



'Urban Seminar' Maps *virtual Baghdad* for 1AD training

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Contrary to the expectations of many military experts, coalition forces in Iraq were able to subdue Iraqi forces to the point that they met little resistance once they entered Baghdad. However, had a fierce battle occurred inside the city, 1st Armored Division troops would have been well-prepared for operations in this complex urban environment, thanks to their training using constructive and virtual simulations.

The 1st Armored Division conducted a series of training events designed to train leaders on urban operations with the city of Baghdad as the backdrop. The division was tasked by the V Corps commander to develop tactics, techniques and procedures that could be exported as a training package to units within the corps. An "Urban Seminar" was the event that 1AD used to develop the TTPs.

The initial Urban Seminar was executed at the United States Army, Europe, Battle Command Training Center in Grafenwoehr, Germany in February. The results of this seminar were translated into actual TTPs that were used by V Corps during Operation Iraqi Freedom.

In a video teleconference briefing from Baghdad, V Corps Commander Lt. Gen. William S. Wallace discussed his concept for the Urban Seminar. "Before I deployed the corps from Germany, I had some of the troops from the 1st Armored Division, as a matter of

▲ Figure 1. Joint Conflict and Tactical Simulation provides high-level detail of the presidential palace in Baghdad.

fact, do some simulation work with a simulation called JCATS (Joint Conflict and Tactical Simulation), which is a very high-resolution simulation that can be used to simulate urban combat. And what they investigated over the course of about five days was possible ways to conduct urban combat with armored formations. And one of the techniques they investigated was the idea of doing armored raids into urban areas."

The 7th Army Training Command's Directorate of Simulations received the mission of executing this 1AD training event. The DOS determined the requirements for successful mission accomplishment: a high-fidelity simulation system with accurate and realistic terrain databases, a skilled and trained Opposing Force, simulation operators, appropriate facilities and an after-action review tool. The DOS, in concert with USAREUR's Warrior Preparation Center near Kaiserslautern, had all the assets necessary to meet 1AD's objectives.

JCATS, a constructive simulation, and the Virtual Reality Scene Generator, a 3-D virtual visualization system, were used to simulate the environment for the TTPs 1AD developed. JCATS has the ability to model individual soldiers and pieces of equipment. It can replicate a building by modeling multiple floors and multiple rooms

within a floor.

“This level of detail is vital to any simulation that will be used to conduct urban operation exercises,” said Major John T. Janiszewski, operations officer for the Directorate of Simulations - Forward. “This means that in a simulation, we can take an individual soldier and place him in any building within the simulation. It gives us countless war gaming possibilities.”



Figure 1 (opposite page) provides an example of the high level of detail JCATS can portray. The JCATS screen-capture image shows the floor plan of the Presidential Palace in Baghdad.

VRSG is a visualization tool that provides the user the ability to view objects, personnel, equipment and terrain features in a 3-D view that correlates with the JCATS simulation. The VRSG image of the Presidential Palace that corresponds to the JCATS image in Figure 1 is shown in Figure 2 (above).

The V Corps commander called together the brigade-level commanders of the Operation Iraqi Freedom ground forces - Marines included - to be briefed on what 1AD had learned.

Without the appropriate terrain databases, the JCATS and VRSG simulation tools would have been of limited use to 1AD. In the spring of 2002, in anticipation of possible training and operational support requirements, the 7th ATC digital terrain lab started to collect and archive all relevant National Imagery and Mapping Agency and commercial digital terrain data available for Iraq. The acquisition of this data, which consisted of mapping, vegetation, hydro,

urban, elevation data, and both classified and unclassified satellite imagery, was essential for high-fidelity correlated terrain databases for JCATS, VRSG and Vision XXI (a tool used for after-action

reviews). The correlated terrain databases provided a common operating picture of the

battlefield for all exercising units, and ensured simulated terrain had all the actual terrain features and that those features were where they were supposed to be. VRSG was correlated with JCATS, matching the terrain down to each individual building in all streets and blocks within built-up areas. This enabled 1AD to develop TTPs in JCATS and simultaneously view them in VRSG.

After an abbreviated test of the simulation, all that was left to do was assign trained personnel to run the simulation and command the OPFOR. Northrop Grumman Information Technology contractors acted as simulation workstation operators and interacted with JCATS and VRSG. They translated the tactical orders from the 1AD into commands that were executed in JCATS. Northrop Grumman senior software engineers were also responsible for providing technical support for the simulations during the Urban Seminar.

