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Challenger explodes, killing seven; NASA mobilizing to determine why

President mourns crew, puts speech off

From wire dispatches

WASHINGTON — President Reagan scrapped his State of the Union speech yesterday to mourn the crew of the space shuttle Challenger and promise, "We'll continue our quest in space. . . . Nothing ends here."

The Challenger crew members, Reagan said, "were daring and brave and they had that special grace, that special spirit that says, 'Give me a challenge and I'll meet it with joy.'"

Calling the disaster "a truly national loss" and saying "Nancy and I are pained to the core by the tragedy," Reagan extended his sympathy not just to the grieving families but to the thousands of employees of the National Aeronautics and Space Administration, paying tribute to their decades of dedication and professionalism.

"We know of your anguish," he said. "We share it."

"The future doesn't belong to the fainthearted. It belongs to the brave," Reagan said in a nationally televised late-afternoon address from the Oval Office less than six hours after the spacecraft blew up. "The Challenger crew was pulling us into the future and we'll continue to follow."

Reagan postponed the State of the Union address for a week. He was to have kicked off an aggressive week-long campaign to promote his political agenda for 1986.

Nine hours before his scheduled appearance before Congress, Reagan watched the manned space program's

Continued on page 2, col. 6

First minutes of flight hold most danger

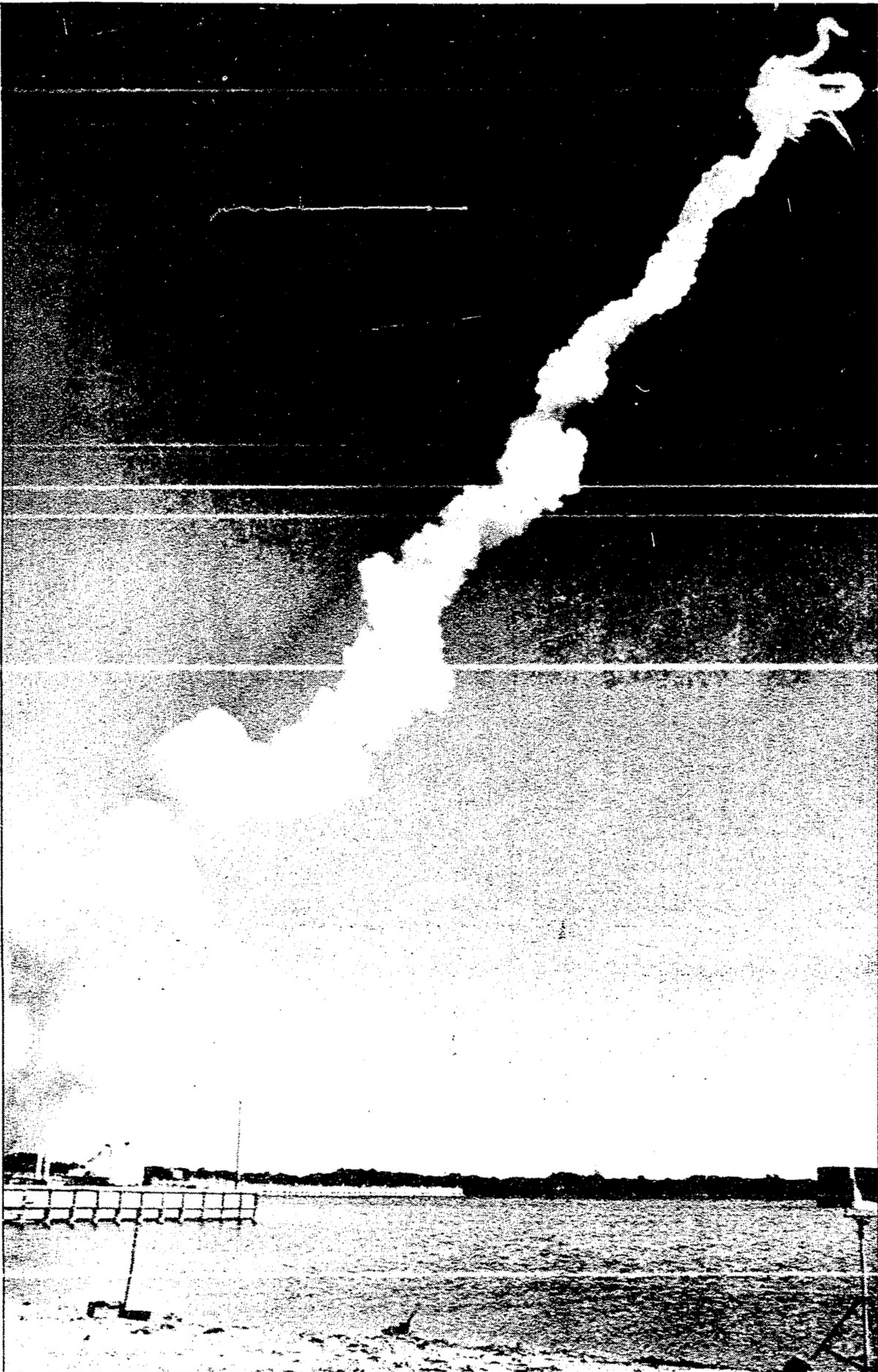
By Beverly Orndorff
Times-Dispatch science writer

The most hazardous step in any space journey is the first one, the one between liftoff and entry into orbit around the Earth.

During those early minutes, the crew members are in the middle of violent, powerful forces. Around them are tons of highly volatile, burning propellants and mighty engines, within the first minute, their spacecraft experiences buffeting aerodynamic pressures as its speed builds up through the viscous atmosphere.

