

U.S. Navy MH-60R

CAE is the prime contractor responsible for the design and manufacture of MH-60R tactical operational flight trainers (TOFTs). The MH-60R TOFTs play a key role in the training and mission readiness of flight and sensor operator crews who fly the MH-60R "Romeo" helicopter for the Navy.

The MH-60R, also called the Seahawk, is a multi-mission helicopter used by the Navy for anti-submarine warfare and surface attack. The MH-60R and MH-60S helicopters form the cornerstone of the Navy's Helicopter Master Plan. The two aircraft share a common cockpit and technology. The Navy plans to procure 300 MH-60R and 271 MH-60S helicopters over the next decade. The massive overhaul of the Navy's rotary wing fleet was the catalyst for development of a range of new high fidelity training systems.

CAE began work on the MH-60R training program in July 2006, at which time CAE won a competitive procurement to design and manufacture MH-60R TOFTs. The MH-60R TOFTs include both an operational flight trainer (OFT) and a weapons tactics trainer (WTT) that can operate independently or jointly. CAE is under contract to design and manufacture seven MH-60R TOFTs and one SH-60B TOFT. The SH-60B TOFT has been designed by CAE to be easily converted at a later date to an MH-60R TOFT. Prior to CAE's involvement on the MH-60R training program, the Navy had already procured three MH-60R TOFTs (called TOFT1 through TOFT3 by the Navy).

The first MH-60R TOFT developed by CAE entered into service at NAS Jacksonville in May 2009. The second entered service at NAS North Island in March 2010. The third was delivered to NS Mayport in late 2010. The SH-60B TOFT was accepted in Fall 2010 at MCBH Kaneohe Bay. In February 2011, CAE was awarded a contract for four additional MH-60R TOFTs. One will be a fixed-based MH-60R TOFT delivered to NS Mayport near Jacksonville, Florida in mid-2013. Two additional MH-60R TOFTs will be fixed-based simulators and delivered to NAS Jacksonville and MCBH Kaneohe Bay by late 2013. The other MH-60R TOFT, which will also be reconfigurable to the MH-60S helicopter variant, will be a full-motion simulator delivered to the Naval Air Facility (NAF) Atsugi, Japan in the summer of 2014.



MH-60R OFTs

The MH-60R OFTs are full-mission simulators used to train pilots and co-pilots of the MH-60R helicopter. Several of the MH-60R OFTs and the SH-60B OFT developed by CAE are fixed-base simulators, while others feature a six degree-of-freedom (DOF) electric motion system. Each MH-60R OFT includes motion seats to provide vibrations and motion onset cues, and includes a 200° by 60° collimated out-the-window visual display that enables use of operational night vision goggles. Each MH-60R OFT includes full mission and weapons system simulation except for acoustics, and employs actual aircraft operational equipment and software to facilitate concurrency with the evolving MH-60R aircraft.



MH-60R WTTs

The MH-60R WTTs replicate the back-end of the helicopter and are used to train sensor operators (SO) and airborne tactics officers (ATO). The MH-60R WTTs feature detailed simulations of the underwater and atmospheric environment and the aircraft weapons and sensors to prepare crew members for anti-submarine and anti-surface warfare missions. Each WTT includes a partially instrumented ATO station as well as a fully-replicated SO station. The WTT also employs actual aircraft mission equipment and software. It includes an automatic flight capability so that full sensor integration and mission training can be accomplished without a pilot when the WTT is operated independently from the OFT. The systems simulated in the WTT include the acoustic processor, dipping sonar, forward-looking infrared (FLIR), radar, electronic support measures (ESM), radios and datalinks including Link-16, sonobuoys, torpedoes and the Hellfire missile. All simulated systems are fully functional in the WTT and include a high fidelity environment for training.



MH-60R Full Crew Tactical Training

When the OFT and WTT are used in joint mode, they become an MH-60R TOFT to provide the Navy with a comprehensive training solution designed to provide a total aircrew mission training system. With the MH-60R OFT and WTT operating in this mode, the pilot and co-pilot in the OFT and the sensor operator in the WTT can interact in the training scenario in the same way they will need to do during a submarine hunting or surface warfare mission. With the OFT and WTT operating independently, they can simulate two MH-60R aircraft operating in the same environment. In addition, all the MH-60R TOFTs are designed according to the Navy's Naval Air System Master Plan (NASMP). The vision of the Navy is for the seamless integration of all Navy aviation simulation assets in a tactically relevant synthetic environment that will meet the fleet's training requirements throughout the entire training continuum.



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