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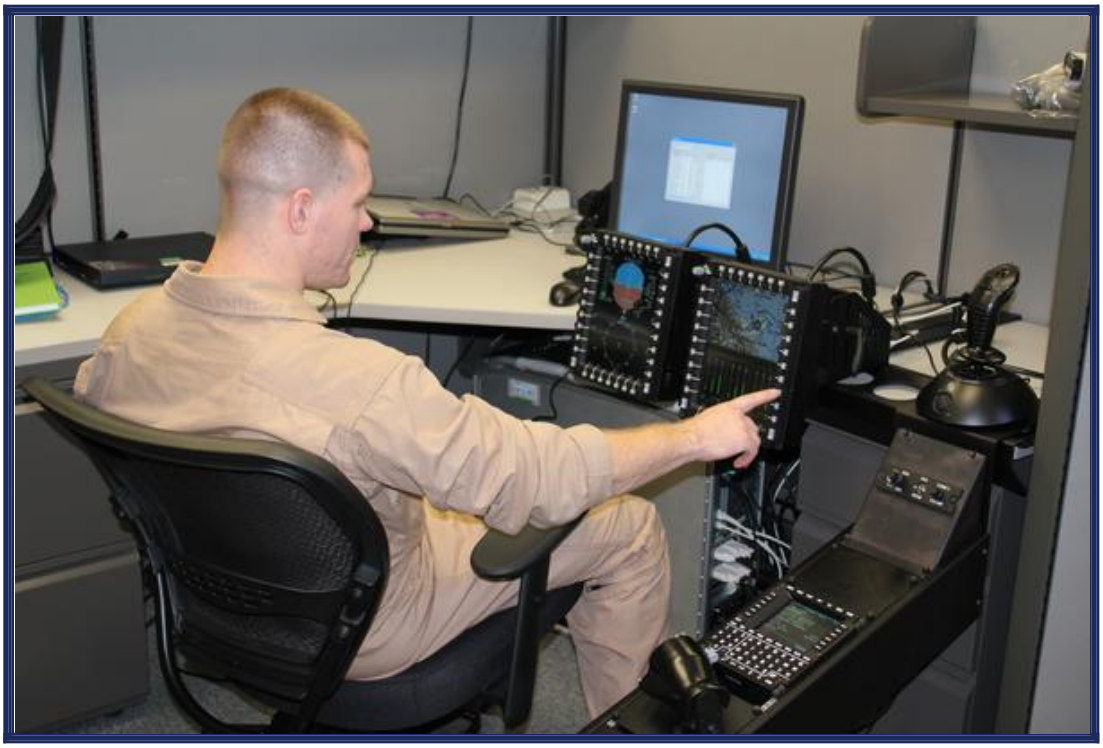
New MH-53E desktop trainer developed for Sea Dragon aviators



Staff Sgt. Eric Fraley, with Air Test and Evaluation Squadron HX-21, located at Naval Air Station Patuxent River, Md., switches between the various multi-function displays on the new MH-53E desktop trainer. The recently developed portable trainer will assist Sea Dragon pilots with navigation, communication and surveillance/air traffic management training. (U.S. Navy photo)

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md.— Naval Aviation Training Systems program office (PMA-205), and industry partners have developed a portable, desktop trainer, or DTT, to assist Sea Dragon pilots with navigation, communication and surveillance/air traffic management (CNS/ATM) training.

The trainer is at the beginning of a naval aviation trend toward having DTTs for aircraft with glass cockpits, according to Rick Anderson, PMA-205 H-53 training integrated product team courseware products lead.

“The relatively inexpensive trainers will save the Navy money, free up aircraft for missions and live training, and dramatically improve pilots’ familiarity with the controls critical to effectively fly the upgraded MH-53E,” said Capt. John Feeney, Naval Aviation Training Systems program manager.

The part-task DTT simulates some of the components of a glass cockpit, which is characterized by digital computer

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technology using multi-function displays (MFDs), as opposed to the legacy analog or steam gauge cockpits with dedicated analog dials, according to Anderson.

Like an actual glass cockpit, the DTT features digital instrument displays and liquid crystal display (LCD) screens. MFDs provide data displayed in many configurations to a pilot, including the aircraft flight and navigation performance instrumentation; engine, hydraulic and systems instrumentation; navigation route; moving map; instrument approach; or airport information. The student can easily move from one page of the display to another simply by pushing a button as a situation changes.

“Pilots need to be intimately familiar with their MFDs,” said Anderson, “which is why the DTT is so important and useful. Time is critical when you’re flying an aircraft.”

The trainer also has a control display unit, or CDU, which is the primary point at which pilots may program navigation routes.

Also included is a multi-function control unit, an alternative control device that allows the pilot to manipulate the displays and the CDU with several buttons and hand controls on the handle.

The Aviation and Missile Research Development and Engineering Center (AMRDEC), Redstone Arsenal, Huntsville, Ala., had successfully completed several DTTs for the Army, according to Anderson, and will be the primary source for the Navy’s MH-53E DTTs.

The AMRDEC team has built two DTT’s using nearly all off-the-shelf computer equipment, and reusing software and equipment design from the Army’s H-47 system. The Army H-47 and the Navy MH-53E glass cockpit designs are very similar, having much of the main equipment in common.

Air Test and Evaluation Squadron HX-21, located at Naval Air Station Patuxent River, began evaluating the trainer in April 2011. Anderson said once it’s been thoroughly evaluated it will be sent to the Airborne Mine Countermeasures Weapon Systems Training School at Naval Air Station Oceana, Va.

The second trainer will be expanded to provide troubleshooting training for maintainers. Once those modifications are complete, it will be sent to the Center for Naval Aviation Tactical Training in Norfolk as an interim maintenance trainer.

As improvements are identified prior to the delivery of the first upgraded Sea Dragon to the fleet, the trainers will be modified to match the aircraft configuration.

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The Sea Dragon is used primarily for airborne mine countermeasures.