

UNITED STATES SHIP  
DACE SS(N)607



Built by  
The Ingalls Shipbuilding Corporation  
A Division of Litton Industries  
Pascagoula, Mississippi



Keel Laid: 6 June 1960  
Launched: 18 August 1962  
Commissioned: 4 April 1964



SPONSOR  
Mrs. Gerald R. Ford, Jr.





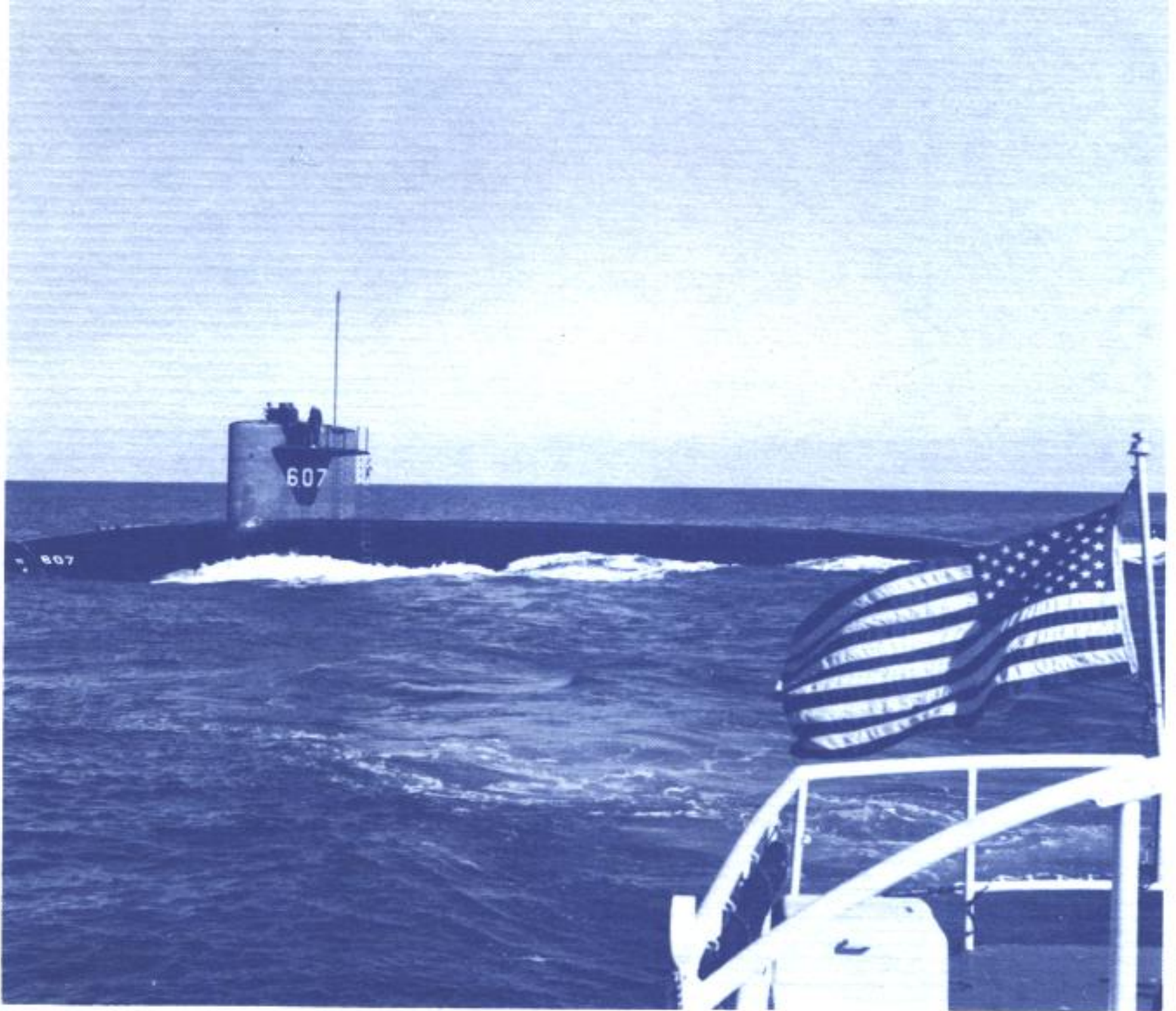
## THE FIRST DACE

USS DACE (SS 247) was commissioned 23 July 1943, at Electric Boat Company, Groton, Connecticut, under command of LCDR J. F. Enright, USN. She departed New London for patrol action in the Western and Southwestern Pacific areas via Pearl Harbor. Prior to her second war patrol LCDR B. D. Claggett, USN, relieved as Commanding Officer. Under LCDR Claggett, DACE completed four successful patrols. She was awarded the Navy Unit Commendation for her fifth patrol. It was during this patrol that DACE successfully engaged and destroyed MAYA, an ATAGO class cruiser of 12,500 tons, the pride of the Japanese Cruiser Fleet. Also during this patrol DACE successfully accomplished the daring at-sea rescue of all hands from DARTER, her sister ship, who had run aground during the above action. Both DACE and DARTER were under air attack during the final stages of the rescue.

Following the fifth patrol, CDR. B. D. Claggett, USN, was relieved by CDR. O. R. Cole, USN. DACE's sixth and seventh patrols were equally successful. DACE participated in several special missions and operations; notably, Operation "Hailstone," the first carrier strike on the Japanese sea and air bastion, Truk, February 1944, and Operation "King Two," the invasion of Leyte, P. I., October 1944. DACE's official patrol record credits her with sinking 9 vessels, 41,600 tons, and damaging 5 vessels, 32,283 tons.

On September 13, 1945, DACE departed Pearl Harbor for home, after seven war patrols in two years and two months of active duty. In January 1947, USS DACE (SS 247) was placed out of commission, in 1951 was recommissioned and in 1955 was transferred to the Italian Navy in which she now serves as LEONARDO da VINCI.





USS DACE SS(N)607 is the United States Navy's nineteenth nuclear powered attack type submarine to be commissioned. She is the fifth of the THRESHER Class, and as such, represents the world's most advanced design in nuclear powered submarines. Powered by a Westinghouse S5W reactor plant driving a single propeller, DACE is one of the most effective weapons in the Navy anti-submarine arsenal. Her ability to cruise the oceans deeper and more quietly than any previous class of submarine is a tribute to the engineering and scientific advances which made it possible.





The Honorable Paul H. Nitze  
Secretary of the Navy





THE SECRETARY OF THE NAVY  
WASHINGTON

19 February 1964

My dear Commander Walsh:

It is with great pleasure that I extend my best wishes to you, your officers and men of USS DACE (SS(N) 607) on this memorable occasion of her commissioning.

The contrast between this ship and the first submarine to bear the name of DACE demonstrates the great forward strides that have been made in the art of building combatant ships. DACE's design capabilities make her a proud symbol of the Navy's growing underseas offensive power and a major weapon in our national defense arsenal.

