SAWE/MILES II:

Providing Realistic Battle Effects for Today's Training

By Sergeant First Class Todd A. Petersen

SAWE/MILES II, (Simulated Area Weapons Effects Multiple Integrated Laser Engagement System), the next generation tactical engagement simulation system, provides force-on-force field training for maneuver units. Building on 10 years' experience with the field-proven MILES system, it integrates area weapons with indirect-fire and direct-fire simulations so that maneuver units can train with weapons systems they will use in battle. The system allows unlimited player participation and position-correlated event data collection.

The SAWE portion combines a new Global Positioning System (GPS)-based area weapons/indirect-fire simulation with MILES II, a laser-based direct-fire simulation. The new system incorporates simulation fidelity enhancements and built-in instrumented data-collection features. The satellite-based GPS provides individual player positioning and adds flexibility in tactical engagement simulation.

The SAWE/MILES II player equipment employs designed-in solutions for all tactical training, from small units at home stations to the high-tech combat training centers (CTCs). It addresses tactical training requirement solutions for soldiers through aircraft and is fully compatible with the "old" MILES system. The Combat Maneuver Training Center, Hoenfels, Germany, currently uses SAWE/MILES II. The National Training Center, Fort Erwin, and the Joint Readiness Training Center, Fort Polk, will begin using it this year.

SAWE/MILES II includes the following components:

The *Mission Control Station* (MCS) provides a central user and fire-mission interface that allows both opposing forces to play. The MCS provides simulation fidelity from individual tube to battalion-level missions, from 60mm mortar to MLRS weapons, and NBC effects.

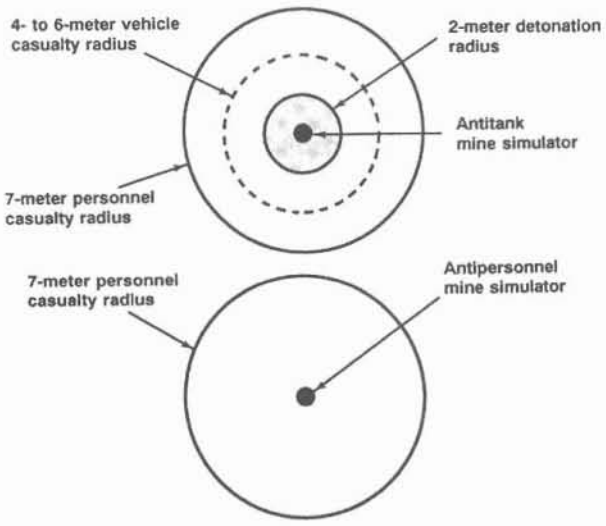
The *Radio Telemetry Network* broadcasts fire missions to all participants; it accommodates more than 100 missions per minute.

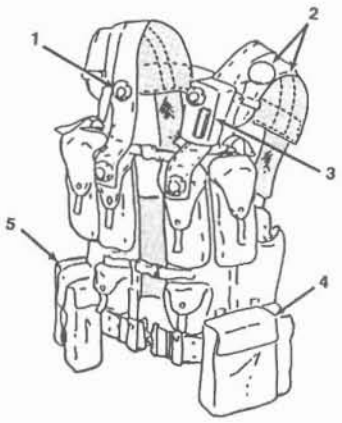
The *SAWE/MILES II Player Units* incorporate mine-effects simulation with deployable mine simulations; they enforce chemical assessments based on the proper use of chemical masks. The player units are fully programmable and allow for enhancements and upgrades.

The *Soldier System* includes—

- Integrated harness assemblies
- Low-power electronics with a long-life battery
- Chemical mask interface

SAWE/MILES II MES Casualty Areas

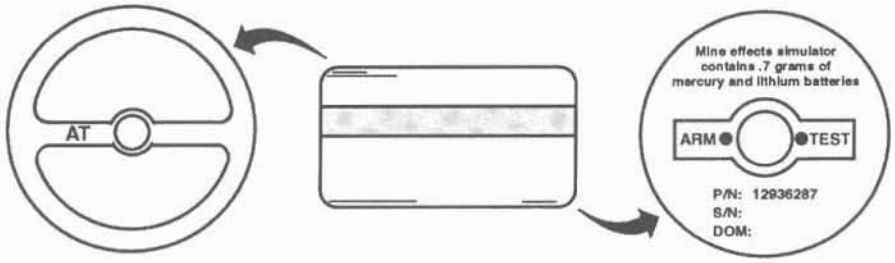




Torso Vest

1. Laser detectors
2. GPS antenna (MCS antenna not shown)
3. Display console
4. SAWE electronics module and MES receiver
5. SAWE battery

