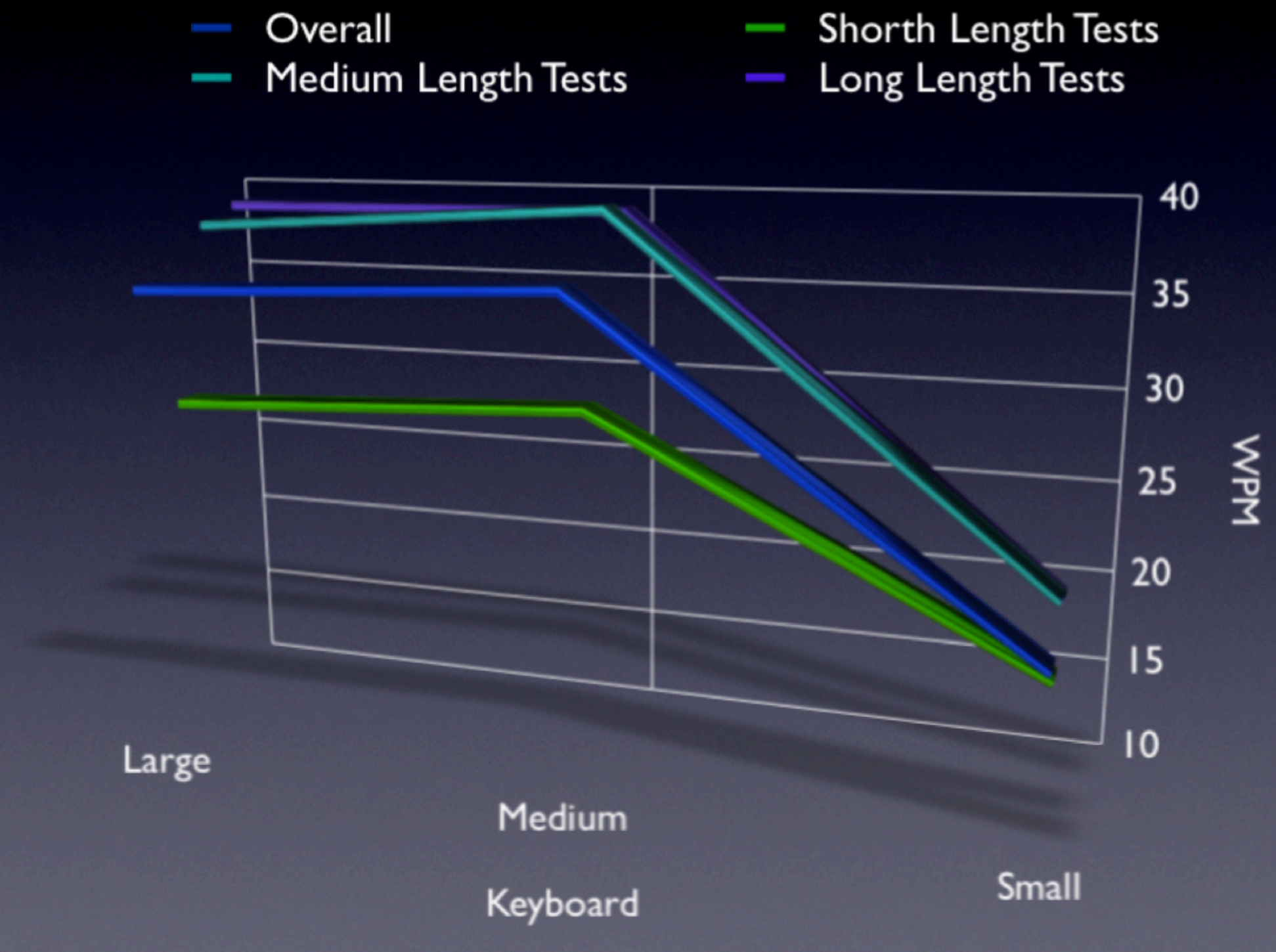
Custom Typing Test



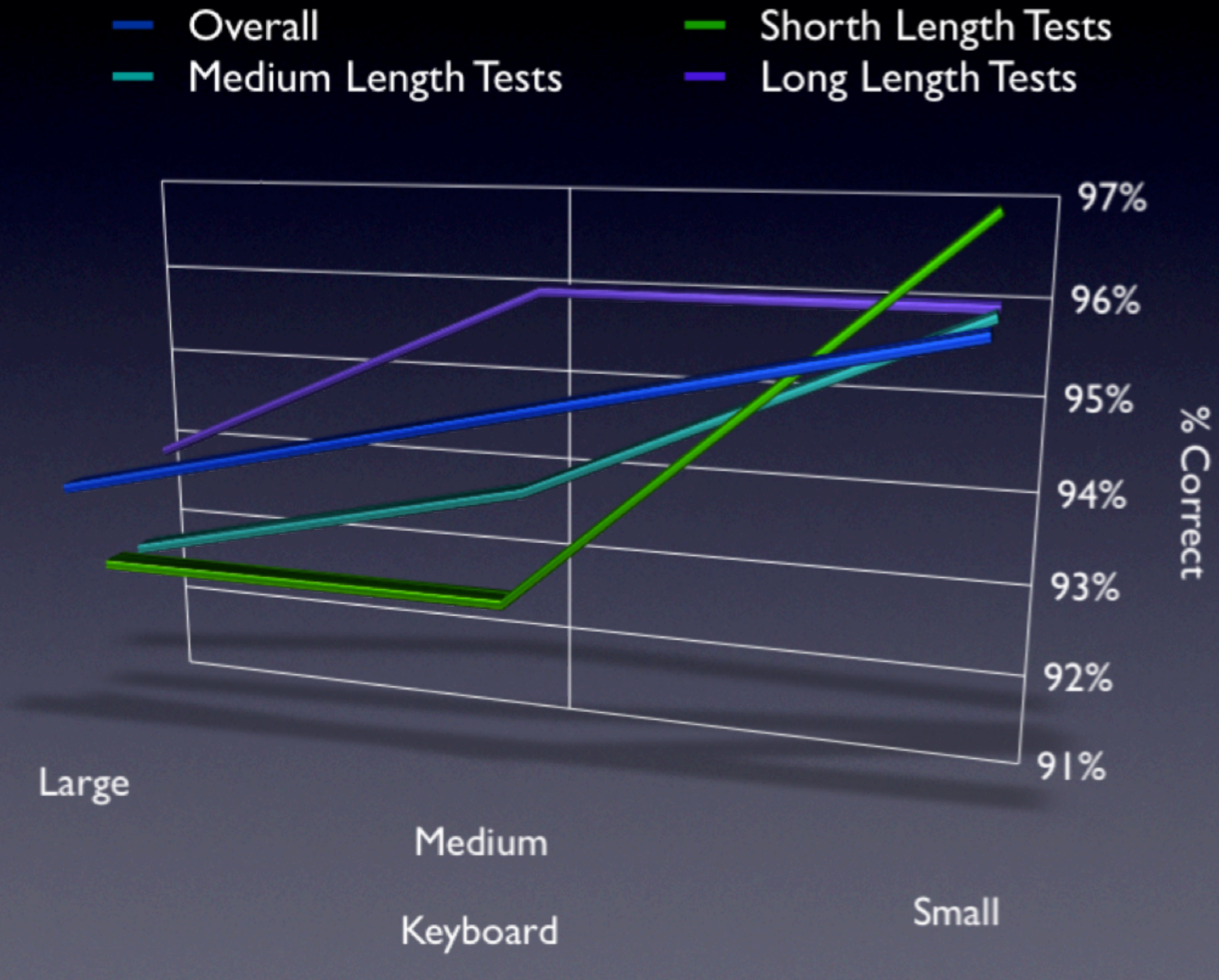




Mean Typing Speeds



Mean Accuracy



Discussion of Results

- Typing Speed:
  - Medium keyboard slightly faster than the larger keyboard
  - Small keyboard considerably slower than other keyboards
  - Medium sized keyboard performed the best
- Accuracy:
  - Small keyboard performed the best
  - Medium keyboard the second best accuracy
  - Large keyboard the least accurate
  - Only separated by a few percentage

Conclusions

- Medium sized keyboard appears to be the optimal keyboard
- Further research that is aircraft and cockpit specific
- Tests conducted in either simulated to actual flight conditions
- Consideration for participant’s preference
- Larger Sample size

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