Powerful weapons and proud traditions will not by themselves provide the strength which DACE will need. Every seafaring man knows that the real strength of a ship lies in the spirit and competence of the officers and the men. I am confident that the highest standards of moral behavior and devotion to duty will be achieved under the leadership and personal example of you and your officers, and that DACE will have both the material means and the fighting spirit to meet whatever challenges the future holds.

Sincerely yours,

Commander John A. Walsh, USN  
Prospective Commanding Officer  
USS DACE (SS(N) 607)  
c/o Supervisor of Shipbuilding, USN  
Pascagoula, Mississippi





Admiral David L. McDonald, USN  
Chief of Naval Operations



CHIEF OF NAVAL OPERATIONS

19 February 1964

Dear Captain,

On the occasion of the commissioning of USS DACE I congratulate you on your new command and send my very best wishes to you, your officers and men.

It is your privilege to command one of the finest ships in the finest Navy on earth. Each officer and man in your crew can be justly proud of your accomplishments to date as plank owners. The challenge before you to generate the teamwork and fighting efficiency necessary to enable DACE to take her rightful place in the Fleet is in itself a privilege. A very large measure of satisfaction will accrue to you and each individual who has the honor to serve in DACE. I truly envy you in your new assignment.

I extend to you and each officer and man of your ship's company, my wishes for a fair breeze and God's help in the many tasks you will encounter.

Sincerely yours,

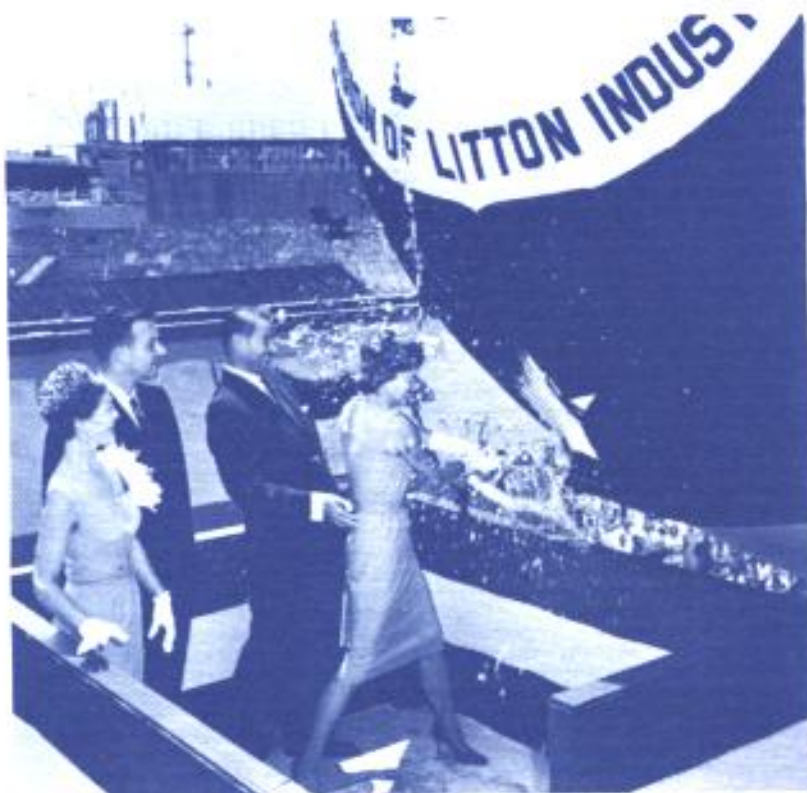
DAVID L. McDONALD

Commander John A. Walsh, USN  
Prospective Commanding Officer  
USS DACE (SS(N) 607)  
c/o Supervisor of Shipbuilding, USN  
Pascagoula, Mississippi

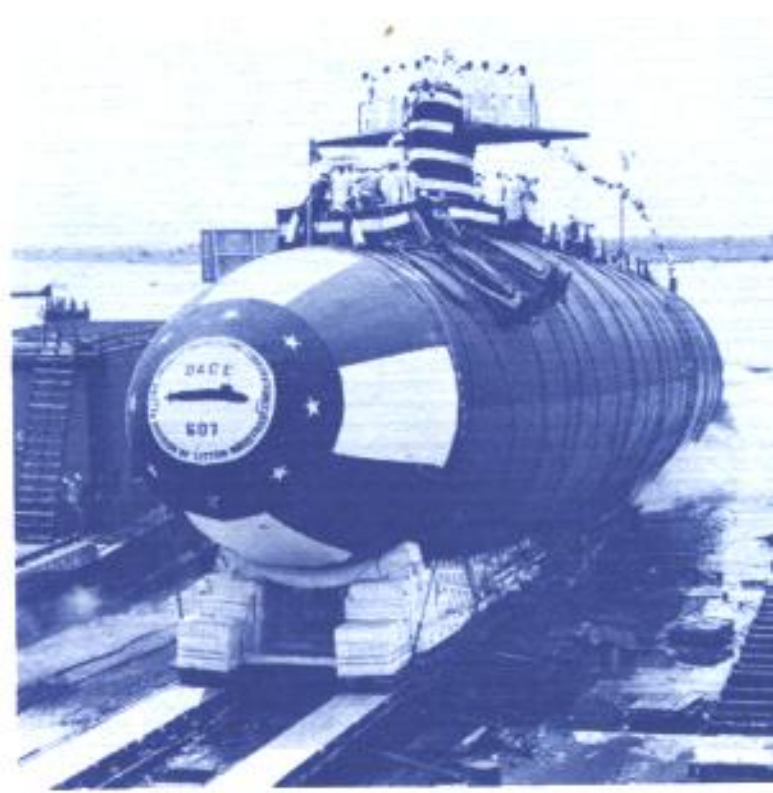




*Sponsor*  
Mrs. Gerald R. Ford, Jr.



Christening



Launching





Captain John B. Guerry, USN  
Supervisor of Shipbuilding  
Pascagoula, Mississippi



Fred J. Mayo, President  
Ingalls Shipbuilding Corporation  
A Division of Litton Industries  
Pascagoula, Mississippi



# U.S.S. DACE (SSN 607) COMMISSIONING CEREMONY

BAND SELECTIONS  
502nd Air Force Band

ORDERS TO COMMISSION SHIP  
Rear Admiral Lawrence R. Daspit, USN  
Commandant, Sixth Naval District

INVOCATION  
Reverend Arthur M. Schneider  
First Presbyterian Church, Pascagoula, Mississippi

HOISTING OF ENSIGN, UNION JACK AND  
COMMISSIONING PENNANT

BUILDER'S REMARKS  
Mr. Fred J. Mayo, President  
Ingalls Shipbuilding Corporation  
A Division of Litton Industries

READING OF COMMANDING OFFICER'S ORDERS  
Commander John A. Walsh, USN

INTRODUCTION OF

Rear Admiral Lawrence R. Daspit, USN  
Commandant, Sixth Naval District  
Captain John B. Guerry, USN

