

SPECIAL FOCUS
Simulation Update



The author is shown in the foreground conducting virtual gunnery in the Nonrated Crew Member Manned Module (NCM3).

TCM V COURTESY PHOTO

TRADOC Capability Manager for Virtual Training Environment Update

By LTC Wellington "Duke" Samouce

Aviation virtual collective training gained a considerable asset this past year with the unveiling of the Nonrated Crew member Manned Module (NCM3). This article will focus on the release of the NCM3.

Before we go into the NCM3 – a quick update on the Aviation Combined Arms Tactical Trainer (AVCATT); development of the UH-60M and CH-47F manned modules, as well as aviation survivability equipment (ASE) upgrades and enhancements continue on time with an expected release for training in 2013.

In addition, the much anticipated integration, testing and accreditation of the Live, Virtual and Constructive-Integrating Architecture (LVC-IA) continues on schedule at Ft Hood, TX.

Elements of the 1st Air Cavalry Brigade are supporting aviations virtual representation in this Army wide initiative through a digitally integrated AVCATT suite.

NCM3

The Nonrated Crew member Manned Module (NCM3) is a subcompo-

nent of the AVCATT program.

It is a mobile, transportable, multi-station virtual simulation device designed to support training of nonrated crewmembers in crew coordination, flight, aerial gunnery, hoist and sling-load 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.

NCM3 navigated its final acquisition, acceptance and accreditation wickets late last year and is successfully assisting commanders in the training of nonrated crewmember individual and collective tasks.

Two NCM3s have been fielded to date and are located at Fort Campbell, KY. Although the first two suites are temporarily stationed at Ft. Campbell, their mobile design makes them available for training throughout CONUS.

Currently, prioritization and usage scheduling is coordinated through the U.S. Army Forces Command (FORSCOM) Army Force Generation (ARFORGEN) Synchronization and

Resourcing Quarterly Conferences. The FORSCOM point-of-contact for NCM3 scheduling is Mr. Terry Murphy, DSN: 670-7707, terry.r.murphy@us.army.mil.

Developing Training

When developing training objectives and plans, units are reminded that the NCM3 may operate stand-alone or be virtually coupled with an AVCATT suite.

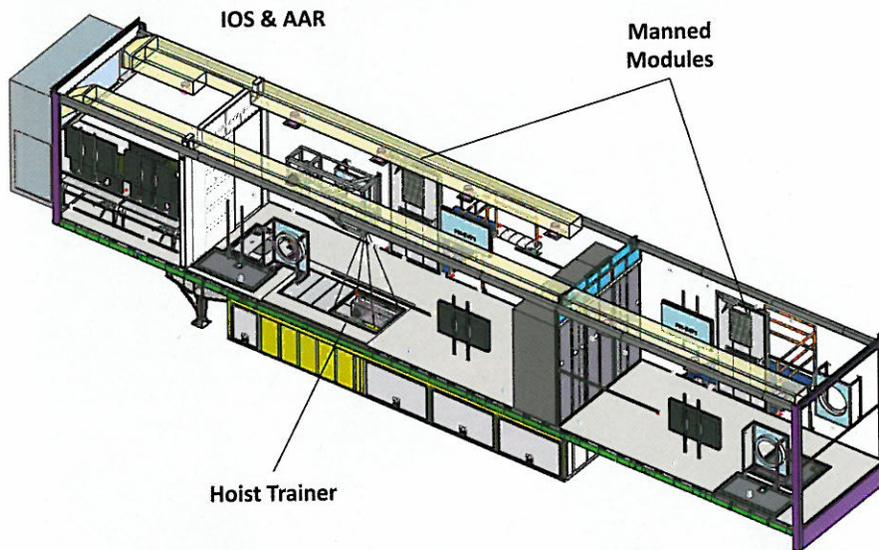
With a limited quantity of simulators on hand, it is necessary that units properly forecast training objectives, timelines and resources required.

At the end of this article are the physical location requirements (site survey) to ensure safe and proper use of the NCM3 while at your location.

