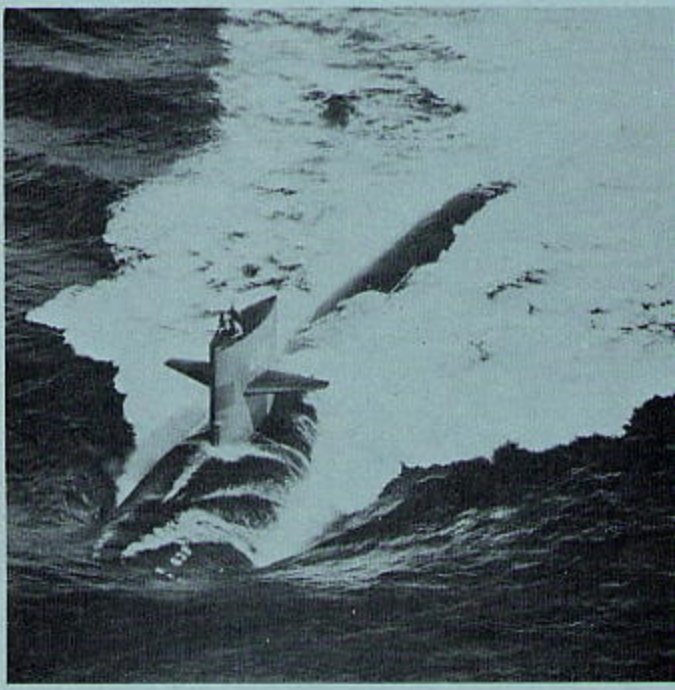
Welcome Aboard



USS TAUTOG
SSN 639

Welcome Aboard

Among the proudest and most enjoyable moments in a submariner's professional life are those spent exhibiting his ship to visitors. The relationship between the submariner and his ship is intimate to the point that he tends to radiate a *personal* pride in his submarine. His link with the heroism of past submarine achievements is strong and close. Most important, the submarine sincerely welcomes the visitor because it is to you that we devote our efforts and accomplishments, our sacrifices and exultations. We are most anxious for you to understand and perhaps even share in these feelings.

TAUTOG is a nuclear powered attack submarine of the STURGEON (SSN637) class. Her principal mission as an *attack* submarine is to operate against submarine or surface ship targets. Surpassing the underwater capabilities of any class of ship before her, TAUTOG carries detection, communications, navigation, propulsion and computerized weapons systems of the most advanced design. For months, she can cruise quietly submerged with a maximum of comfort for her crew, and with an ever ready potential for delivery of any submarine tactical weapon the Navy possesses—against submerged or surfaced vessels. This versatile warship can lay mines, launch torpedoes, perform reconnaissance, support frogman operations, transport troops and equipment, coordinate with surface ships and aircraft in conducting anti-submarine operations, and carry out rescue at sea missions: all without exposing herself to hostile forces or detection.

When coupled with the polished talents of a trained submarine crew, these unprecedented abilities afford a tactical capability of major importance in our nation's defense. TAUTOG is an able ship with a unique awareness of her vital defense role and a deep pride in the valorous heritage of her legendary namesake— the "Terrible T" of the Second World War.

HOW A SUBMARINE IS ORGANIZED

Few modern institutions can rival the nuclear submarine for complexity and absolute self-sufficiency. The often inhospitable environment of the vast sea only intensifies the need for coordination of each crewman's activities. The keystone of the submarine organization is the Commanding Officer—the Captain of the ship. The responsibility for each operation of the submarine—in fact, the responsibility of each individual aboard—converge at the command level and create the Commanding Officer's ultimate charge: to successfully carry out the missions assigned. Whatever measures are required, in his judgment, to accomplish this task, the Commanding Officer is empowered to employ. It is this necessary conferral of discretion in an isolated circumstance that lends to the submarine command a sense of creativity and individuality.

Second in command is the Executive Officer—always next senior in rank to the Captain and not very far from attaining his own command. The *Exec*, or XO as he is informally called, offers his wide ranging experience to the submarine organization through direct coordination of the administrative and training activities of the ship. His knowledge and position extend his responsibilities and interests to every aspect of submarining.

The remainder of the ship's force is composed of six departments: Navigation, Operations, Weapons, Engineering, Supply and Medical. The first four are ordinarily led by the more senior officers of the ship who rank just below the Executive Officer. The more junior officers are assigned within these departments to act as division officers. Divisions are the smallest organizational units aboard, and consist of groups of enlisted specialists organized according to skills.