ASSUMPTION OF COMMAND AND SETTING THE WATCH

BREAKING OF PERSONAL FLAG  
Vice Admiral Lawson P. Ramage, USN  
RUFFLES AND FLOURISHES ADMIRAL'S MARCH

REMARKS AND INTRODUCTION OF PRINCIPAL SPEAKER

Vice Admiral Lawson P. Ramage, USN  
Deputy Chief of Naval Operations (Fleet Operation and Readiness)  
Rear Admiral Lawrence R. Daspit, USN

REMARKS BY COMMANDING OFFICER

BENEDICTION  
Reverend Father Peter J. Tormey  
Our Lady of Victories Church, Pascagoula, Mississippi

ADDRESS  
Vice Admiral Lawson P. Ramage, USN

BAND SELECTIONS  
502nd Air Force Band





Vice Admiral Elton W. Grenfell, USN  
Commander, Submarine Force, U. S. Atlantic Fleet



Rear Admiral Lawrence R. Daspit, USN  
Commandant, Sixth Naval District









Vice Admiral Lawson P. Ramage, USN  
Deputy Chief of Naval Operations (Fleet Operations and Readiness)



## **VICE ADMIRAL LAWSON P. RAMAGE, U. S. NAVY**

Vice Admiral Lawson Paterson Ramage, who holds the Nation's highest award in addition to other decorations for outstanding services in World War II, was born in Monroe Bridge, Massachusetts, on 19 January 1909. He received his early education in Beaver Falls, New York, and at the Willison Academy, Easthampton, Massachusetts. Graduated from the Naval Academy in 1931, he had duty afloat as a junior officer on the destroyers DICKERSON and LAWRENCE and the heavy cruiser LOUISVILLE.

Designated a Submariner, he was assigned from late 1935 until 1941 to the submarine S-29, and as Executive Officer of the USS SANDS, interspersed with instruction in General Line at the Naval Postgraduate School, Annapolis, in 1938-39. He was Radio and Sound Officer on the Staff of Commander Submarines, Pacific Fleet, based on Pearl Harbor, T. H., and was present during the Japanese sneak attack on the Fleet there, December 7, 1941. On board the USS GRENADIER during the spring of 1942, he participated in her second war patrol, assisting in the sinking of 24,000 tons of enemy shipping.

His first command was the USS TROUT, which under his guidance in 1943 engaged in successful war patrols in the areas of Midway, Truk, the Solomons and the South China Sea. He later commanded the USS PARCHE during four of her successful war patrols. He was awarded the Medal of Honor for conspicuous gallantry and intrepidity during a pre-dawn attack by the PARCHE on a Japanese convoy on July 31, 1944. After forty six minutes of violent action, the PARCHE retired victorious and unscathed with four enemy ships sunk and another severely damaged.

Throughout the remainder of World War II, he was Personnel Officer on the Staff of Commander Submarines, Pacific Fleet. He next commanded Submarine Division 52 and during July and August 1946 commanded a group of four submarines conducting a training cruise in Alaskan waters. Much pertinent data was obtained through



the study of conditions generally affecting submarine operations in the Arctic.

His duties from 1947 until 1956 included: Chief of the Surface Objectives Branch, Office of the Assistant Chief of Naval Operations (Guided Missiles), Navy Department; Readiness and New Developments Officer, Staff, Commander Submarines, Atlantic Fleet; Commander Submarine Squadron SIX; command of the attack cargo ship RANKIN; Chief of Staff and Aide to Commander Submarine Force, U. S. Atlantic Fleet, and Special Assistant to the Chief of Naval Operations. During that period he completed courses at the Armed Forces Staff College, Norfolk, Virginia, and the Naval War College, Newport, Rhode Island, in 1950 and 1955.

He was Director of the Surface Type Warfare Division, Office of the Chief of Naval Operations, from December 15, 1956 until September 1958, when he reported as Commander Cruiser Division TWO. In December 1959 he became Director of the Undersea Warfare Division, Office of the Chief of Naval Operations and in October 1960 he was designated Assistant Chief of Naval Operations (Fleet Operations and Readiness). On August 6, 1962 he became Deputy Commander of the Submarine Force, Atlantic Fleet and on July 22, 1963 reported as Deputy Chief of Naval Operations (Fleet Operations and Readiness).

In addition to the Medal of Honor, Vice Admiral Ramage holds the Navy Cross, with Gold Star in lieu of second Navy Cross; the Silver Star Medal; the Bronze Star Medal; Letter of Commendation (ribbon), Commander Submarines, Pacific Fleet; and Presidential Unit Citation (USS TROUT), with star (USS PARCHE).

Vice Admiral Ramage and his wife, the former Barbara Alice Pine of New London, Connecticut, have four children, Barbara, James, Alfred and Virginia. The Ramages' home is New London, Connecticut.





Commander John A. Walsh, USN  
Commanding Officer USS DACE SS(N)607





### **COMMANDER JOHN AMAND WALSH, USN**

John Amand Walsh was born in Port au Prince, Haiti on 3 January 1924. He is the son of Odette V. Fautrat Walsh of Brest, France, and the late Captain John A. Walsh, USN of New London, Connecticut. He is married to the former Sheila Hardwick Keliher of Hollywood, California. They have three children, David, Christopher, and Sheila.

Commander Walsh attended the Portsmouth Priory School, Portsmouth, Rhode Island; the Massachusetts Institute of Technology, Cambridge, Massachusetts; and the United States Naval Academy. Upon graduation from the Naval Academy in 1945, he served aboard the USS COLOMBUS (CA 74) in Chinese and Japanese waters. He attended Submarine School in 1946. After serving in the Pacific Fleet in USS CARP (SS 338) and in the Atlantic Fleet in USS HALFBEAK (SS 351) he attended the United States Naval Intelligence School in Washington, D. C., specializing in the Italian language. Upon graduation Commander Walsh served as assistant U. S. Naval Attache in the American Embassy, Rome, Italy. Following two years in Rome he became Executive Officer, USS TENCH (SS 417). In 1957 he became Intelligence Officer on the Staff of Commander, Submarine Force, U. S. Atlantic Fleet. In 1959 Commander Walsh assumed command of USS ENTEMEDOR (SS 340). From this latter assignment he was ordered to the Atomic Energy Commission, Division of Naval Reactors, Washington, D. C. with subsequent orders as Prospective Commanding Officer, USS DACE SS(N)607.