The WPC OPFOR was the final building block for the exercise. In this exercise the role of the OPFOR was to demonstrate to 1AD different tactics that the OPFOR would use in a complex urban environment so that 1AD could make appropriate adjustments to their TTPs.

“One thing that made the Urban Seminar different from our simulations training exercises was that we put the OPFOR and the training audience in the same room,” Janiszewski said. “This gave the 1AD leadership the flexibility to try different tactical courses of action and gain immediate feedback from the OPFOR.”

Before the seminar, workstation operators attended the brigade operations order brief and discussed tactics with subject matter experts. 1AD worked through three simulation runs of a brigade-level vignette with a cooperating OPFOR, but with free-play engagements. Throughout the seminar the VRSG operator provided a “God’s eye” view of the battlefield.

▲ Figure 2. Virtual Reality Scene Generator image of the presidential palace in Baghdad, corresponding with the JCATS image in Figure 1.

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CATC instructor keeps 'HAZ 11' students fired up

Staff Sgt. Michael Tracy (left, with silver hydrant) is the chief instructor for the Combined Arms Training Center's "HAZ 11" class: Transportation of Hazardous Goods on European Roadways.

Tracy describes the course, the most-attended in CATC's inventory, as demanding, requiring mastery of a great deal of regulatory information. He tries to keep students interested with hands-on practical exercises, he said, including the one pictured at right, during which students practice putting out fuel fires at the Vilseck Fire Station.



photo by Paula J Guzman

Drill and Ceremony *concluded*

deal with people correctly, how to be a leader, and a lot of other things that will help in life. Useful life skills, like first aid." He would recommend JROTC to other students, he said.

After the competition, Lutz, chief of operations for 7th Army NCOA, said the cadets were disciplined and dedicated. "I was very impressed at the young generation applying themselves in such a professional way," he said.

During inspection the cadets were obviously nervous, he said, but added that during the competition, "It was very impressive to see most groups work in absolute unison."

Taylor, a senior small group leader for the NCOA, said the cadets impressed her as, "Disciplined, well-rehearsed students that cared about and seemed to take pride in what they were doing."

Results from the Vilseck competition follow:

Squad Regulation Drill	Bamberg	2nd	
Vicenza	1st	Vilseck	3rd
Hohenfels and Vilseck	tied for		
2nd			
Bamberg	3rd	Individual Exhibition Drill	
		Vilseck	1st
		Hohenfels	2nd
		Bamberg	3rd
Platoon Regulation Drill			
Vicenza	1st		
Vilseck	2nd		
Hohenfels	3rd		
Individual Regulation Drill			
Vicenza	1st		
Hohenfels	2nd		
Vilseck	3rd		
Color Guard			
Hohenfels	1st		
	<i>Editor's note: The top three team finishers at the European finals, a week after the Vilseck regional competition, were Wuerzburg, Heidelberg and Hohenfels, in that order.</i>		

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After the seminar, the DOS provided 1AD with a take-home package of 6 compact discs. The data on the CDs — including scenario and workstation files, 3-D snapshots and video clips — gave 1AD the ability to rerun the entire event in JCATS and to demonstrate the TTPs and lessons learned from the Urban Seminar.

"The division commander was so pleased with the hard work of the Urban Seminar team and the TTPs they developed that he insisted that all brigade and battalions within the division be given the opportunity to learn first-hand from the urban operation TTPs," said Lt. Col. Michael A. Spencer, deputy director of Simulations for 7th ATC.

Wallace said, "Prior to leaving Kuwait, we hosted a seminar with all of the brigade-level commanders within the 5th Corps and in fact invited the brigade-level commanders and their senior officers from the 1st Marine Expeditionary Force to the same seminar," said Wallace. "And the folks from the 1st Armored Division that had conducted the simulation shared with us the techniques that they seem to have refined through simulation, not perfected, but refined, and at least planted the seeds for the idea of heavy armor in an urban raid-type configuration."

Janiszewski summed up the seminar's importance, saying that in this instance, simulation played an essential role in developing urban operations TTPs that may have saved soldiers' lives. "It is quite possible that the TTPs that 1AD developed and demonstrated to commanders in the Gulf were a prime reason the coalition was successful when they entered the heart of Iraq," he said.

The DOS team is now developing an urban operations training support package that will be sent Army-wide, so all Army units can benefit from the efforts of 1AD and the DOS to train and educate soldiers on the complexities of operating in an urban environment.