

## The Aviation Combined Arms Tactical Trainer: Update

By MAJ James F. Dougherty

SSG Vernon McNabb, UH-60 MTPC instructor assigned to 110th Avn. Bde., conducts door gunnery evaluations during initial testing and evaluation of the NCM3 in Orlando, FL, May 23-25, 2011.

It has been a busy year for the aviation virtual collective trainer – AVCATT. In 2010, all twenty-three suites received a combined retrofit, essentially applying several much needed engineering change proposals (ECP) which greatly enhanced the overall system performance.

Some highlights of the retrofit include new helmet mounted displays (HMD), faster host computers, and improved image generators. If it has been awhile since you have been in and around an AVCATT, we encourage you to stop by your local suite and rate the improvements for yourself.

2011 continues to be an enhancement year for the program. As budget constraints tighten, we are encouraged and thankful to our airframe program managers (PM) for ensuring that necessary funding is identified and allocated towards keeping the AVCATT cockpit configurations usable and relevant to the aviation community.

As you know, these last couple of years have seen an accelerated fielding of live aircraft platforms (UH-60M, CH-47F, AH-64D BLK II 13, etc.) across the aviation fleet. What you may not know is that behind the

scenes system and non-system training aids, devices, simulators, & simulations (TADSS) try to play catch-up with the live systems, often times unable to begin development until post fielding and software contractual issues are resolved.

As of right now, the AVCATT OH-58D BLK II configuration is complete and awaiting accreditation in August 2011. In addition, preliminary work has begun on the AVCATT UH-60M, CH-47F and AH-64D BLK II Lot 13 configurations with expected suite fieldings in FY13.

### NCM3

The Nonrated Crewmember Manned Module (NCM3) is a mobile, transportable, multi-station virtual simulation device designed to support training of nonrated crewmembers (NCM) in crew coordination, flight, aerial gunnery, hoist and slingload related tasks.

Essentially a third AVCATT trailer, the NCM3 is reconfigurable to either a UH or CH backend, which enables two complete lift crews (RCM and NCM) to train in the virtual environment. Unique to the NCM3 system is the ability to oper-

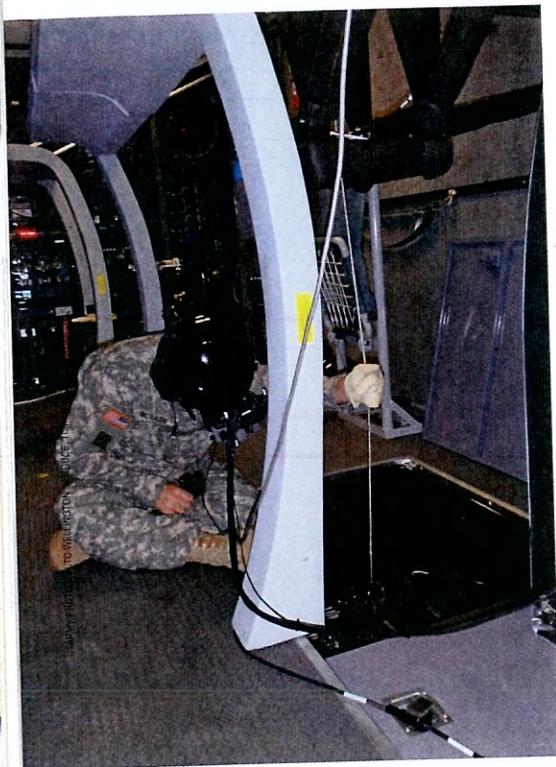
ate in three separate modes.

In the first mode, the NCM3 is tethered to an AVCATT suite with correlated visual and audio cues. All crewmembers utilize their HMD and fly and fight their platform as they would in a live environment.

The second mode, allows the NCM3 to operate in a standalone mode where the instructor/operator (I/O) is able to perform the role of the pilot(s).

The third mode, enables the NCM3 to operate under a 'white-light'. Crewmembers are not submersed in the virtual world, but rather are able to work through weapon and hoist tasks with actual demilitarized weapons and an operational hoist. This mode is compatible to sitting in an actual aircraft on the ramp and working through weapon and hoist procedures in the crawl phase of learning.

The first NCM3 is currently scheduled to arrive at Fort Campbell, KY in September 2011, with the second arriving on station at Ft. Campbell in December 2011. As a mobile trainer, the NCM3 will be able to be scheduled by aviation brigades for crewmember training in support of training requirements.



SSG Vernon McNabb conducts an evaluation of the NCM3 UH-60 hoist capability. The NCM3 will be able to train individual and collective tasks associated with door gunnery, sling and hoist operations. As part of the simulator developmental process, USAACE Directorate of Simulation (DoS) provides subject matter experts (SME) in order to provide critical feedback during all phases of design and construction.