# USS DACE (SSN607)

CDR Robert W. BULMER  
LCDR Herbert J. SNYDER .....Executive Officer  
LT Dickinson M. SMITH .....Engineer Officer  
LT Edward H. BROWDER .....Weapons Officer  
LT Richard M. SWENGEL .....Medical Officer  
LT Kenneth D. PETERSON .....Operations Officer  
LT John C. BRONS .....Main Propulsion Assistant  
LTJG Allison J. HOLIFIELD, Jr. ....Electrical Officer  
LTJG Robert L. GRAHAM .....Communications Officer  
LTJG William W. STEPHENSON, II .....Commissary Officer

## CHIEF PETTY OFFICERS

JAHNKE, Henry C., TMCS(SS) .....Chief of the Boat  
ANDERSON, Bobby M., SOC (SS)      FREY, Richard C., MMCA (SS)  
ATWOOD, Frederick R., ENCA (SS)    HERMAN, Ralph C., ETCA  
BERRY, Palmer, Jr., MMCS (SS)      HOTALEN, Robert J., MMCA (SS)  
BROUN, Claude A., EMCM (SS)      MANESE, Ruperto C., SDCA (SS)  
CLAYTON, Charles R., ENCA (SS)    SCOTT, John Jr., SKCS  
COLEMAN, Edward A., RMC          SHURON, John D., SOC (SS)  
COOK, Keith W., ETCA (SS)        TUCKER, James A., HMC (SS)  
CYGANIK, Stephen P., FTC (SS)      WEBB, David W., MMC (SS)  
DANGERFIELD, Thomas E., ETCA (SS) WILLOUGHBY, Harvey, ENC (SS)  
DAVIS, James R., EMCA (SS)        WRIGHT, Gordon L., EMCS  
DILLARD, "L" "A," HMC              ZIPP, George F., QMCS (SS)

## ENLISTED

ADVINCULA, Teofilo C., SD1 (SS)    CHANCE, Francis L., CS2 (SS)  
ALLISON, Thomas G., Jr., EN2 (SS)  CHEEKS, Andres V., CS1 (SS)  
ALTRO, Ronald C., YN3                CLARK, James C., FTG2 (SS)  
AUSTIN, Thomas E., EM1 (SS)        CLARK, Raylan F., MM3 (SS)  
BAKER, Robert P., ICFN              COLGAN, George T., MM1 (SS)  
BALLARD, Jack E., RM1 (SS)         COMPEAU, Alonzo F., MM1 (SS)  
BANKS, Walter W., EM2 (SS)         CROSBY, David M., TM2 (SS)  
BARKER, James R., MM2 (SS)        DAVIS, Steve A., EN2 (SS)  
BLISS, Albert M., ICI (SS)          DICK, Ernest E., Jr., ICI (SS)  
BROWN, Joseph M., ICI (SS)         DIKE, David A., EN1 (SS)  
BURNS, Ronald W., SA                DIXON, Charles L., TN  
BUTLER, Alfred E., ETR3              EDWARDS, Robert E., RM1 (SS)

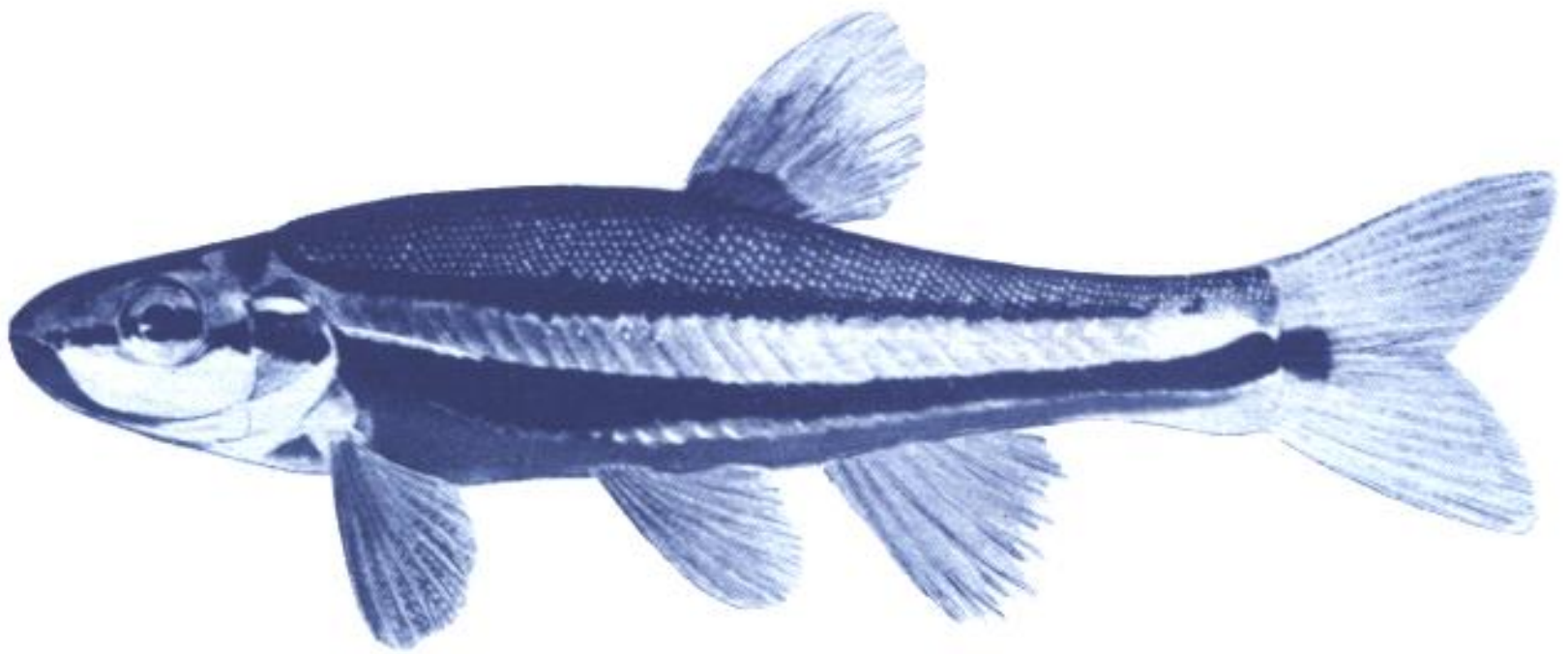


**ENLISTED** (Continued)

FLEURY, Norman R., SN  
FRENCH, James E., ETR2  
FUGATE, Roger L., SO1 (SS)  
GARSKE, Robert H., FN  
HAAF, Joseph B., QM1 (SS)  
HAASE, Alfred F., SO1 (SS)  
HENDERSON, John G., SA  
HICKS, Jay R., SN  
HINCKLEY, Robert J., ETR2 (SS)  
KEITH, Gardner F., IC3 (SS)  
KENNY, Thomas J., EM2 (SS)  
KRUYD, Jacob G., TM1 (SS)  
LITTLE, John T., IC2 (SS)  
LYONS, David E., MM1  
MAGUIRE, Thomas F., SOS2 (SS)  
MAIDA, William P., EN3 (SS)  
MC GAHA, Alvis E., ET1  
MILLER, Emmett D., EN1 (SS)  
MILLER, Stanley P., EM1 (SS)  
MILLER, Thomas A., ET1 (SS)  
NICKERSON, Irvin H., ETR2  
NYESTE, John A., MM2 (SS)  
OBER, Gordon W., QMSN (SS)  
PAGE, Mitchael B., TM1 (SS)

