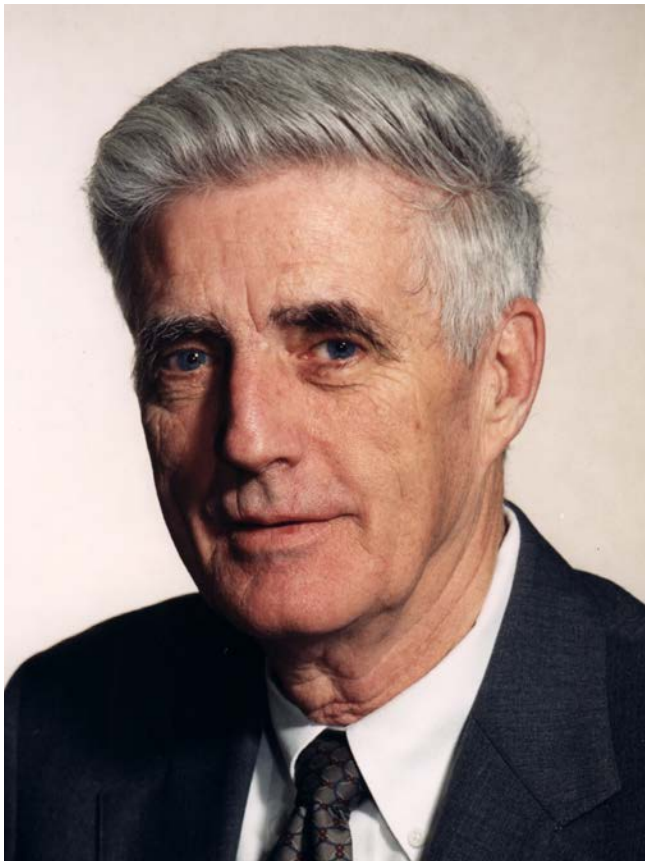

WALTER B. LABERGE

1924–2004

Elected in 1987

"For outstanding engineering contributions to the national security through technical leadership in industry and in extensive public service."

BY MALCOLM ROSS O'NEILL

WALTER BARBER LABERGE died in Aptos, California, on July 16, 2004. He was 80 years old.

Walt was born March 29, 1924, to Walter Coloney LaBerge and June Barber LaBerge. The eldest of four, he grew up in Maywood, Illinois, along the west bank of the Des Plaines River, just outside Chicago. In 1944 he received his bachelor of science degree in naval engineering from Notre Dame University and headed off to the war with his Navy ROTC classmates. He was soon assigned to Yard Mine Sweeper (YMS) 165 and deployed to the Western Pacific. By war's end, as only a lieutenant junior grade (LTJG), he had become the ship's captain.

In 1946 he returned to Notre Dame, received his BS in physics, and enrolled in the doctoral program. During that period, he met and fell in love with Patricia Anne Sammon, who was attending St. Mary's and had grown up in nearby River Forest. They were married in the fall of 1949.

After receiving his PhD in physics in the spring of 1950, Walt was selected as a senior aerospace engineer for the first infrared "heat homing" air-to-air missile system, Sidewinder, under development at the Naval Ordinance Test Station in China Lake, California. At its peak, Sidewinder was both a Navy and Air Force program with the highest priority in both services.

In 1955 Walt was selected as manager for the Sidewinder program, which had grown to a $100 million project. In 1956 he was voted one of Five Outstanding Young Men of California by the California Chamber of Commerce. That same year, Sidewinder was entered into service. More than 60 years later, Sidewinder is still the most widely used air-to-air missile, in more than 40 nations throughout the world. The Sidewinder AIM-9 is one of the most mature, least expensive, and most successful missiles in the US weapons inventory. Describing the development of Sidewinder, Walt wrote:

> The marvel of Sidewinder was that it was made up, for the most part, of well-understood turn-of-the-century, fifty-year-old technology, inspirationally collected into a missile which led the world into guided weapons and the US into air warfare mastery.

In 1957, with a successful physics and engineering record and major technical management experience behind him, Walt was offered a significant job in the aerospace industry. Philco Corporation selected him as director of engineering at its Western Development Laboratories (WDL) in Palo Alto. In 1960, under his direction, Philco launched the world's first active repeater satellite, the Courier 1B. The company was also contracted by NASA to design and build the now iconic front-wall display for Mission Control in Florida, which was later refined in Houston.

