A Combat Multiplier in Iraq:
The Long Range Advanced Scout Surveillance System

by Major Edward J. Stawowczyk

The long-range advanced scout surveillance system (LRAS3) greatly enhanced the survivability and lethality of the 3d Infantry Division (3d ID) during Operation Iraqi Freedom. This article is based on interviews with soldiers who used the system during combat operations in Iraq. These interviews gained valuable information on the system's performance during combat operations to confirm expectations and gather recommendations for product improvements.

The 3d ID received an out-of Department of the Army Master Priority List (DAMPL) fielding of the LRAS3 in February 2003 and the product office quickly conducted the fielding at Camp New York, Kuwait. To support this urgent requirement, product manager forward looking infrared (FLIR) provided a total of 42 systems, of which 39 systems were mounted on M1025/1026 and M1114 type vehicles. The three remaining systems were then issued to each forward support battalion as operational readiness floats (ORFs).

Each brigade received 13 mounted systems and one ORF. Brigade reconnaissance troops (BRT) received four mounted systems and each maneuver battalion scout platoon received three mounted systems. In addition to system installation, the product manager provided new equipment training for crews assigned to the systems.

All soldiers interviewed expressed an intense satisfaction with the LRAS3's performance. Simply put, it enhanced their survivability by allowing them to maintain a significant standoff range outside Iraqi weapons systems. The scouts consistently detected Iraqi forces far in advance of being detected. This enhanced the scouts' effectiveness as the task force and brigade commanders' "eyes and ears," allowing them to quickly and accurately determine and report enemy target location and direction. With accurate enemy target locations, the scouts effectively called for artillery fire or close air support (CAS) and provided timely and accurate information to task force maneuver units.

All soldiers interviewed stated that the LRAS3 enabled them to perform their mission more effectively. During one interview, a crew assigned to one of the scout platoons established that prior to having LRAS3 they would maneuver their vehicle along the low ground to avoid detection by enemy forces. After receiving LRAS3, they adjusted this technique and maneuvered more frequently along the high ground because of the system's long-range target acquisition capabilities. This technique adjustment allowed the crew greater opportunity to acquire more enemy targets without having to assume unnecessary higher risk. The standoff range between the LRAS3 and enemy weapons systems proved most effective in enhancing crew survivability.

The range capability and image clarity provided by LRAS3 is credited with preventing several fratricides because operators could distinguish between enemy and friendly vehicles beyond the ranges of other systems. Two such incidents were related during the interviews. The first incident involved a supply sergeant who became navigationally challenged and entered an adjacent unit's sector. The LRAS3-equipped crew identified the vehicle and notified units in sector not to

fire on the vehicle. The second incident involved a report from a local civilian of an unknown vehicle approaching the unit's sector. This civilian thought it was an Iraqi vehicle; the LRAS3-equipped crew quickly identified it as an M88 recovery vehicle moving into sector and notified adjacent units of the friendly vehicle.

LRAS3 worked extremely well in conjunction with other systems, such as the Force XXI battle command brigade and below (FBCB2) and the combat identification panels (CIP). Many of the crews interviewed highlighted this factor. Many of the operators related how the CIP were easily distinguished through the sensor. In addition, leaders at platoon and company levels remarked how using FBCB2 in conjunction with LRAS3 helped maintain situational awareness.

Enhancing survivability relates to protecting crews and soldiers. As mentioned earlier, LRAS3 enhances survivability by providing long-range target acquisition capabilities outside the capabilities of threat weapons systems. In other words, it provides standoff between the individual operating the LRAS3 and the threat weapons system. In addition to providing the crew with standoff, it allows the crew to rapidly forward enemy target locations, thereby providing early warning to adjacent and higher units. The target information allows friendly forces to mass weapons effects based on the target information provided by the LRAS3. The ranges at which the crews acquired, detected, and identified targets depended on the weather, terrain, target type, and the experience level of the operator.

In addition to enhancing crew survivability, the LRAS3 greatly enhanced the lethality of the 3d Infantry Division. When accurate targeting information allows for the massing of friendly weapons' effects, a transition occurs from survivability to overwhelming lethality. Calling for close air support, indirect fires, or providing target location for maneuver units to close with and destroy enemy forces resulted in enhanced lethality.

The LRAS3 was also extremely effective in calling for fire support. According to those interviewed, the vast majority of fire missions were called by scouts with LRAS3. A number of soldiers related experiences of identifying an enemy target, calling for fire, and having the first round impact and destroy the target. According

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to most of the individuals interviewed, this first round impact occurred for a majority of the fire missions.

