OMIA: Simulation-based Training for Helicopter Cockpit Operations

Customer U.S. Navy

Users Helicopter crew members and their instructors at HSC-3 and HSM-41 at Naval Air Station North Island, HSC-2 at Norfolk, HSL-44 at NAS Jacksonville, and HSM-40 at NS Mayport

Need The Common Cockpit design used by the Navy's MH-60S and MH-60R helicopters includes all the flight and mission instrumentation. It enables the pilot and co-pilot to share workload through dual flight and mission instrumentation; and to work with the Sensor Operator in the MH-60R. The Navy needed a flexible training system that could function as a part-task trainer for general functionality, simulate multiple seats in a helicopter as part of a Mission Avionics Subsystem Trainer, as well as be expandable to support in-depth training in particular subsystems, such as active acoustics.

Solution For more than nine years the US Navy's PMA-205 in conjunction with Stottler Henke has developed/deployed/updated a flexible, low-cost PC-hosted and WEB-hosted Part-Task Trainer (PTT) crew trainer for the Navy's new MH-60S (Sierra) and MH-60R (Romeo) helicopters called the *Operator Machine Interface Assistant* (OMIA).

The core OMIA is a standalone Java program that operates under any standard Windows XP/Vista/7, Linux or Macintosh computer that includes a Java Runtime Environment. The standalone OMIA is a part-task trainer for the Common Cockpit, including the Mission Display, Flight Display, Center Console's Fixed Function and Programmable Keys, and the CMP, RCU and FLIR HCU units.

OMIA also supports integration with flight simulator software to provide an optional 'out the window' view. The core OMIA supports three training configurations: Sierra Pilot, Romeo Pilot, and Romeo Sensor Operator.

There are two additional training areas currently supported by OMIA: FLIR and Acoustic. These areas add functionality to the core system described above.

The FLIR functionality allows OMIA to function as a FLIR trainer. The FLIR user mainly controls the FLIR operation via a Hand-Control Unit (HCU). OMIA can interface with a portable HCU that is a close facsimile of the actual helicopters HCU via USB, or with a software version of the HCU.

The Acoustic functionality supports in-depth acoustic systems training. In this configuration OMIA connects to the same helicopter acoustic processor used in the actual helicopter and realistically plays back recorded sonar data. Currently, this configuration is directed at the dipping sonar only, with sonobouy support planned in the near future.

Status OMIA is currently used in the Navy's fleet training program for MH-60R and MH-60S helicopter crews. In addition, it is used to familiarize maintenance crews with the MH-60S cockpit. OMIA is available to all crewmembers at land and at sea.

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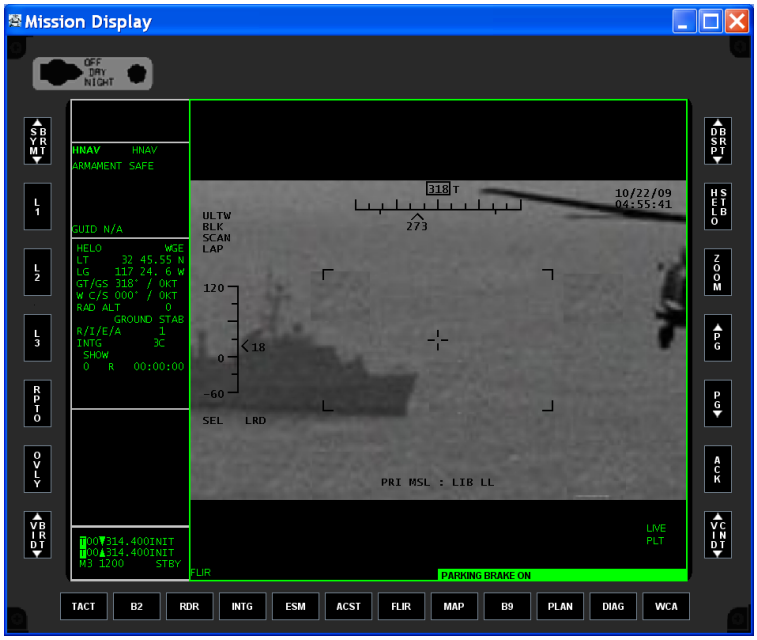
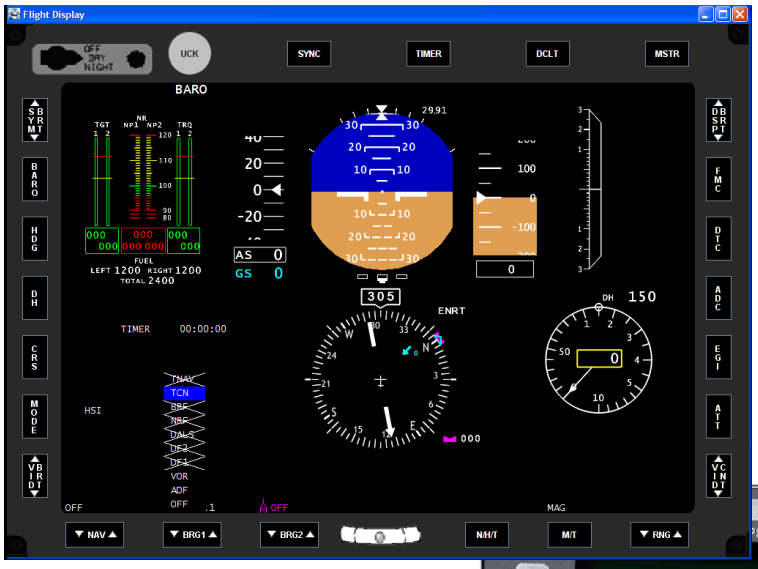
Example: OMIA for FLIR Training in MH-60R Pilot Configuration

Mission Display with FLIR enabled (upper left), Programmable and Fixed Keypad (upper right), Flight Display (lower left), and hardware FLIR hand control unit via USB (lower right).





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