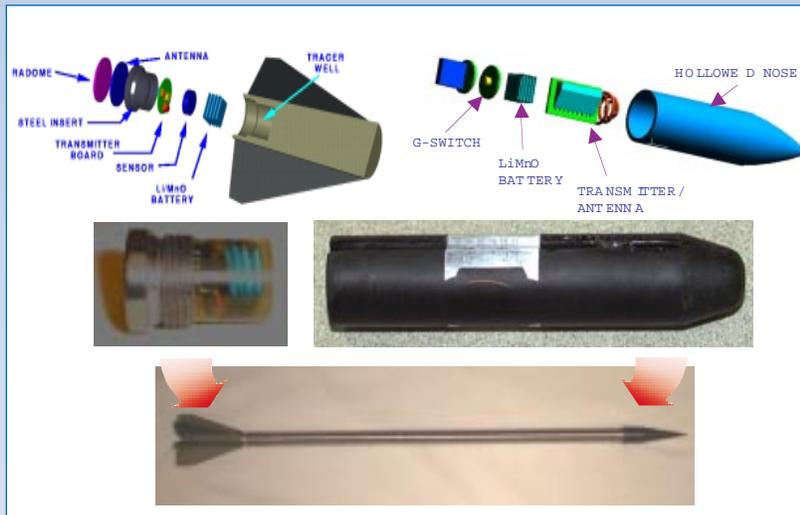


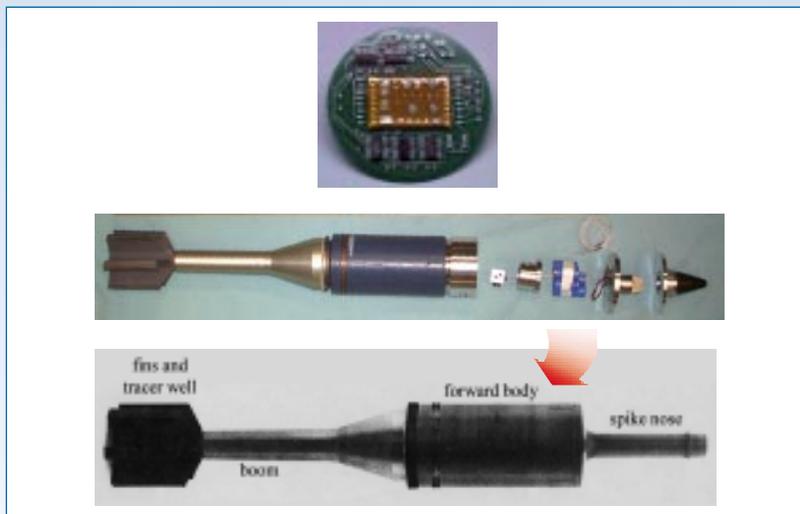


KINETIC-ENERGY AND HEAT ROUND INSTRUMENTATION

SUPPORTING TANK-ROUND DEVELOPMENT BY PROVIDING LAUNCH AND FLIGHT DATA



Successful instrumentation of a kinetic-energy (KE) projectile has been achieved by installing a telemetry kit into the tracer well of a 105-mm M735 KE training round. The kit was successfully fired at Yuma Proving Ground, surviving launch accelerations of 65,000 G's, and measured free-flight spin of the projectile. As a result of this success, Alliant TechSystems and the HSTSS team have built and successfully tested a telemetry kit compatible with the front windshield of KE a projectile.



Two HSTSS telemetry kits packaged in modified 120-mm M831 rounds were successfully flight tested at Yuma Proving Ground. Each round contained a three-channel digital recording system implemented on a programmable multi-chip module (MCM). The instrumentation system was designed to measure in-bore balloting and setback accelerations. A magnetic resonance spin sensor was also on-board to measure the in-flight spin history. The flight-test objectives included qualifying MCM technology for high-G applications, developing microelectronics packaging and assembly techniques, conducting proof-of-concept for HSTSS delay and repeater circuits, and measuring in-bore phenomena.