Life on a Nuclear Submarine

What Did I Do

I was an Electronics Technician Nuclear Power (ETN)

I repaired electronics on ships and on shore

I operated and maintained Naval Nuclear propulsion plants at prototype and aboard Submarine

My Navy Career

Studied

- Electronics Theory and Practice
- Nuclear Power plant theory, operation, metallurgy, chemistry and radiation

Operated and taught at the reactor plant Prototype (D1G, Ballston Spa NY)

- Taught reactor physics, health physics and reactor plant operation

Served on the:

- USS Wright CC2
- Ethan Allen SSBN 608
- USS Newport News

ME IN 1969

How Did I End Up On A Sub, Anyhow?

Detailer: You are going to sub school

Me – I didn’t volunteer!

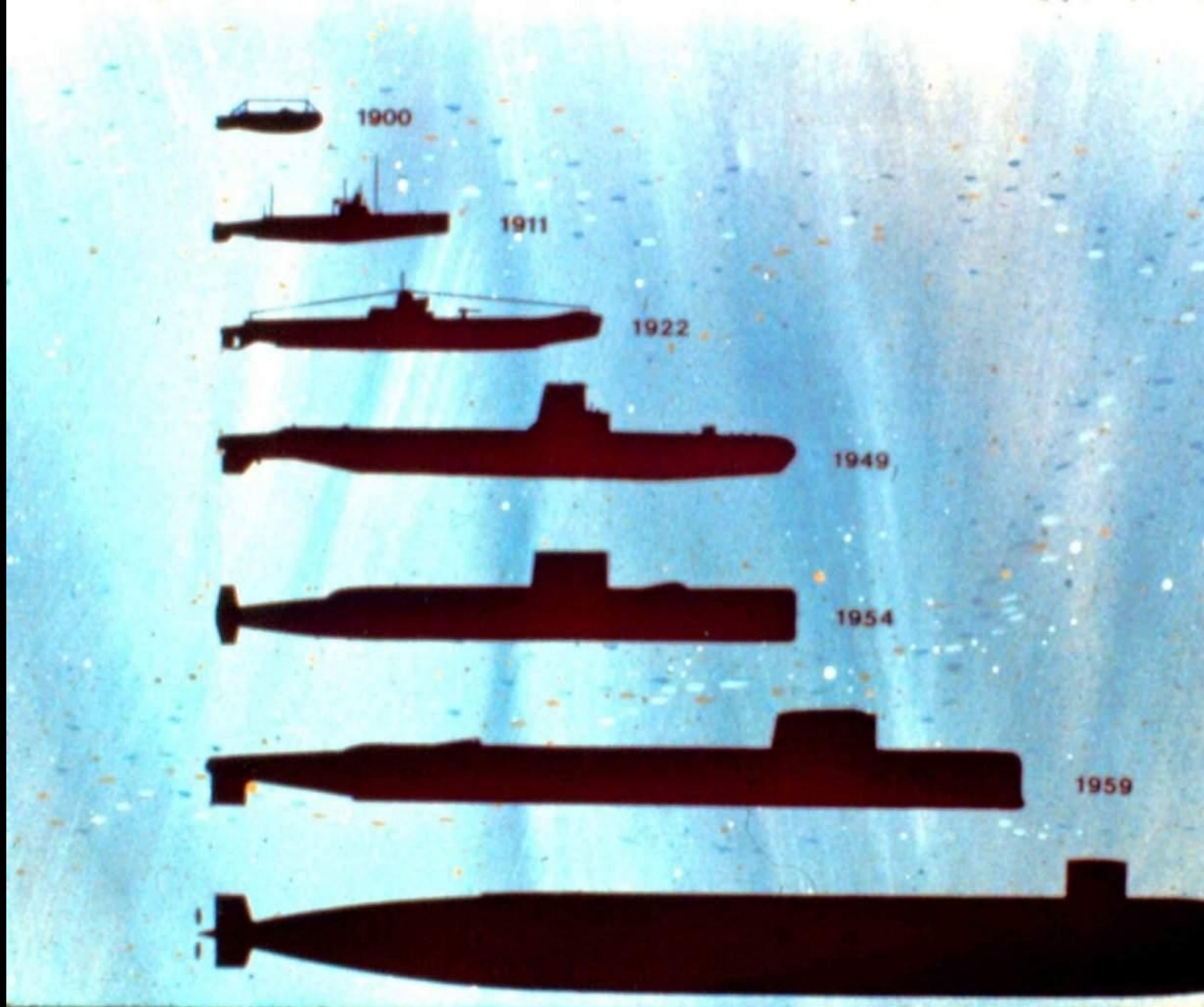
Detailer: So what?

