Challenger explosion a haunting memory

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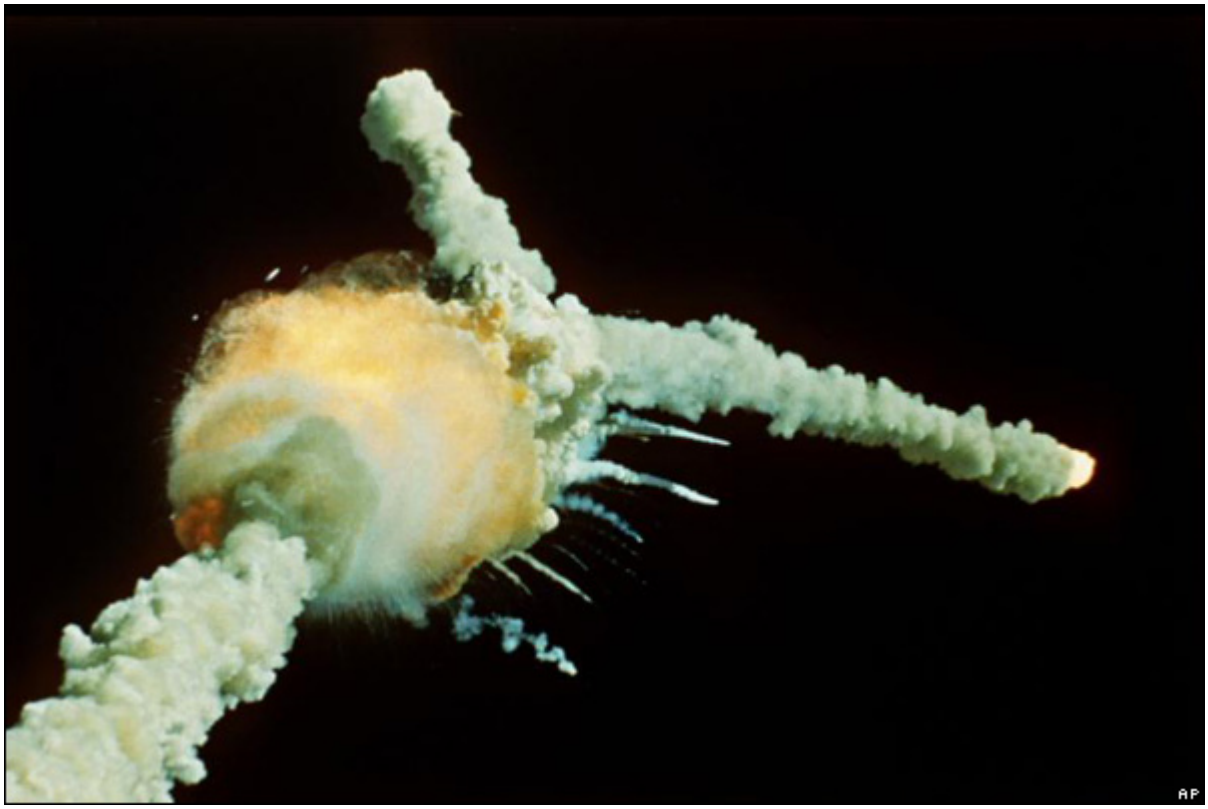

The Challenger disintegrates 73 seconds after liftoff on January 28, 1986. All seven crew members were killed in the explosion, including teacher Christa McAuliffe.

To those who saw it, even from a distance, the explosion of the space shuttle Challenger on an unusually chilly morning 14 years ago, is a memory that will never let them go.

"It was a traumatic experience," said Gayle Kochan, a part-time Stuart resident, who traveled up to Cape Canaveral the morning of Jan. 28, 1986, to see her first shuttle launch.

"After all these years, I still get goosebumps when I think about it."

To Ed and Laura Spring -- now of Port St. Lucie but Stuart residents in 1986 -- the shock of what happened and the tragic loss of the lives on board was much more personal. Not only was their son Woody a shuttle astronaut, but Challenger pilot Mike Smith was his Houston neighbor and friend.

