

Abstract ID: 10144

Title: The 0.50 Caliber Multi-mode Machine Gun and Family of Enhanced Ammunition: A Complete Weapon System for Remote Mounts, Fighting Vehicles and Aircraft

Abstract Text: The Browning M2 0.50 caliber (12.7mm) machine gun is the standard heavy machine gun for almost all Western military forces. Developed in 1918, the M2 is the primary infantry support weapon in most warfighting scenarios. The M2 has been so successful that almost no development work on alternative 0.50 caliber weapons has been performed in the last thirty years.

In 2008, the Mauser branch of Rheinmetall Waffe Munition (RWM) decided to create a new, externally powered 0.50 caliber machine gun. All of Mauser's expertise in machine gun development – ranging from the legendary MG42 up to the latest MLG 27 machine cannon systems – was leveraged in the design of this new weapon system. The resulting gun, the Mauser 0.50 Multi-mode Machine Gun (MMMG or "triple em-gee") is an innovative advance that delivers better ballistic performance than any other heavy machine gun in a package that is more than 50% lighter than either the M2 or the DShK. Key characteristics of the Mauser MMMG include:

- Operating Modes: electrically operated (externally driven mode) or battery operated drive ("emergency" mode)
- Dual Feed System: two ammo types can be fed simultaneously
- Four Firing Modes: Automatic (user selectable rate of fire, up to 600 rounds/min), Burst (user selectable burst length), Single and Sniper Shot ("locked bolt" precision mode)
- Environmental Immunity: completely sealed operating system is impervious to environmental intrusion (sand, dust, moisture, etc.)
- Advanced Barrel Technology: High performance barrel (68K psi operating pressure) mates with a gapless barrel bearing to ensure high accuracy and no user-level maintenance (i.e. no head space or timing adjustment).
- Molecular-level Coatings: all weapon system parts use an impregnated molecular-level coating that results in reduced corrosion and friction, minimal cleaning time and dramatically extended service intervals.
- Safety: revolutionary operating system prevents heat build-up in gun, thereby eliminating "cook-offs"

The MMMG fulfills the fighting requirements of the latest ground, air or naval platforms; the weapon system can be adapted to fit into all existing Remote Control Weapon Stations (RCWS), used in ground vehicle pintle or cupola mounts, employed as a coaxially mounted machine gun in armored turrets, integrated into a pod or airframe for helicopter and airplane operations, and – in a revolutionary first for an electrically driven gun - can also be used in a self-powered "emergency mode" when the external power source is not available.

With a total system weight of roughly 25 kg (including remote control) the new RWM Mauser MMMG is half the weight of a tripod-mounted M2. This reduced system weight allows the user to either carry more ammunition or to reduce the overall weight load on the host platform; a feature especially important for aircraft or other weight sensitive platforms. The MMMG system will complete developmental testing in 2010 for eventually qualification and fielding in 2013. The launch customer for the RWM Mauser MMMG will be the German Bundeswehr.