

# It's good with directions

## Boeing upgrades electronics of ICBM guidance system

By CHERYL SAMPSON

The upgrading of all active Minuteman III Intercontinental Ballistic Missiles (ICBMs) with Boeing-built modernized guidance-system electronics is now complete, signaling the readiness of this linchpin in the United States' strategic deterrent.

The attainment of this milestone, eight years in the making and referred to as Full Operational Capability, was recognized during a recent ceremony at Warren Air Force Base in Cheyenne, Wyo. In attendance were members of the ICBM Prime Integration U.S. Air Force/contractor team, including prime contractor Northrop Grumman Mission Systems, Boeing and Honeywell.

Boeing has the distinction of having been the only U.S. Air Force ICBM guidance system integration contractor for more than 50 years, not only on the Minuteman series of ballistic missiles but also the Peacekeeper and Small ICBM.


"The Boeing Guidance Replacement Program (GRP) team in Anaheim, Calif., El Paso, Texas, and Heath, Ohio, has delivered exceptional performance to meet our customer's requirements," said Peggy Morse, director of ICBM Systems for Boeing's Command, Control and Communications Networks business unit.

The Minuteman GRP is extending the service life of the Minuteman III Missile Guidance Set, designated NS50—the navigational heart of the ICBM weapon system—through 2030 by modernizing its electronics.

Full-rate production of the new electronic sets began in 2000 with a total of 652 units being produced to support 450 operational Minuteman III ICBMs. So far, Boeing has delivered 593 units on or ahead of schedule for six years. The final sets are scheduled for delivery in 2009.

"The Guidance Replacement Program team has consistently demonstrated attention to technical excellence, continuous product improvement and customer satisfaction," said Charles Dutch, Boeing Guidance Replacement Program director. "When dealing with a long-duration program like GRP, losing some of our suppliers is inevitable. The team tackled this challenge by identifying alternate sources and making life-time buys when needed. This flexibility has helped achieve six years of being on or ahead of schedule in our deliveries." ■

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As part of an operational test, a Minuteman III Intercontinental Ballistic Missile is launched from Vandenberg Air Force Base, Calif., to determine the weapon system's reliability and accuracy. All active Minuteman IIIs now feature Boeing-built modernized guidance system electronics.

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## A bittersweet milestone

Achieving Full Operational Capability, where all active Minuteman III Intercontinental Ballistic Missiles (ICBMs) have been equipped with Boeing-built modernized guidance-system electronics, is a significant milestone for the Boeing Guidance Replacement Program team in Heath, Ohio. The center is a recognized leader within Boeing as a Strategic Center for maintenance, repair and spares of military guidance and navigation systems. The Jan. 29 return to Heath of the last unit from the original Minuteman III guidance set—designated NS20—was marked with memories and pride. It will be upgraded to an NS50 and is scheduled for delivery in 2009.

"The return of the final NS20 is one of those bittersweet events," said Miike Emmelhainz, Heath center director. "It closes out one chapter in the Minuteman III work that has been performed at this site, but opens the next chapter in Minuteman as part of our 50-year ICBM legacy."

For Heath veteran John Jenkins, "There are a lot of memories." Jenkins has worked in missiles since the early 1960s, performing diagnostics and testing on everything from the Titan and Peacekeeper missiles to Minuteman I, II and III.

"The Minuteman program has provided a steady workload since its arrival," said Heath ICBM Program Manager Ron Yates. "This has permitted investment in this facility and the ability to attract and retain employees and other workloads in Heath."

—Dawn Pettit