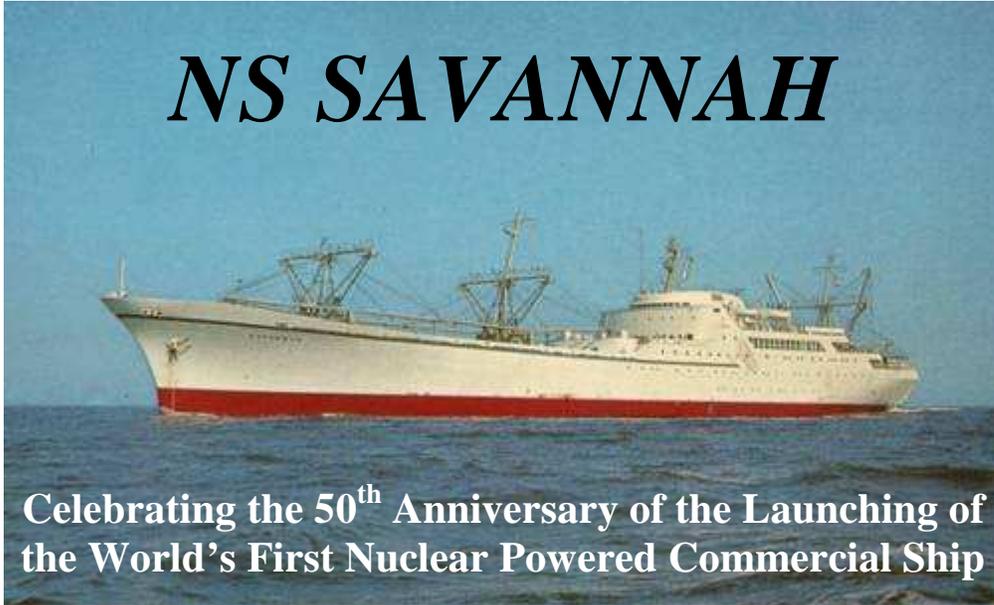


# *NS SAVANNAH*

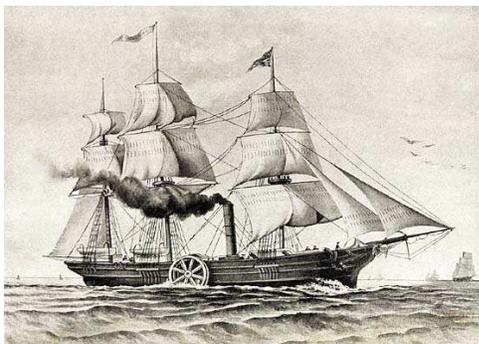


Tuesday, July 21, 2009 marks the fiftieth anniversary of the christening and sliding launching of the Nuclear Ship (NS) SAVANNAH in Camden, New Jersey. July 21<sup>st</sup> in 1959 was also a Tuesday; unusual for such gala shipyard events. Perhaps a weekday was dictated by the schedule of the ship's sponsor, First Lady Mamie Eisenhower.



Although the SAVANNAH's operational career was short, this streamlined combination passenger/cargo vessel is currently experiencing somewhat of a rebirth. At present, she is berthed in Baltimore, undergoing radiological cleanup and preservation work by the Maritime Administration (MARAD). The maritime agency's hope is that the world's first nuclear powered commercial ship will eventually become a floating museum.

By late spring last year, restoration work on the SAVANNAH has progressed to the point where she appears, at least externally, as she did when first placed in service. This photograph depicts her all dressed up to help observe National Maritime Day in 2008. Her current color scheme replicates the original, based on contemporary 1959 documents and color charts discovered via archival research.



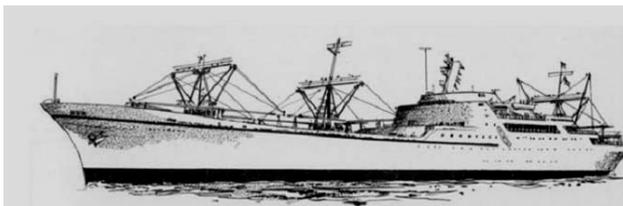
This year not only marks the 50<sup>th</sup> anniversary of NS SAVANNAH's launching, but it is also the 190<sup>th</sup> anniversary of the first-ever transoceanic voyage made under steam power by her namesake, an American designed and built steamship also named *Savannah*. Appropriately, the starting point for that historic voyage was the seaport of Savannah, Georgia.