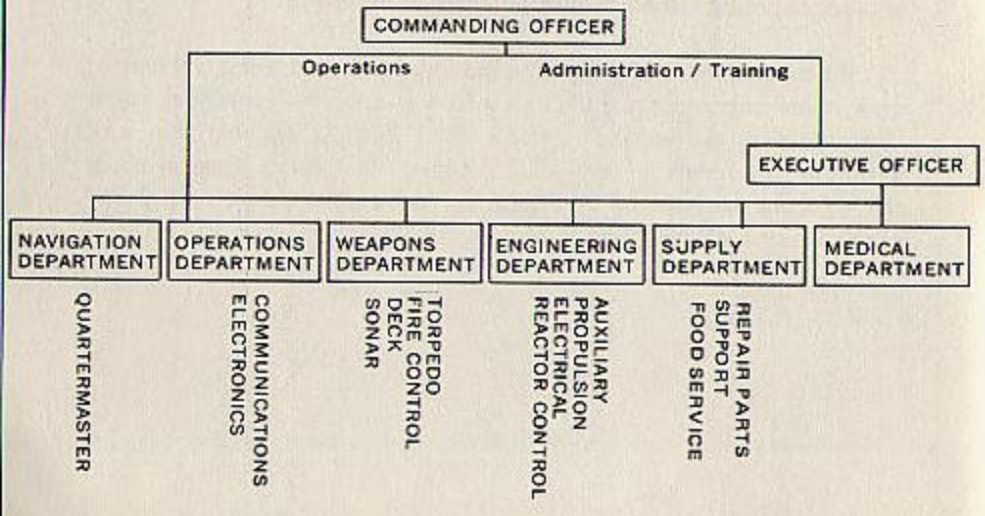
Every piece of material on the ship from the propeller to the paint job is assigned to a division and finally to an individual technician for its care. Each of these men soon becomes an expert not only in the technical functions to which his special training has been directed, but also in the demands of administration, leadership and instruction of his shipmates.

There is a second organization aboard the ship: the watch organization. Whereas the first organization is designed to maintain equipment, train and administer to the various groups of men, the watch organization is designed to conduct and coordinate the actual *operations* of the ship around the clock. This organization is ordinarily divided into three similar groups called sections. At any given time on the submarine one of these sections "has the watch". Each watch section is headed by the Officer of the Deck who carries out the Commanding Officer's orders during the hours of his watch. It is the Officer of the Deck who orders the ship's course, speed and depth, and conducts all combined shipboard evolutions. He is assisted by a second officer, the Engineering Officer of the Watch, who controls the reactor plant and all engineering evolutions in the propulsion plant.

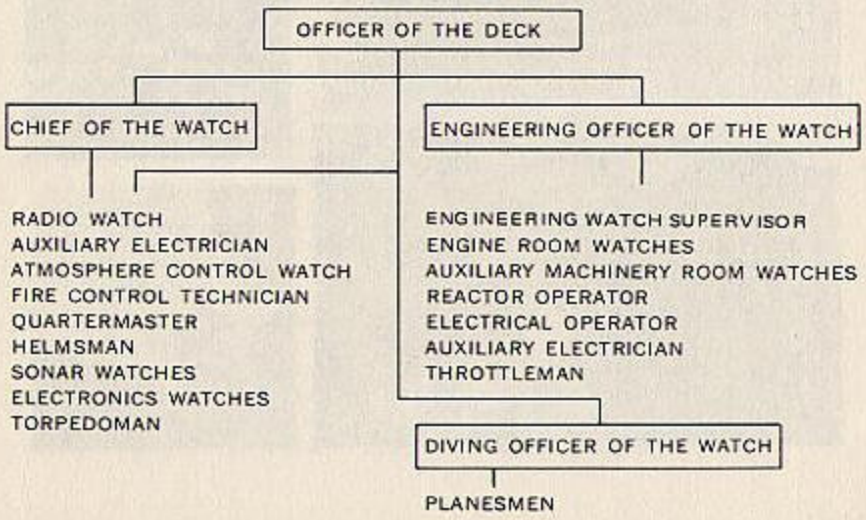
Each watch section consists, for example, of helmsmen, who steer the ship; throttlemen, to control the steam turbine engines; sonar operators, who silently probe the ship's environs; reactor operators, who control the ship's remarkable energy source; torpedomen, to service and launch TAUTOG's weapons; radio operators, who continually maintain an invisible link with command centers ashore; and electricians, who supply power from the reactor for virtually every service on the ship. These watchstanders, among others, stand alertly by their equipment and stations throughout the duration of each watch.