Robin Venturini, now of Jensen Beach, also has a unique perspective on the tragedy. Only hours before the explosion, the Lockheed technician had been at the Cape's Launch Pad B, preparing the Challenger for its leap into space.

"It was the end of the best job I ever had," he said more than once during an interview. "Even after

all these years, I can't believe they tried to launch. I can't believe they let that happen."

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All seven crew members -- including New Hampshire schoolteacher Christa McAuliffe -- died when the Challenger exploded 73 seconds after liftoff that January morning.

At the time, the doomed spacecraft was about 8.9 miles above the Atlantic Ocean and traveling at 1,460 mph, or almost twice the speed of sound.

A months-long investigation found that the pressure seals, or O-rings, in a critical joint of the right solid-fuel rocket booster had given way in the cold -- it was 36 degrees at launch time -- and failed to contain the combustible rocket gases.

The result was something like a huge blowtorch, which created a hole in the external fuel tank and quickly collapsed.

At the same time, the tip of the leaking booster rotated and crashed into the upper part of the external tank -- the final blow that ripped the shuttle apart.

It was and remains the greatest tragedy of America's manned space flight program. And Venturini, 48, for one, thought then and still thinks it never had to happen.

Venturini's job was as an electrical technician for the shuttle's environmental control system.

"I was the last technician off the pad before the launch except for the crew who helped the astronauts on board," he said.

"I was on the shift that ended at midnight, the night before the launch, but they asked us to stay on to work on the heaters."

The heaters, in the forward compartment along with the auxiliary power units, were supposed to keep the air around that part of the shuttle at 71 degrees.

But even when the heaters were cranked up to 105 degrees, the air temperature wasn't getting close to what was required, Venturini said.

After several attempts to tweak the heaters, the technician was told to go home and get some sleep about 1:30 a.m.

"It's kind of hard not to have your memories clouded by what happened, but one thing I do very clearly remember about that night was looking at our computer monitor on my way out the door and seeing a temperature reading of 17 degrees," Venturini said.

He called a weather service hot line for confirmation.

"After the forecaster on the other end told me that was the right temperature, I remember turning to a buddy of mine and talking about how unbelievably cold it was. I remember he said, "They'll never launch this thing tomorrow,'"

Venturini said. "I mean, there were icicles hanging from the structure of the pad."

But other factors were coming into play as the countdown proceeded that night.

The shuttle launch, originally scheduled for mid-January, already had been delayed several days by bad weather, and because McAuliffe -- somewhat erroneously billed as the first civilian in space -- was going to be aboard, public interest in the mission was almost unprecedented.

Despite warnings from several engineers about the dangers posed by the cold, officials at NASA and managers for booster-maker Morton Thiokol made the decision to go ahead. A few hours before liftoff, Venturini's supervisor called for him to come back later that day to help clean up the pad.

He and his wife, Charline, then stood in the living room of the home they owned at the time in Port St. John and watched the launch through a large picture window.

"It was literally too cold to go out on our front lawn and watch it," Venturini said.

As the plume of smoke ascended, the technician remembers being surprised the launch was really happening. A moment later, he said, he was horrified to realize the shuttle was gone.

"As everybody knows, it happened in a burst of smoke, but as someone who had been involved in the flight, as someone who'd literally just been standing next to the Challenger, it was unbelievable . . . complete, instant denial," Venturini said.

"Then, suddenly, just as quickly, I guess, the reality hit. Even from my house, you could see the bits and pieces streaming down. It was like someone tearing your insides out. It felt so bad."

Feeling their own personal connection to the flight were the Springs, who dashed to the front of their Stuart home on the St. Lucie River to catch a glimpse of the launch that morning.

Their son, Woody, had become good friends with Smith, the Challenger pilot, and the Springs had met most of the Challenger crew when visiting their son during astronaut training at the Johnson Space Center in Houston.

"It got to where we'd see them all the time, training at the pool and other facilities there, and so the launch was particularly exciting," Laura Spring said.

"Of course, from our home, all you could kind of see was kind of a bulge at the head of its vapor trail, but you knew something went wrong. You knew it had exploded," she recalled.