Me – I can’t pass the physical!

Detailer: So what?

Therefore, I went to sub school

Nuclear Submarines are not like WWII Subs



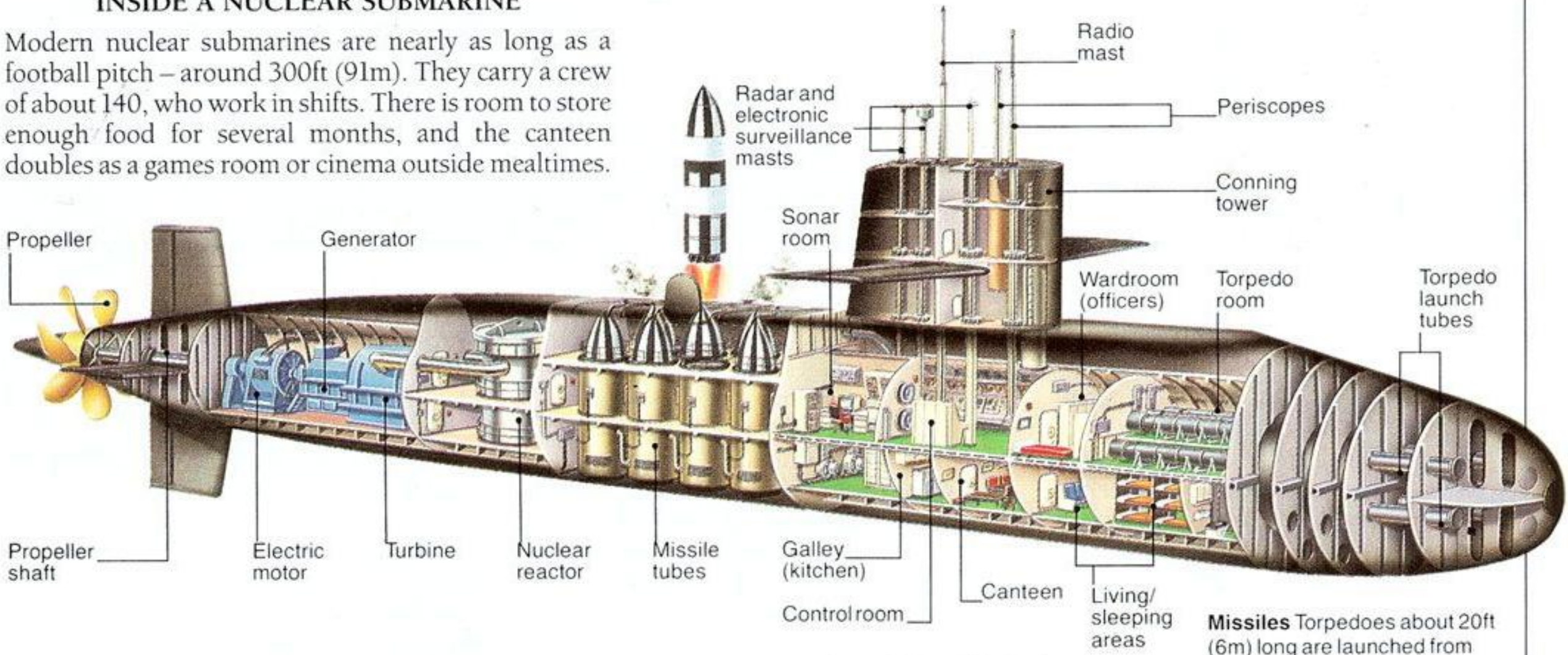
My Boat – Ethan Allen SSBN 608

- Length: 410 ft
- Beam: 33 ft
- Speed:
  - 16 kt surface,
  - 21 kt submerged
- Crew:
  - 16 officers
  - 128 enlisted
- Armament:
  - 16 Polaris ballistic missiles
  - 12 torpedos


608

INSIDE A NUCLEAR SUBMARINE

Modern nuclear submarines are nearly as long as a football pitch – around 300ft (91m). They carry a crew of about 140, who work in shifts. There is room to store enough food for several months, and the canteen doubles as a games room or cinema outside mealtimes.