The tempo of the watch is the heartbeat of the ship—and, since one third of a submariner's time is spent standing his watch, it is also the principal determinant of his day to day routine.

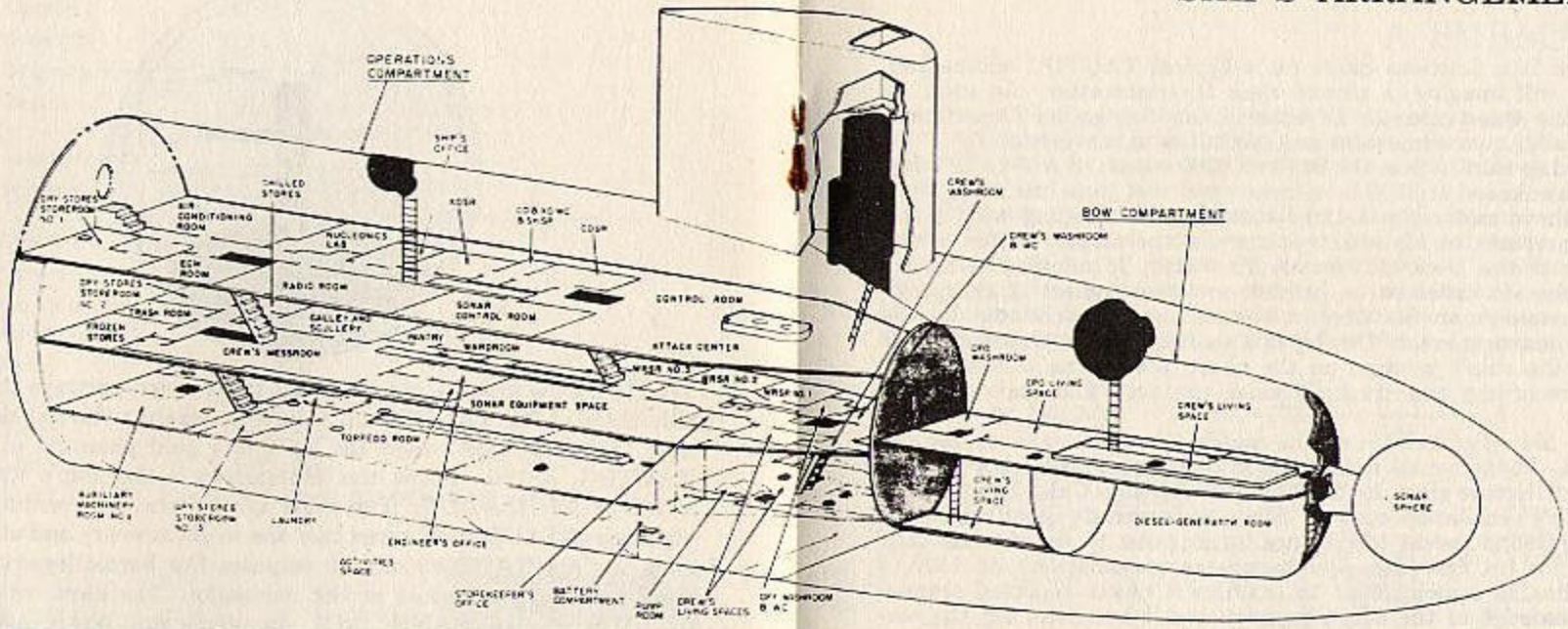
ADMINISTRATIVE ORGANIZATION

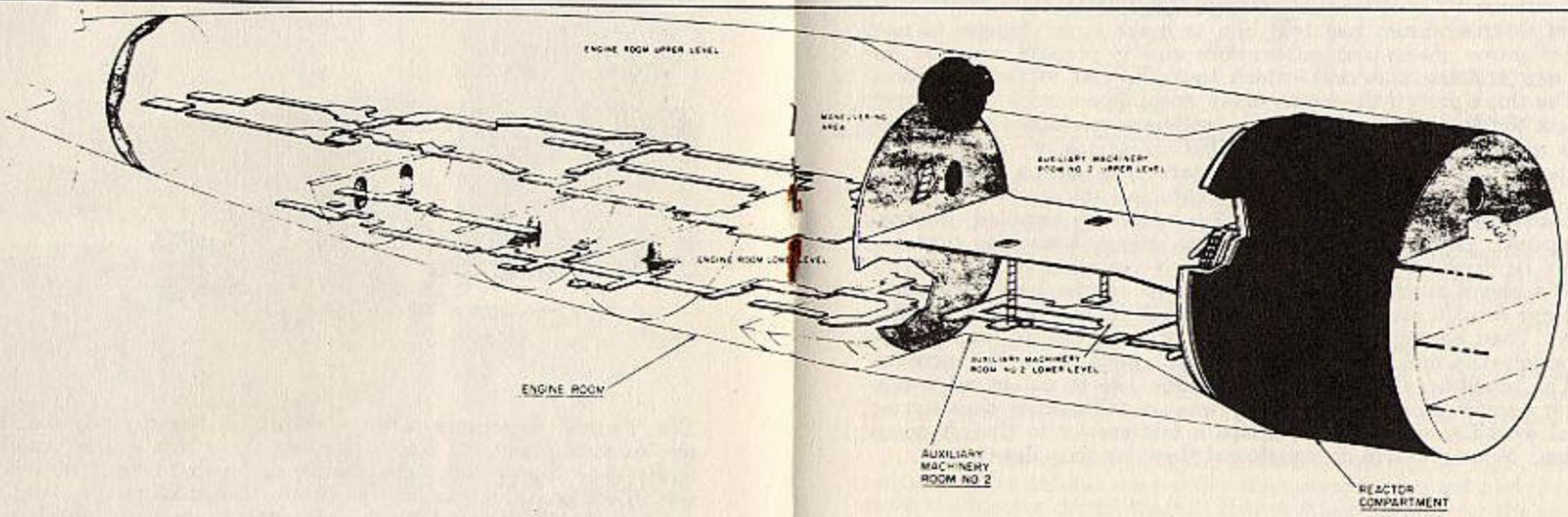


WATCH ORGANIZATION



SHIP'S ARRANGEMENT





A DAY IN THE LIFE OF A SUBMARINER

George Lee is a fictitious name for a typical TAUTOG submariner. He is, we will imagine, a second class Quartermaster. As such, he works in the Quartermaster Division in the Navigation Department. (In the Navy, quartermasters are specialists in navigation.)

On a day that he has the 0600 to 1200 watch (6 AM to 12 AM), George is awakened at 0500 by a messenger; this gives him 45 minutes to dress, shave and enjoy a large breakfast. In keeping with a tradition, he reports to his watch station in the attack center, where the Officer of the Deck also stands his watch, 15 minutes before his watch begins, in order to be briefed on the activities of the previous watchstander on *his* time: a custom most appreciated by the departing quartermaster. During this six-hour watch, Quartermaster Lee plots the ship's position on the chart, assists the Officer of the Deck by recording and tracking sonar contacts, and maintains the ship's log.

After his relief has taken the watch, George cleans up for the noon meal. Today's meal is followed in the Crew's Mess by a "School of the Boat" lecture given by the Auxiliary Division Chief Petty Officer on the ship's ventilation system. Since he is already qualified on the TAUTOG, George passes the lecture up in order to spend some time preparing for his first class Quartermaster examination. At 1500 (3 PM), he has an appointment to examine a newly reported seaman on his knowledge of the ship's periscopes and antennas, for the seaman's submarine qualification. George Lee's immediate supervisor, a Chief Quartermaster, had told him to make some changes to several navigation charts and publications and to prepare an order for some new training materials—which took the rest of the afternoon.

The ship's daily drill—which today was unannounced—interrupted the task for about thirty minutes. Drills are conducted to test the crew's reaction to casualty and combat situations of various sorts: fire, loss of power, toxic gas, depth charge, and so on. Every drill is an "all hands" effort—even those catching up on lost sleep are summoned by the ship's alarms. Fire hoses are unrolled, medical bags opened, gas masks worn, equipment operated, nothing that can possibly be done to enhance the realism is neglected.

