

Reason for shuttle explosion remains a mystery

By HARRY F. ROSENTHAL
Associated Press Writer

CAPE CANAVERAL, Fla. — The Coast Guard pulled 600 pounds of metal and tiles from Challenger out of the Atlantic Ocean yesterday, and experts impounded every bit of data for clues to the death of seven people in the world's worst space disaster.

NASA said the five men and two women aboard the 100-ton shuttle probably had no warning of the impending explosion. The debris collected by yesterday afternoon did not include any clothing or personal effects of the astronauts.

A cone-shaped object, possibly from the nose of one of the shuttle's solid rocket boosters, was spotted, but it was too big to put aboard the small cutter U.S. Dallas. A buoy tender was sent to the area.

The largest piece of debris found after a full day of searching was 15 feet by 15 feet. Other pieces were 12 feet long and 10 feet long. Most were of aluminum, some containing piping, others covered with tiles.

More helicopters would be used today to see if a large object could be seen in shallow areas. Sonar equipment was to be added later.

Experts were studying computer readouts that timed events at one-thousandths of a second, hoping to learn if the problem could have been a rupture of the shuttle's huge external tank. Much speculation has focused on the tank as the source of the explosion.

Flight director Jay Greene said data from the tank is not read in Mission Control, but that it is recorded and will be available for the analysis of the tragedy.

"Obviously the ET temps would be very nice to have right now, but operationally we have no use for it so we don't display it (during launch)," he said. "We have a limited number of operators and you want them to look at a limited amount of data."

Mission Control, with all of its sophisticated technology, had no warning of the impending explosion, said Greene, who was directing Challenger's climb to space.

"We train awfully hard for these flights and we train under every scenario you can possibly imagine," he said. "There was nothing anyone could have done for this one. It just stopped."

He described the mood in the control room as "extremely professional under the circumstances, very somber, there was not much said."

When computer screens showed no

more data was coming in, he said, engineers watched the views from television cameras.

"We were hoping something better would come out of it," he said. "After a while, we resumed gathering data, put it all up and called it a day."

Speculation focused on an ominous bright flash that was visible at the base of the fuel tank before the explosion, but shuttle director Jesse Moore said he wanted to discourage that.

"You are asking me to lay out causes," he said. "I'm not prepared to do that."

NASA scheduled a memorial service at the Johnson Space Center in Houston tomorrow and said President and Nancy Reagan will attend.

In Palm Bay, a community south of the space center, plans were made to name a school after Christa McAuliffe of Concord, N.H., who was aboard the shuttle as the first "common citizen" to fly in space. She had planned to teach two lessons from space to schoolchildren all across the country.

Killed along with McAuliffe were commander Francis R. Scobee, 46; pilot Michael J. Smith, 40; Judith A. Resnik, 36; Ronald E. McNair, 35; Ellison S. Onizuka, 39, and Gregory B. Jarvis, 41.

An investigation team held its first meeting to start the long inquiry into why the \$1.2 billion shuttle, appearing to be on a perfect course, suddenly exploded 74 seconds after liftoff Tuesday, raining fiery debris into the Atlantic Ocean.

Lt. John Philbin, commander of the Coast Guard cutter *Point Roberts*, brought back the first load of debris. He said there was 600 pounds of it, much of it in small pieces.

"Most of what we found was bulkhead-type material, aluminum with insulation attached to it," he said. "There were a couple of charred pieces and we did bring in some small cylinder-type tanks this morning."

The *Point Roberts* was the first military ship on the scene. He said his crew watched the debris coming down and got the location from a tug in the area.

The space agency impounded every scrap of paper, film and data connected with the launch and pleaded with souvenir hunters to turn in anything they find on the beaches in this central Florida area.

"We need every piece of that because we don't know where the clue might be," said Richard Smith, the director of the Kennedy Space Center.

Moore said it was unlikely bodies of



One of the military personnel searching the area of the shuttle catastrophe removes a piece of debris thought to be part of the Challenger, which exploded Tuesday, killing all seven persons aboard. The debris was found on Cocoa Beach and is being impounded by NASA for its investigation of the disaster.

the crew members would be found.

"I would always like to hold out hope," he said. "However, we've seen a lot of small debris."

The crew apparently had no warning.

