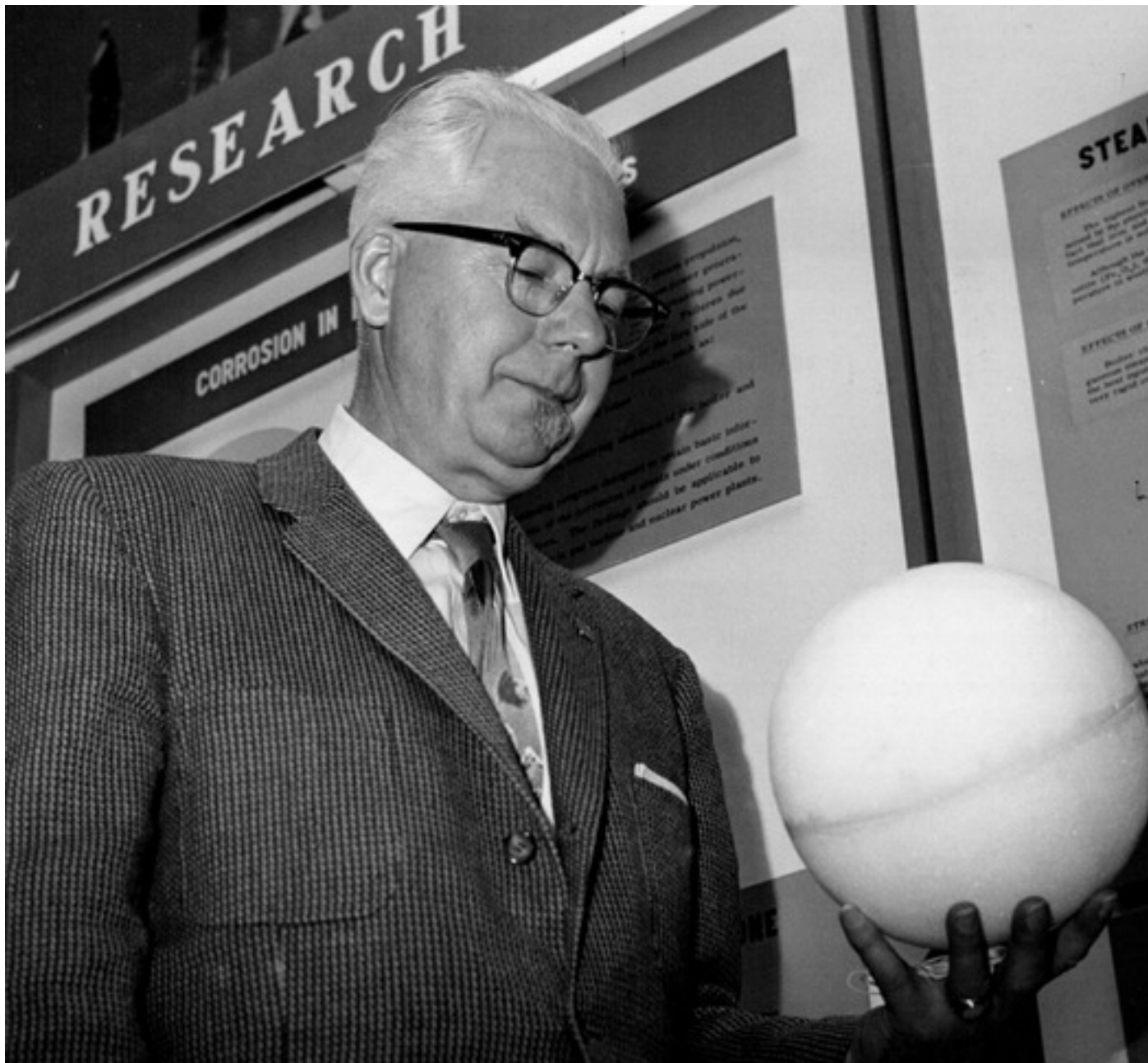


Robert Morris Page: He stayed firmly on history's radar

By Curt Brown
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STAR TRIBUNE FILERobert Page, in a 1960 photo, held a sphere representing the balloon used in satellite radar he helped develop. The Echo satellite reflected microwave signals and helped trace Soviet missiles.

As a physics pioneer, Robert Page helped turn a “radio detection and ranging” system into a household word: radar.

The St. Paul-born, Hamline-educated inventor figured out how to use the same antenna for transmitting and receiving signals bouncing off objects so Allied ships in World War II could accurately find German and Japanese enemies at sea and in the sky.

Dropping two atomic bombs on Japan ended that war 70 years ago. But radar helped win the battles. To wit: Page's radar advances, combined with his British colleagues' work, played a key role in sinking dozens of German "wolfpack" submarines in the Atlantic Ocean in May 1943.