This year, MARAD is planning a series of events between July 17<sup>th</sup> and 19<sup>th</sup> to celebrate and commemorate SAVANNAH's launching. These include:

- An open house, free to the public, onboard the vessel on Sunday, July 19<sup>th</sup>
- Reunions onboard the ship for former crew members and support staff
- An invitational fundraising dinner for the NS Savannah Association, Inc., a 501©(3) non-profit organization dedicated to the conservation of the ship

It all started in 1955, when President Dwight D. Eisenhower proposed building a nuclear-powered merchant ship as a showcase for his Atoms for Peace initiative. The next year, Congress authorized construction of such a vessel under the auspices of the Atomic Energy Commission (AEC), MARAD and the Department of Commerce. The name SAVANNAH was selected to mark another first in American commercial maritime history; the generation of steam by nuclear fission.

SAVANNAH was always intended to be a demonstration of the technical feasibility of nuclear propulsion for merchant vessels, and never was expected to be commercially competitive. She was also designed to



be visually impressive; more like a yacht than a bulk cargo vessel. In that regard, noted naval architect George Sharp certainly succeeded, as this developmental sketch indicates.

In addition to her cargo-carrying capability, SAVANNAH was also configured to provide accommodations for sixty passengers. Amenities included air-conditioned staterooms (each with individual bath), a dining room that could seat 100, a lounge that doubled as a movie theatre, a library, and a veranda equipped with an outdoor swimming pool.

Accommodations for an unusually large crew of 124 were also provided, including unique facilities necessary for the operation and maintenance of a nuclear-powered ship. A contract for her construction was awarded in 1957 to New York Shipbuilding Corporation (NYSC) of Camden, New Jersey. Manufacture of her nuclear reactor and related apparatus were provided by Babcock & Wilcox (B&W).

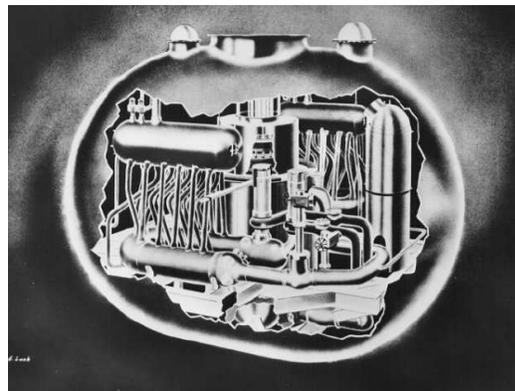
The keel for NYSC Hull #529 was laid on the largest covered, sliding shipway at Camden on National Maritime Day, May 22, 1958. With the wave of a 'magic wand' the keel was ceremoniously laid by Patricia Nixon, wife of the Vice President. Actually, her wand, which contained a minute amount of radioactive material, caused a nearby Geiger counter to be activated. That was the cue for a crane operator to swing the first keel section into place.



The ship's hull was constructed utilizing conventional methods. But the reactor and its massive containment vessel received special treatment. A full-scale mock-up of the reactor plant, surrounded by an outlined skeleton representing the

containment vessel, was constructed at the Camden yard while the ship was under construction.

This practice, borrowed from the nuclear navy, not only minimized unforeseen problems in construction, but also served to train the initial crew in reactor maintenance.



Construction work proceeded on schedule, in spite of the necessity for her shipbuilders to deal with the complications of installing the first reactor vessel they had ever encountered into a ship being built on a sloping shipway.

In many other aspects, SAVANNAH was, from a shipbuilder's standpoint, not all that different from bulk cargo carriers of that era, as the following basic ship characteristics illustrate:

Length: 596 feet; Beam: 78 feet  
Displacement: 9,900 long tons; Gross Tonnage: 13,599 GRT  
Speed: 21 knots, nominal; 24 knots, maximum  
Propulsion: Steam turbines rated at 20,300 SHP; one propeller

SAVANNAH's source of steam made her unique. Over 60 % of her total cost of \$46.9 million went to the purchase of her 74 MW nuclear power plant and initial load of fuel. Unlike other commercial vessels, which have to frequently acquire fuel oil, SAVANNAH's 32 fuel elements provided her with the capability of steaming 300,000 nautical miles at a sustained speed of 20 knots.

