

# Flight School XXI

A key training systems provider to the U.S. Army's largest training center



In 2021, CAE acquired L3Harris' Military Training business, which included Link Simulation & Training and Doss Aviation. These businesses are now integrated with CAE USA as part of CAE's Defense & Security business unit.

## Overview

The U.S. Army's Flight School XXI (FSXXI) trains approximately 1,500 new student pilots and 1,600 rated Army aviators annually, supporting the Army's goal to bring individual aviators, crews, and units to a higher level of proficiency. FSXXI graduates aviators with advanced aircraft skills who are ready to perform unit level missions with minimum impact on unit training and operations. In addition, FSXXI supports complex, large-scale Army Aviation training exercises that enable aviators to hone their tactical skills prior to deployment. Through the FSXXI program, the U.S. Army is able to conduct 38 percent of aviator training for eight percent of its overall training budget. In support of FSXXI and its mission to produce highly proficient aviators the legacy L3 Link Simulation & Training, now part of CAE USA, has delivered over 30 Advanced Aircraft Virtual Simulators (AAVS), including Reconfigurable Collective Training Devices (RCTDs). We also provide contractor logistics support for these training devices, which to date have a record of 99.7 percent availability. AAVS training devices are FSXXI's highest fidelity simulators while RCTDs, which can be changed from one helicopter configuration to another within 30 minutes, provide the capability to train multiple crews and leaders in collective exercise scenarios.

## Operational flight trainers

For FSXXI, we have delivered OFTs to support UH-60A/L/M Black Hawk, CH-47D/F Chinook, and OH-58D Kiowa Warrior helicopter platforms. The full-motion, high-fidelity CH-47D/F OFTs and UH-60A/L/M OFTs are currently being used to train Army aviators at Ft. Rucker.



Each high-fidelity OFT cockpit is mounted on a 3 degree-of-freedom (DOF) vibration platform. The vibration platform is mounted on a 6-DOF electric motion system. A 200 degree horizontal x 45 degree vertical visual display, supplemented with pilot and co-pilot chin windows, supports out-the-window imagery.

A PC-based image generation system provides high resolution visual scenes and supports night vision goggle training using tactical night vision devices. A geo-specific full-color imagery terrain database uses photo and satellite imagery. Base fields, stage fields, routes, transition corridors, nap-of-earth routes and specific database training areas are one-meter resolution.

High-fidelity software modeling provides accurate simulation of the aircraft's onboard components, including the engine; electrical; hydraulic; navigation and communication systems; and aircraft survivability equipment. These simulations support highly realistic malfunction and emergency procedures training.

Each OFT contains a physics-based blade element model and an electrically driven servo flight control system. The cyclic and collective controls replicate actual aircraft hardware.

## OFT instructor operator station

Each OFT contains an on-board instructor operator station (IOS). The IOS, which can be used to provide control of the Army's OneSAF tactical environment, consists of two touch screen monitors providing the instructor pilot the capability to control and monitor the training scenario.

## Reconfigurable collective training devices

RCTDs provide collective aircrew training that enable Army aviators to arrive at their units considerably more proficient in basic combat skills. These fixed based, reconfigurable training devices provide terrain and threat environment specific training for all aviation units as the last training and evaluation event prior to deployment to combat theaters. RCTDs — which are interoperable with the U.S. Army's Close Combat Tactical Trainer — can simulate the Army's fleet of combat helicopters, including UH-60A/L/M Black Hawk, CH-47D/F Chinook, and AH-64A/D Apache platforms.

RCTDs are integrated with projected instrument displays, physical fidelity modeling of critical switches, an acoustic seat shaker and a helmet mounted visual display that provides aviators with a 360 degree field-of-regard.

Each RCTD configuration simulates specific aircraft radio communications and digital messaging capabilities. Aircraft survivability equipment and weapon systems are modeled for each aircraft and are fully interoperable with the OneSAF threat environment.

## RCTD battle master controller

Management, control and observation of collective training exercises can be performed at the Battle Master Controller station. Role player and observation stations — which can communicate with exercise participants via simulated radio models — also contain stealth view displays, cockpit sensor video monitoring, OneSAF controller stations and an exercise control station.

## After action review

After Action Review (AAR) sessions, led by AAR controllers, enable participants to review their performance in a training exercise. All participants can review network traffic, including radio communications and aircraft sensor video, while a full range of training exercise video is shown on large projection displays.



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