Intercontinental Ballistic Missile

In partnership with the Air Force for more than 50 years
Northrop Grumman’s Intercontinental Ballistic Missile (ICBM) team began in 1954 with then Brigadier General Bernard Schriever (Commander, Air Research and Development Command) and Simon Ramo (chief engineer, The Ramo Wooldridge Corporation, currently Northrop Grumman Corporation). Today, this revolutionary Air Force / industry collaboration continues to create unprecedented ICBM mission success and deliver an enduring national deterrent.

ICBMs provide a safe, secure, reliable and strategic deterrent that continues to ensure security and safety against today’s threats by deterring potential adversaries, dissuading would-be aggressors, and assuring allies the steadiness of purpose in fulfilling global security requirements.

ICBMs were originally developed in the late 1950s to deter Soviet aggression, and have evolved over time to meet varied and emerging complex warfighter needs. Today’s Minuteman III program—a cornerstone of our nuclear deterrent since it was first deployed in 1970—is a highly complex system that demands perfection, requiring high availability, high reliability and the ability to operate under any and all conditions to pose an effective deterrent.

Although Minuteman’s service life was originally designed for 10 years, various modernization programs have extended the weapon system’s operational life beyond 2030.

Northrop Grumman acted as the Air Force’s ICBM systems engineering and technical assistance contractor for more than forty years, which included an award in 1997 for the ICBM Prime Integration Contract. As the prime contractor, Northrop Grumman and our industry partners were charged with maintaining readiness of the nation’s ICBM weapon systems. This 18-plus year contract delivered sustaining engineering support and two Acquisition Category I / 13 Acquisition Category III, and over 400 small ICBM modernization programs. In 2013, the Air Force began assuming the lead systems integrator role supported by an integration support contractor and a team of subsystem contractors. Today, Northrop Grumman continues its rich ICBM heritage and expertise as the industry lead on the Ground Subsystems Support Contract (GSSC), performing hardware and software modifications that extend the life of Minuteman III. In addition, the company’s ICBM capabilities include work on inertial guidance instruments, nuclear command and control, and nuclear certified software.
Minuteman III Weapon System Programs

From 1997 through 2015, Northrop Grumman led the industry team that sustained and modernized the Minuteman III Weapon System, extending its life past 2030 through seven major programs:

Guidance Replacement Program (GRP)
Replaced 1960s-era guidance electronics with new electronics that improve flight reliability, maintainability, supportability and nuclear safety, while maintaining accuracy and nuclear hardness.

Propulsion Replacement Program (PRP)
Replaced propulsion systems for stages 1, 2 and 3 by eliminating environmentally unacceptable materials and establishing limits for hardware reuse.

Propulsion System Rocket Engine (PSRE)
Identified, and took actions to remedy, supportability and reliability issues in the liquid engine post-boost vehicle.

Safety Enhanced Reentry Vehicle (SERV)
Accommodated the newer, safer MK21 re-entry vehicle (RV) with the W87 warhead from Peacekeeper to Minuteman III missiles.

Environmental Control System (ECS)
Upgraded the environmental control systems in launch control centers, launch facilities and trainers.

ICBM Cryptography Upgrade (ICU)
Developed the replacement for the KI-22 encryption device, which secures data communications links between launch control centers and launch facilities.

ICBM Security Modernization Program (ISMP)
Implemented new security system approaches that increased the physical security at Minuteman launch facilities post-9/11.

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Safe • Secure • Reliable
ICBMs provide a safe, secure, reliable, strategic deterrent – credible to friend and foe.