

UH-60 Operational Flight Trainer

Overview

The UH-60 Operational Flight Trainer (OFT) supports the A/L/M variants and provides a high-fidelity immersive environment and mission scenarios that supports a robust aircrew training experience. Aircrews gain valuable training on aircraft flight operations and employment skills, including emergency procedures, environmental conditions, and threat environments that could be encountered in the real world.

Spatially and Physically Accurate Cockpit

The UH-60 OFT accurately simulates the UH-60 Black Hawk helicopter and the mission environment it operates in by providing a cockpit that is spatially accurate in physical and functional features. The OFT cockpit contains instrumentation, controls and display devices that replicate the equipment and configuration of the customer's UH-60 aircraft cockpit to ensure a high-fidelity realistic flight training environment.

Direction and movement of the controls and switches and the accurate simulation of the navigation, communication, aural cueing, motion cueing and visual system provides an environment that allows student pilots to become totally immersed in training tasks. All panel backlighting is provided with controls and the cockpit contains an over-the-shoulder cross-cockpit video camera that records all cockpit activity for after action review for all day, night, and night vision goggle (NVG) operations.

The UH-60L/M OFT communication systems provide the functionality required to support all communication system training tasks. This includes the cockpit communication system controls, panels, switches, indicators, displays and helmet connections. All radio simulation is capable of communication across the real-time network to provide interoperability with any other networked simulator or IOS role player containing compatible radio simulations.



High-Fidelity Flight Models and Motion / Vibration Cueing System

Flight dynamics and engine models respond to all required flight and power plant controls and simulated environmental conditions (such as temperature, pressure, winds, and turbulence) in accordance with the aircraft performance data. The high-fidelity blade element flight model includes modeling of variation in gross weight, inertias, center of gravity position, fuel, cargo load, sling load and personnel loading.

The UH-60 OFT cockpit will be installed on a three degrees-of-freedom (DOF) vibration platform that provides high-frequency vibration cues associated with helicopter flight. The vibration platform is then mounted on a six DOF electric motion system, which eliminates environmental issues associated with legacy hydraulic motion systems.

The motion system will provide cueing for normal flight, highly dynamic maneuvering flight, emergency conditions, as well as reflecting atmospheric disturbances including winds and gusts. Cues will be provided for ground or surface contact, effects of weapon impacts on the ownship, sling load operations and deployment of personnel.

Visual Display System and Virtual Battlespace Environment

The UH-60 OFT is integrated with a 200° horizontal by 45° vertical out-the-window (OTW) visual system display. A full complement of vehicles; troops; immobilized vehicles; in-flight missiles and projectiles; animation and special effects; threat air defense units; and tactical smoke combine to support training on a virtual battlefield under a full range of environmental and battlefield conditions. The displayed images depict the speed, path, and attitude of the simulated models.

Semi-Automated Forces (SAF) provides a realistic, functionally-and-tactically correct battlefield training environment inclusive of friendly and opposition aerial and ground weapon systems in day, night, adverse weather, battlefield obscurants, dynamic terrain, obstacles, and weapon engagements.

Training scenarios are developed and conducted in tactical, target-rich, interactive virtual environments that are correlated to the visual system. The UH-60 OFT provides its own synthetic environment (SE) for stand-alone operation and is capable of interoperability with the synthetic environments of other OFTs or compatible simulation selected to be in the same exercise.



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