"We have no indication that the commander had any sense of anything wrong," said William Graham, acting administrator of NASA. "The spacecraft was traveling at more than twice the speed of sound at 47,000 feet, which is at the boundary of the stratosphere where there are physical changes such as optical and visual phenomena and shock waves."

Graham said the ship's two solid-rocket boosters, which could be seen heading away from the fireball and forming a huge Y-shaped trail in the

sky, were deliberately destroyed by the range safety officer, who gave a computer command that triggered explosives stored aboard the rockets.

"There was an indication one of the solids was heading for a populated area and he took the correct action," Graham said. After a normal launch, the boosters drop off the shuttle fuel tank, parachute into the ocean, and are recovered by waiting ships.

Their condition, had they been intact, might have helped solve the incredible jigsaw puzzle confronting the space agency.

The officials reiterated that there will be no more shuttle flights until investigating teams have made their report and corrective actions are taken.

Repercussions seen for space program

By ADAM BOONE
Collegian Science Writer

Tuesday's space shuttle tragedy may deal a crippling blow to astronomy and other areas of space science research, said a University professor of astronomy.

Daniel W. Weedman said the disaster will undoubtedly have an impact upon the launching schedule of future shuttles, which will greatly affect planned satellite programs.

"I consider it a disastrous setback for space astronomy," he said. "Everything that relies on the space shuttle will be delayed and deferred."

National Aeronautics and Space Administration spokesman John Lawrence at the Johnson Space Center in Houston said he could not speculate on how far back the space shuttle launch schedule will be pushed as a result of the ongoing inquiry into Tuesday's explosion.

"I feel it will be a very lengthy investigation," Lawrence said, adding that the investigative team began gathering information in hopes of discovering the cause of the disaster.

Dick Smith, director of Kennedy Space Center, said, "(NASA) hasn't made any decisions yet on how (the disaster) will affect the shuttle program."

Weedman said a number of astronomical satellites were scheduled to be carried into orbit by the shuttle later this year.

NASA planned to observe Halley's Comet with instruments launched from a shuttle. Because of the shuttle delay, these will be unable to reach their necessary positions in time to view the comet, he said.

Gordon P. Garmire, professor of astronomy, said the Galileo space probe will also miss its scheduled launch in May. Galileo was to travel to Jupiter, where it would go into orbit and release a probe into the planet's atmosphere.

The Galileo and the Ulysses — a solar satellite — were dependent on the shuttle for specific launch dates, times that will now be missed because of the launch delay, Garmire said.

Galileo will have to wait at least a year before Jupiter will be in the right position for the probe launch, he said.

Another large astronomical telescope, called Space Telescope, was planned to be carried into orbit. This launch will also suffer a delay, Garmire said.

Smith said conventional rocket boosters are available to carry satellites into orbit — the Atlas Centaur and the Delta vehicle — thus providing an alternative to the shuttle.

However, Weedman said these will not work in the case of the Galileo.

"(The Galileo is) far too big to be launched by any other vehicle (than the shuttle)," he said.

Weedman said he believed NASA's reliance on the shuttle for launching its probes and satellites is necessary because of the money involved. NASA could not afford to develop the shuttle program and continue to use non-reusable rocket boosters.

Garmire said he believes NASA may have put too much effort into the shuttle program, adding that the agency should have continued to develop larger, unmanned rocket boosters to back up the shuttle for satellite launches.

"I've always felt scientific missions did not benefit from the shuttle specifically," he said. "I never felt secure in putting all the eggs in one basket."

Garmire said the cost is typically less for an unmanned satellite launch than for the shuttle; however, in space technology development, "it's expensive to change direction now."

Garmire agreed that scientific aspects of space exploration will be significantly delayed. "(However), that pales with the loss of (human) life," he said.

Smith said the other shuttles — Discovery, Columbia, and Atlantis — have been shut down until the investigation is completed.

NASA will halt work on the remaining shuttles "until we understand the fundamental causes of the incident and take corrective measures on the other vehicles," he said.

Smith said while the future of the shuttle program may be questioned, he is optimistic.

"I'm confident we'll have many more shuttle launches in the future because the needs of the space program aren't going to go away," he said.

Meanwhile, the nation's grief continues

By TAMARA JONES
Associated Press Writer

"Why did all these good people have to die? Why now? Why them?"

