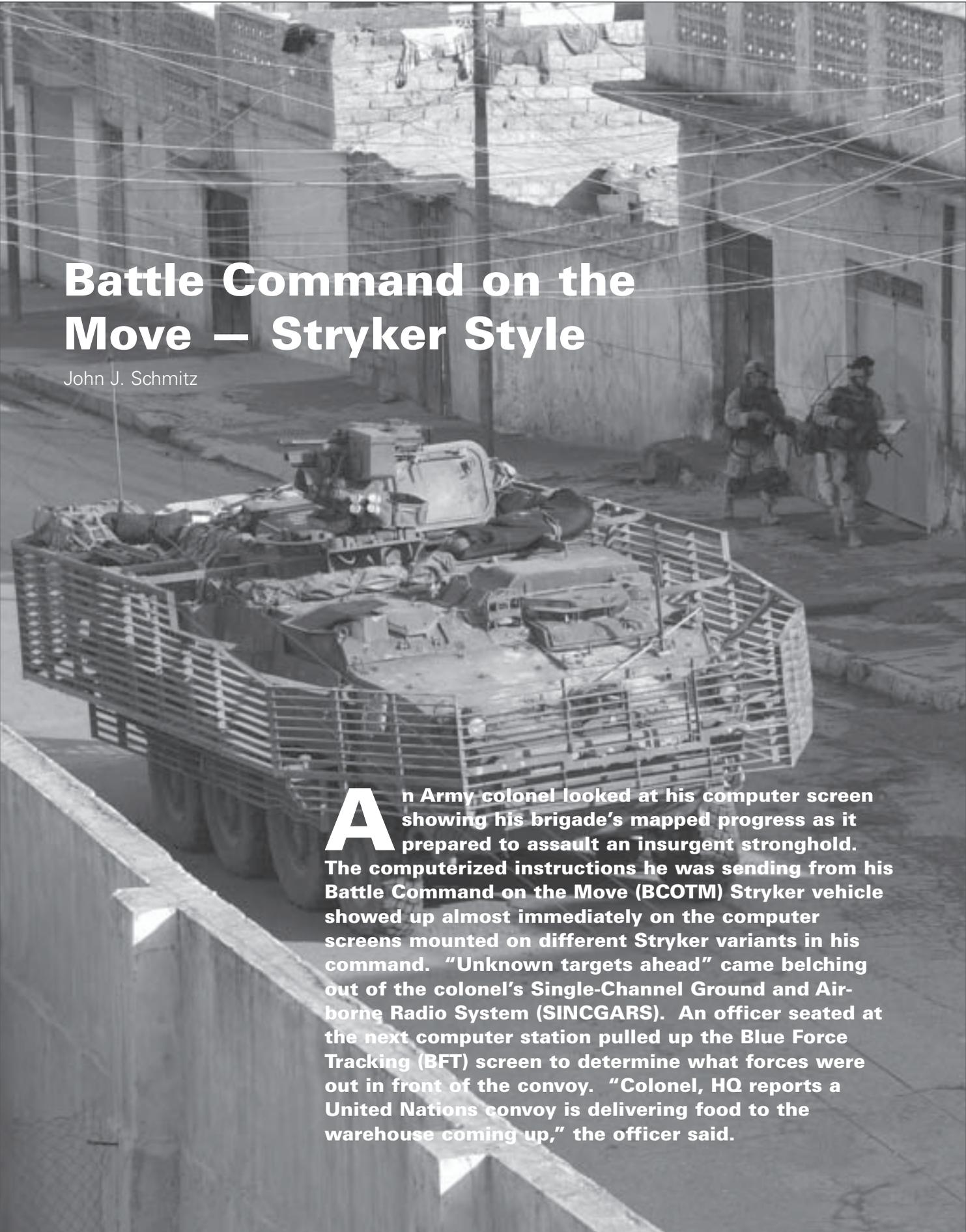


# Battle Command on the Move – Stryker Style

John J. Schmitz



**A**n Army colonel looked at his computer screen showing his brigade's mapped progress as it prepared to assault an insurgent stronghold. The computerized instructions he was sending from his Battle Command on the Move (BCOTM) Stryker vehicle showed up almost immediately on the computer screens mounted on different Stryker variants in his command. "Unknown targets ahead" came belching out of the colonel's Single-Channel Ground and Airborne Radio System (SINCGARS). An officer seated at the next computer station pulled up the Blue Force Tracking (BFT) screen to determine what forces were out in front of the convoy. "Colonel, HQ reports a United Nations convoy is delivering food to the warehouse coming up," the officer said.

