



TSM STRYKER/BRADLEY CORNER

THE STRYKER REMOTE WEAPON SYSTEM

CAPTAIN KEVIN CLINE



The Stryker is filling the Army's need for a rapidly deployable force to improve the deployability and operational effectiveness of rapid response/early entry forces. This calls for organizing and equipping forces to provide high mobility (strategic, operational, and tactical) yet retain the capability to achieve decisive action through close combat centered primarily on dismounted infantry assault. The U.S. Army requires this force to be equipped with integral capabilities for the successful conduct of offensive, defensive, and stability and support operations as well as the ability to fight as part of a larger formation. This force must be capable of being projected anywhere on the globe and be capable of conducting operations immediately upon arrival, in order to dominate and/or defeat the threat. It must also be capable of effective operations in a major theater of war environment with appropriate augmentation.

The Stryker M151 Remote Weapon

System (RWS) provides a multifunctional system that can employ a suite of weapons to include the M2 .50 cal machine gun (MG), and MK-19 40mm automatic grenade launcher. The Stryker RWS is a completely integrated system that will accommodate future lethality capabilities and be capable of firing on the move and from static positions.

The M151 RWS is employed on the following variations in the current Stryker Brigade Combat Team (SBCT) formation:

- Infantry Carrier Vehicle (ICV) — 127 per SBCT,
- Engineer Squad Vehicle (ESV) — 9 per SBCT,
- Command Vehicle (CV) — 16 per SBCT, and
- Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV) — 3 per SBCT.

The core fighting unit within the SBCT that is capable of conducting full range of military operations is the SBCT infantry company. The infantry platoons and squads are the primary means of finishing decisively in the close fight.

The SBCT infantry platoon is currently equipped with .50 cal MGs, MK-19s, and has an organic, light, highly lethal anti-armor capability in the Javelin. While the .50 cal MG and MK-19 can be fired from the M151 Remote Weapon System, the missile currently can only be fired in the dismounted mode. The multifunctional RWS enables mounted and dismounted engagement options. SBCT infantry platoons will face a wide range of threats, to include main battle tanks and light armored vehicles with enhanced reactive armor, and fortified positions including bunkers and buildings.

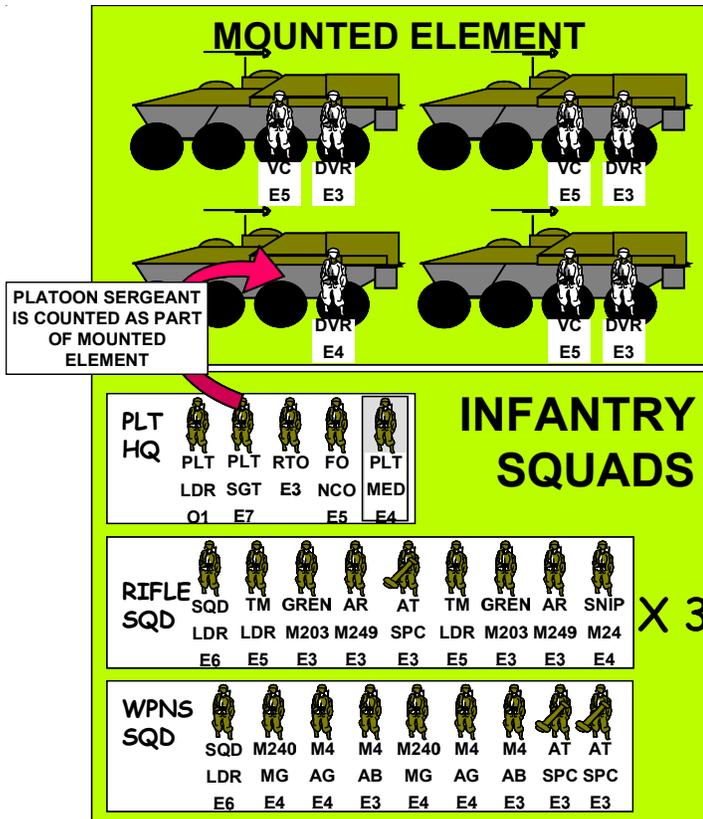


Figure 1 — SBCT Platoon

Given its likely operational environment, the SBCT achieves decisive action by means of combined arms dismounted assault at the company level, supported by direct fires from organic weapon systems (M151 RWS, ICV crew-served weapons, MGs, anti-tank systems, and snipers) integrated with indirect fires from artillery, mortars, and joint fires/effects. Although dismounted actions will be the primary means of achieving decision, the high mobility of the SBCTs and its network-based integrated capabilities also allow some immediate actions to be taken without dismounting, enhancing survivability and force effectiveness.

