Section B

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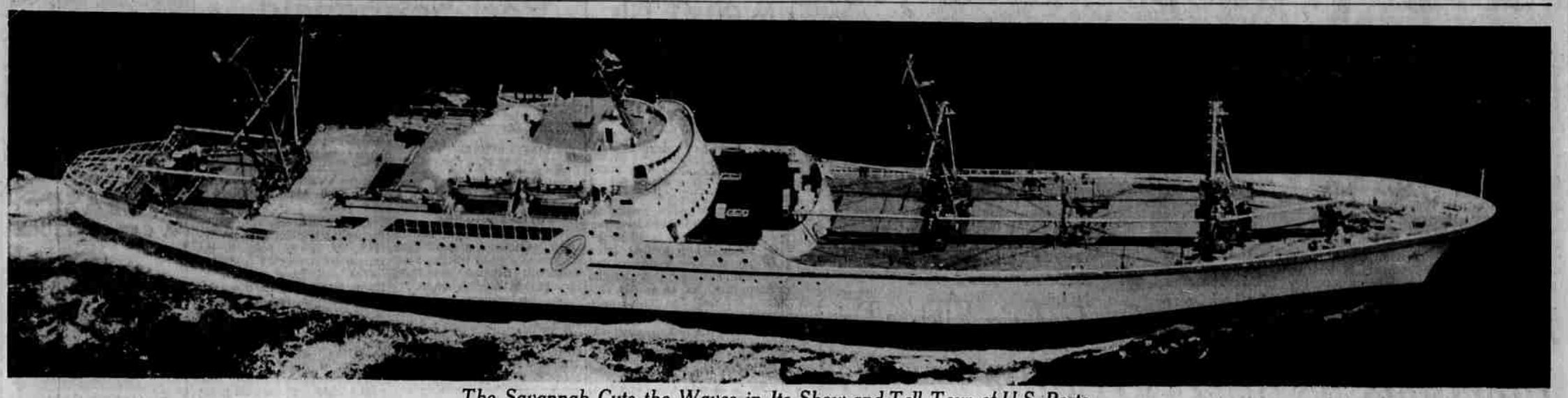


*The Savannah Cuts the Waves in Its Show-and-Tell Tour of U.S. Ports*

**COMMODORE DE GROOTE**
*"It . . . Cannot Blow Up"*

# U.S. Savannah No A-Bomb

By DON BISHOFF
Of the Register-Guard

"The Savannah is as safe as any vessel afloat. Safer."

Grey-haired Commodore Gaston R. De Groote, master of the nuclear-powered ship Savannah, sat in his cabin last week. He was talking about his latest charge—then tied up at a Portland dock.

Safety is a word that comes up often in discussion of a ship powered by the same force that has devastated entire cities. Third Mate James Nolan described a fear common among those who know little of the ship; "People have the feeling that this might go up like an atom bomb."

But De Groote said flatly, "It definitely cannot blow up. . . . We have controlled fission—as well-controlled as the cylinders in your car."

Stored away deep within the Savannah's innards, behind tons of lead, steel, water, and plastic insulation, lies what makes the Savannah different from any other modern passenger-freighter—the nuclear reactor, or "atomic furnace."

Eight and a half tons of uranium oxide, formed into 682,200 pellets, each the size of a half-inch stack of dimes, is the fuel for this furnace. When the reactor is set into operation—allowing neutrons to bombard the surrounding uranium atoms and thus create heat—water is passed through the furnace and super-heated.

This water in turn heats other water, turning it to steam. The steam turns two giant turbines which transfer their power to the ship's propeller.

In other words, the ship is run much the same way as a conventional vessel, except that an atomic furnace instead of an oil one, is used to make the steam.

On a single loading of its 8½ tons of fuel the Savannah will be able to sail for 3½ years, or some 350,000 nautical miles. A conventional ship would need about 90,000 tons of fuel oil for the same trip.

The entire process is carried on in a sealed compartment, away from the eyes of the 110-man crew and the passengers. A five-man crew of "health physics" scientists carry on 24-hours-a-day tests to make certain that no atomic radiation or contamination seeps out of the sealed area.

The Atomic Energy Commission—which built the Savannah along with the federal Maritime Commission—says the reactor is so well shielded and insulated that the ship could withstand a broadside ramming from 99 per cent of the ships afloat today without danger of penetration of the reactor area. This same shielding protects passengers and crew, the AEC says.

There are some exterior signs of the ship's atomic power.

For one thing, there's no smokestack atop the streamlined superstructure—no fire in the furnace below to make smoke. For another, the three-interlocking-circles symbol of the atom is used throughout the ship—on the officers' uniform sleeves, on eating utensils, in the passenger dining room light fixtures.

But ordinary seamen still swab the decks and polish the brass. So far there's been no atomic substitute devised for these duties.