Power Heat from the nuclear reactor, fuelled by uranium, generates steam to drive the turbines that turn the vessel's propeller shaft.

Nuclear weapons On some submarines, long-range missiles for firing from underwater to land are kept in vertical tubes.

Control Room Navigation, steering, and weapon firing are controlled here. Two 'pilots' steer, in front of instruments that show the course, speed and depth.

Missiles Torpedoes about 20ft (6m) long are launched from bow tubes at targets in the water. Aiming is computer-controlled. Missiles that float to the surface then launch into the air to attack ships are fired from the same tubes.

The Crew Schedule for an SSBN

2 full crews – Blue and Gold – they alternate patrols

Schedule (starting at the end of a patrol)

- 1 week turnover to new crew
- 2 - 3 months leave and training (in New London)
- Fly to submarine in Rota, Spain (or Holy Loch, Scotland)
- 1 week turnover from old crew
- 3 weeks maintence and stores replenishment
- Patrol ~60 days

What Is A Typical Day Like On Patrol

Submarines operate on a 6 hour "watch" cycle.

The crew is divided into 3 "watch" sections, and each section stands watch for 6 hours, then gets 12 hours off.

During those 12 hours off, a crew member eats, sleeps, trains, and conducts maintenance. As a result, the crew operates on an 18-hour day.

However, the world remains on a 24-hour schedule, which makes the patrol seem even longer

