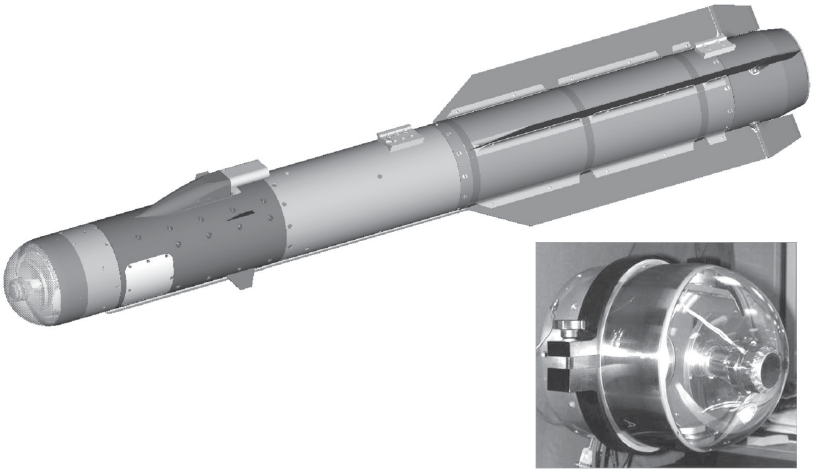
Joint Common Missile (JCM)

SUMMARY

- At Milestone B in April 2004, the Joint Common Missile (JCM) became an Army-led joint program with participation from the Navy and Marine Corps.
- The JCM Test and Evaluation Master Plan (TEMP), approved in April 2004, is adequate to evaluate the development program.

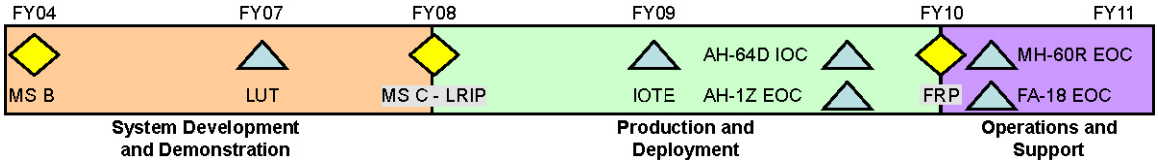


The Services intend the JCM to have precision point targeting, fire-and-forget, and lock-on before/after launch capabilities.

SYSTEM DESCRIPTION AND MISSION

The Services intend the JCM to have precision point targeting, fire-and-forget, and lock-on before/after launch capabilities. The JCM seeker will integrate laser, millimeter wave, and imaging infrared technology. This technology intends to expand targeting options and improve resistance to enemy countermeasures. The JCM warhead design seeks to provide a capability to defeat heavy armor and light vehicles, and to penetrate bunkers and buildings to incapacitate personnel targets. JCM will enable engagements at beyond line-of-sight ranges, thereby increasing launch platform standoff and survivability. The intent is for initial integration to take place on rotary-wing and fixed-wing aircraft. These aircraft include the AH-64D Longbow Apache, the AH-1Z Cobra, the MH-60R Seahawk, and the F/A-18E/F Super Hornet. Integration onto unmanned aerial vehicles and ground platforms may occur in the future. The Army's acquisition objective is 30,978 missiles, while the Navy's acquisition objective is 33,000 missiles.

TEST AND EVALUATION ACTIVITY



Prior to Milestone B, subsystem testing, modeling, simulation, and analysis supported the source selection process.

No significant test and evaluation activity has taken place since the Milestone B contract award to Lockheed Martin. Planned testing for the upcoming year includes component-level testing of the seekers, warhead, and rocket motor. Additionally, wind tunnel testing of the missile shape, blast overpressure testing, jettison flight testing, missile vibration flight testing, and handling qualities flight testing on F/A-18 and AH-64D aircraft will also occur.

TEST AND EVALUATION ASSESSMENT

Based on limited subsystem testing and analysis, there are three areas of concern: platform integration, warhead performance, and the ability to test against naval and urban targets.

- **Platform Integration.** There is risk that, due to the lack of common interfaces and competing priorities, successful integration of the JCM onto all four required aircraft platforms will not occur without impacting the program cost or schedule. Potentially, the JCM may have limited employment modes for one or more aircraft at Milestone C.
- **Warhead Performance.** There is risk that one warhead and fuze may not achieve the required lethal effects against all required target types. The JCM must integrate shape charge and blast fragmentation warhead technology, as well as point detonating and delay fuzes, into a single design. Further complicating warhead performance is the likelihood of extreme attack angles against urban buildings. In the coming year, warhead and fuze testing are planned that may mitigate these concerns.
- **Validity of Simulated Engagements of Naval and Urban Targets.** End-to-end performance against naval and urban targets may be difficult to evaluate. Plans call for computer models supplementing the many engagement scenarios of the JCM. Sufficient focus and funding for these modeling efforts may not be enough to validate the models. Historically, the Army has not significantly modeled ships at sea or buildings in an urban environment. A current modeling effort of ship targets is only focusing on the available range surrogates, not the likely threat targets. Effective comparison of missile flight and warhead testing with these models will strengthen the adequacy of the test and evaluation strategy.