That show of awesome power, with its real sense of danger, is an unforgettable experience for those who watch a space shuttle being launched. There is a flash of ignited fuel, an outpouring of yellowish-white smoke, an additional flash a few seconds later and then, when the shuttle and its tanks begin rising, there is crackling

Continued on page 2, col. 3



Manchester Union Leader photo/United Press International

White smoke traced the Challenger's path from the pad to its ultimate fate

Chosen out of 11,000, teacher showed aplomb

Editor's note: In this excerpt from the Jan. 5 New York Times Magazine, John Noble Wilford talked with Christa McAuliffe, the first teacher in space, about why she was chosen for the honor, her reaction to the intensive training and celebrity and her mission in space.

By John Noble Wilford
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"It's such a quantum leap from what my life has been like," Christa McAuliffe was saying. A frown shadowed her brow. It was the frown of recurring disbelief, not of worry. So much had happened since July, when she was chosen from 11,000 teacher applicants to be the first private individual to fly into space.

There was the White House ceremony, the onslaught of reporters and television cameras, the hometown parade. Then came the exchange of her high school classroom for the high-tech simulators at Houston's Johnson Space Center and the moment she stood on the launching pad at Cape Canaveral and got a close look at the space shuttle Challenger.

"It just didn't hit home that the rockets are going to go off and I'm going to be 200 miles up in space. It still doesn't seem possible," the 37-year-old teacher from Concord, N.H., recalled.

Yet, by all accounts, Mrs. McAuliffe handled the quantum leap with aplomb and delight. She had just experienced weightlessness in a diving plane, which can be euphoric and sometimes nauseating. Her trainers

Continued on page 3, col. 3

Tapes seem to show problem originated around one booster

From wire dispatches

CAPE CANAVERAL, Fla. — An explosion blew apart the space shuttle Challenger 75 seconds after liftoff yesterday, killing all seven crew members, including Christa McAuliffe, the first teacher in space.

The accident defied quick explanation, though a slow-motion videotape replay seemed to show an initial problem with one of two peel-away solid-rocket boosters followed by the detonation of the shuttle's huge liquid fuel tank.

The blast destroyed the Challenger high above the Atlantic while crew members' families and NASA officials watched in horror from the cape.

Other observers noted that the boosters continued to fly crazily through the sky after the explosion, indicating that the explosion might have originated in the fuel tank itself.

"We will not speculate as to the specific cause of the explosion based on that footage," said Jesse Moore, NASA's top shuttle administrator. National Aeronautics and Space Administration officials are organizing an investigating board and Moore said it will take a "careful review" of all data "before we can reach any conclusions."

NASA suspended its ambitious 1986 shuttle schedule until it finds out why the craft exploded. Moore wouldn't say how long that might take.

The explosion followed an apparently flawless launching, delayed two hours as officials analyzed the danger from icicles that formed in the frosty Florida morning along the shuttle's new pad.

"There were no signs of abnormali-

Other stories

• The space director at Langley Research Center "thought [the shuttle] was going too slow" at liftoff. Page A-2.

• "This isn't real, is it?" students at Christa McAuliffe's school asked. Page A-3.

• Judith Resnik's nephew and niece made the trip to Cape Canaveral with their parents to watch the start of her second space mission. Page A-3.

• Memories of a fatal accident 19 years ago. Page A-4.

ties on the screens" as flight controllers monitored Challenger's liftoff and ascent, a source at the Johnson Space Center in Houston said, adding that the blast occurred "unexpectedly and with absolutely no warning."

Mission control reported that there had been no indication of any problem with the three shuttle engines, the solid boosters or any other system and that the shuttle just suddenly blew apart 10 miles high and eight miles down range of Cape Canaveral.

The crew consisted of Mrs. McAuliffe and six NASA astronauts: commander Francis R. Scobee, 46; pilot Michael J. Smith, 40; Judith Resnik, 36; Ronald E. McNair, 35; Ellison S. Onizuka, 39; and Gregory B. Jarvis, 41.

NASA delayed its announcement

Continued on page 2, col. 1

Many answers may not be found

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Debris from the shuttle Challenger was scattered so widely over the Atlantic that investigators may never recover enough of it to determine the cause of the disaster.

However, suspicions quickly focused on the craft's huge external fuel tank, a potential bomb that carried more than 385,000 gallons of liquid hydrogen and more than 140,000 of liquid oxygen at liftoff.

The most logical explanation is that a large leak must have occurred either in the tank itself or in the pipeline and pumping system that carried

hydrogen to the orbiter's three main engines.

Barbara Schwartz, a spokesman for the Johnson Space Center, acknowledged that pure liquid or gaseous hydrogen cannot burn, only if the pure hydrogen carried in the rear section of the shuttle's tank were allowed to come into contact with air or with the liquid oxygen in the tank's nose section could it have burned or exploded.

But what might have started a leak and what could have ignited the ex-

Continued on page 2, col. 4



United Press International

SHUTTLE CREW — Aboard Challenger were Ellison S. Onizuka (left), Michael J. Smith, Christa McAuliffe, Francis Scobee, Gregory B. Jarvis, Judith Resnik and Ronald E. McNair.

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General Assembly page A-5

Index 4 sections, 38 pages

Area	B-1-4	International	Section A; D-14
Ask Andy	C-4	Jumble	C-4
Bridge	A-7	Living Today	Section C
Business	B-5-8	Market tables	B-5-7
Classified	D-6-13	National	Section A; D-14
Comics	C-4	Obituaries	B-2
Dear Abby	C-3	People	A-10
Editorial	A-8	Sports	D-1-5
Entertainment	A-7; C-5	State	B-1-4
Horoscope	C-4	TV, radio	C-5

The Weather . . . A 30 percent chance of light snow this morning, otherwise partly cloudy. High in the low 30s. Fair tonight, low around 20. Sunny tomorrow, high near 40. Data, page A-4.

Virginia's State Newspaper