On my second patrol, I was 6 on and 6 off

Crew Berthing

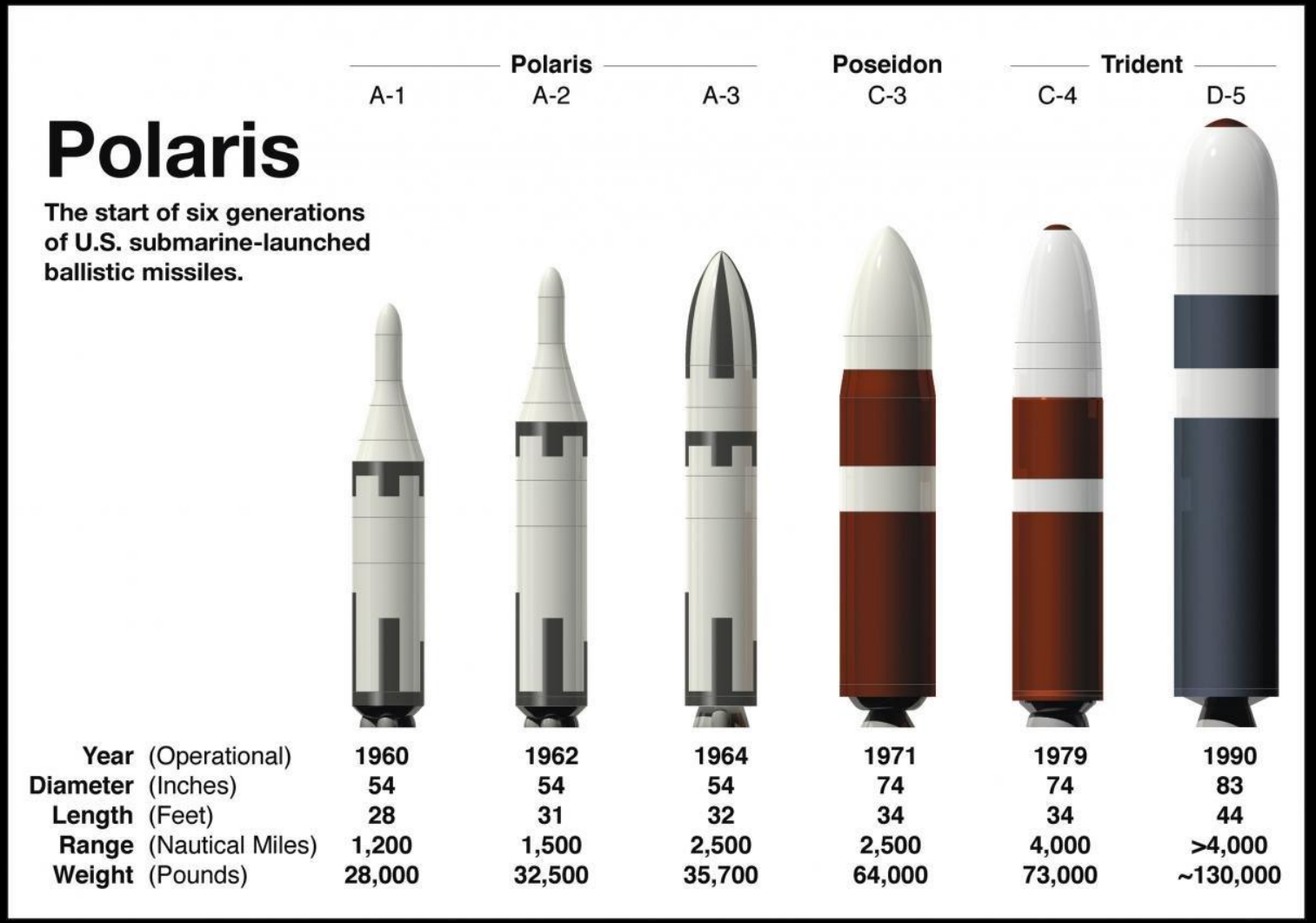
Crew Berthing

MEALS

Relaxation

Missile Compartment

The Missiles

