News from the US Navy

On 20th April 2007 USS Oklahoma City (SSN 723) took the next step in technological advances, adding the Navy’s newest navigational tool to its arsenal. The Voyage Management System (VMS), a combination of digital charts, constant global positioning system fixes, environmental sensors and electronic command and control, will allow the submarine to eliminate many of the constraining aspects of navigation when using paper charts.

Electronics Technician Chief (Submarines) Robert Jacques, Submarine Force assistant navigator, explained VMS will provide greater benefits than paperless navigation. “VMS will reduce manpower workload by almost 40 percent and it will allow for plans to be utilized at a future date or shared with other units in the same ports,” said Jacques who added, “The computerized voyage plan safety checker assists the operator in finding hazards to navigate around and the integration of contact data from various sources including BPS-15 Radar, fire control, Automatic Identification System (AIS) onto the electronic chart and will allow for easier situational awareness for the contact management process.”

The new system will save space, which is a valuable commodity on submarines. All charts are stored on compact discs. “Imagine the entire world’s charts in your CD holder,” said Jacques. A wide range of associated publications such as sailing directions and an atlas of pilot charts, normally kept in subs, will also be converted to CDs. The digital nautical charts can be downloaded or ordered from the National Geographical Intelligence Agency (NGA) Web site along with other data provided by NGA which add needed bottom contour features necessary for safe navigation.

Capt. Mike Brown, force navigator for Submarine Force, says the many different features VMS offers will be vital to efficient navigation. “In the past the quartermaster would do all of this work that could take anywhere from ten minutes or more just to plot our position. By the time you completed that task you would already be ten minutes beyond that plot. With VMS, it’s plotting for you as you are moving along which allows the quartermaster to look ahead more,” said Brown. He describes the whole process of VMS much like that of using newer computer software, saying that at first many will be frustrated at the newer technology. “I would compare it to using Mapquest instead of
conventional maps. In the past you would get out your map and physically plan the route you were going to take. These days you can just pull up Mapquest, type in where you want to go and follow the directions given by the computer,” said Brown. “It just takes a different way of thinking. I happen to think this way is much easier.”

Brown says training is a key factor to get the submarine crews ready for the implementation of the VMS. He commented, “There’s really two steps to certifying the sub. Making sure the submarine meets the requirements and training the crew for certification.” “Training for VMS is well underway” said Chief Jacques who reflected “There is a formal two-week school taught by Submarine Learning Center (SLC) for the VMS operator and a weeklong school for the assistant navigator. The navigator pipeline school at SLC is also dedicated to VMS operation. Of course there will always be on-board training. It is conducted as part of qualifications as quartermaster of the watch.” According to Brown, once the system is installed and the crew is fully trained it is really up to the squadron to clarify it certified for use. In closing Brown said, “The process is really given to Fleet Forces Command but they delegate the process down to the Submarine Force. Once the crew is certified the submarine is deemed ready for paperless navigation.”

_Oklahoma City_ is the first submarine to operate on this version of VMS. USS _Cape St. George_ (CG 71), the first naval vessel to use the system, has been navigating paperless since May 2005.

Brown believes the system could be fully implemented in all submarines by 2009.