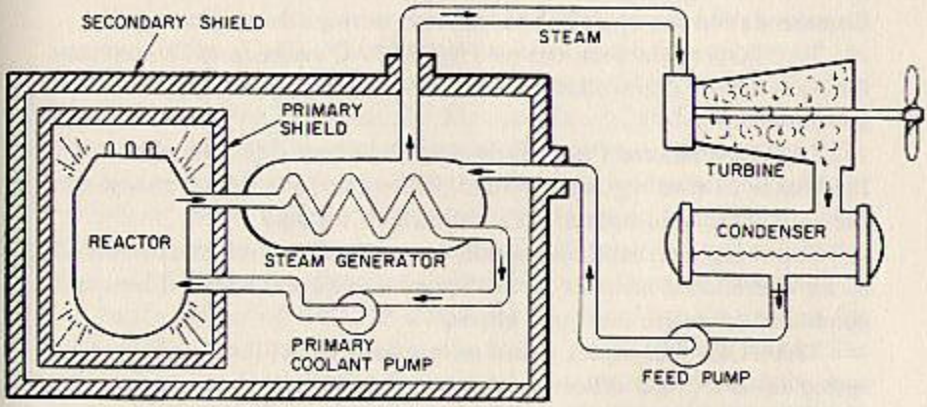
The movie after the evening meal was one he had seen before so George read some more of a Western he'd gotten in the ship's library. Then he can doze for a couple of hours before standing his next watch—the mid watch, from midnight until six in the morning.

The schedule of our mythical George Lee is not at all imaginary or exceptional—it is typical of what a submariner does during a usual workday at sea. It is perhaps a fair answer to the oft posed question: What on earth do you do out there for sixty days?

HOW NUCLEAR POWER OPERATES A SUBMARINE

The power plant of a nuclear submarine is based upon a nuclear reactor which provides heat for the generation of steam. This, in turn, drives the main propulsion turbines and the ship's turbo-generators for electric power.

The primary system is a circulating water cycle and consists of the reactor, loops of piping, primary coolant pumps and steam generators. Heat produced in the reactor by nuclear fission is transferred to the circulating primary coolant water which is pressurized to prevent boiling. This water is then pumped through the steam generator and back into the reactor by the primary coolant pumps for reheating in the next cycle.



In the steam generator, the heat of the pressurized water is transferred to a secondary system to boil water into steam. This secondary system is isolated from the primary system.

From the steam generators, steam flows to the engine room where it drives the turbo-generators, which supply the ship with electricity, and the main propulsion turbines, which drive the propeller. After passing through the turbines, the steam is condensed and the water is fed back to the steam generators by the feed pumps.

There is no step in the generation of this power which requires the presence of air or oxygen. This fact alone allows the ship to operate completely independent from the earth's atmosphere for extended periods of time.

During the operation of the nuclear power plant, high levels of radiation exist around the reactor and personnel are not permitted to enter the reactor compartment. Heavy shielding protects the crew so that the crew member receives less radiation on submerged patrol than he would receive from natural sources ashore.

TAUTOG
SOME HIGHLIGHTS FROM HISTORY

USS TAUTOG (SSN639) is the second submarine of the U.S. Navy to bear the name of the carnivorous blackfish common to the New England coast. The first TAUTOG (SSN199) sank 26 Japanese ships in World War II, a record unequalled by any U.S. submarine. The present TAUTOG was built by Ingalls Shipbuilding Corporation in Pascagoula, Mississippi, and was commissioned on August 17, 1968. After leaving the Gulf Coast for her new home port of Pearl Harbor, Hawaii, she entered into a rigorous training cycle, culminating in TAUTOG's receiving the Battle Efficiency "E" in 1970 for her outstanding performance.

TAUTOG sailed with the Seventh Fleet in 1970, making port calls in the Philippines, Hong Kong, Okinawa, Japan and Korea. Upon return to Pearl Harbor, the Terrible "T" was presented the Meritorious Unit Commendation for operations conducted during that deployment.

TAUTOG again departed on a WESTPAC cruise in 1972, receiving the Navy Unit Commendation for operations conducted upon return to her home port.

TAUTOG entered Pearl Harbor Naval Shipyard in January 1973 to commence its first regular overhaul. This period saw many changes to the habitability and operational outfitting of the ship.