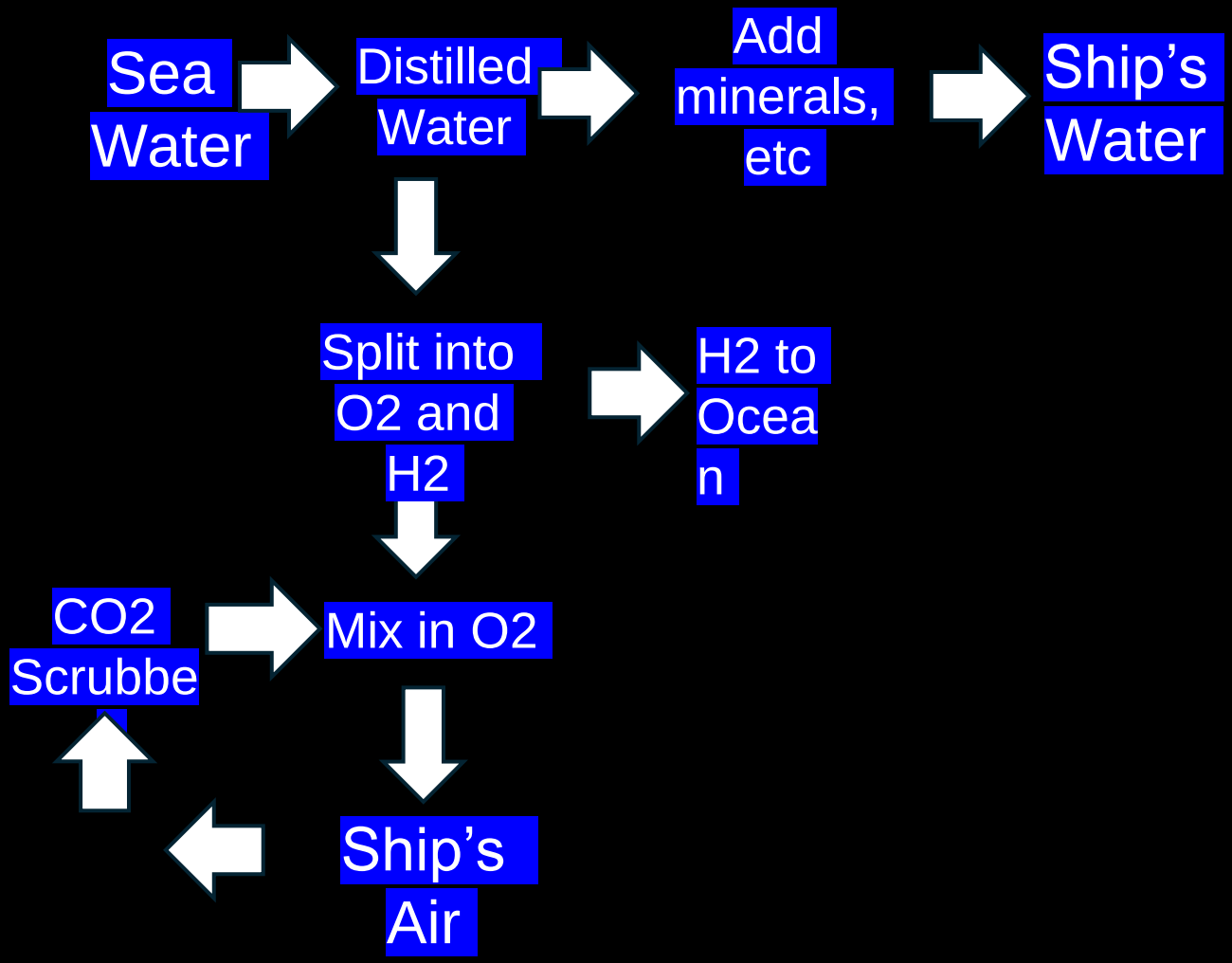


Auxiliary Space

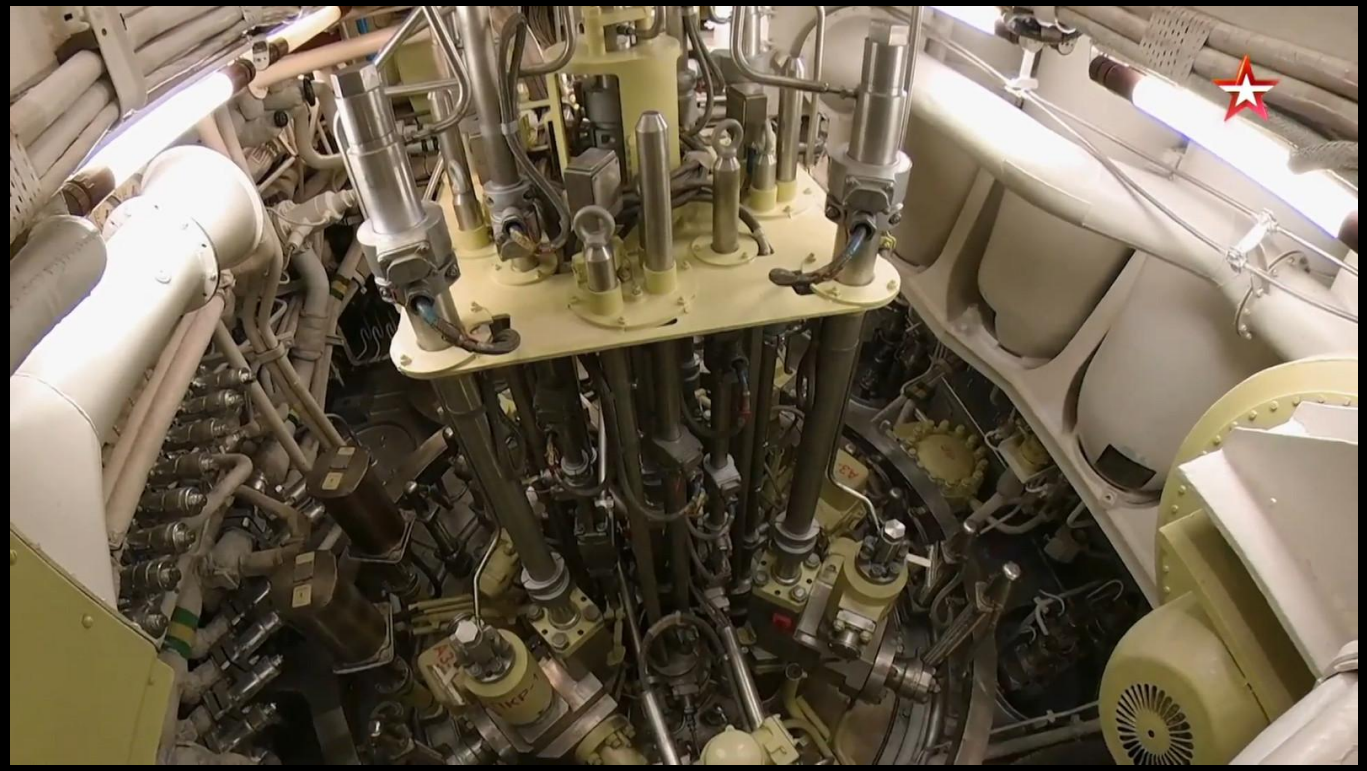
Auxiliary Space Includes multiple critical components such as:

