

Mark Shepherd, a Force in Electronics, Dies at 86

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Mark Shepherd Jr., who as an engineer, manager and chief executive of [Texas Instruments](#), headed its rise to power as a maker of semiconductors and consumer electronics, died Wednesday at his ranch in Quitman, Tex. He was 86.



Texas Instruments

Mark Shepherd Jr.

The cause was complications of pulmonary fibrosis, his son Marc Shepherd said.

During his 40 years at Texas Instruments, Mr. Shepherd helped turn the company from a niche outfit catering to the needs of oil and gas companies into an electronics pioneer, producing goods for both businesses and consumers.

As a hard-charging engineer, Mr. Shepherd was given the task of building Texas Instruments' first transistors and semiconductor products, which soon found their way into calculators, computers and toys. Later, as chief executive and chairman of the company, Mr. Shepherd fought to expand the semiconductor business overseas, while also fending off budding electronics giants in Asia.

Mr. Shepherd's rise through Texas Instruments paralleled the rise of the transistor and semiconductor technology in which he specialized.

In 1952, he and three other Texas Instruments engineers were sent to Bell Laboratories to learn about the company's transistor, which had been invented in 1947. Texas Instruments bought a license for the technology and began to explore broad applications for the transistor.

Former employees at Texas Instruments credited Mr. Shepherd with understanding the significant role transistors and semiconductors would play in reshaping electronics products. As a replacement for clunky, unreliable vacuum tubes, the transistors led to cheaper, smaller and more stable devices like portable radios and pocket calculators.

Having just learned about the transistor technology, Mr. Shepherd managed to assemble and lead a team that produced a working product in short order. Mr. Shepherd was also the head of the semiconductor team in 1958, when Jack S. Kilby invented the integrated circuit, the precursor to modern computer chips.

Texas Instruments created ground-breaking products, perhaps most notably a portable calculator, based on its semiconductor technology. In addition, the company built devices like printers and PCs with the technology.

Like many of the prominent engineers of his day, Mr. Shepherd demonstrated a precocious gift for electronics. He is said to have built a vacuum tube at the age of 6 and a radio shortly thereafter. He graduated from high school at 14.

"I heard him say that after those early experiences he never thought of doing anything else but going into electronics," said Max Post, a former Texas Instruments engineer who had worked with Mr. Shepherd.

Mr. Shepherd went on to receive a degree in electrical engineering with honors from Southern Methodist University and a master's degree in the same field from the [University of Illinois](#).

Mr. Shepherd applied his engineering expertise during a stint in the Navy where he served as a lieutenant for three years, working on radar and electronics systems on the U.S.S. Tucson.

After jobs at [General Electric](#) and the Farnsworth Television and Radio Corporation, in 1948 Mr. Shepherd joined Geophysical Services, which would become Texas Instruments.

During his four decades at Texas Instruments, Mr. Shepherd spent time either overseeing crucial semiconductor projects directly or serving on the leadership groups approving them. He had roles as chief engineer and chief operating officer at the company before becoming its chief executive in 1969. In 1976, Mr. Shepherd was named chairman of Texas Instruments and held that position until 1988.

As a manager, Mr. Shepherd was credited with driving Texas Instruments' overseas expansion, turning the company into one of the first to open semiconductor manufacturing facilities abroad, including a factory in Japan.

Through an intense focus on cost controls and computer-aided mechanisms for semiconductor manufacturing, Mr. Shepherd worked to lower the prices of Texas Instruments' technology.

“Driving the cost down was an obsession for him,” Mr. Post said. “He just kept telling everyone that the semiconductor market will only grow if we can get the cost down for consumer products.”

The breadth of products introduced during Mr. Shepherd's tenure as a prominent manager established Texas Instruments as a force in the electronics industry.

“He drove T.I. into world leadership not only in semiconductors, but took the chip industry into consumer electronics with calculators, digital watches and toys where Texas Instruments dominated even companies like [Hewlett-Packard](#) and [Intel](#),” said Michael Malone, an author who has covered the technology industry and Silicon Valley. “That was T.I.'s golden age.”

Later in his career, Mr. Shepherd and Texas Instruments were forced to confront a powerful set of suppliers in Asia and falling profits on the consumer electronics products. As a result, Texas Instruments refocused its efforts on advancing semiconductor technology.

After his retirement from Texas Instruments, Mr. Shepherd and his wife, Mary Alice, raised longhorn cattle at their ranch in Quitman. Marykay Shepherd, his daughter, now handles affairs on the ranch. Debra Shepherd Robinson, his other daughter, lives in Dallas. He is also survived by three granddaughters.

Still an engineer to the core, Mr. Shepherd oversaw the construction of dams, fire protection systems and buildings on the ranch.