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## **Modeling and Analyzing Lifetime Lost in Airport Screenings vs. Terrorist Attacks**

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**Author Note:** Michael Selner is a Systems Engineering Student at the United States Military Academy. Thank you to Dr. Burk and the rest of the Systems Engineering Department for this opportunity.

**Abstract:** In today's volatile world there seems to be an increasing emphasis on security due to recent terroristic activity in the United States and abroad. A major security push was created after the events of September 11th, 2001. Specifically, airline security became the illustration of increased security methods. With the increase in airline security, an increase in queues and wait times at the security checkpoints followed. This research analyzes whether airport security is worth the resources in terms of lifetimes lost measured in years; using years of life lost as a result of terror attacks and compare it with years of life lost as a result of waiting in the security queues. Based off of the initial results, the research will then examine the disparity, if any, between lifetime lost as a result of terrorist attacks and life time lost spent in queues. It will then examine the morality of such tradeoffs and whether or not they would be practical to implement. The goal of the research is to obtain which measure causes the greatest loss of life in years, and also begin to find a balance in the level of security that will minimize years of life lost in queues while still maintaining a level of security that will properly deter any potential threats.

*Keywords:* Airport Screening Time, Terrorist Attacks, Lifetime Lost, Mathematical Modeling