

Employing the Air Defense Airspace Management Cell

10th Mountain Division Air Defense Airspace Management Cell Demonstrates Combat Effectiveness During Operation Iraqi Freedom IV Deployment

by Warrant Officer Steven Fitch

Since its deployment to Iraq in August 2005, the 1st Brigade Combat Team, 10th Mountain Division, Air Defense Airspace Management (ADAM) Cell has proven highly effective in actual combat operations. The cell's ability to properly employ and utilize all systems not only enhances effectiveness of the brigade combat team airspace users, but also prevents fratricide and damage or destruction of equipment. By effectively managing the airspace, the ADAM Cell team has accelerated counterfire reaction times and improved restricted operations zone deconfliction. This has enhanced the combat effectiveness of all fires, unmanned aerial vehicles (UAVs) and rotary- and fixed-wing platforms. The ADAM Cell has become the vital link for all air and missile defense and Army airspace command and control (A²C²) operations in the joint theater.

The ADAM Cell is a fusion of both Air Defense Artillery and Aviation systems and personnel. It greatly enhances the cell's effectiveness if ADAM Cell Soldiers are cross-trained to operate all the cell's systems. During training, it is important that ADAM Cell personnel get "hands-on" experience on all systems, so the transition to wartime operations can be seamless. This means that personnel should be qualified at the operator level on every aspect of system utilization. At division level, separate cells exist for G3 (Operations, Plans, and Training) A²C², G3 Air, and G3 Air and Missile Defense. The brigade combat team's ADAM Cell performs all three of these functions simultaneously. At any time, ADAM Cell Soldiers can be activating or inactivating a restricted operations zone, submitting an air control measure request, deconflicting UAVs, or monitoring air tracks. Obviously, the need for operators to know and understand all aspects of ADAM Cell systems is vital.

The ADAM Cell has a long list of responsibilities, but the bottom line is maximizing the effectiveness of the brigade combat team airspace by deconflicting all rotary- and fixed-wing aircraft, UAVs, and fires assets in the brigade combat team area of operations. This is accomplished

by systems such as the Tactical Airspace Integration System (TAIS), Air Defense Systems Integrator (ADSI), Air and Missile Defense Workstation (AMDWS), and Forward Area Air Defense (FAAD) System, plus a versatile radio suite consisting of UHF, VHF, HF, and satellite communications radios. All these systems reside in the ADAM shelter (AN/TSQ-282D) and are remotely linked into the tactical operations center.

The ADAM Cell manages the brigade combat team airspace while air traffic control agencies control the airspace. The cell manages the airspace by coordinating functions with air traffic control agencies, including activating preplanned fire restricted operations zones, clearing airspace for controlled detonations or counterfire missions, and providing notification of aircraft violating a brigade combat team's restricted

operations zone. Air traffic control agencies control the airspace by speaking directly with pilots and controlling where airspace users can fly and at what altitudes. By communicating with air traffic control agencies, the ADAM Cell reduces the time it takes to execute such functions as clearance of fires, controlled detonations, and activating or inactivating restricted operations zones.

The ADAM Cell's versatile radio suite and chat room programs allow operators to monitor and transmit via air traffic control, brigade combat team, aviation, and fires networks. Operators must understand how to communicate with all these different entities. For example, calls for counterfire missions can come at any time. Before fires assets can respond, the ADAM Cell must communicate with air traffic control agencies above and below the coordinating altitude to clear all airspace users from the path of fire units. This can be a stressful situation. Everyone's eyes are on the ADAM Cell crew, which must clear the airspace so the counterfire unit can shoot. Knowing which agencies to talk to, being aware of what information needs to be communicated, and having all systems working enables the cell to accomplish the mission.



From left to right, Sergeant Michael Hall, Sergeant Douglas Gray, and Warrant Officer Steven Fitch of the Air Defense Airspace Management Cell, 1st Brigade Combat Team, 10th Mountain Division, are deployed for Operation Iraqi Freedom.