You know that round screen with the streak of light rotating from its center that paints targets as blips of light? That was Page's breakthrough, showing both a target's direction and range for the first time.

"No one did more than Page to bring forth working radar from the mass of theoretical possibilities," according to *Invention and Technology* magazine.

A short biography

Career: 40 years as a physicist at the U.S. Naval Research Laboratory in Washington, where his radar innovations helped Allied forces target German and Japanese aircrafts and ships.

Minnesota connections: Born in St. Paul in 1903. Returned to Minnesota after he retired. Died at 88 at Fairview Southdale Hospital in Edina in 1992.

Education: A bachelor's and honorary doctorate from Hamline University and a master's degree in physics from George Washington University.

Honors: A member of the Minnesota Inventors Hall of Fame; 1946 Certificate of Merit from President Truman for his aid to the war effort; 1960 Presidential Award for Distinguished Civilian Service from President Eisenhower.

Footnote: 19 sets of Page's radar systems were aboard U.S. warships at Pearl Harbor, but none were turned on Dec. 7, 1941, when the Japanese attacked.

But it was his ability to overcome money troubles — first as a child growing up in poverty and later as a government scientist during the cash-strapped Depression — that made Page's radar innovations all the more remarkable.

One of nine kids, Page was the son of a Methodist preacher and house painter. His father gave up the pulpit for a hardscrabble farm in Eden Prairie in 1909 when Page was 6.

He left his one-room school in ninth grade, moving in with his older brother, Fred, an electrician in St. Paul. He helped his brother on electrical projects while attending St. Paul Central High School. He then moved to Minneapolis, where he tended furnaces and went to West High School.

He dropped out for a year because of financial woes, driving a school bus between Bloomington and Eden Prairie. He finally graduated from West High School in 1923, at 20, and headed to Hamline University in St. Paul to major in religion like his father. "I intended to study the ministry," he said. "But I got more enjoyment and did better work in science."

He graduated in 1927 and went immediately to Washington, D.C., for a job at the U.S. Naval Research Laboratory. By 1934, he was testing a pulsing radar transmitter that bounced radio waves off a plane — tracking the aircraft for a mile over the Potomac River.

The U.S. Senate plunked down \$100,000 for further research of the secret system, but the government wallet would soon shut. Despite the looming war and a need to detect emerging bomber planes from long range, Page's radar program was a low priority. With the Depression drying up resources, the 31-year-old inventor faced a financial shutdown.

“The bureau of engineering decided we were getting nowhere and canceled the project,” he said, years later.

He was given the go-ahead to focus on high-frequency communications. So he put a phone jack on his radar experiments and plowed ahead.

By 1937, his radar was passing tests at sea on the USS Leary. “We threw the switch and within a few seconds an airplane at an altitude of three miles stuck out on our sets like a sore thumb.”

Great Britain's Robert Watson-Watt was independently working on a radar project and has always grabbed most of the credit. But Page scholars, including his son John in Oregon, insist he was nine months ahead of the Brits in 1934.

Luckily, they were on the same side and worked together, enhancing radar to detect German and Japanese targets and tilting the war the Allies' way.

Page often had to fight for the credit he deserved, going to court to protect the dozens of patents he was awarded.

“Practically all of the basic patents in radar are in my name,” he said in 1960, the same year the New York Times wrote: “From the start, Dr. Page has been the idea man behind radar.”

He was named the director of the Naval Research Laboratory in 1957. His 1960 over-the-horizon radar enabled military experts to watch Soviet missile launches from 3,000 miles away — a mostly forgotten factor in the Cold War.

Page wrote a book, “The Origin of Radar,” in 1962 and was honored by presidents Truman, Eisenhower and Reagan — the last of whom wrote to him in 1986 on the 50th anniversary of his major radar breakthrough to say “our nation's scientists continue to rely on your research.”

Page retired in 1966 after nearly 40 years at the naval lab. After a few years in California, he returned to Minnesota. He lived in Bloomington until he died of heart failure in 1992, a few weeks shy of his 89th birthday.

Through it all, he remained deeply religious. “A lanky man who wore a distinctive goatee,” the New York Times said in his obituary, Page taught Bible classes during his decades in Washington. After his retirement, he often lectured on the connection between science and scripture.

He once said God showed him how to create radar. And the ancient prophets, he argued, made predictions about Jesus centuries beforehand “only through a knowledge obtained from a realm which is not subject to the laws of time as we know them ... things which to the natural world, or the scientific world, remain to this day completely inexplicable.”

Curt Brown's tale on Minnesota's history appears each Sunday. Readers can send him ideas and suggestions at mnhistory@startribune.com