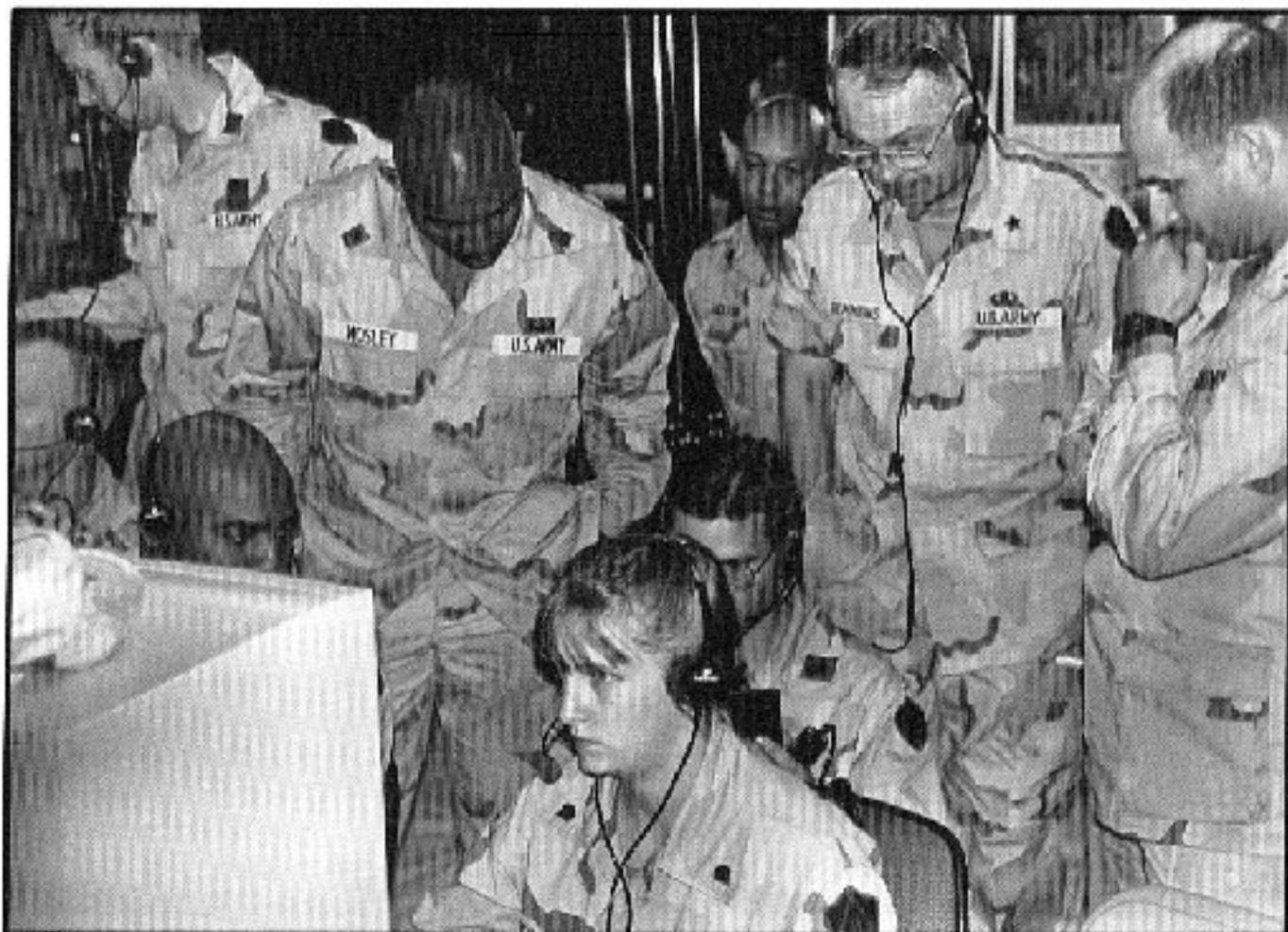


On the "Gun Line" of the Army Theater Missile Defense Element (ATMDE) during Exercise Roving Sands, members of the U.S. Army Space Command (Forward) intently watch the hunt for a SCUD launcher. ATMDE uses a vast array of information processors, most of which are in everyday use in the Army, to locate and destroy SCUD launchers after they have fired their deadly cargo.



ARSPACE Public Affairs Office photo

## Lightning Strikes at Roving Sands

By SSG David Abrams

**L**ightning only strikes once in the same place—so they say. While that may hold true for the natural elements, lightning bolts were touching down every hour inside the Force Projection Tactical Operations Center (TOC) during Roving Sands '95 at Ft. Bliss, TX.