“Roger, order the units to go around,” responded the brigade commander through his intercom. Just down the road, a reconnaissance vehicle watched armed men carrying boxes of explosives, the scouts knew they had the right place and entered a Red icon into their Force XXI Battle Command Brigade and Below (FBCB2) software to show the Strykers in their unit the enemy location. Mortar fire soon rained down on the targeted building and vehicles — the infantry made quick work of the rest. The power of computerized warfare just saved the commander’s unit precious time and saved lives.

While this anecdote is fiction, it is close to becoming reality. A pre-production BCOTM Stryker prototype was fabricated at the U.S. Army Research, Development and Engineering Command’s Tank Automotive Research Development and Engineering Center (TARDEC) in Warren, MI, and was recently displayed at the 2004 Acquisition Senior Leaders’ Conference, Fort Knox, KY, where it received accolades from Army leaders and soldiers alike.

The prototype BCOTM Stryker is a combination of the Program Manager (PM) BCOTM Mission Equipment Package with TARDEC’s fabrication and system integration capabilities, creating a very powerful mobile battle command center. The prototype program was ordered by PM BCOTM, and supported by PM Stryker, to provide an upgraded and Soldier-friendly

mobile command post with the latest radios, computers and network components. TARDEC’s development group was chosen as the lead integrator because of its proven track record of providing rapid design and prototyping support to PM Stryker and other programs. The design and fabrication time from start to finish was a mere 12 weeks.

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The new BCOTM Stryker is outfitted with the latest technology, including a Mission Equipment Package from PM BCOTM that contains a 4-slice multiprocessor unit, an 8 by 8 keyboard video mouse (KVM) switch, four 18-inch flat-panel monitors, a network switch and router, fiber optic media converters, Inmarsat satellite (sat) phone with voice and digital capabilities and an Iridium sat phone. These systems are integrated with the standard Stryker associated support items of equipment consisting of four SINCGARS very high-frequency radios, a near-term digital radio, an Enhanced Position Location Reporting System, VRC-103 sat communications radio, VRC-104 high-frequency radio, three Precision Lightweight Global Positioning System Receivers and a BFT sat antenna. To support the radio and sat communications gear, 14 antennas are spread out on the roof. This antenna configuration (except for the Inmarsat and Iridium antennas) was successfully tested at Fort Huachuca, AZ.

To display the various software packages, an 18-inch flat-screen monitor is

mounted at each of the Stryker’s four command stations. Three monitors can be adjusted up and down and tilted slightly and one can be swung out of the way to improve access to the roof escape hatch. The monitors are connected to the 8 by 8 KVM switch and they can display any of the various software programs running on the multiprocessor unit. A typical set of software is FBCB2, Maneuver Control System, Advanced Field Artillery Tactical Data System and All Source Analysis System. These programs can be called up from any generic command station.

To give the vehicle’s crew improved situational awareness, another selection on the KVM switch is the quad video display. Consisting of four video inputs including the Remote Weapon Station video, the Driver’s Vision Enhancement video, a rearview camera and a curbside video, camera crews can get a 360-degree view of the outside of the vehicle, allowing them to detect possible close threats or potential obstacles.

Soldiers were impressed to see that TARDEC took their comfort into consideration while designing the Stryker’s interior layout. First, TARDEC engineers changed the Stryker’s existing V4 computer (located on the right side) to upgraded BFT software. For ease of egress, the vehicle’s center isle was left as wide as possible and flanked by four comfortably padded, commercial-off-the-shelf (COTS) bucket seats arranged in a 2 by 2 configuration. Unlike the current Stryker Command Vehicle’s bench configuration, the COTS seats can tilt back and slide fore and aft about 6 inches, are mounted on stainless steel wire shock mounts and are upholstered with fireproof cloth allowing maximum safety and comfort. The



Interior layout of the BCOTM Stryker.  
(U.S. Army photo by John J. Schmitz.)

shock mounts provide relief from very rough terrain and they also provide improved protection if the vehicle is hit by a mine or an improvised explosive device.

Another improvement in rider comfort is the addition of heater cores and fans located in the seat bases. The fans can be individually adjusted at each seat and will provide some relief in the summer by blowing air across the legs and feet. A jump seat, known as the "Auto-bahn Seat," was added in the left front hatch to provide a location for a soldier providing security watch while on

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road marches. The seat is such that it positions the rider at a "nametag defilade" height and it can be quickly folded up to clear the hatch access.

Overall, the vehicle was praised by many high ranking officers and other visitors to the Fort Knox Live-Fire Demonstration. TARDEC is currently discussing a follow-on plan for vehicle testing and other field demonstrations. No matter what the next step for this vehicle is, it is certain that BCOTM vehicles will populate the next generation of military weapons platforms.

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