Reminder, the NCM3 does not necessarily have to be collocated with an AVCATT suite. If your unit's training objective does not involve coupling the two then it is not necessary to do so. The NCM3 may operate solo and independent from the AVCATT.

Understanding exactly where you would like the simulator to be put

NCM3 Trailer Diagram



when it arrives on station will help ensure your request through MSO to FORSCOM gets the simulator on station during the targeted window of your training plan. Hangars meeting tie-down, grounding and power requirements are valid options.

NCM3 ATM Tasks

So what exactly can the NCM3 do? Listed below is the resultant NCM3 analysis of the USAACE Directorate of Simulations (DoS) Simulator Development and Accreditation Division (SDAD).

It has been determined that the Aircrew Training Manual (ATM) tasks shown are able to be trained to varying levels in NCM3.

Detailed discussion to the level of fidelity in training each task may be addressed to the DoS NCM3 subject matter expert SFC Richard S. Leeper, DSN: 548-6640, richard.s.leeper@us.army.mil.

[SFC Leeper was the FY 11 Army Modeling and Simulation Office (AMSO) Training (Individual) award winner for his work in the development, testing and accreditation of the NCM3 – *Well done!*]

TC 1-237 (UH-60) Tasks

- 1026 - Maintain airspace surveillance
- 1032 - Perform radio communication procedures
- 1038 - Perform hovering flight
- 1040 - Perform visual meteorological conditions takeoff

- 1052 - Perform visual meteorological conditions flight maneuvers
- 1058 - Perform visual meteorological conditions approach
- 1155 - Negotiate wire obstacles
- 2010 - Perform multi-aircraft operations
- 2022 - Transmit tactical reports
- 2024 - Perform terrain flight navigation
- 2026 - Perform terrain flight
- 2034 - Perform masking and unmasking
- 2036 - Perform terrain flight deceleration
- 2042 - Perform actions on contact
- 2048 - Perform sling load operations
- 2127 - Perform combat maneuvering flight
- 2169 - Perform aerial observation
- 1262 - Participate in a crew level after-action review

TC 1-240 (CH-47) Tasks

- 1026 - Maintain airspace surveillance
- 1028 - Perform hover power check
- 1032 - Perform radio communication procedures
- 1038 - Perform hovering flight
- 1040 - Perform visual meteorological conditions takeoff
- 1052 - Perform visual meteorological conditions flight maneuvers
- 1058 - Perform visual meteorological conditions approach
- 1262 - Participate in a crew level after-action review
- 1405 - Transmit tactical reports
- 1406 - Perform terrain flight navigation
- 1408 - Perform terrain flight

- 1411 - Perform terrain flight deceleration
- 1413 - Perform actions on contact
- 2010 - Perform multi-aircraft operation

Site Survey Requirements for NCM3

In order to meet the trailer stationary stability requirement the trailer must be securely anchored with tie down chains. These chains are provided with the trailer. Each tie down anchor should be capable of supporting an applied load of 25,000 lbs.

Power – The NCM3 uses the same connectors and power as the AV-CATT; however, power use is ½ that of the AVCATT.

Details are below:

Electrical Service - Two electrical power sources are required for operation of the ECU and onboard systems.

480 60Hz/380 50Hz Volt A.C., 3 Phase, 100 KVA, fused at 100 Amps for the ECU and 60 Amps for the operation of the onboard systems.

Configuration - Three phase, three wire, wye connection, with ground (not less than AWG #2).

Frequency - 50/60 Hz ± 2.0%

Phase Balance - The phase balance is + 2% maximum phase-to-phase line voltage difference lowest phase.

Maximum voltage variation - The maximum voltage variation is + 4.5% / -12.5% from nominal steady state (under the worst case conditions of line voltage)

Connector Type - The unit is supplied with two 100-foot cables and male connectors. The connectors are Crouse-Hinds 100 Amp plug #APJ10477. The 480V AC receptacle to be used is a Crouse-Hinds AREA10416



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