PARSONS, Max M., ETR2  
PATTERSON, Lafayette (n), IC2 (SS)  
PECKHAM, David B., SOS2 (SS)  
PETERSON, Donald A., CS1  
PETRI, Melvin R., TM1 (SS)  
ROBERTS, Calvin N., QM3  
ROBISON, William J., EN3 (SS)  
SCHILLING, David J., SN  
SCHRADER, Bobbie E., SN  
SCOTT, Philip C., SOG2  
SEVERINSEN, Edward (n), ET1 (SS)  
SIEMER, William A., FT1 (SS)  
SILVER, Ronald B., TM3  
SIMS, Thomas J., MM1 (SS)  
SWENSEN, Rudolph G., ET1 (SS)  
TRYBALSKI, Joseph L., MM1 (SS)  
TYNER, William M., YN2 (SS)  
UETZ, Edward A., EM2 (SS)  
UPHOLD, Albert L., Jr., EM1 (SS)  
WEST, George W., RM2 (SS)  
WILSON, Robert J., SA  
YOUNG, Larry D., EM1 (SS)  
YOUNG, Lawrence J., SN





**RED-BELLIED DACE, *Chrosomus erythrogaster* Ratinesqae**

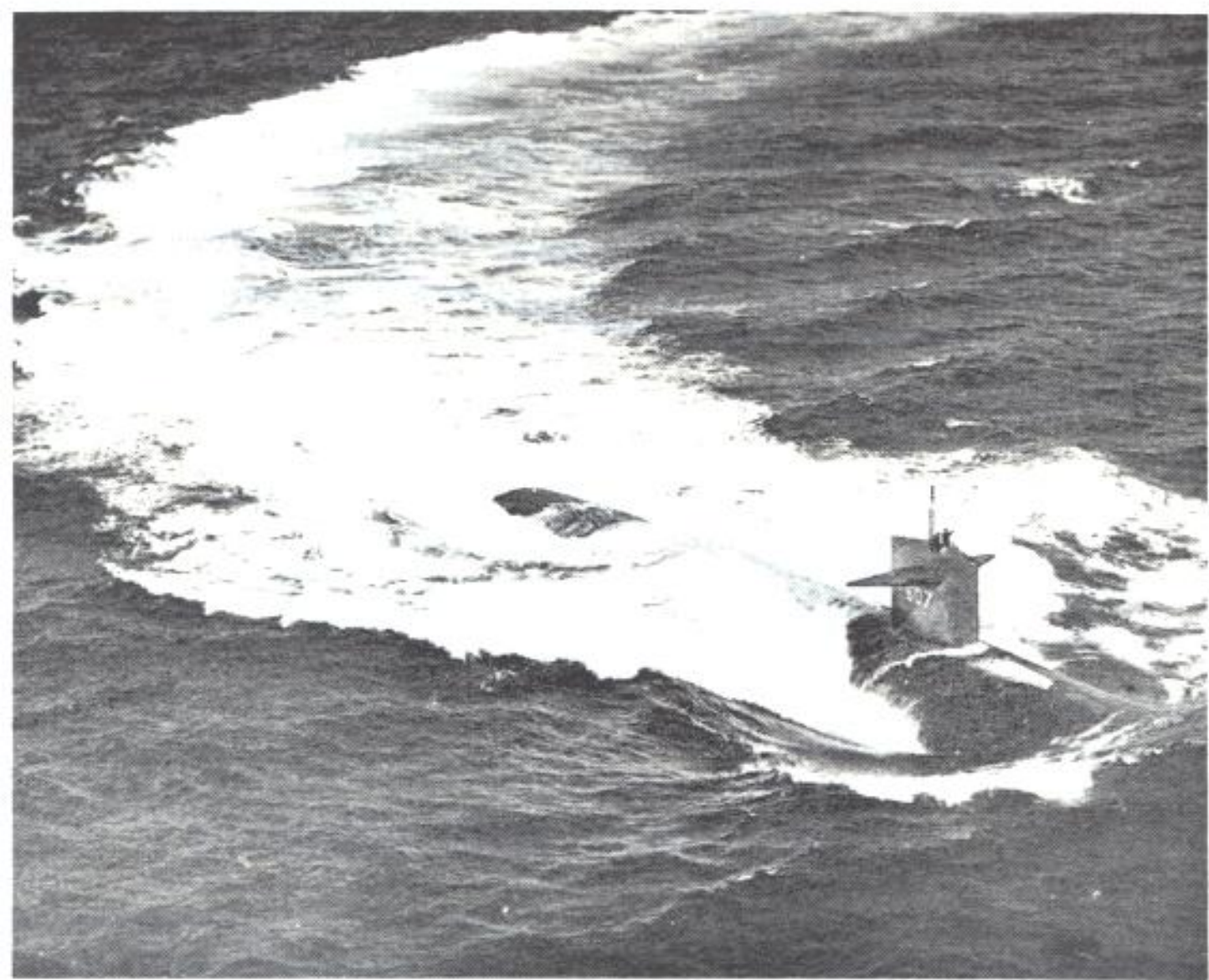
The term dace refers to a number of different and rather unrelated species of minnows. Over 2,000 species of minnow are known and approximately 307 species are listed for North and Central America. With the exception of one Japanese species, all minnows are strictly fresh water fishes.

The southern red-belly dace, ***Chrosomus erythrogaster***, has been chosen as the namesake of DACE. It is one of the most attractive of the North American fishes. Contrary to its name, it is a rather northern species. The southern red-belly dace occurs as far south as northern Mississippi but in the southern part of its range it is restricted to cold, spring fed, clean streams.

The southern red-belly dace is a small brownish olive minnow with black spots on the back, a blackish stripe along the sides from above the eye to the tail, and another band running from below the eye ending in a black dot at the base of the caudal fin. The belly and the space between the bands are usually silvery but in the spring they become bright scarlet. The dace ranges from southern Wisconsin through Iowa to Pennsylvania and southward to northern Mississippi and Alabama.