The unanswerable questions of a 10-year-old Minneapolis schoolgirl reflected the anguish of a nation yesterday as families, friends and admirers grieved for the seven victims aboard the shuttle Challenger.

Wall Street tickers briefly halted and flags fluttered at half staff. Radio stations, schools and legislatures observed moments of silence.

Hundreds of mourners packed a church last night in Christa McAuliffe's hometown of Concord, N.H., where she was remembered as a teacher "who led us to the threshold of space and on to the face of God."

At the White House, President Reagan pledged to continue the space program, then turned to the sad task of telephoning families of the victims to offer his condolences.

Reagan and his wife, Nancy, planned to attend a memorial service for the Challenger crew tomorrow in Houston.

In Washington, legislation to establish a national recognition day for teachers in McAuliffe's memory was introduced in Congress.

"However painful it is to remember, we must always cherish the pioneering spirit that led Christa McAuliffe and our brave astronauts to break the barriers of the unknown," said Rep. Gary Ackerman, D-N.Y., the bill's sponsor.

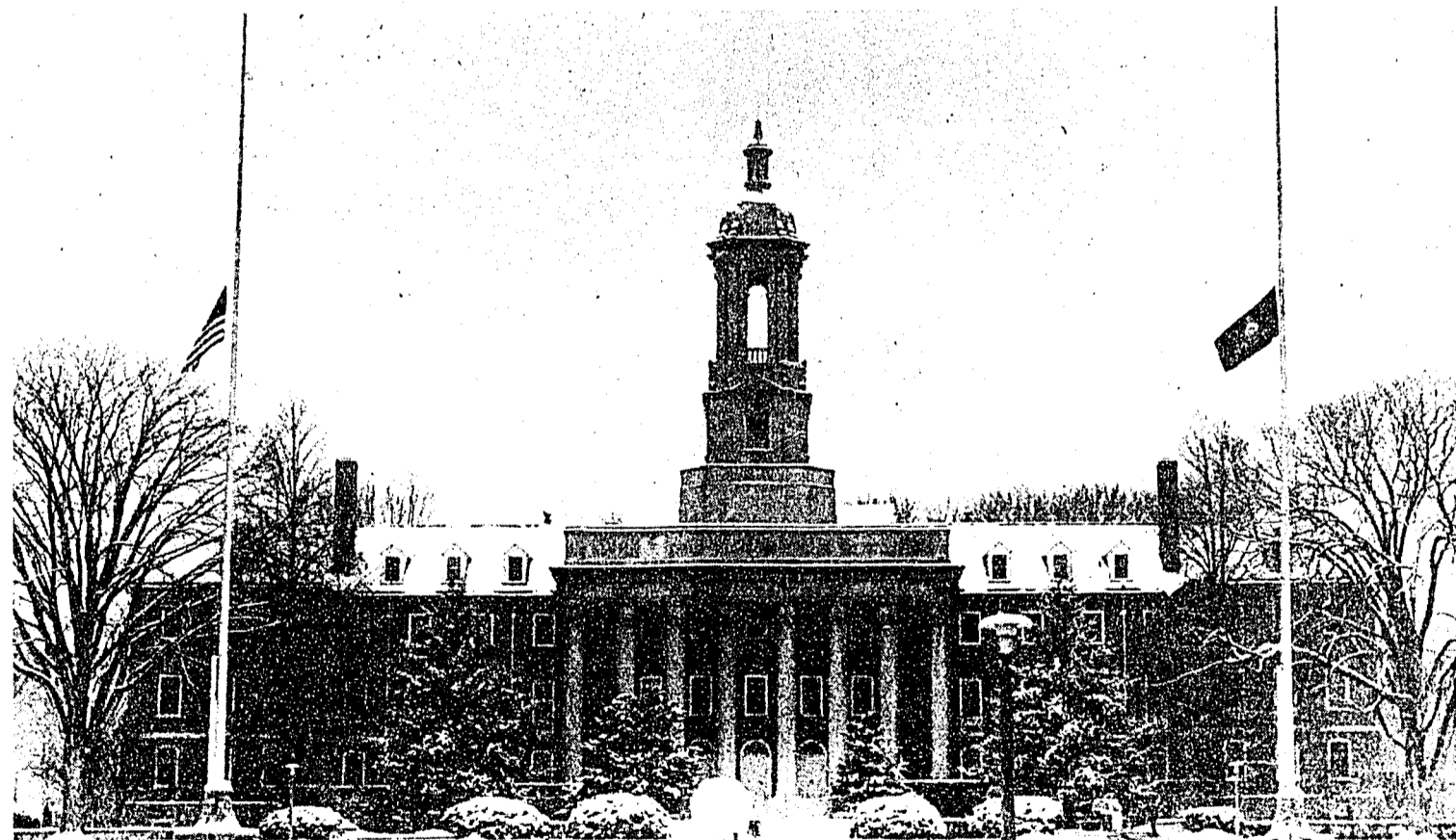
The legislation would establish National Teacher Recognition Day to be celebrated each year on Jan. 28.

