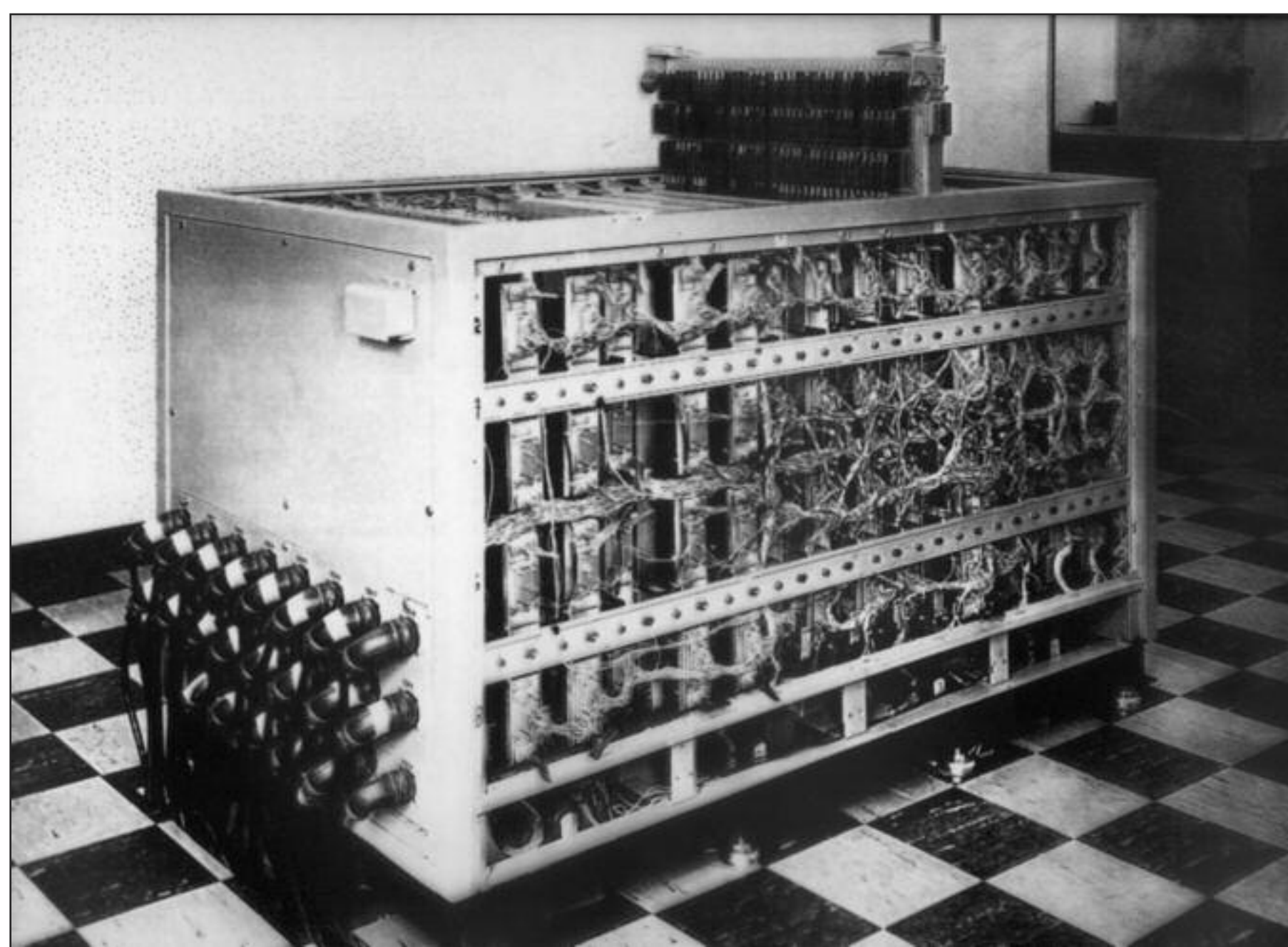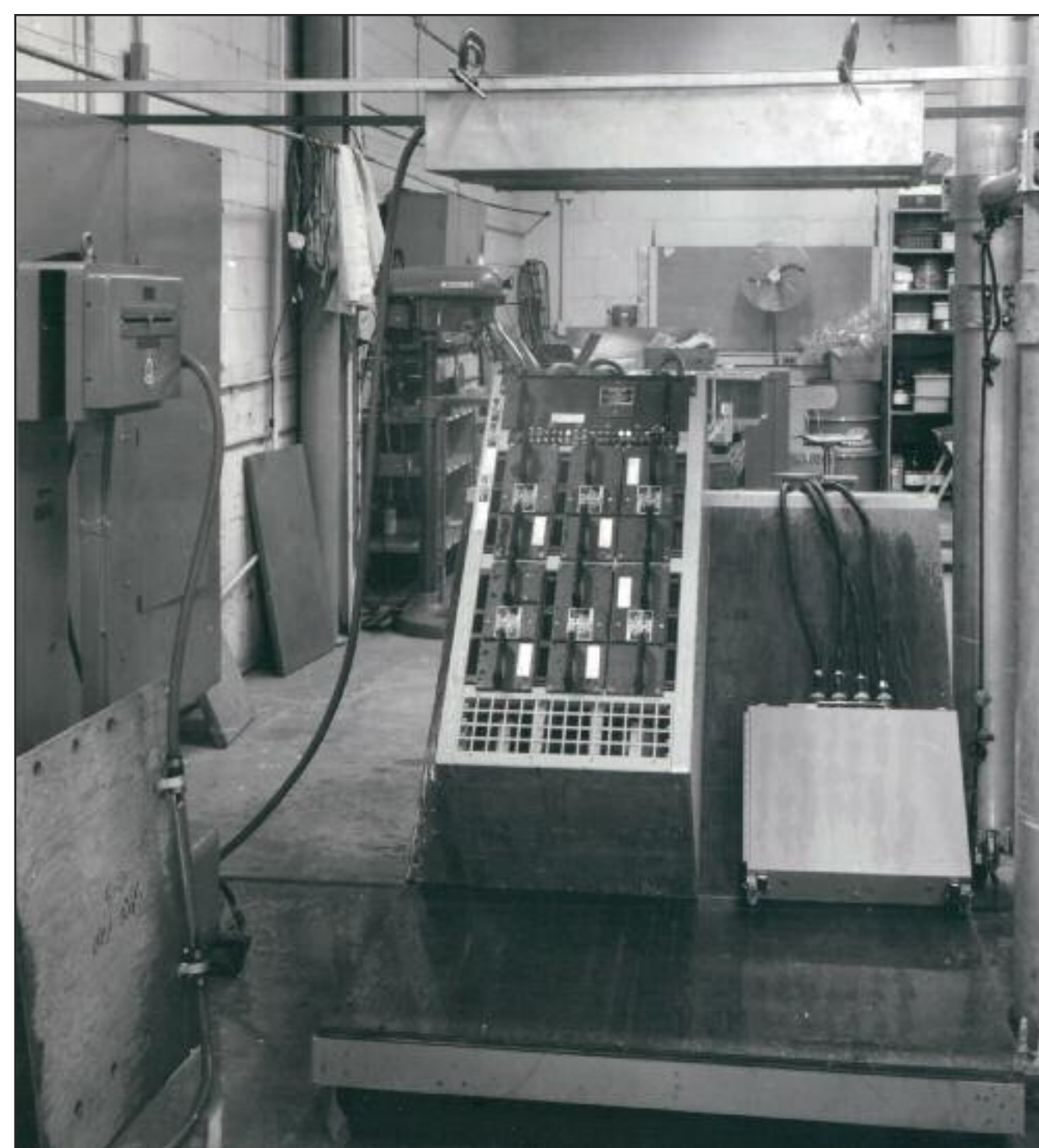# Computers At Sea:
The Naval Tactical Data System