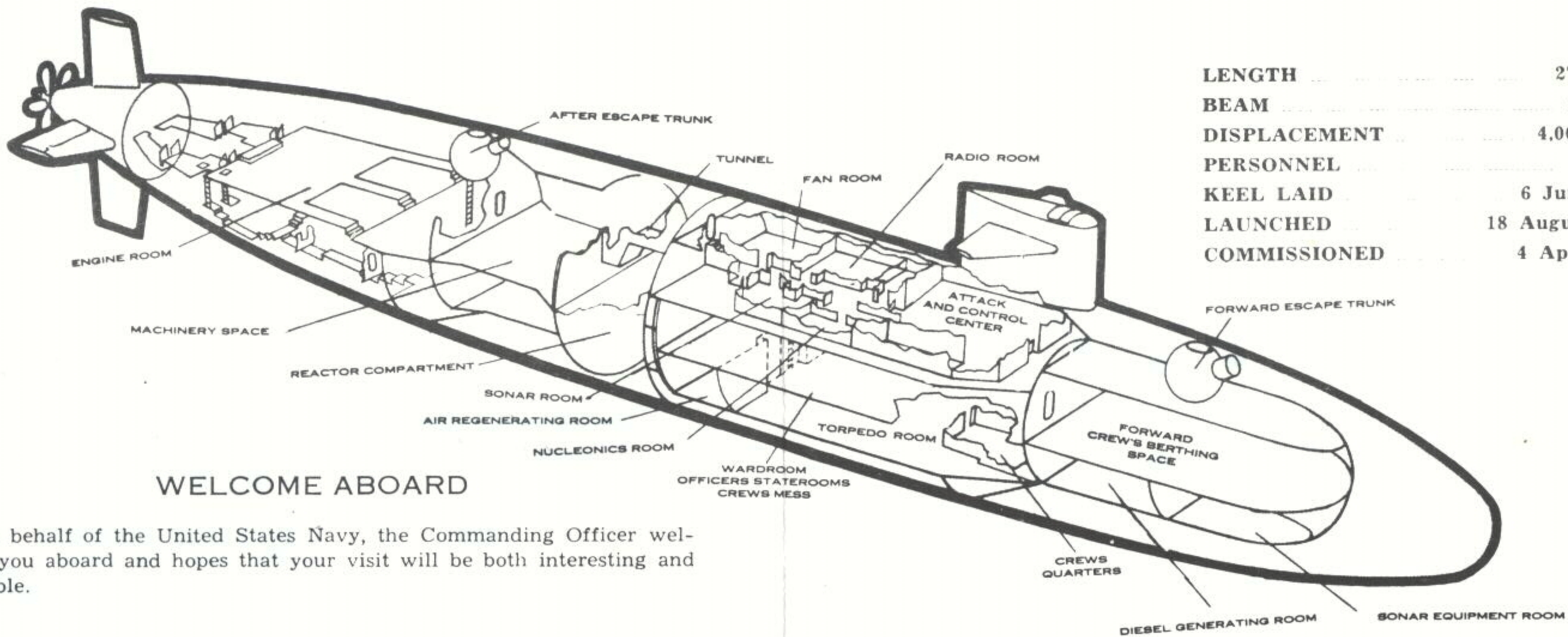


# WELCOME ABOARD



USS DACE (SSN 607)





LENGTH	278 Feet
BEAM	32 Feet
DISPLACEMENT	4,000 Tons
PERSONNEL	95
KEEL LAID	6 June 1960
LAUNCHED	18 August 1962
COMMISSIONED	4 April 1964

## WELCOME ABOARD

On behalf of the United States Navy, the Commanding Officer welcomes you aboard and hopes that your visit will be both interesting and enjoyable.



## DACE, OLD AND NEW

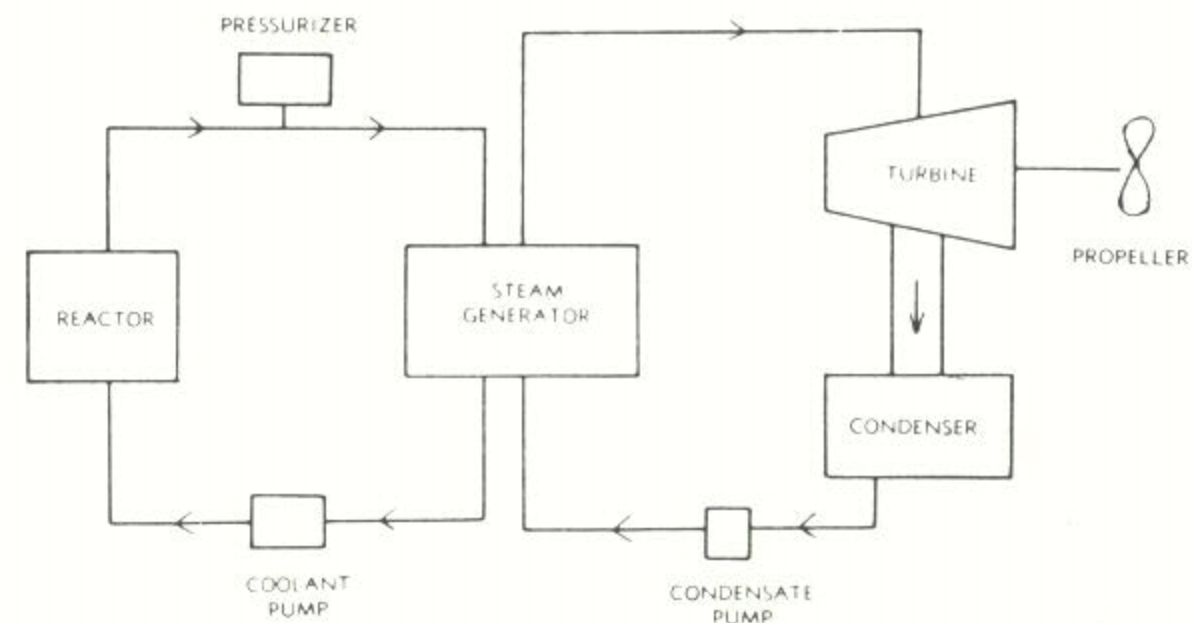
The first DACE (SS-247) was commissioned 23 July 1943 at Electric Boat Company in Groton, Connecticut. After seven successful war patrols in the Pacific during which DACE was credited with sinking nine enemy vessels totaling 41,600 tons, and damaging five others totaling 32,283 tons, she returned home in the fall of 1945 and was subsequently decommissioned in January 1947. DACE was recommissioned in 1951 and was transferred to the Italian Navy in 1955 where she now serves as LEONARDO da VINCI.

The new DACE, which you are aboard today, is a THRESHER class attack submarine designed primarily to seek out and destroy enemy submarines. To this end DACE is equipped with a highly complex sonar system and the most modern scientific methods have been used to make both ship and machinery as quiet as possible. DACE is capable of firing the Navy's newest submarine weapons, including SUBROC, an anti-submarine missile. With the atmosphere control equipment which is carried on board DACE can remain submerged for extended periods, completely independent of the earth's atmosphere.