The main system for deconfliction is the TAIS, a battlefield automated system designed to meet both A²C² and air traffic control requirements. Its role is to digitize the A²C² and air traffic control en route airspace management processes. This system has proven its importance as a fully automated A²C² tool. The ADAM Cell processes all brigade combat team operation airspace reservation requests through the TAIS. For example, battalions send requests for Raven Small UAV and Shadow Tactical UAV flights. These requests include grids, altitudes, and times of flight. The Fire and Effects Coordination Cell sends requests to the ADAM Cell via the Advanced Field Artillery Tactical System (AFATS). Fire-mission specific information includes the fire restricted operations zone, primary/platoon area hazard restricted operations zone, and the target area hazard restricted operations zone. The ADAM Cell inputs them into the TAIS, displays them, and deconflicts as needed. Once the data is added, the system automatically displays potential conflicts. Aviation units can resolve conflicts by adjusting times, locations, or altitudes of flights. It then becomes the user's responsibility to coordinate with lower and adjacent units to make sure all conflicts are resolved before air operations plans are sent to higher echelons for approval and addition to the air control order.

Another of the ADAM Cell's primary functions is to provide the commander situational awareness of the brigade combat team airspace by receiving and displaying air tracks. The primary system that accomplishes this is the ADSI. The ADSI provides continual joint air track coverage and tactical ballistic missile early warning capabilities through tactical digital information links, satellite intelligence feeds, and local radars. An important feature of the ADSI is the ability to load the air tasking order, which provides detailed information about each track. For example, if an aircraft violates a brigade combat team restricted operations zone, ADAM Cell Soldiers can hook the air track and obtain call sign information, which in turn directs users to the unit for notification and reporting. It also provides the capability of tracking brigade combat team UAV and rotary- or fixed-wing missions. The ADSI provides a direct air track link to the TAIS and AMDWS. For redundancy, the FAAD system receives a local air picture through radio networks and can also forward this information to the ADSI or AMDWS, so if the local area network goes down, users still can receive tracks through radio transmissions.

The ADAM Cell must also alert the units within the brigade combat team area of operations in the case of an enemy tactical ballistic missile launch. The ADSI provides the capability of tracking missile launch points, trajectories, and impact points. The system can receive tactical ballistic data from multiple sources such as the Multi-Function Information Distribution System Radio, the Joint Tactical Terminal Radio, and the tactical local area network. ADAM Cell Soldiers must continually monitor for missile launches and understand proper procedures to follow for dissemination of alerts to



Sergeant Douglas Gray, an air defense tactical operations center operator, uses system engagement operation software to receive and relay the local air picture.

subordinate units. If a missile will impact the brigade combat team area of operations, ADAM Cell Soldiers must notify all subordinate units to provide Soldiers valuable time to don chemical protective gear and proceed to assigned bunker locations. This is accomplished by the use of a dedicated tactical ballistic missile early warning radio net.

The ADAM Cell is only as effective as the leaders and Soldiers within it. Leaders must fully understand and articulate ADAM Cell capabilities to commanders. It is important for ADAM Cell leaders to properly train Soldiers and then keep those Soldiers in their positions upon deployment. Developing a cohesive team of air defenders and Aviation personnel is equally important. Some of the tasks traditionally accomplished by the other branch may seem foreign, but with proper training and teamwork, mastery of these tasks becomes attainable. The key is having a "can-do" attitude and seeing the bigger picture.

It is imperative that ADAM Cell Soldiers share information about successful tactics, techniques, and procedures rather than letting lessons learned "fall under the radar" once they redeploy from theaters of operation. Sharing lessons learned can impact every aspect of cell operations, including doctrine, personnel structure, equipment, and training. For example, feedback from deployed ADAM Cells could prompt air and missile defense training developers to add additional tasks, such as TAIS operations and A²C² doctrine, to advanced individual training. Working as a team, we can continue to build on the successful combat debut of ADAM Cells in Iraq and Afghanistan.



Warrant Officer Steven Fitch, a command and control systems technician, is assigned to the 1st Brigade Combat Team, 10th Mountain Division, which is deployed to Iraq for Operation Iraqi Freedom IV. The current deployment is his first experience working inside an ADAM Cell. In addition to his traditional duties as a systems technician, he has been placed in charge of all the brigade combat team's airspace management operations.