

LT Jett Jockey is sitting on the flight line waiting for his turn to take off. His mission today is to fly air cover in his new FI-22B. His weapon load consists of 6 Sparrows and 2 Sidewinders. He expects to be flying in a "target rich" environment, and is hoping to max out on his number of kills. The usual firing tactic that he follows is SHOOT-SHOOT-LOOK, but he is not too concerned with the possibility of a missed shot putting his aircraft in danger. Thus he is considering only firing one missile at a target at a time (SHOOT-LOOK-SHOOT). He hopes this will give him more kills. Is he correct? How many more (or less) kills can he expect if he changes his tactic? He thinks that the probability of kill of a single Sparrow is usually taken to be 0.85, and the usual probability of kill of the Sidewinder is 0.7. Is the difference significant?

His thoughts wander to his friend Icann Think at NAVAIR, who was an analyst who helped choose the FI-22B over 3 other possible new aircraft. He wonders if his friend considered the cost effectiveness of the weapons in his analysis. He thinks that the Sparrow costs about \$31,000 each, while the Sidewinder costs about \$27,000 each. He wonders if this makes the Sidewinder the better buy. He knows that you, his shipmate, majored in math at good ole USNA, so he decides to ask you when he gets back what you think. What do you tell him?