## NUCLEAR PROPULSION

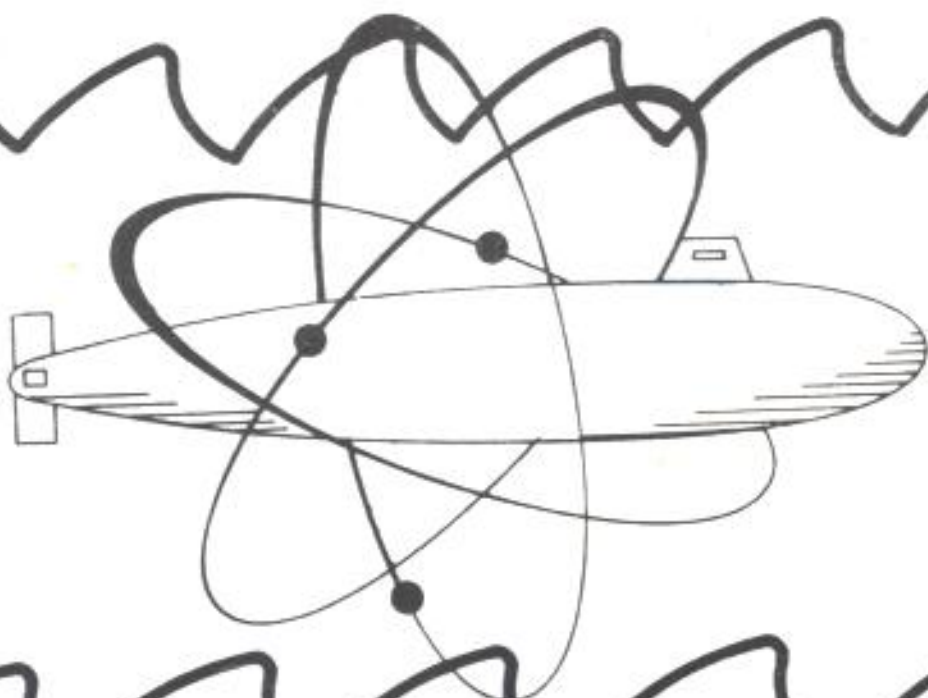
The advent of nuclear propulsion brought about the development of the true submersible because external air was no longer required for the operation of the propulsion plant.

The nuclear propulsion plant consists, basically, of two closed systems. In the primary system the pressurized water is heated in the reactor vessel by the controlled nuclear reaction of the uranium fuel. This water is in turn circulated by pumps through a steam generator or heat exchanger where it gives up its heat to the water on the secondary side. This water is boiled to produce steam for operating the propulsion turbines and other auxiliary equipment. After passing through the turbines this steam is then condensed and returned to the steam generator to be converted to steam again.





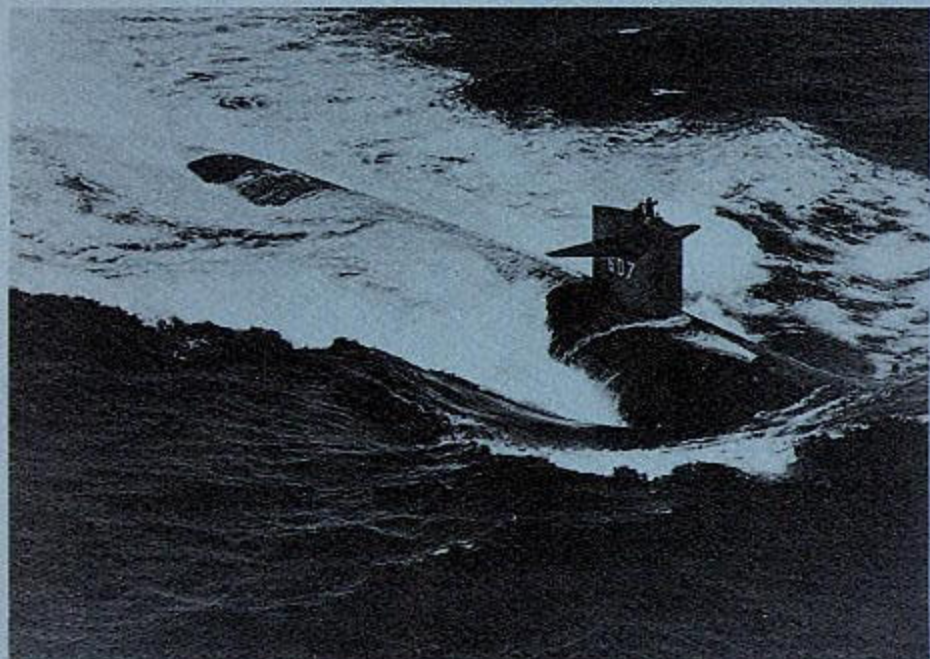
**USS DACE**



**SSN 607**



# welcome aboard



## USS DACE



## SSN 607





## USS DACE (SS247)



## USS DACE, OLD AND NEW

The first DACE (SS247) was commissioned 23 July 1943 at Electric Boat Company in Groton, Connecticut. After seven successful war patrols in the Pacific during which DACE was credited with sinking nine enemy vessels totaling 41,600 tons, and damaging five others totaling 32,283 tons, she returned home in the fall of 1945 and was subsequently decommissioned in January 1947. DACE was recommissioned in 1951 and was transferred to the Italian Navy in 1955 where she now serves as LEONARDO da VINCI.

The new DACE (SSN607), which you are aboard today, is a PERMIT class attack submarine designed primarily to seek out and destroy enemy submarines. To this end DACE is equipped with a highly complex sonar system and the most modern scientific methods have been used to make both ship and machinery as quiet as possible. DACE is capable of firing the Navy's newest submarine weapons, including HARPOON, an antisurface-ship cruise missile. With the atmosphere control equipment which is carried on board, DACE can remain submerged for extended periods, completely independent of the earth's atmosphere.



# SHIP'S HISTORY

USS DACE (SSN607) is a nuclear powered attack submarine attached to Submarine Squadron TEN, at New London, Connecticut and was built by Ingalls Shipbuilding Company at Pascagoula, Mississippi.

Commissioned in April 1964, DACE served in Submarine Development Group TWO until October 1967. As a member of the Development Group, DACE became the standard for a continuing program aimed at establishing the ASW capability of our modern nuclear submarines. In the process, DACE made significant contributions in the field of tactics, weapons employment, and the development of modern submarine sonar systems. Many of the tactics, procedures, and equipment now used by our first line attack submarines trace their origin to DACE's participation in this program.

During late 1967 and 1968, DACE conducted two highly successful independent submarine operations and was awarded two Navy Unit Commendations. In further recognition of DACE's performance, Commander Submarine Force, Atlantic Fleet nominated USS DACE (SSN607) as "The Ship of the Year - 1968."

In July 1969, DACE completed a routine overhaul at the Electric Boat Division of General Dynamics. DACE joined Submarine Squadron TEN following overhaul and continued her role of testing and development of new submarine tactics and equipments.

The caliber of her response to these demands was evidenced by the fact that DACE had been awarded the Battle Efficiency Pennant (E) and the (E) for Excellence in Weapons Employment and Fire Control during seven of these eight years of commissioned service.

DACE has made six deployments to the Mediterranean, completing the sixth deployment on 10 October 1978.

