# Call-for-Fire Trainer and the Joint Fires Observer

*Dieser Artikel von Colonel Stephen D. Mitchell beleuchtet den neusten Schiesskommandanten-Simulator der amerikanischen Armee. Der Artikel ist im Magazin «Field Artillery – A Joint Magazine for US Field Artillerymen» März/April 2005 erschienen. Mit diesem Simulator sollen alle Aufgaben eines Joint Fire Observer – eines Schiesskommandanten, der sowohl mit der Artillerie im eigentlichen Sinn, wie auch mit Raketenwerfern, Schiffsgeschützen oder Close Air Support zu schiessen vermag – trainiert werden.*

Stephen D. Mitchell*

C45, this is C71, SEAD (suppression of enemy air defenses) Polar, over. Suppression, Direction 1820, Distance 3000; Mark, Direction 1860, Distance 3500, over. SA-6 dug-in, Q, illumination mark continuous.

CAS (close air support) TOT (time-on-target) 1011, over.

Viper 7, this is C71; are you prepared to copy 9-line?

This commo cut was captured during training in the Army's newest and most state-of-the-art simulator, the call-for-fire trainer (CFFT). The CFFT is a leap ahead of the old training set fire observation (TSFO) and guard unit armory device, full-crew interactive simulation trainer (GUARDFIST). Instead of using pictures, it uses high-resolution terrain databases accurate to better than one meter on the ground.

The CFFT trains all the required tasks of the joint fires observer (JFO), including FA (Field Artillerie), mortar, naval gunfire and CAS (Close Air Support). Units can tailor it to train against a variety of opposing forces (OPFORs), from «technicals» in pick-up trucks to a massive attack that one might see in the mountains of Korea. Observers can pick their observation points (OPs) to best cover their zones or sectors from anywhere in the terrain database.

This gives the field a cutting-edge trainer to teach and maintain observer skills throughout the force and, because of the pressing need, fielding has been pushed to the right. In fact, Fort Sill teamed with the Program Executive Office for Simulation, Training and Instrumentation (PEO-STRI) to push this program through, from writing the requirements document to first production models, in less than two years – a tremendous success story.

The first CFFT pre-production models are on the ground now and being used in training at Fort Sill for the Military Occupational Specialty (MOS) 13F Fire Support Specialist NCO Education System (NCOES) courses, the captain's career course (CCC) and officer basic course (OBC) plus the Special Operations Command (SOCOM) Special Operations Terminal Attack Controller (SOTAC) course. Forty percent of SOTAC training is conducted on the CFFT simulator.

CFFT represents a major advance in capabilities, technological fidelity and interoperability in the joint training arena. As Operations Iraq Freedom (OIF) and Enduring Freedom (OEF) continue to shape defense requirements, the Department of the Army recognized the CFFT as a Tier 0 (must fund) Army priority.

## CFFT Capabilities

The CFFT incorporates the Army's new one semiautomated force (OneSAF) constructive simulation as a force generation tool capable of creating any type of friendly, enemy or neutral force the commander or instructor desires. The SAF mission profiles can be saved as scenario files to be used repeatedly as well as modified to suit any number of operational and training requirements. CAS, naval gunfire and mortars are just some of the CFFT's joint fires training; it is flexible enough to create SAF aircraft as well as combat surface vessels.

The range of current and programmed weapons and munitions establishes CFFT as a major player in training joint fires. It incorporates the recognition of combat vehicles (ROC-V), enhancing the JFO's ability to identify vehicles in combat. The high level of fidelity in munitions effects and accurate simulation are great improvements over former observed fire training systems.

Use of simulated military equipment, such as the lightweight laser designator rangefinder (LLDR), increases the student's ability to replicate tasks seldom allowed in a field environment. Other simulated military equipment under development include the Viper laser range-finding binoculars and the mini eye-safe laser infrared observation set (MELIOS).

The flexibility in simulated military equipment allows a unit to tailor its CFFT to reflect its table of organization and equipment (TOE).

The CFFT has three basic configurations: 1:4, 1:12 and 1:30. The first number represents the number of instructors required, and the second represents the number of Soldier/student stations. The 1:4 and 1:12 systems are fully deployable and take about 20 minutes for an experienced operator to set up in any classroom.

The Windows-based CFFT supports open architecture protocols and virtually unlimited connectivity to other training and command, control, communications, computers and intelligence (C4I) systems. Specifically, CFFT is interoperable with other training systems such as the Soldier-combined arms tactical trainer (S-CATT), virtual emergency response training system (VERTS), close combat tactical trainer (CCTT), unmanned aerial vehicle (UAV) simulator, digital battle staff trainer (DBST) and other distributive interactive simulation (DIS) and high-level architecture (HLA) compliant systems.

We recently had one connected to an engagement skills trainer 2000 (EST 2000) where the observer in the CFFT was supporting a direct fire engagement. The effects of the fires called in the CFFT were seen in the EST 2000 and vice versa. This connectivity will give trainers a tool that is only limited by their imagination.