"At the time, it was just a shocking experience. My husband and I, I think both of us, instantly thought of those smiling, happy, dedicated people we knew. It was hard for a long time after that."

Their son, who had flown on the shuttle Atlantis just two months before, was in Dakar, Senegal, advising mission control of weather conditions at one of the alternate landing sites for aborted missions.

"The mission, even before the explosion, had been a pretty miserable experience for him," Spring said. "The sand storms were a constant in that part of Africa at that time of year, and he was housed in a tent and the mission had been delayed.

"He was pretty depressed, as you can imagine," she said. "To lose half a dozen of your friends all at

once ... that's a lot to deal with."

At the time of his death, Smith was in the midst of a major home improvement project, adding a spare bedroom to his Houston home. As soon as he got back from Africa, Woody Spring completed the project.

"He said it was kind of his memorial to a friend," his mother said.

But it is not just those who had a personal connection to the flight who still feel its impact. Gayle and Tom Kochan were simply space flight fans who had been lucky enough to score tickets in the VIP section at the Kennedy Space Center.

At first, the couple -- who spend their winters in Stuart -- watched in amazement as the roar of the booster rockets sent the shuttle upward.

"I had my camera and was taking pictures as it lifted off the pad, and then I said to my husband, "Where is it? I can't see it anymore," Gayle Kochan said.

"Tom said, "Something terrible has happened.' Then I realized I could make out the remnants of a huge ball of orange. The fireball."

Those sitting on the bleachers around her immediately fell silent, a silence Gayle Kochan said she can "hear" to this day.

"A moment later, I remember it being just an instant later, they made an announcement over the intercom system -- "The shuttle has exploded.' After that, the only thing you could hear were the few people who began saying prayers aloud."

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Before the Challenger tragedy, NASA thought the likelihood of a catastrophic shuttle accident was 1 in 100,000. The agency's current risk assessment: 1 in 148.

"It's not something you worry about," said shuttle astronaut Scott Horowitz, a veteran of three flights, including the first trip to the International Space Station earlier this year. "Frankly, I've had more friends killed in car or fighter aircraft accidents than were killed aboard Challenger."

Horowitz, whose in-laws, Frank and Joan Ecker, live on Hutchinson Island and whose wife, Lisa, gave birth to their daughter, Arielle Marie, in Martin Memorial Medical Center in Stuart on the eve of his first shuttle flight, said he takes comfort in knowing "there are thousands of people looking after his well-being during a mission."

"Yes, there are odds that something might happen, but there are odds because you care, are doing something you believe in and are doing amazing things," he said.

"That said, we've taken every precaution, and our people and contractors have done everything they can to ensure the vehicle completes its mission."

Asked how his wife feels about the risk, Horowitz said they both think "risk is just a number."

"Lisa doesn't worry about me flying the shuttle," he said with a laugh. "She worries more about me

flying the home-built aircraft we made together in our garage."

But as NASA prepares to launch its 100th space shuttle mission this week, the legacy of the Challenger disaster remains. From time to time still, pieces of the craft are surrendered by the sea, winding up on Space Coast beaches.

The largest of these, two big chunks the Challenger's left wing washed ashore in 1996, a decade after the craft went down.

One piece was 6 to 8.5 feet wide, 13.5 feet long and 2 to 2.5 feet thick; the other was about 6 inches wide and 5 feet long. Some thermal tiles and shriveled wires were attached.

Both pieces were found in the surf in Cocoa Beach, about 20 miles south of Kennedy Space Center, and later buried with about 5,000 other pieces weighing a quarter-million pounds, in two abandoned missile silos nearby.

Most of the shuttle, however, remains in the Atlantic Ocean -- half of the orbiter and boosters, two-thirds of the external fuel tank and one-fourth of the satellite payload.

NASA receives several reports of Challenger debris being found each year. Some pan out. More often, though, the pieces of space hardware that turn up on Florida beaches are the remnants of unmanned rockets or other junk.

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Seven lives were lost the day of the disaster, but the lives of local witnesses have moved on.

Soon after returning to their other home in Greenwich, Conn., in 1986, Gayle Kochan tied seven yellow ribbons on a tree in the front yard -- one for each astronaut.

