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DIVE, DIVE, DIVE!

Surrounding the *U-505 Submarine*, several hands-on, high-tech challenges allow guests to become “one of the crew,” while reliving and understanding the history and technology of a U-boat. The exhibit’s interactive elements are detailed below.

Crack the Code

The Enigma code machine allowed German forces to communicate in secret by scrambling and unscrambling their messages to each other. The Allied forces struggled for years to decode Enigma messages, but the code was nearly impossible to crack since Enigma machines could be reconfigured easily.

On four interactive touch-screen stations, guests become code breakers. They can decode an “enemy” Enigma message sent by a fellow guest in the exhibit by unlocking the correct rotor combination. (The Enigma machine contained multiple rotors, each with the alphabet on them. When a letter was input, the rotors would turn, causing a different letter to output.) A guest can also select their own rotor combination to write secret coded messages to other guests or send messages to friends via the Internet.

U-505 Dive Plane Simulator

The *U-505* was able to dive several hundred feet into the sea, and now guests can too as they assume the role of one of the crewmen aboard the submarine in this immersive single-person simulator.

Split-second communication between the crew was essential to survival on the *U-505*, especially during an attack. Guests will experience a simulated battle and receive orders from the captain and executive officer to dodge torpedoes and evade dangerous depth charges that could force the vessel to surface. Players will trigger cues and spin wheels that mimic the same controls inside the *U-505*. Above each steering station, a large plasma screen wraps around the player and replicates the motion of the submarine in response to the steering commands. This experience is also wheelchair accessible.

Life On Board

Within a recreation of the crew’s quarters, guests can climb through the hatch and experience the sights and sounds that were reality for the *U-505*’s sailors during wartime.

Guests can try to maneuver in the sub’s tiny galley, or kitchen, only big enough for one person to stand. Or they can take their turn in one of the sub’s “hot bunks.” Only 35 bunks were on board the *U-505*, and at the time of the vessel’s capture, there were 59 sailors. This meant that most of the men had to “hot bunk,” or take turns sleeping in beds still warm from the use of a fellow crewmember.

On Patrol

Our guests are put on patrol in a recreation of the sub’s conning tower, complete with both an attack and an aerial-navigation periscope. Using these periscopes, outfitted with high-resolution LCD displays, they race against the clock to launch a torpedo as well as determine their vessel’s bearings and decide whether it is safe to surface.

On the attack periscope, a guest plays the role of “captain” and attempts to identify and lock in on an enemy target. A “watch officer” mans the aerial-navigation periscope, seeking out critical visual and navigational information. The patrol is a success if the guest can identify the harbor or dive before aircraft or enemy destroyers detect their vessel!

Buoyancy Challenge

Here guests will learn how, using the principle of buoyancy, the U-505 was able to adjust its depth. Like all submarines, by manipulating a variety of controls, U-boats could alter their weight while at sea, enabling them to dive or surface quickly as needed.

In an 11-foot tall tank of water, guests will experience a timed challenge to alter the buoyancy of a cut-away model U-505, including a scaled representation of its ballast tanks. On the high seas, one mistake might keep a vessel on the surface a split second too long or drop it to crushing depths. Guests will have to fill the U-boat’s ballast tanks with just the right ratio of water and air to reach periscope depth, deep dive and neutral buoyancy—while still compensating for water temperature, saline levels and currents. A plasma screen illustrates an image of their boat out at sea and signals their success.

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