The air in the TOC was charged with electricity as a team of officers, noncommissioned officers and junior enlisted soldiers from U.S. Army Space Command monitored the latest launch of a simulated SCUD missile, known as a "lightning."

From one corner of the tent: "We have lightning southeast of Albuquerque."

From another corner: "Lightning! Lightning! Lightning!"

A yellow light mounted on a pole in the center of the TOC started flashing. Soldiers who'd been on break rushed back into the tent. Fingers flew over computer keyboards, bringing up a series of screens with maps of the notional battlefield. The lightning path of the

SCUD arced across the southern half of New Mexico. Though the SCUD was in reality a prop—little more than a tube made of cardboard, sheet metal and 100-mph tape mounted on the back of a flatbed truck—try telling that to the soldiers in the TOC who treated every launch like a life-or-death situation.

"Predator on station!"

"Who do we have in the impact zone?"

A computer screen was consulted, then: "We have no known critical assets on ground."

"Roger, copy."

Tension mounted as Patriot missile crews were alerted to the incoming SCUD. A fire mission went out across the radio airwaves. A Patriot, the ballistic hero of Desert Storm, was launched.

In the dim interior of the connected tents, the air defenders sat at their stations, watching screens with the eyes of hawks while the voices of forward observers and other TOC soldiers chattered over headsets. In the hyper-tense moments after a lightning was first called, the collective blood pressure visibly rose in the tent.

"Impact in 10 seconds."

The Patriot screamed through the desert air, seeking the intruding SCUD.

Finally, a voice choked with relief said, "We have impact."

"OK, everybody. End of mission."

It was over in less than five minutes. The Force Projection TOC had identified a launch, alerted ground forces and monitored the destruction of the enemy missile. Chalk up another victory not only for the friendly forces, but also for the TOC itself as the Army's newest battle-management tool for air defense.

It was also a triumph for the NCO Corps since more than 70 percent of the TOC's personnel wore stripes on their sleeves.

"From the time we set up to the time we break down, NCOs have been running the show," said SSG Loren Roe, a theater tactical planner with U.S. Army Space Command (Forward). "We've got the cream of the NCO crop in here."

The TOC—which played a key role during Roving Sands, the annual joint exercise held in west Texas and southern New Mexico and involving about 24,000 servicemembers—was actually a proto-

type. In 1994, recognizing that nothing in the Army fully integrated weapons and capabilities to counter the theater missile threat, then-Army Chief of Staff GEN Gordon R. Sullivan tasked the U.S. Army Space and Strategic Defense Command to create an organization dedicated to TMD planning and execution. The resulting birth of the Army TMD Element then led to another tasking: create a nerve center to incorporate the four pillars of TMD (attack operations, active defense, passive defense and command, control, communications and intelligence).

Voila! The Force Projection TOC was formed, snapping together all four TMD pillars like pieces of a jigsaw puzzle. On the battlefield, the TOC enables the Joint Force Land Component Commander to integrate air, sea and ground

battle information. The TOC is also compact—two C-141 transport planes can deliver personnel and equipment to the battlefield in a matter of hours.

