Standard Missile-3 Independent Review Team

June 2010

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The Independent Review Team (IRT) to assess the Standard Missile (SM-3) program consisted of three members:

Dr. Thomas Bussing
Mr. Larry Lynn
Dr. Granger Morgan
Mr. Ed Hudak served as the Executive Secretary for the team.

The team examined three questions:

1) Are the SM-3 launches hitting the surrogate warhead's aim point at which they are aimed?

2) Once an SM-3 kinetic kill vehicle hits the surrogate warheads, are they destroyed?

(b)(3):10 USC §130,(b)(5)

3) (b)(3):10 USC §130,(b)(5)

Question # 1

After a careful examination of the available data the answer to question one, is a definite yes. We base this assessment on two sources of evidence, both of which demonstrate that the SM-3 kinetic kill vehicles are hitting their intended target aim points with accuracies of a few centimeters. The first source of evidence that supports this conclusion is telemetry that comes from a mesh of wires or optical fibers that cover the surrogate warhead. When the kinetic kill vehicle impacts the synthetic target it breaks these wires. Telemetry that reports the successive rupture of grid elements with micro-second resolution not only clearly shows the impact, but also displays the penetration of the kinetic vehicle into the target

(b)(3):10 USC §130,(b)(5)

The second source of evidence of successful precise impact comes from signal processing conducted on the Infra-Red (IR) images telemetered from the kill vehicle itself.

Together these two data sources demonstrate persuasively that impact occurs consistently (b)(3):10 USC §130,(b)(5) of the intended target location when used against non-countermeasured targets.

Question # 2

There are also two sources of evidence that persuasively demonstrate that once a warhead is hit by the kinetic kill vehicle it is destroyed. The most compelling of these derives from data produced in a series of ground-based rail-sled and rocket driven test studies in which the kill vehicle was driven into these warheads at typical SM-3 closing velocities. The second derives from radar data that displays the fragmentation of warheads, the distribution of the fragments and the fragment speeds once they have been hit in field tests. These two sources of evidence are backed up with other data such as gas guns and computational models.

In summary, we conclude that when launched against single intact test missiles, or single separated simulated warheads, in the absence of any significant countermeasures, SM-3 has displayed a high level of precision and reliability in striking the intended targets, and causing their destruction.

(b)(3):10 USC §130,(b)(5)