From October 1972 to April 1975, DACE underwent a major overhaul at Electric Boat Division of General Dynamics. DACE then conducted extensive post-overhaul shakedown testing. In December of 1975, DACE began its first post-overhaul Mediterranean deployment.

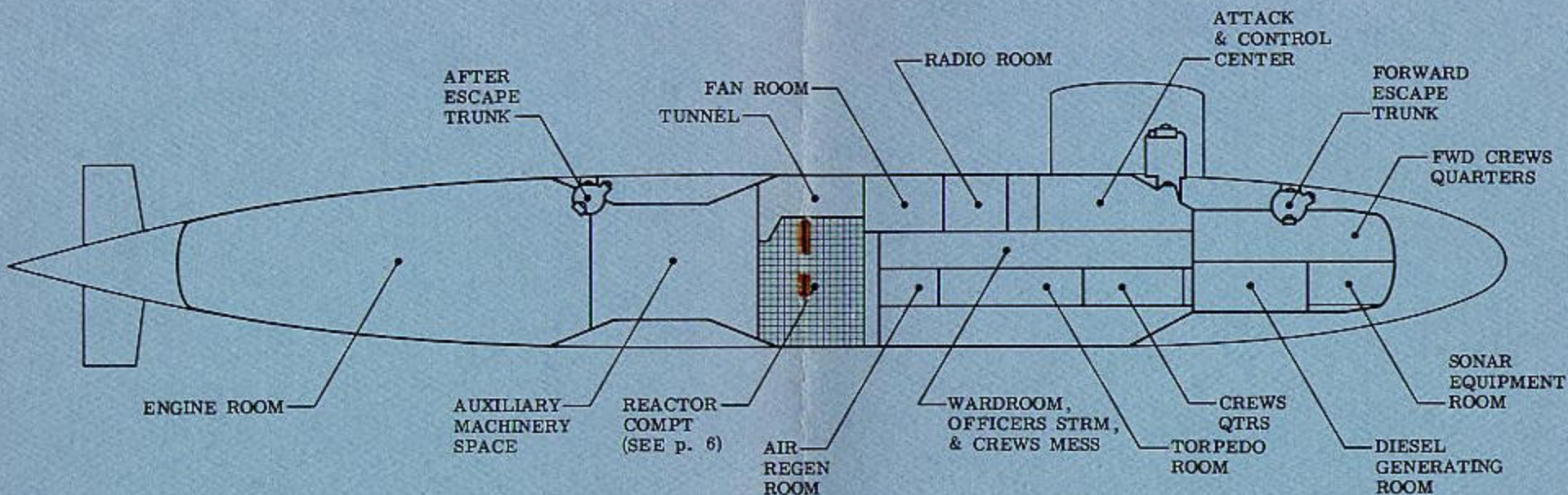
Subsequently DACE underwent a period of tender availabilities, short underway missions, and two Mediterranean deployments.

In October 1979, DACE commenced an AN/BQQ-5(A) Sonar System/MK117 Fire Control System backfit and a Subsafe Certification overhaul. Upon completion of the overhaul in summer 1981, DACE returned to New London and rejoined Submarine Squadron TEN.

USS DACE has a proud history of achievement having been awarded three Navy Unit Commendations, a Meritorious Unit Commendation, and a Golden Anchor Award for outstanding service as a fleet unit.



# SHIP'S ARRANGEMENT



## LEGEND

DISPLACEMENT \_\_\_\_\_ 4,000 TONS  
 PERSONNEL \_\_\_\_\_ 105  
 KEEL LAID \_\_\_\_\_ 6 JUNE 1960  
 LAUNCHED \_\_\_\_\_ 18 AUGUST 1962  
 COMMISSIONED \_\_\_\_\_ 4 APRIL 1964

LENGTH \_\_\_\_\_ 278 FEET  
 BEAM \_\_\_\_\_ 32 FEET  
 SPEED \_\_\_\_\_ IN EXCESS OF 20 KNOTS  
 DEPTH \_\_\_\_\_ GREATER THAN 400 FEET  
 SPONSOR \_\_\_\_\_ MRS. GERALD R. FORD



## 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.

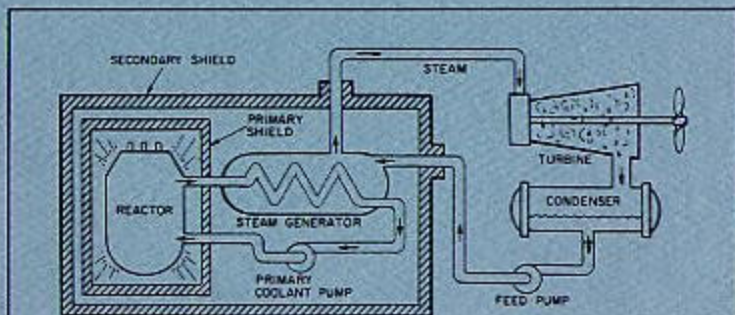
The primary system is a circulating water cycle and consists of the reactor, loops of piping, primary coolant pumps, and steam generators. Heat produced in the reactor by nuclear fission is transferred to the circulating primary coolant water which is pressurized to prevent boiling. This water is then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

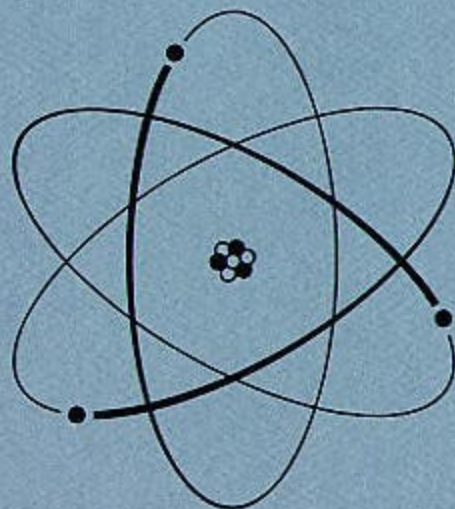


## DACE



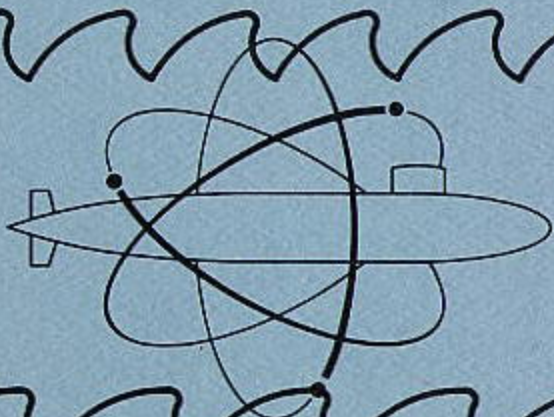
The "dace" is a small freshwater fish found in many habitats throughout the world. Most North American dace are found in cold, rocky, and fast-flowing streams.

The dace are among the most brightly-colored and showiest of North American fishes. They can be kept in aquariums but tend to lose their bright color.





**USS DACE**



**SSN 607**