SAWE/MILES II Mine Effects Simulator



The *Vehicle System* has the following features:

- One console that is common to all vehicle types
- Ammunition-dependent probability-of-kill for direct-fire weapons
- Multilevel kills: firepower, mobility, communication, and catastrophic
- Synthesized voice cues, which eliminate the need for the "casualty card"
- Vehicle power interface

Common features include:

- Six-channel GPS
- Programmable weapons simulation
- Instrumentation data-collection interface and internal data storage
- Direct-fire, indirect-fire, and mine-effects simulation
- Direct fire MILES player identification
- Chemical alarm simulation
- Built-in test
- MILES capability

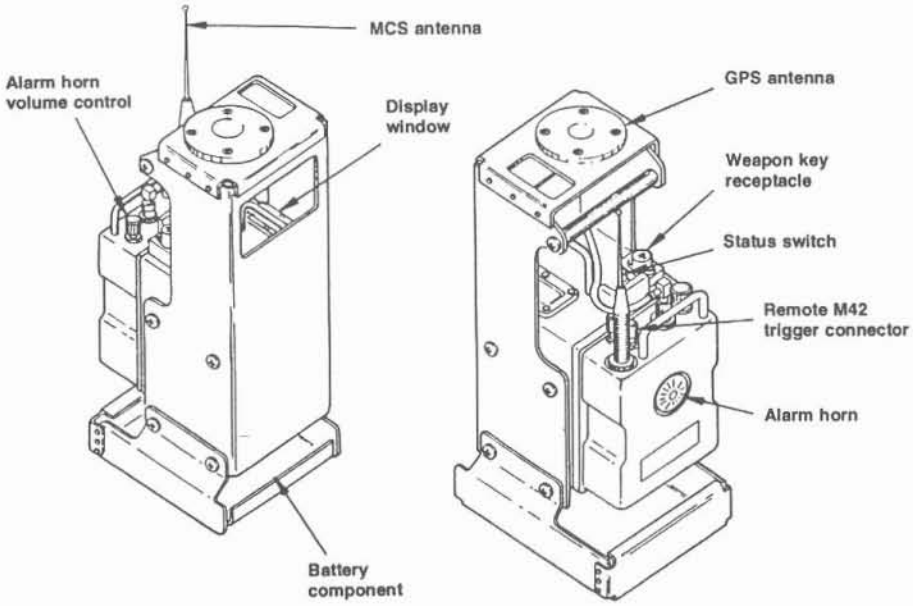
Soldiers can use a reactive training mine, called the *Mine Effects Simulator (MES)*, with SAWE/MILES II. The MES is designed to replicate in size, shape, weight, and capability the M74/M75 antipersonnel/antitank mine. It emits a radio frequency when activated, which sets off the SAWE portion of the new gear and assesses the appropriate casualties.

Now, for the first time, engineers have a system that cannot be ignored by soldiers during training exercises. No longer will engineers have to watch an armored unit "find" a minefield and then drive through it without "casualties."

Together, the SAWE/MILES II and the MES systems provide a 21st century battlefield simulation that facilitates training, to standard, for all players in the combined arms force. The effects provided by these systems realistically demonstrate the lethality of weapons employed in war. They also show commanders and soldiers the effectiveness of using proper doctrine and tactics.

Development and testing of SAWE/MILES II was an extensive and time-consuming effort that involved personnel at the Artillery, Chemical, Infantry, and Engineer Schools, as well as the Army Training and Simulation Command. Thanks to the efforts of these members of the combined arms team, the Army now has an improved training method to realistically simulate battle effects during combined arms exercises.

Chemical Agent Alarm Simulator Controls and Indicators



Sergeant First Class Todd Petersen is a senior training developer/writer, Directorate of Training, at the Engineer School. Previous assignments include platoon sergeant, A Company, 20th Engineer Battalion, and drill sergeant, A Company, 3-10 Infantry. SFC Petersen is a graduate of the Drill Sergeant and Air Assault Schools.

All artwork courtesy LORAL