The tattered remnants of those ribbons remain on that tree to this day. She and her husband still enjoy the Treasure Coast in the winter and still watch a launch from their Stuart yard whenever they get a chance.

Woody Spring left the astronaut corps a few years ago, having been recalled to service by the Army. He has since retired from the service and works as an aerospace consultant.

Like the Kochans, the Springs continue to be avid supporters of the space program, watching launches whenever they can.

Asked whether she ever feared for her son's safety during his shuttle missions, Laura Spring said no.

"It wasn't a piece of cake, but you know, I don't think I worried any more about him than I did when he used to drive his motorcycle over the desert sands in California just for fun," she said.

"Come to think of it, I think I probably worried much more about him during his two tours of duty in Vietnam," Spring said. "Now, there's a worry. But as for anything else, I just took it in stride. He's always liked to live on the edge of the envelope."

Of the three area families who saw the disaster, the Venturinis have not only been through the most changes, but also the most Challenger-related changes.

After the explosion, NASA put the shuttle program on hold for two years, and contractors such as Lockheed began to lay off workers.

"We were going to build another house -- had actually put money down on a property -- but after that, we had to get our money back," Venturini said.

Although he survived two rounds of layoffs, he didn't survive a third. But Lockheed helped him find a job as a technician at Florida Power and Light Co.'s St. Lucie Nuclear Plant, and he moved to Martin County in 1987.

At the same time, he opened a repair shop -- Venturini Musical Instruments in Jensen Beach.

"It was a trade I learned while in the Army band and something I always did on the side," he said.

Earlier this year, he sold that business and now works at American Music in Jupiter.

"Of all the jobs I've had, working at the Cape for various contractors was the most fun -- except for that one day," Venturini said.

"I can still remember just how it felt to see the cloud of smoke and waiting for the shuttle to come out . . . but it never did," he said.

Every once in a while, Venturini finds himself poring over memorabilia from his association with the space program, especially Challenger materials -- astronaut photos and the like -- that NASA gave contractor employees in the days leading to the launch.

"Like I said, it was the most fun on a job I ever had," Venturini said. "I always felt I was part of history. Unfortunately, I also got to be a part of that day in history."

Space shuttle timeline:

Born in the late 1960s at the height of the Apollo program, the space shuttle was designed to fulfill two basic roles in NASA post- Apollo human flight objectives.

The first goal of the shuttle program was to provide NASA with an efficient, re-usable method of carrying astronauts to and from a permanently occupied space station.

In addition, NASA thought that shuttles could serve as multi-purpose satellite delivery vehicles with the potential to completely replace Atlas-Centaur, Delta and Titan rockets.

Highlights:

Jan. 31, 1969

NASA asks four contractors to submit designs for a reusable and a partially reusable space craft.

Feb. 18, 1970

The name "space shuttle" first appears in the purpose section of an official NASA invitation for production contract bids. NASA initially expects the first shuttle to fly by 1977.

Jan. 5, 1972

President Richard Nixon announces his commitment to fund the development of the space shuttle.

June 4, 1974

Rockwell begins work on the space shuttle Enterprise. It is rolled out of the Rockwell hangar and sent to Edwards Air Force Base, Calif., for flight testing on Sept. 17, 1976.

1977-1980

Rockwell continued the development of the space shuttles Columbia, Discovery and Atlantis. Enterprise, originally built for flight-testing only in the earth's atmosphere, was intended to be re-fitted as an operational shuttle, NASA opted instead to construct the Challenger.

April 12, 1981

The space shuttle Columbia lifts off from Cape Canaveral, marking the first shuttle mission.

June 18, 1983

Sally K. Ride, a mission specialist, becomes the first American woman to fly in space. She flies to space aboard the space shuttle Challenger, making its second orbital flight.

Aug. 30, 1983

Guion S. Bluford, a mission specialist, became the first black American to fly in space. Like Sally Ride, he also achieves this distinction aboard the Challenger.

Nov. 28, 1983

The Columbia carries the first astronaut to represent the European Space Agency, Ulf Merbold of West Germany.