Those individuals who experienced the opportunity to call for fire support and CAS realized the potential value of an LRAS3 enhanced with a laser designator. One BRT commander felt that during one particular CAS mission, a great deal of collateral damage could have been prevented if his unit had an effective designator. He described the difficulty with trying to talk a pilot onto an enemy target.

The crews interviewed recommended an improvement to the system by having the direction to the target provided in both degrees and millimeters. During the fire mission, the fire support element (FSE) would require the direction to target be provided in millimeters before the mission would be fired. The scouts obliged by converting to millimeters but felt it would be extremely helpful if the LRAS3 would provide the conversion. However, they also wanted to maintain the direction in degrees. When communicating within the unit or with other maneuver units, the scouts preferred reporting enemy target

direction using degrees. Having the system provide "mils and degrees" simultaneously is the desired endstate.

The LRAS3-equipped scouts worked very effectively with maneuver units, as they could pass target information to Abrams and Bradley Fighting Vehicle crews. In one particular incident, a tank crew identified an Iraqi engineer vehicle employing a minefield; however, the tank crew could not obtain a range to the target. The tank crew requested a range from the scouts. An LRAS3 crew identified the target, lased it for the far-target location, and passed the information to the tank crew. The tank crew then fed the range information into the computer and fired the first round, destroying the target.

There were numerous accounts of effective coordination between scouts and maneuver units based on the far-target acquisition and location capabilities of the LRAS3. Scouts usually avoided engaging enemy vehicles/targets with their own direct fire weapons systems. The scouts either used indirect fire or passed the threat target information to maneuver units. The effectiveness of the LRAS3 allows scouts to maintain this technique.

The LRAS3 appeared to be very reliable. Most, if not all, crews interviewed stated they had operated the LRAS3 continuously during the entire operation — 24 hours a day, 7 days a week, for 21 days. Operators who did experience a system failure found that merely recycling the system power corrected the problem. As far as operating the system, most operators used the system primarily in the FLIR mode and very seldom used the day TV mode. Personal preference varied the response.

The LRAS3 also has the capability of being dismounted on a tripod and powered by batteries. The interviews revealed only one incident when the crew dismounted the system. This occurred at Baghdad International Airport where a crew mounted the system on top of the balcony of the airport's control tower. They stated that this worked very effectively, and the crew experienced the same lethal results as previously discussed. In general, it appears the division moved so rapidly that it was not feasible to dismount the system. However, this may very well change as the unit's mission evolves in Iraq. It may now be more feasible and desirable to dismount the system in an urban environment for security operations.

During fielding of the LRAS3, a battery charger was issued and installed on each LRAS3-equipped vehicle. The charger on the move (COTM) proved to be very versatile and useful for charging other weapons systems' batteries. The scouts used the system to recharge the thermal weapon sight's batteries continuously and effectively.

During the interviews, potential product improvements were identified. Two recurring suggestions for product improvements warrant immediate attention. The first would remedy a conflict involving the amount of clearance between the mounted weapons system and the LRAS3. There are three different types of weapons systems that were mounted on the LRAS3-equipped vehicles: the MK19, the M2 .50 caliber, and the M240B. The MK19 seemed to present the greatest conflict, especially when attempting to reload the weapon. Because of this conflict, the gunner/LRAS3 operator must climb out of the hatch, stand on top of the vehicle, and lean over the edge of the vehicle while sliding a 60-pound ammunition can into the feeder tray. The conflict was not as great for the other weapons systems; how-ever, there was a reported problem with an armor protection plate that was mounted on some of the vehicles. This additional armor protection plate, mounted in front of the operator, also restricted weapon movement due to the conflict with the vehicle-mounted yoke.

In addition to the movement conflict between weapons systems and the LRAS3, many of the operators felt the LRAS3 created a severe blind spot at the 2 to 3 o'clock position. A suggestion recommended off-setting the sensor at 90 to 180 degrees from the weapons system.

Another suggested improvement was to provide the vehicle commander with a flat panel screen. This would eliminate the commander and operator changing positions to allow the commander to verify the target before engaging the weapons systems. This improvement would save valuable time and effort during combat operations.

The 3d Infantry Division conducted highly successful operations in Iraq. The victory was a result of the dedicated leaders and brave soldiers of the 3d Infantry Division. The soldiers of the 3d Infantry Di-vision displayed an ability to implement the latest technology into current operations. Their experience with LRAS3 was successful and they provided valuable information to future users and material developers.

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