

## Land Warrior

### Executive Summary

- The Army approved an Operational Needs Statement to support the fielding of Land Warrior to the 5th Brigade 2nd Infantry Stryker Brigade Combat Team (5/2 SBCT).
- The program manager added a commercial GPS to Land Warrior.
- The Army Test and Evaluation Command (ATEC) conducted developmental testing of Land Warrior.

### System

- Land Warrior is an integrated combat fighting system used by dismounted combat Soldiers on the networked battlefield. It includes a laser rangefinder; visual displays; integrated load carrying equipment with ballistic protection; protective clothing; a display; a headset consisting of a speaker and a microphone; a radio; an enhanced computer; navigation tools; computer software that integrates mission data support products; and a Stryker vehicle installation kit. It has two variants: the original version, Land Warrior-Manchu, was fielded to and deployed with the 4th Battalion, 9th Infantry in 2007; the current version, Land Warrior-Strike, was fielded to and deployed with 5/2 SBCT in 2009.
- There are two configurations of the Land Warrior-Strike: Squad Leader and above, and Team Leader. The Squad Leaders' configuration has the Navigation Sub System (NSS) Selective Availability Anti-Spoofing Module (SAASM) in addition to a commercial GPS, while the Team Leaders' configuration has the commercial GPS.
- The new Land Warrior-Strike Team Leader configuration weighs 7.28 pounds due to the removal of the NSS SAASM. The Squad Leader's configuration is 9.9 pounds, similar to the weight of the earlier Land Warrior-Manchu configuration.
- The Army continues to field Land Warrior to Stryker units, from Infantry Company to fire team level, of the 5th



Brigade, 2nd Infantry in preparation for their deployment to Afghanistan.

### Mission

- Infantry units will use Land Warrior to provide increased situational awareness and enhanced communications to increase their ability to close with and engage the enemy to defeat or capture him, or to repel his assault by fire, close combat, and counter-attack.
- Infantry units will use Land Warrior to:
  - Enhance small unit leaders' situational awareness through leader icon emplacement into the Force XXI Battle Command Brigade-and-Below (FBCB2) network
  - Provide voice communications between companies, platoons, and squads
  - Enhance collaborative mission planning

### Prime Contractor

- General Dynamics C4 Systems, Scottsdale, Arizona

### Activity

- The Army approved an Operational Needs Statement to field the Land Warrior system to the 5/2 SBCT.
- The Army deployed the Land Warrior system with the 5/2 SBCT to Operation Enduring Freedom in July 2009.
- The Land Warrior system has undergone several modifications since the previous deployment. The current configuration is known as Land Warrior-Strike. Key system changes include adding a commercial GPS in addition to the NSS SAASM GPS.
- ATEC conducted developmental testing on the Land Warrior-Strike configuration to include land navigation and reliability testing.
- The program manager conducted a week-long New Equipment Training exercise with each of the Stryker companies equipped with Land Warrior-Strike with the 5/2 SBCT at Fort Lewis, Washington.

### Assessment

- The Land Warrior has improved its reliability during the deployment of the 4th Battalion, 9th Infantry. Upgrades to the software corrected the high number of system failures identified early in the unit's deployment. Failures included lock-ups and freezes that required system reboots.

# ARMY PROGRAMS

- The commercial GPS is the primary navigational mode for team leaders and the de-facto primary means for the squad leader due to the commercial GPS demonstrating better accuracy (10 meter average error) than the NSS SAASM GPS (15 meter average error). The impact of this has not been determined because no operational testing of Land Warrior-Strike has been conducted.
- The Enhanced Soldier Control Unit (eSCU) is not watertight. Testing indicates that exposing the eSCU to significant amounts of water (i.e., heavy rain, submersion) can result in failures in the eSCU.

## Recommendations

- Status of Previous Recommendations. With the termination of the program in January 2007, and the supplemental funding used to purchase additional sets of Land Warrior, the Army was able to take action on the previous recommendation of increasing the life while decreasing the size of the battery.
- FY09 Recommendations.
  1. Before fielding to additional units, the Army should conduct an operational assessment with an electronic warfare threat to adequately assess the effectiveness of Land Warrior-Strike.
  2. Units need to be trained on how to recognize GPS jamming and spoofing. Tactics, techniques, and procedures need to be developed on how to recover and resume operating in one of the other navigation modes.
  3. Soldiers must take steps to protect their eSCU in rain or near water to avoid water induced problems with their systems.