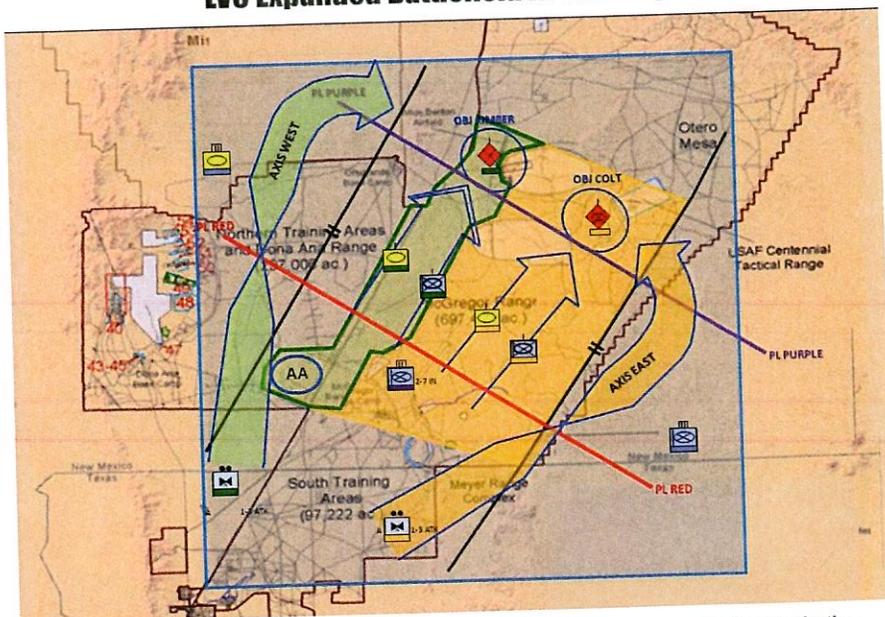
### AVCATT and the LVC-ITE

AVCATT is Army Aviation's only virtual collective training asset participating in the Army's Live-Virtual-Constructive Integrated Training Environment (LVC-ITE) Increment 1.

Key to AVCATT's success in the LVC-ITE is integration of Synthetic Environment Core (SE Core) products. These products include terrain databases (TDB), common moving models (CM2), and One Semi-automated Force (OneSAF). The AVCATT/SE Core integration effort is in progress with software fielding scheduled to begin 1st quarter FY12. The AVCATT currently operates on Iraq, Korea and Afghanistan East TDBs.

The LVC-ITE requires the capability to train on home station terrain databases which will start to become available for AVCATT use this year. The SE Core databases, CM2, and OneSAF will ease interoperability issues with other SE Core compliant

## LVC Expanded Battlefield in Training



This illustration highlights a use case of the LVC-ITE. Shown in green are units training in the LIVE environment. Shown in blue, the CONSTRUCTIVE environment. Amber represents units in the VIRTUAL domain and blue, the CONSTRUCTIVE environment. In this case an Infantry BN TF is directly supported by aviation elements in both the LIVE and VIRTUAL training domains. As with every training exercise, the commander's training objectives will define the extent of the exercise. Although the INF BN TF has only two companies maneuvering in the LIVE environment, the LVC-ITE enables a larger, more realistic training audience thus incorporating the principle of training found in FM 7-0.

virtual simulators and between the virtual and constructive training domains.

The use of common SE Core databases and OneSAF yields a user-friendly commonality allowing for a persistent connectivity capability at the home stations. For example, commanders of both air and ground units, through their local Battle Command Training Centers (BCTC), will be able to link the Close Combat Tactical Trainer (CCTT) and Reconfigurable Vehicle Tactical Trainer (RVTT), our supported maneuver units virtual collective trainers, with the AVCATT.

Once an installation is fielded with the LVC-ITE capability, commanders can then expand this interoperability across all three domains.

Figure 1 depicts a Fort Bliss LVC-ITE use case where an infantry battalion task force is trained employing units across multiple training domains. From an aviation perspective, this scenario could yield one company supporting a live battalion in the exercise with actual aircraft; while a second company supports the ground commander through the use of virtual simulation.

The 'so-what factor' is gained from the ability to generate one common

operating picture (COP) at all levels of command and to train in accordance with several FM 7-0 key principles to include, training as a combined arms team, training utilizing multi-echelon techniques and training to develop leaders.

In closing, the AVCATT team (PEO STRI, USAACE DOS and TCM Virtual) look forward to another productive year for the program and remain committed to supporting the commander's aviation virtual training requirements.

We again encourage commanders and trainers alike to get out and see the improvements for themselves. In addition, the AVCATT and NCM3 will be showcased at both the 2011 Interservice/Industry Training, Education Conference (I/ITSEC) in Orlando, FL, November 28 – December 1, 2011 and the 2012 AAAA Annual Professional Forum & Exposition, in Nashville, TN, April 1-4, 2012.



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