The M151 Remote Weapon System provides overwatch for the rifle platoon and enhances lethality and survivability without additional manpower and with minor equipment modifications.

Further, the M151 RWS accommodates future lethality capabilities and permits the platoon to fire from static positions and on the move. This will allow tactical flexibility during the execution of full range of military operations.

***The on-the-move capability is a preplanned product improvement that will be demonstrated 2nd QTR (FY 06) and will be fielded by SBCT 6 (FY 07).

The Accelerated Evolution of the M151 Remote Weapon System (RWS):

2000 — Stryker SBCT requests a remote weapon station for a number of vehicle applications. The KONGSBERG Protector solution is selected in October 2000. (Kongsberg is the Company that makes the RWS, and Protector is the commercial name for the M151 Remote Weapon System).

2001

— The Norwegian Army uses the Protector mounted on M113s for mine clearing in Afghanistan, and Kongsberg is contracted to supply the RWS.

— The first EDU (Engineering Development Unit) was delivered to GM Defense in October. The first six units to be mounted on vehicles were delivered in December the same year.

2003

— Strykers equipped with Protectors are deployed to Iraq.

— The Javelin anti-tank missile, in cooperation between KONGSBERG and AMRDEC (Aviation and Missile Research, Development, and Engineering Center), is successfully fired from the RWS while both stationary and on the move.

2004

— Block 1 Upgrade is ordered. (See Block 1 upgrade section for more information.) Block 1 is currently in production and will be introduced on Stryker Brigade 5 and will be a retrofitted to all existing Protectors delivered to Stryker.

— The Australian Army selects the Protector as an upgrade for their Type 2 ASLAV (8x8) vehicles under a rapid acquisition program for Iraqi Freedom. The first 40 units which are similar to those operational with Stryker BCT are operational in Iraq by September.

— Advanced Crew Served Weapon (ACSW) with 12.7mm is demonstrated on hard-stand in Burlington, VT.

Figure 2 — Remote Weapon System



2005

— Protector Lite is presented. This version of the Protector is optimized for low weight and signature and suitable for low recoil weapons such as M240, M249, ACSW, etc.

— The Finnish Army has ordered the Protector for their new Patria AMV (8x8) vehicle.

— Production unit #1000 of Protector is delivered.

— Block II upgrade is planned for production to SBCT 6. (see Block II upgrade section for more information)

— ACSW with 25mm Air Burst capability will be demonstrated on a M151 Remote Weapon System from a Stryker vehicle.

To Date — Approximately 200 systems fielded with SBCTs and other Operation Iraqi Freedom units, have been in theater for two unit rotations and gained more than 1 million hours with a high level of reliability and effectiveness.

M151E1 (Block I) Changes to the Protector Remote Weapon Station

■ New Thermal Imaging Module (TIM) which more than triples the ID range of the original thermal camera and provides

two optical fields of view and two electronic fields of view. This improvement leverages the current technology in the Heavy Thermal Weapon Sight program.

■ Integrates the new Small Tactical Optical Rifle Mounted (STORM) Laser Range Finder providing the operator with increased response time and visible and IR pointers to coordinate engagements with ground troops. This system is common with Land Warrior Units and directly interchangeable.

■ Modified Video Imaging Module (VIM) includes a color display which allows for improved situational awareness and coordination with ground troops.

■ Larger ammo can with a low ammo sensor provides longer engagement times between reloads and the low ammo sensor provides a warning when ammunition is getting low.

■ Enhanced Control Grip provides the gunner improved accessibility and easier operation.

M151E2 (Block II) Changes to the Protector Weapon Station

□ Capability to engage targets while

moving at speeds of up to 25 mph over various terrains.

□ Increased slew rate which will improve engagement times and provide “hooks” for future enhancements that will leverage sensors and provide automatic slew to target on demand.

The M151 Remote Weapon System future considerations

■ Integrated Javelin capability;

■ Future armament upgrades such as the Advanced Crews Served Weapon;

■ Acoustic and IR sensors to detect and slew to threats; and

■ Far target designation — will lase a target and determine target location (grid coordinates) for hand off to other resources for engagement or situational awareness.

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