In 1961 Philco merged with Ford Motor Company and became Philco-Ford Corporation. The new company bid on the contract to design, procure, and install all of the instrumentation for the new NASA Mission Control Center then under construction at Clear Lake, Texas, just south of Houston. Had it not been for the merger with Ford, the company most likely would not have been considered for the job because of the magnitude of the engineering resources required. Walt wrote:

> The selection process by which Philco-Ford was chosen was particularly provident. The written discussion of how we would do the job and our proposed costs were, it appeared,

> not as important as the orals which would follow if we made the cut…. they placed much importance on face to face discussions with the proposed team leaders and with senior corporate management.
>
> Dr. Chris Kraft, who later became a close friend, was the senior NASA selection official. . . . As I remember it, after I had described Ford's intense commitment to our country's endeavor to go to the Moon, I discussed my own China Lake background and my own experience of how government engineers need to work with their industrial contractors and vice versa.

Philco-Ford was awarded the contract in early 1962 and Walt was selected to lead the project. NASA's Mission Control Center was often cited as the most highly automated information correlation center in existence because of the vast amount of data that it processed (provided under separate contract by IBM).

Although Philco-Ford was selected because of its ability to quickly assign resources to the project, during the first six months staffing was a principal problem. Walt wrote:

> The problem was wiring up all the connections needed to tie together all the computers to the information sources and to the consoles of the flight controllers. After the wires were laid, there were then literally a zillion connections to be made and manually verified. It was a low-tech, manually intensive job where lots of people were needed. And we had far less than we needed to make the schedule NASA demanded and we had signed up for.

According to a December 2013 article in *Engineering & Technology Magazine* ("NASA's Control Centers: Design & History" by Layne Karafantis):

> The statistics were truly astounding. In 1965, the Mission Control Center housed the largest assembly of television switching equipment in the world—larger even than commercial studios in New York City—as well as the largest solid-state switching matrices of 20 megacycle bandwidth. This system was driven by more than 1,100 cabinets of electronics

> equipment, 140 command consoles, 136 television cameras, and 384 television receivers. Some 10,000 miles of wire linked this behemoth with more than two million wire connections.

In 1966 Walt returned to Philco-Ford's Palo Alto site and became vice president of the WDL Electronics Group. But he remained involved in operations at Houston Mission Control and was there for the Apollo 11 lunar landing and the Apollo 13 aborted mission. He worked closely with many US astronauts, including Neil Armstrong, Mike Collins, Jim Lovell, and Wally Shirra, as well as NASA flight directors Chris Kraft, Gene Krants, and Glynn Lunney.

He returned to government service in 1971 as technical director of the Naval Ordinance Test Station in China Lake, where he had first worked as a young physicist 21 years earlier.

In 1973 he was nominated and confirmed by the Senate as President Nixon's assistant secretary of the Air Force for research and engineering. In 1976 he served as assistant secretary of NATO for Defense Support in Brussels. And in 1977 he was confirmed again, this time as President Carter's under secretary of the Army. In 1980 he became deputy under secretary of defense for research and engineering.

After his stint in the Pentagon, in 1981 he became corporate vice president of Lockheed Missile and Space Company in Sunnyvale, California. He worked there until 1989, when he retired as vice president for advanced planning.

In retirement Walt remained active in the engineering field for both government and academia. He was chair of the Army Science Board, professor of physics at the Naval Postgraduate School, visiting professor at the Defense System Management College, and senior researcher at the Institute for Advanced Technology at the University of Texas in Austin.

In his honor, the Institute for Advanced Technology created the Walter B. LaBerge Distinguished Leadership Award for those excelling in science and engineering. The award states:

> The Walter B. LaBerge Distinguished Leadership Award is named in honor of the late Walter Barber LaBerge, pioneering

> aerospace research scientist and esteemed public servant whose wisdom, inspiration, and selfless service were integral to our national Defense and Space programs. Ever an astute leader, Dr. LaBerge not only shepherded the essential programs of his day, he nurtured the seeds of future scientific and technical military advances. As chief scientist at the Institute for Advanced Technology, his leadership of research at the frontiers of knowledge and his enthusiastic mentorship of young scientists and engineers propelled the Institute to international leadership in electromagnetic launch and hypervelocity physics science and technology.

