

Counter-Force Calculations

Using the figures and calculations from the charts, the utility of the SS-18's in this scenario can be examined. In all the calculations below, the following assumptions are made:

- a) the hardness of missile silos for both the US and the Soviet Union is 2,000 psi
- b) the Overall Reliability (OAR) for the US is estimated to be 80%, and for the Soviet Union 70%
- c) The CEP and yields are the values identified in the Tables 2A and 2B
- d) There are 1,000 American ICBM targets
- e) The Soviet targets consist of the counterforce capable SS-17s, SS-18s and SS-19s, which constitute 818 targets

In the first instance, we can examine the relatively simple case in which the Soviets use 1,000 SS-18 warheads (100 missiles) to attack 1,000 American targets

Example 1

$\begin{aligned} \text{SS-18 SSKP} &= 0.654 \\ \text{TKP} &= \text{SSKP} \times \text{OAR} \\ &= 0.654 \times 0.70 \\ &= 46\% \\ \text{Probability of survival of targets} &= 54\% \end{aligned}$

In sum, 46% of 1,000 warheads or 460 warheads could be expected to hit and destroy their targets. Clearly, this would leave the Americans with a substantial Minuteman counter-force capability still intact.

The second and more complex case begins with the recognition, illustrated above, that single warhead targeting offers a poor TKP; in this second case, - the one normally assumed to be the most plausible attack scenario, - two warheads are allocated to to each hard silo target.