Another exciting capability is the requirement for each CFFT to be shipped with three-plus-one terrain databases. Joint Forces Command's experiment Joint Urban Warrior has demonstrated the opportunities for simulation to lead the way in training urban operations in a joint and combined environment. CFFT is positioned to provide the tools needed to train joint fires in the urban fight.

The Night Vision and Electronic Sensors Directorate, at Fort Belvoir, Virginia, currently is developing the Baghdad terrain database. This effort will give the instructor a realistic urban environment using a high-fidelity geospecific building topography.

Terrain databases are being generated to accommodate a wide range of operational and training requirements, including open terrain, urban terrain and multiple canopy terrain. The standard three terrain databases shipped

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with each CFFT will be the National Training Center (NTC) for that open, rolling desert training environment; Fort Sill, for some open and compartmented terrain; and Baghdad.

The «plus-one» terrain database will be defined by the unit's location. For instance, units in Korea will want a terrain database of the area they are most likely to fight in. This capability will give units the ability to do virtual mission rehearsals on virtual terrain they will later train or fight on.

The CFFT program is also leveraging another simulation that was initially designed for SOCOM to incorporate future capabilities – the Special Operations Forces (SOF) air-ground interface simulator (SAGIS).

The Field Artillery School and PEO-STRI are working to leverage technologies in the two simulations to achieve the best of each system. The inclusion of voice recognition and non-voice digital input capabilities will continue to increase CFFT's ability to accurately train the JFO.

Fort Sill and the University of Southern California Institute of Creative Technology (ICT) joined in an initiative to develop the Joint Fires and Effect Trainer System (JFETS). Fort Sill and ICT have incorporated movie industry special effects into JFETS and created an immersive training environment. This year the beta version CFFT was integrated into the open terrain module (OTM) of JFETS. FY05 JFETS initiatives include developing a fully immersive state-of-the-art CAS trainer. Once complete, the CFFT will be the Army's only system capable of training the full suite of CAS missions.

## CFFT Pre-Pro Models and Fielding

The CFFT is not a future system. The JFETS and SOTAC courses are using pre-production CFFTs, and the Project Manager for Ground Combat Tactical Trainers (PM GCTT) currently is fielding an additional 13 pre-production CFFTs to selected Army Reserve and National Guard (ARNG) units. After a successful Milestone C decision in April for full-rate production, the PM plans to begin fielding the production CFFT in late Third Quarter FY05.

Units that need the trainer now and can't wait for the Army to field them can order from a limited number of pre-production models. There are advantages in buying a CFFT over some other system. It is warranted by the Army and any repairs or maintenance are paid for.

**Der CFFT-Simulator für Schiesskommandanten der amerikanischen Armee soll noch dieses Jahr in die Serienproduktion gehen.**

Also, with software drops, units will get all the updates of the production modules as they are developed.

Finally, units will get a trainer designed to meet the rigid requirements developed by the Field Artillery School, which also provides scenarios, training support packages (TSPs) and new equipment training (NET) to get unit trainers up and running. The CFFT is the training simulator for the FA's future that the school will continue to develop to train all JFOs for joint interdependency.

## Zusammenfassung

Der CFFT (Call-for-Fire Trainer) ist der neuste und modernste Simulator der amerikanischen Army. Der Simulator arbeitet an Stelle von Bildern mit einer hochauflösenden Datenbank des Gebietes, welche eine Genauigkeit von weniger als einem Meter aufweist. Das System ist Windows basierend und trainiert alle Aufgaben eines Schiesskommandanten. Die Skdt können ihre Beobachtungsposten überall im virtuellen Gebiet wählen, um ihr Ziel am besten zu erreichen. Die ersten CFFT-Vorserien-Geräte sind jetzt in Fort Sill, der amerikanischen Artillerieausbildungsstätte, im Einsatz. Als Ergebnis des Engagements während der «Operation Iraq Freedom» und «Enduring Freedom» wurde die Entwicklung des Simulators als höchste Priorität angesehen.

Der Simulator enthält die neusten halbautomatischen Tools- um irgendeine Art von feindlichen, verbündeten oder neutralen Kräften zu generieren. Das ganze System ist so flexibel aufgebaut, dass es den verschiedensten Anforderungen genügt. Es kann zudem in einer Konfiguration bis zu 30 Übungsstationen gleichzeitig bedienen. Dabei ist das System von einem geübten Operator in rund 20 Minuten im Klassenzimmer aufgebaut. Als grossen Vorteil des Simulators kann die offene Architektur gewertet werden, die es erlaubt, das System mit vielen anderen C4I-Geräten zu verbinden. So können Daten der Schiesskommandanten auf den «engagement skills trainer 2000» direkt übertragen werden.

Besteht der Simulator alle Tests, welche derzeit auch mit 13 weiteren Systemen erfolgen, soll mit der Serienproduktion Ende 2005 begonnen werden.

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