Above: The original NTDS computer, the AN/USQ-17, with its covers off. It was a prototype, designed by Seymour Cray before he left for Control Data in 1957. The finished product, the AN/USQ-20 (installed in 1961) proved to be a very reliable machine.

One of UNIVAC's enduring successes is the Naval Tactical Data System (NTDS). Begun in the 1950s when the company was still ERA, the computers used transistors instead of vacuum tubes which made for a smaller unit. Winning a contract with the U.S. Navy, the company began designing computers to be used on ships and submarines.

While the name of the company changed over the years, designing NTDS computers remained a constant. They followed up the first computer with a second, third, and eventually fourth generation.

Right: An image of the second generation of the NTDS system, the AN/UYK-7, dated 1975. The units were subjected to a variety of tests to ensure their durability. Here it was set at an angle and had water poured over it. The units were also subjected to shock, vibration and electromagnetic interference tests. The computers were exposed to a harsh environment at sea and were designed to continue functioning even in the worst of conditions.

The NTDS shipboard system involved linking multiple computers together to work cooperatively.

George Gray

From: *Sperry Rand Military Computers, 1957-1975*

The second generation of the NTDS system, the AN/UYK-7, was a vast improvement upon its predecessor. One fourth the size and two and a half times faster, it was also designed to be more versatile. However, the Navy's computing needs soon caught up with this machine, and they commissioned yet another computer. UNIVAC designed the first standard naval minicomputer, the AN/UYK-20. Designed to supplement the UYK-7, it was designed for peripheral tasks.

Below: A Sperry UNIVAC employee assembling a AN/UYK-20 minicomputer at the company's Clearwater, Florida, plant. While the units were designed in Eagan, they were assembled in Florida.