By early July 1959, construction on the nation's first (and what proved to be its only) commercial nuclear ship had progressed to the point of launching. First Lady Mamie Eisenhower did the honors, and did them well: sending SAVANNAH down the ways before a large crowd and into the Delaware River without incident.



Twenty-two years previously, another ship named Savannah was christened and also slid down the ways at Camden. She was the Light Cruiser USS SAVANNAH (CL-42).

At SAVANNAH's outfitting pier, months of finish work took place. In 1961, her reactor achieved initial criticality. Following dock and sea trials, NS SAVANNAH was turned over on May 1, 1962 to States Marine Lines, who had leased her from MARAD.

By many measures this first-of-a-kind commercial vessel was a success. She performed well at sea; her safety record was impressive, her fuel economy unsurpassed and her gleaming white paint was never smudged by boiler smoke. However, her cargo holds were limited in size, and her luxurious passenger accommodations took up space that could have been better utilized for carrying cargo. In addition, her large crew required specialized training, and she also required a dedicated shore-based facility for maintenance.



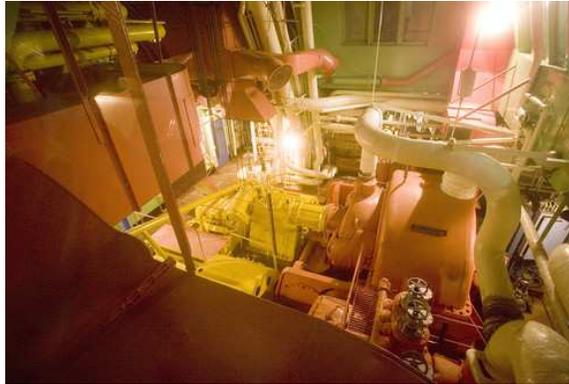
In 1963, while in port and undergoing routine maintenance, a labor dispute erupted; the result of which was that the nuclear-trained engineers refused to go back to work. MARAD cancelled its contract with States Marine Lines and selected American Export-Isbrandtsen Lines to be the ship's new operator. Training an entirely new crew took almost a year. No ship with these characteristics and complications could hope to be commercially successful, over the long haul.

In 1972, it was estimated that SAVANNAH cost the government \$2 million more in subsidies than similar-sized vessels with conventional steam plants. After declaring that her few years of operational experience had demonstrated the feasibility of nuclear power for commercial vessels, MARAD decommissioned her. During her career, SAVANNAH steamed more than 450,000 nautical miles, and visited 32 domestic and 45 foreign ports.

An effort was made to display her in the city of Savannah as part of a proposed Eisenhower Peace Memorial, but that did not materialize. Instead, SAVANNAH's nuclear fuel was removed and she was laid up in Galveston, Texas. Then, in 1981 Congress authorized display of the ship to the Patriots Point Naval and Maritime Museum in Charleston, South Carolina. MARAD retained ownership, and had periodic radiological inspections conducted to ensure public safety.



Once SAVANNAH was made ready for display, tourists could walk her decks, inspect the vessel's passenger spaces, and view her propulsion machinery from an observation walkway that was part of the ship's original 'demonstration' design. SAVANNAH did not prove to be a good attraction. In 1994 she was towed to Baltimore for underwater inspection and maintenance, and then moved to the James River Reserve Fleet, in Virginia.



There she rested, and rusted, until 2006, when MARAD funded the removal of the ship's nuclear systems and much-needed preservation work to support her possible future use as a museum. SAVANNAH was drydocked in Norfolk, Virginia, and later towed to Baltimore,

Maryland for further work; arriving there on May 8, 2008. It will take three years for all her remaining radioactive residue to be removed.

SAVANNAH has been designated a National Historical landmark, and has also been recognized as being historically significant, by the American Nuclear Society and the American Society of Mechanical Engineers.



As SAVANNAH marks the 50<sup>th</sup> anniversary of her launching, tangible memories of that key event in the life of this unique ship, and of her role in the history of America's Merchant Marine provide reminders of President Eisenhower's bold dream that became a reality...albeit ever so briefly.



Launching of N. S. SAVANNAH July 21, 1959  
New York Shipbuilding Corporation

