



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Protective Equipment

Enhanced Combat Helmet and its Suspension System

The US Army's PM SPIE Program Office has sponsored and conducted R&D supporting the Enhanced Combat Helmet (ECH) and its pad suspension system, which has been used in combat since 2014. The ECH represents a protective improvement over the ACH. The ECH meets penetration probability requirements for fragments traveling 35% faster than the level required for the ACH, which is an 83% increase in kinetic energy resistance with no increase in helmet weight. This improvement equips Service Members with enhanced fragmentation protection, thereby reducing blast-induced injuries. In addition, the ECH uses the same suspension system design as the ACH and thus retains the same blast-propagation disruption capabilities. The development of the ECH influenced requirements for the IHPS, a subsystem of the SPS. The IHPS base shell will provide the same level of blast-fragmentation protection as the ECH with a 5% reduction in helmet weight.