In his *Memoirs for My Children* (self-published in Austin; 1999), Walt wrote that one of the most influential classes he ever took was creative writing in high school. He first used his writing skills as the assistant sports editor for the high school newspaper. Besides being elected to the National Honor Society, he was president of the Algemetricians and a member of the Senior Science and French clubs.

He used the skills first developed in high school in countless papers, technical presentations, and speeches throughout his career. He put his fluency in French to good use while living in Brussels working at NATO, and later after he purchased an apartment in the south of France, which he visited as time permitted.

Most importantly, Walt had a profound interest in history, especially the Civil War. He used that knowledge in many of his speeches and papers to draw similarities between the past, present, and future. Here is the opening of one of his many writings, *Lessons from the Civil War* (published in the *Indiana Historical Society Military History Journal* in January 1980):

> It is a pleasant leisurely twenty minute walk from the mall entrance of the Pentagon to Arlington National Cemetery. As one strolls up the gentle incline of the cemetery the intensity of the Pentagon is left behind. The competitive pressures of how to get things accomplished give way to more reflective thoughts of what the Pentagon should do and why. In the peace and serenity of that National Cemetery and of our many

> battlefield parks one can draw insights into today's problems from those who lived their lives in the service of their country. It is about the help to be drawn from those who have preceded us that I wish to write.

He continued:

> [O]ne last lesson important above all others that flows from our Civil War heritage is an appreciation of how very good we can be if we only try. We in America must appreciate what we can do as individuals in a gigantic, impersonal system. We need to be reminded of the many times that one ordinary man made a difference. The Civil War is replete with such men who, while considerate of others, believed in themselves.

How apt that he would write about one ordinary man's ability to make a difference.

Walt himself started from very humble beginnings. His father was an industrial brush salesman for the Osborn Manufacturing company. His grandfather was an immigrant from the French-speaking town of Châteauguay, Québec, just south of Montreal, who came to St. Joseph, Missouri, in 1873. Walt was very proud of his family history and an avid genealogist, tracking his family line back to Robert de la Berge who came over from Normandy to Québec in 1658.

Among Walt's greatest thrills was, at the age of seven, riding in the cab of a locomotive conducted by his maternal grandfather and getting to pull the steam whistle while going 60 miles per hour. His second greatest thrill was some 50 years later when he was outfitted in a space suit and strapped into the cockpit of the SR-71 Blackbird, the world's fastest air-breathing plane, with 160,000 horsepower of thrust. He flew in it at over Mach 3 at an altitude of more than 80,000 feet, looking out at the stars above and the curvature of the Earth below.

Walt's portfolio was enormous and influential, and he was widely acknowledged as one of the country's finest leaders in the fields of aerospace and national security system management. He was a physicist and engineer who embodied an

exceptional combination of competence, commitment, courage, integrity, and imagination.

After his first job with the Sidewinder missile, he quickly rose to become an important member of the team that got us to the Moon. He helped steer the future of the Army, Air Force, and NATO. He played an important role at Lockheed developing systems that are critical today. And late in his life, he spent his days teaching at the Navy Postgraduate School and solving physics and engineering issues on the electromagnetic railgun system under development at the Institute for Advanced Technology.

In addition to his election to the NAE in 1987, he received many honors:

- American Theater WWII, 1944
- Pacific Theater WWII, 1945
- Outstanding Young Men of California, 1956
- NASA, Apollo Achievement Award, 1969
- US Navy Superior Civilian Service, 1970
- US Air Force Distinguished Service, 1975
- US Army Distinguished Service, 1979 & 1993
- Department of Defense Distinguished Service, 1980
- Award of Honor, University of Notre Dame, 1990
- The Walter B. LaBerge Distinguished Leadership Award

Walt's beloved wife of 32 years, Pat, succumbed to cancer in 1982. She had been a professor of speech pathology at San Jose State University, and then had a career as a speech therapist in the public school system while raising five children as the family moved around the world following Walt's various assignments. Walt later married Elizabeth (Bette) Ann Deeley, whom he had known many years before as a student at Proviso Township High School in Maywood. She died in 2003.

He is survived by the children of his first marriage: Peter LaBerge, Stephen LaBerge, Jeanne LaBerge, Philip LaBerge, and Jacqueline LaBerge Gunn; and stepchildren Deborah Pharris, Pamela Alexander, Richard Baughman, and Kurt Baughman.