What are the advantages of a nuclear-powered ship?

"At the present time, none are visible anywhere," said Commodore De Groote. "At the present time it is more costly, it isn't producing anything . . . it's not exactly built for speed at all (20 knots cruising speed).

"But we have to conserve our fossil fuels (oil, coal) because of the large consumption. In the future if we expect to have nuclear-powered vessels, we must start someplace, and this is it. From this one we'll learn a lot . . . I'm sure as we gain in experience we'll be able to compete with fossil-fuel ships."

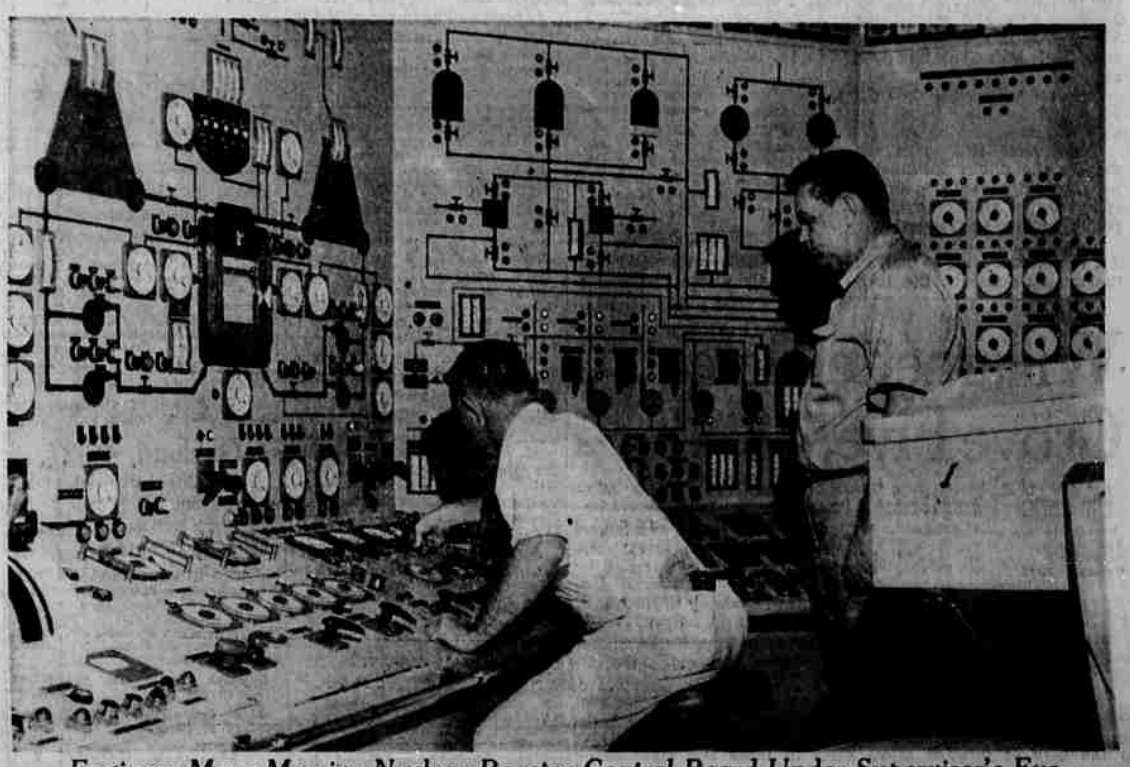
Sometime, the AEC envisions, atomic ships will be able to operate on longer runs at higher sustained speeds. And the AEC says nuclear ships will be able to carry larger cargoes because reactors and their fuel require less space than conventional power plants.

Cargo is now being carried in the ship's 9,200-ton-capacity holds (the ship brought 400 tons of canned pineapple to Portland from Hawaii), and a few passengers are being transported in the posh passenger facilities, which can hold up to 60 passengers.

But the ship is primarily a combination floating test laboratory and traveling exhibition, designed to test and demonstrate the advantages of nuclear power—not produce revenue. It's currently on a "show-and-tell" tour of U.S. ports, and is expected to make a world tour later.

As its namesake, which in 1819 was the first steam-powered ship to make an ocean crossing, the NS (for Nuclear Ship) Savannah is a pioneer. If it's a good pioneer, more of its kind may follow.

(Register-Guard photos by Mirko Pitner)



*Engineer Mans Massive Nuclear Reactor Control Board Under Supervisor's Eye*

*Enclosed Veranda, Part of Posh Passenger Facilities, Opens Onto Swimming Pool*

*Even on Nuclear-Powered Ship, Decks Must Be Swabbed, Windows Washed*

*Nurse Mary Furlow, One of Two Women Aboard, In Savannah's Operating Room*

*Richard Deakin, Health Physics Monitor, Checks Radiation in Ship's Lab*