- Oxygen generation
- CO_2 Scrubber
- Fresh water generation
- Diesel Generator
- Battery Room

The Air & Water Cycle

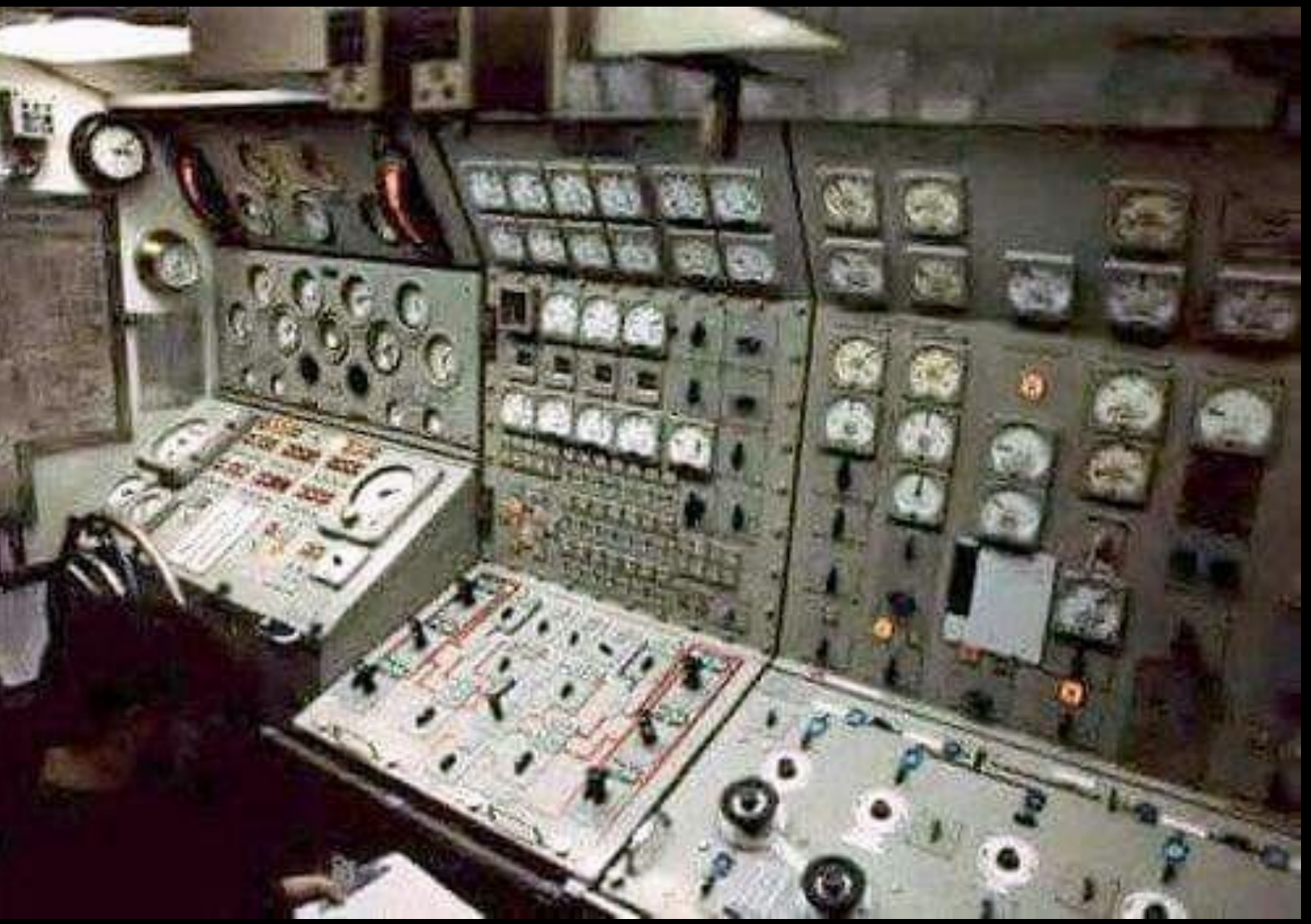


Reactor Compartment



Electrical Panels

Reactor Operations