Following overhaul completion in April 1974, TAUTOG returned as an operational member of the Submarine Force, Pacific Fleet, and conducted extensive local operations.

TAUTOG once again sailed on another WESTPAC cruise in the spring of 1975. The officers and crew earned the Navy Expeditionary Medal for the highly successful completion of their assigned mission.

1976 saw TAUTOG and her crew participating in exercises, local operations and proficiency inspections, which maintained the high degree of readiness required of a submarine crew.

January 1977 saw TAUTOG start another WESTPAC deployment, with her crew enjoying such liberty ports as Mombasa, Kenya; Guam; Chinhae, South Korea; the Philippines; and Hong Kong.

Upon return to Pearl Harbor, preparations were made for the upcoming transit to Vallejo, California, where TAUTOG would undergo its second major overhaul and would receive a new reactor core. December 1977 saw the TAUTOG enter Mare Island Naval Shipyard and the overhaul commenced.

After spending nearly fifteen months in Vallejo, TAUTOG successfully completed her sea trials and sailed to Pearl Harbor to rejoin the Submarine Force of the Pacific Fleet, arriving in July of 1979.

Following an intense period of training and operational exercises, TAUTOG again deployed on a WESTPAC cruise in March 1980. TAUTOG met every commitment placed on her during this period of international tension, and was awarded the Navy Expeditionary Medal for her performance. In September of 1980, the ship was awarded the Battle Efficiency "E", Anti Submarine Warfare "A" and Engineering "E" for excellence displayed during the previous year. Port visits to Diego Garcia; the Philippines; Perth, Australia; and Guam were enjoyed by all hands.

Following a well earned standdown period, TAUTOG plunged into a vigorous training cycle and prepared for a short two-month availability at Pearl Harbor Naval Shipyard, which was successfully completed.

1981 found the ship and crew rested and ready to go. After a vigorous training cycle, TAUTOG sailed West once more in support of the Seventh Fleet in the Pacific and Indian Oceans. She became the first nuclear submarine to transit the Malacca Straits, surfaced and visited Singapore, the Philippines, Australia, Diego Garcia and Japan. The trip was culminated in 1982 when she was awarded her second grade of "excellent" on a Reactor Safeguards examination. Later in the year TAUTOG earned her third consecutive Engineering "E" and a Damage Control "DC" for excellence in Engineering and Damage Control.

In the winter of 1982, TAUTOG joined one of her sister ships, the USS ASPRO, and journeyed to the frozen reaches of the North. She operated below the ice pack for two months and experienced the rare thrill of a dual surfacing maneuver at the North Pole with the ASPRO.

During the summer of 1983, TAUTOG once again found herself operating under the Arctic ice pack. TAUTOG experienced, at the North Pole, temperatures 110° F. higher than those encountered when she surfaced in the winter of 1982. To celebrate her arrival at the Pole, the crew had a picnic, a tug-of-war and dog sled races "around the world."

In 1984, following a two-month shipyard availability, TAUTOG entered a vigorous operational crew training period. In the spring of 1984, TAUTOG again journeyed west in support of Seventh Fleet operations. TAUTOG operated extensively in the Northern Pacific, making port visits to the Philippines, Thailand, and Japan. TAUTOG was awarded two Navy Expeditionary Medals for her operations.

COMMANDER THOMAS R. KENT, USN

Comander Thomas R. KENT, United States Navy, is the son of Mr. and Mrs. George KENT of Ithaca, New York. He was commissioned upon graduation from the United States Naval Academy in 1967.

Upon completion of nuclear power and submarine training, Commander KENT was assigned as an Engineering Division Officer aboard USS THOMAS A. EDISON (SSBN610) (GOLD). His next assignment was as an instructor in the Navigation Department at the United States Naval Academy. During this tour he received a Master of Science in Business Administration from George Washington University.

Commander KENT was then assigned as Engineer Officer of USS KAMEHAMEHA (SSBN642) (BLUE) where he was awarded the Navy Achievement Medal. He then served as Executive Officer of the Commissioning Crew of USS INDIANAPOLIS (SSN697). He was awarded the Navy Commendation Medal for his tour on INDIANAPOLIS.

Commander KENT reported to USS TAUTOG from duty with the Division of Naval Reactors in Washington, D.C.

Commander KENT is married to the former Carol Anne FORD of Centreville, Maryland. They reside in Kaneohe with their two children, Thomas and Ted.