Feb. 3, 1984

The Challenger achieves more milestones. The mission features the first untethered spacewalks by astronauts. On Feb. 11, it becomes the first shuttle to conclude its mission by landing at the Kennedy Space Center.

Oct. 5, 1984

This was the first space flight to include two women, Sally Ride and Kathryn D. Sullivan. In addition, Sullivan became the first woman to walk in space on Oct. 11, 1984.

Jan. 24, 1985

The first of 10 secret missions conducted for the Department of Defense. Elements of these missions remain classified to this day.

April 12, 1985

U.S. Sen. E.J. Garn, R-Utah, becomes the first civilian observer to fly aboard a space shuttle.

Jan. 28, 1986

The space shuttle Challenger explodes 73 seconds after launch. This marked the first time in the history of the U.S. space program that a vehicle and crew were lost during flight. The dead are Francis R. Scobee, Michael J. Smith, Judith A. Resnik, Ellison S. Onizuka, Ronald E. McNair, Gregory B. Jarvis, and Sharon Christa McAuliffe -- who was to have been the first teacher in space.

In the aftermath of the tragedy, NASA decides to build a fifth space shuttle, the Endeavour, specifically to replace the Challenger.

Sept. 29, 1988

Program resumes with the launch of the space shuttle Discovery.

May 7, 1992

In addition to being the first flight of the Endeavour, other important firsts occurred during the mission. For the first time, four spacewalks were conducted during a shuttle mission. Also for the first time, three astronauts participated in a single spacewalk.

Sept. 12, 1992

Astronaut Mae C. Jemison became the first black American woman to fly in space. Astronauts Mark Lee and Jan Davis became the first married couple to fly in space. Astronaut Mamoru Mohri became the first Japanese citizen to fly aboard a shuttle.

Dec. 2, 1993

Considered one of the most challenging, complex and successful shuttle missions during a record five space walks, astronauts completed the first service and repair mission to the Hubble Space Telescope.

Feb. 3, 1994

For the first time, Sergei K. Krikalev, a Russian cosmonaut, flew aboard a U.S. space vehicle in a new era of international cooperation in space.

Feb. 3, 1995

This was the first shuttle flight with a female pilot, Eileen M. Collins, and the second flight carrying a Russian cosmonaut, Vladimir G. Titov.

June 27, 1995

The 100th U.S. manned space flight. The shuttle docked with the Russian Mir spacecraft, creating the largest man-made object in space, weighing about 225 tons, and for the first time a U.S. spacecraft returned to Earth with more occupants than when it departed.

March 22, 1996

Astronaut Shannon Lucid was transferred to the Mir and became the first American woman to live on the space station. Lucid's stay of 188 days in space set a new U.S. space endurance record and a world space endurance record for a woman.

Oct. 29, 1998

The return to space of John Glenn, who flew in space for the first time since becoming the first U.S. astronaut to orbit Earth on Feb. 20, 1962, during mission MA-6. At age 77, Glenn became the oldest human in space. The flight also marked the longest time between space flights for an astronaut, as Glenn was launched exactly 36 years, 8 months, 9 days after completing his Project Mercury.

Dec. 4, 1998

The first shuttle mission dedicated to assembly of the International Space Station.

July 20, 1999

The 95th Space Shuttle mission is the first to feature a female shuttle commander, Air Force Col. Eileen Collins.

October 5, 2000

The 100th Space Shuttle mission is scheduled to lift off from Cape Canaveral's Launch Pad 39A at 9:38 p.m.

Captions from the original press run of the story: The Challenger disintegrates 73 seconds after liftoff on January 28, 1986. All seven crew members were killed in the explosion, including teacher Christa McAuliffe. Schoolteacher Christa McAuliffe gave T-shirts with the seal of the state of New Hampshire to each member of the space shuttle Challenger crew before the flight. Salvage crews unload the right hand landing gear of the Challenger at Port Canaveral on April 17, 1986. Pieces of the shuttle still wash ashore -- in 1996, two big chunks of the left wing surfaced in Cocoa Beach. Most of the shuttle, however, remains in the Atlantic Ocean.

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