

OBITUARIES

ROBERT EBELING ENGINEER/CONSERVATIONIST, 89

He foresaw Challenger disaster

Engineer tried to raise concerns about function of booster rocket's O-rings, but couldn't stop fatal launch

WILLIAM GRIMES

Thirty years ago, Bob Ebeling drove to the headquarters of the aerospace contractor Morton Thiokol in Brigham City, Utah, to watch the launch of the space shuttle Challenger. On the way, he leaned over to his daughter Leslie and said: "The Challenger is going to blow up. Everyone's going to die."

Mr. Ebeling, an engineer at Thiokol, knew what the rest of the world did not: that the rubber O-rings designed to seal the joints between the booster rocket's segments performed poorly in cold weather. A severe cold snap in Florida was about to subject the O-rings to temperatures more than 30 degrees lower than at any previous launch.

During the afternoon and evening before the launch, Thiokol engineers, relying on data provided by Mr. Ebeling and his colleagues, argued passionately for a postponement of the launch in conference calls with NASA managers at the Kennedy Space Center in Florida and the Marshall Space Flight Center in Huntsville, Ala. They were overruled not only by NASA, but also by their own managers.

On the morning of Jan. 28, 1986, sitting in a conference room with his daughter and Roger Boisjoly, Thiokol's chief seal expert, Mr. Ebeling watched on a large projection screen as the Challenger cleared the launchpad.

"I turned to Bob and said, 'We've just dodged a bullet,'" Mr. Boisjoly told *The Guardian* in 2001.

A minute later, the O-rings failed and the Challenger exploded in a ball of fire, killing all seven crew members aboard. Among them was Christa McAuliffe, a teacher from New Hampshire who was the first citizen passenger in space.

Mr. Ebeling, who died on March 21 in Brigham City at 89, never recovered from the disaster. "I've been under terrible stress since the accident," he told *The Houston Chronicle* in 1987. "I have headaches. I cry. I have bad dreams. I go into a hypnotic trance almost daily."

He soon left Thiokol and the engineering profession. For the rest of his life he faulted himself for not doing enough to prevent the launch.

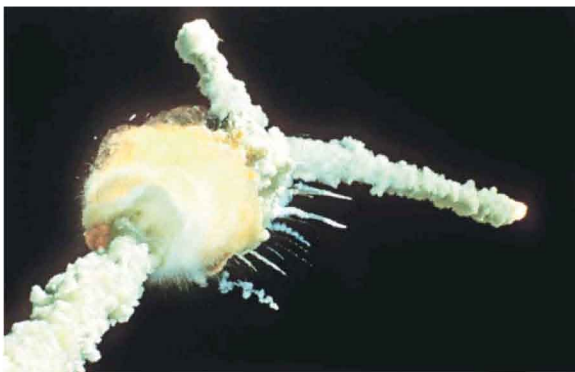
At times, he seemed to carry the entire burden of the disaster on his shoulders, although it was he, on the afternoon before the launch, who made a critical phone call to Allan McDonald, the Thiokol engineer in charge of the solid rocket motor project at the Kennedy Space Center, alerting him to concerns about the O-rings.

"I think this was one of the mistakes that God made," Mr. Ebeling told Howard Berkes of National Public Radio in January, on the 30th anniversary of the event. "He shouldn't have picked me for that job. I don't know, but next time I talk to him, I'm going to ask him, 'Why? You picked a loser.'"

Robert Vernon Ebeling was born on Sept. 4, 1926, in Chicago.



Bob Ebeling faulted himself for not doing enough to prevent the Challenger launch. HOWARD BERKES/NATIONAL PUBLIC RADIO



The space shuttle Challenger explodes shortly after lifting off from Kennedy Space Center on Jan. 28, 1986. BRUCE WEAVER/ASSOCIATED PRESS

After graduating from high school he was called up by the army and served as an infantryman in the Philippines during the Second World War.

He returned to San Diego after his discharge and in 1949 married Darlene Popejoy, whom he leaves. In addition to their daughter Leslie, he also leaves daughters Kathleen Ebeling, Judy Kirwan and Terrie Johnston, and extended family.

After leaving Thiokol, he became a volunteer at the Bear River Migratory Bird Refuge near

his home in Brigham City. In 1989, in response to damage caused by flooding of the Great Salt Lake, he created Friends of the Bear River Refuge, which raised money to restore the sanctuary. Drawing upon his engineering background, he also helped to repair dikes and water-control structures.

In 1990, U.S. President George H.W. Bush presented him with the Theodore Roosevelt Conservation Award for his work. In 2013, he was named the National Wildlife Refuge System's volun-

teer of the year by the National Wildlife Refuge Association and the National Fish and Wildlife Foundation.

Mr. Ebeling's anguished interview with NPR in January moved hundreds of listeners to send expressions of support and sympathy. Mr. McDonald, his former boss at Thiokol, called him. "I told him that he was not a loser, that a loser was someone who has a chance to act but doesn't, and worse, doesn't care," Mr. McDonald said in an interview.

"He really did do something," he added. "I told him that if he had not called me, we never would have had the opportunity to try to avert the disaster. They would have just gone ahead with the launch. At least we had the opportunity to try to stop it."

The public response to Mr. Ebeling's interview had an effect, especially after a former Thiokol executive and a NASA official contacted by Mr. Berkes of NPR wrote words of encouragement. In a follow-up piece, Mr. Berkes asked Mr. Ebeling if he would like to respond.

"You helped bring my worrisome mind to ease," Mr. Ebeling said. "You have to have an end to everything."

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