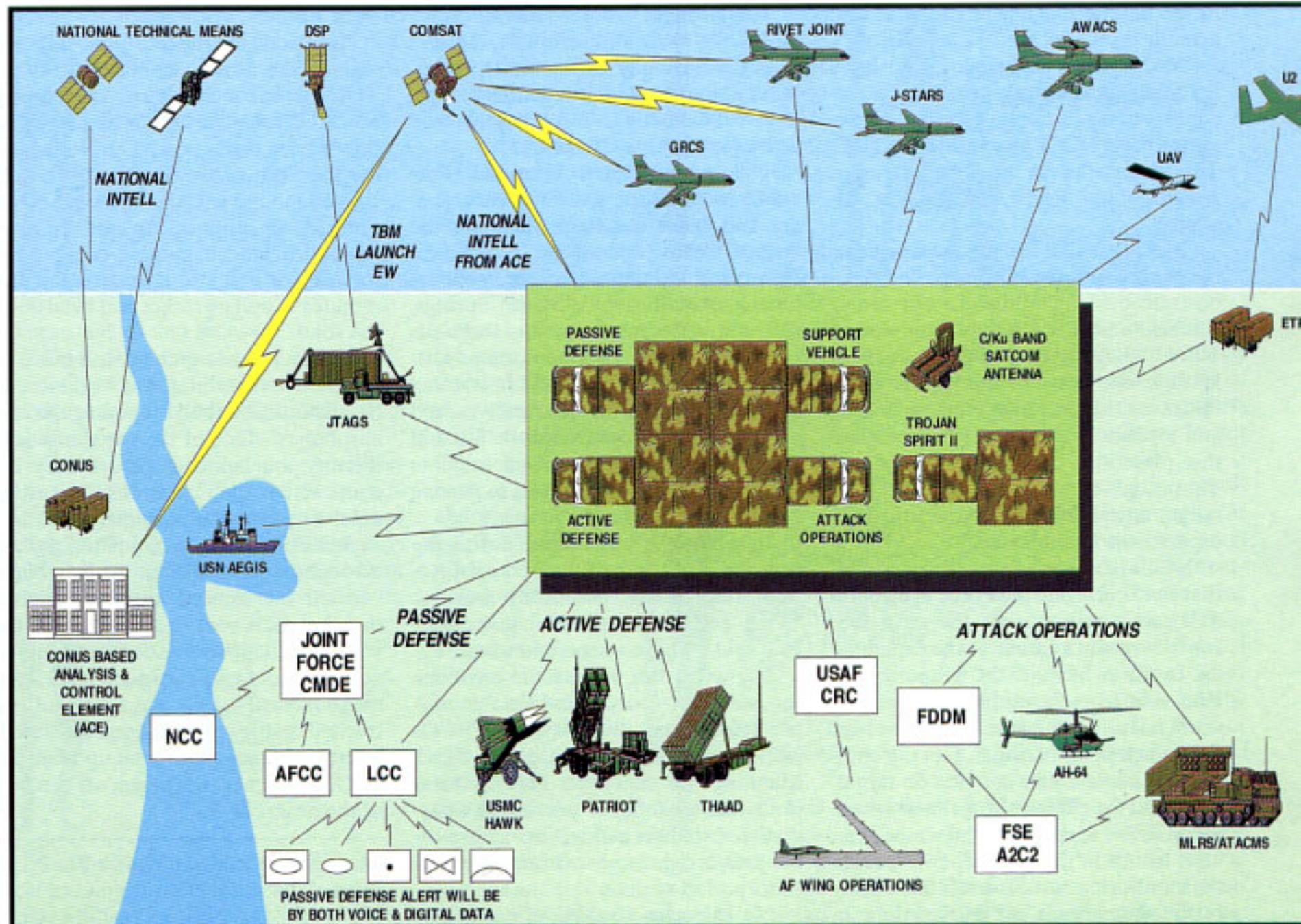
Composed of five High Mobility Multi-Purpose Wheeled Vehicles connected by dark green tents, the Force Projection TOC gives a focused and synchronized picture of the joint battlefield. The air defense exercise marked the first time the prototype TOC has been fully operational in a tactical environment. If Roving Sands was a test, military officials declared, then the integrated TOC passed with flying colors—due in large part to the battle reflexes of NCOs who were, so to speak, quick as lightning.

With a vertical range of 10,000 feet and a horizontal sweep of more than 2,000 square miles, computer operators in the TOC had a wide, clear view of the

battlefield. Intelligence assets ranged from overhead satellites to special operations troops maneuvering through the desert. The TOC commander could look at the fused information on one of the dozens of computer screens, then pass the critical data up through the appropriate channels.

If Roving Sands was any indication, the TOC works like a charm, said many of the center's NCOs. "Some people are already calling this the 'TOC of the 21st century,'" Roe said.

During a calm between the lightning storms, SSG James Crenshaw walked out of the crowded TOC into the desert landscape of Ft. Bliss' Logan Heights, the main nerve center for Roving Sands' Blue Force command and control. A SCUD missile had just been identified and destroyed and the adrenaline was



The ATME TOC provides battle management support to the JFLCC throughout the spectrum of conflict. For a small investment in equipment and personnel, a superb TMD battle management tool counters a growing threat.

still pumping through Crenshaw's veins. "I can't wait until the next lightning!" he said, blinking in the bright light outside the tents.

"We never actually shoot the missiles down—we're just the detectors," he explained. "Our objective is to locate the bad guy, then we cue the Patriot units so they can kill him."

"We're like the eyes and the ears of the world," he added. "It's good to feel important."

In the attack operations van branching off the main room of the TOC, SSG Mike Washington from Space Command was tucked into the small space in front of his console. "During a lightning, we're in here listening over the headsets until the commander assigns a priority to the mission," he said. "At that point, we initiate the fire mission and pass it along to the battalion. They're the ones who actually do the technical fire control."

