3.2.6 Test Limitations

Aerial targets will not fully represent the full spectrum of threat anti-ship cruise missiles (ASCM) in terms of speed, altitude profile, maneuverability, radar cross section, size and shape, infra-red (IR) signature, countermeasures, counter-countermeasures, radar emissions, and survivability (in the event of warhead-configured Sea Sharks). In those areas where the target fidelity differs substantively from the most prevalent ASCM threat, the Sea Shark and its supporting NCS may not be stressed to a comparable extent as they would be by the actual threat, thereby bringing into question the relevance of the operational test results when using the lower fidelity target. The areas in question are the target speed and the target altitude profile.

Planned mitigation efforts include:

- NCS and Sea Shark modeling and simulation will explore Sea Shark missile performance and in-flight support against all expected threat/target speed/altitude profiles. This will be followed by validation of the M&S simulation with developmental test results and pre-shot predictions for operational testing.

- Development and procurement of an upgraded threat target that can match the speed/altitude profile of the most challenging threats.

Background for Maritime Air Defense Example

This example is for the hypothetical Sea Shark missile (ship-launched, anti-air, semi-active radar homing missile, supported by the hypothetical Neptune Combat System (NCS)). Critical operational issues (COIs) for Sea Shark and its supporting combat systems include:

- Area Air Defense Capability (Can Sea Shark, supported by the NCS, provide air defense for other ships within the Aircraft Carrier Strike Group?)

- Own Ship Air Defense Capability (Can Sea Shark, supported by the NCS, provide own ship defense against air threats while also conducting Area Defense?)

- Availability (Can Sea Shark, after a representative shipboard storage time in the vertical launch cell, provide the required launch availability?)

- Reliability (Can Sea Shark, after a representative shipboard storage time in the vertical launch cell, provide the required in-flight reliability?)