Counselors tried to help children cope with the trauma after classes across the country turned on television sets Tuesday to watch teacher Christa McAuliffe become the first private citizen in space — and instead saw the world's worst space disaster.

Fifth- and sixth-graders at Barton Open School in Minneapolis had listened to the launch over the classroom loudspeakers, and heard the horrified reaction of spectators at Kennedy Space Center.

"I couldn't believe it. It seemed unreal," recalled 10-year-old Liza Moscovice. "I could hear the screams of agony over the loudspeaker, the crying and moaning. I could see their faces and I could feel what they must have been feeling. It was terrible."

"Why did all these good people have to die? Why now? Why them? It was like a nightmare come true."



The cold weather reflects the feelings of the nation in the wake of Tuesday's explosion of the space shuttle Challenger. Penn State honored the seven passengers of the ill-fated shuttle by lowering its flags to half-mast shortly after the disaster.

Residents of several states, including Illinois, Indiana and New Mexico, were urged to turn on their porch lights for 12 hours starting at 7 p.m. last night to honor the Challenger crew.

The porch-light vigil originally was intended to honor McAuliffe as part of a nationwide effort promoted by state school superintendents. It was to have taken place on the eve of McAuliffe's lessons from space, to symbolize the illumination of teaching and learning.

Mike Brasher, general manager of KANW-FM, a public radio station operated by Albuquerque Public Schools, was the man who suggested live lessons from space for school children.

Brasher said he was "sickened" when he saw

the shuttle explode, but added, "I hope that they'll try again and have another teacher go up in space."

On Wall Street, trading stopped, tickers froze and the shouts of traders faded away when a bell clanged twice at 11 a.m. signaling a minute of silence.

Similar observances were held at the American Stock Exchange, the New York Commodity Exchange, the New York and Chicago Mercantile exchanges and the Chicago Board Options Exchange.

"It's not often that we do it, but I think it's important that some respect be shown to people who have paid a price for America," said New York Stock Exchange spokesman Richard Torrenzano.

In East Hanover, N.J., Al Lasso said he hung red, white and blue ribbons on trees in front of his house as a gesture of mourning for the shuttle astronauts.

"It'd be nice if the whole nation could do it," Lasso said.

At the University of Oklahoma, students were planning a candlelight vigil tonight. Most of the families of the Challenger seven returned to Houston but remained in seclusion with NASA guards outside their homes as friends and colleagues from the space community sought to comfort them.

McAuliffe's parents and siblings returned to the family home in Framingham, Mass., under heavy security.

Wachob vows to unseat Clinger

By MEGAN O'MATZ
Collegian Staff Writer

William Wachob last night announced his intention to unseat U.S. Rep. William F. Clinger during November's congressional race, in what promises to be an interesting rematch between Wachob and the incumbent congressman who defeated him by a narrow margin in 1984.

Claiming that he has set out to finish the job he began two years ago, Wachob, a former state representative and a consultant for Penntech Papers, said the problems he addressed in his last campaign have not been solved.

Speaking from the Sheraton Penn State, 240 S. Pugh St., his fourth stop on a five-day spree of announcement parties and press conferences, Wachob said problems concerning unemployment, toxic waste and the growing arms race still need to be resolved.

In 1984 Wachob, a Democrat, mounted a powerful challenge to Clinger.

Please see 'Wachob,' Page 18.

thursday

weather

This afternoon, it will be windy at times with a mix of sunshine and a few clouds. High of 24.
..... Heldi Sonen