Washington's performance during a lightning normally takes less than 60 seconds, but it's just one of the many integrated roles NCOs play inside the TOC. The importance of the hard strippers is not going unnoticed by senior Army officials.

"Exercises like Roving Sands give us the chance to shine as a Corps and demonstrate our capabilities to our senior leaders," said CSM James Randolph of Third U.S. Army, headquartered at Fort McPherson, GA. "In the future, you'll find more responsibility for the planning and execution of tactical situations like this placed on the NCO's shoulders. That kind of responsibility can't be taught anywhere—it's learned through experiences like this one."

NCOs like Roe agree with Randolph that working inside the Force Projection TOC adds zest to even the most seasoned sergeant's career. As he explained his function in the TOC's operations, Roe could barely disguise the enthusiasm he has for the mission. "Once I get the launch point of origin, I let the commander know if he's got eyes on target. Then I let the chemical guys know where the SCUD's supposed to hit so they can alert troops in the area. Then I go into the monitoring mode to see if there's any further launches. I get all that done in about 45 seconds."

If the Force Projection TOC is ap-

proved for future use, it could very well change the face of the battlefield, Roe added. "What we're doing here is trying to narrow down our alert warnings. In Saudi, if a missile was fired on Dhahran, the whole theater of operations went on alert. We want to avoid that by alerting just those units in the immediate vicinity of the impact zone. We're trying to get the early warning system down to a basic science."

From first alert to final shutdown, the TOC soldiers work inside a window of 18 minutes. "We've set our own goal of 10 minutes, and there have been times when we've gotten it down to six minutes," Crenshaw said with a trace of justifiable pride in his voice.

That the TOC gets the job done like clockwork is something of a minor miracle in itself.

Just six months before Roving Sands began, the Force Projection TOC didn't even exist. Details on personnel, equipment and operating procedures had yet to be solidified by U.S. Army Space and Strategic Defense Command.

U.S. Army Space Command (Forward) received the system in late January and, after demonstrations for the Army Chief of Staff and the U.S. Central Command commander, the soldiers headquartered in Colorado Springs, CO, started learning the nuts and bolts of how to run the TOC's computer software. After only three weeks of training by both computer representatives and augmenting soldiers from forts Sill and Bliss, the Space Command warriors were ready to take their skills to Roving Sands.

Based on the success rate during the exercise, the future of the Force Projection TOC seems practically assured. "This TOC has unlimited potential," Roe said. "There are no boundaries."

If anyone has pushed the envelope for computer-coordinated theater missile defense operations, it was the NCOs working inside the prototype TOC. Manning the center in 12-hour rotations, the platoon of previously unacquainted soldiers melded into a state-of-the-art warfighting team in an amazingly short period of time.

"Considering these guys have only had three weeks to learn everything about this system, they're doing a damn

fine job," said SFC Ricky Judy, NCOIC of the TOC. "My NCOs are trying to incorporate multitudes of information, bring it all together then send it to the commander so he can make a decision. It can be very stressful, especially when you've got an inbound SCUD and someone has to make a decision whether or not to shoot it down."

As Judy spoke, the activity inside the TOC shifted to a blizzard of excitement. There weren't any inbound SCUDs, but a scouting team on the ground had spotted an enemy missile launcher. A preemptive strike was now the order of the day.

From the center of the room: "Do we have cleared airspace?"

A sergeant tapped his keyboard, searched the screen for an answer, then called out: "Not yet, sir. I'm waiting on word from the Air Force."

The seconds ticked into minutes, making the tension unbearable, as the TOC waited for clearance. Any moment now, the enemy launcher might realize they'd been discovered. The NCOs pacing the floor of the TOC knew a well-trained mobile launcher crew has an estimated 30 minutes to set up, two minutes to launch, another two minutes to wait for gases to dissipate and five minutes to pull up stakes and head down the road.

"They'll either pick up and move or they'll fire something at us," said Roe as he anxiously cupped a hand against his earphones. "One of the key things is to identify the launcher before they become active, then kill it. It's like cutting off the head so the body dies."

Relief spread like melted butter throughout the TOC as the Air Force verified the cleared airspace. Chatter over headsets rose to a fever pitch, the voices overlapped in a tangle of alpha-numeric and grid coordinates. A long-range tactical missile was launched and tracked on the computer screens. Finally, an exuberant cheer went up when the SCUD launcher was blown off the face of the desert. ■

*Abrams is senior journalist for The NCO Journal.*