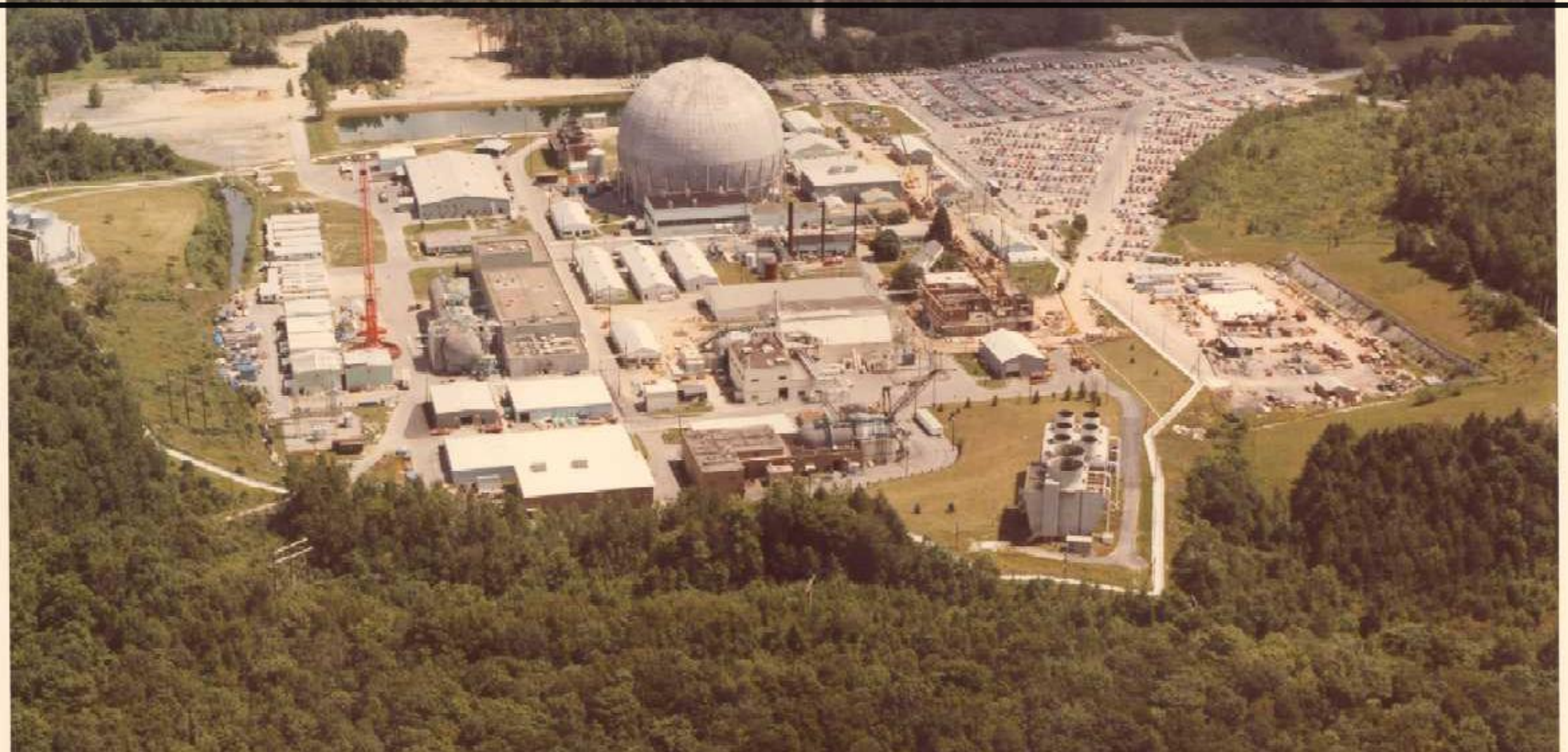


Engine Room


ETHAN ALLEN
SSBN 608
Nautilus
SHIP's STORE
store.submarinemuseum.com

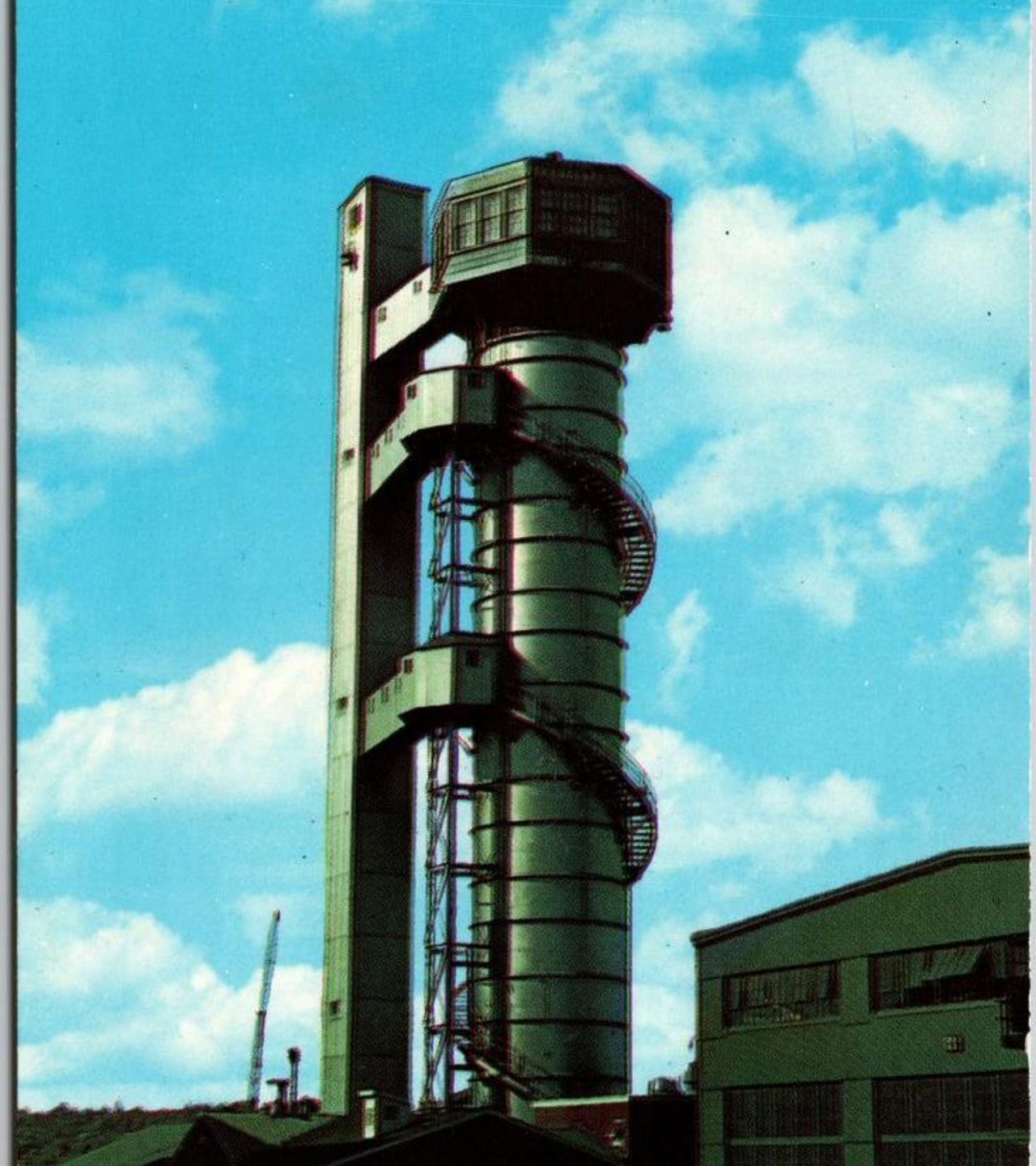
My First Ship – USS Wright CC2

Where I Taught --Nuclear Reactor Prototype



Submarine Escape Tower

- I could not pass this test (can’t equalize pressure
- But – they waived it for me



Nuclear Submarine Control Room

Nuclear Submarine Batteries

Eletrical Plant Control Panel

My Last Ship – USS Newport News CA 148