


The Orlando Sentinel

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Today's 12-page A section deals exclusively with the shuttle tragedy. World and national news and the opinion pages are in the B section.

A city's pride becomes emptiness of loss

By Anne Groer

SENTINEL WASHINGTON BUREAU

Reaction: Concord, N.H.

CONCORD, N.H. — "Reach for the stars," Christa McAuliffe used to tell her social studies students at Concord High School.

On Tuesday, a stunned and somber Charles Foley, the principal, recited those words as he sought to explain the fiery death of a beloved colleague and the nation's first teacher-astronaut.

"Her words are more applicable now than they ever were and Christa would want [her students] to believe that and feel that," Foley said at a press conference almost four hours after the shuttle explosion.

Concord High students, who earlier had sported party hats, noisemakers and streamers as they watched the televised launch, were suddenly ordered back to their classrooms from the library, auditorium and cafeteria.

Foley sent them home at midday, closed the school today and asked school psychologists and counselors to stand by to help students already traumatized late last year when a student dropout returned to school with a shotgun and was later killed by a policeman.

Townpeople — who had turned out by the hundreds in July when McAuliffe was chosen from among more than 11,000 teachers — sat along Main Street in the New Hampshire capital as they tried to make sense of the explosion. Their triumph had turned to tragedy. In newsstands around town, an enormous headline in the Concord Monitor proclaimed "Shuttle Explodes."

Residents took to heart the news about the plain-spoken, exuberant woman who always told them they could be more than they might imagine.

"Although the impact would be the same in a town of any size, in Concord, because we tend to know each other better, it's like losing a member of the family," said Fred Kocher, a former city council member working in Concord for U.S. Sen. Warren Rudman.

Please see CITY, A-10

Explosion kills all 7 crew members



What went wrong?



Shuttle's booster rockets veer off crazily from the enormous ball of flame that marks Challenger's tragic end 10 miles above the Earth.

Theories cite cold weather, tank damage

By James Fisher

OF THE SENTINEL STAFF

CAPE CANAVERAL — The cause of the catastrophic explosion that destroyed Challenger on Tuesday remains a mystery, but television pictures point to the fuel-laden external tank as a prime clue.

The 15-story, apricot-colored tank, which holds 528,000 gallons of liquid oxygen and hydrogen, appeared to explode first, shattering the fragile spaceplane and killing its seven crew members.

The tank was attached to the underside of Challenger. It normally supplies fuel to a shuttle's three main engines for the first 8½ minutes of flight and then is jettisoned to fall into the ocean.

Two solid-fuel rocket boosters attached to the tank also provide thrust. They normally fall away at 2 minutes, 7 seconds into flight and drop into the Atlantic by parachutes. Unlike the fuel tank, they are recovered, cleaned and reused.

"I think the tank just came apart," said Sam Beddingfield, who retired in November as deputy director of space shuttle management at Kennedy Space Center.

He watched the launch from his Titusville home and studied slow-motion replays on television.

"The whole orbiter appeared to disintegrate," he said. "The first two minutes and four seconds of the launch are very dangerous because the solid rocket boosters are burning. If anything happens during this time, it's a catastrophe," Beddingfield said.

Other experts speculated that freezing temperatures at the pad and the rocket boosters may be linked to the explosion.

Marc Vaucher, program manager for the space station project at the Center for Space Policy in Cambridge, Mass., said, "It sure looked to me like I saw a flare-up coming out of the external tank somewhere near one of the solid rocket boosters."

He wondered whether a chunk of ice might have fallen and somehow dented or damaged the tank or the rocket boosters.

Bert Zin, a Georgia Tech University professor who specializes in fuels and propulsion, said that a bonding agent that binds the solid fuel to the inside of the boosters could have become unstable if it contracted or expanded in the freezing temperatures at the pad.

"Maybe it broke or separated," he said.

NASA shuttle chief Jesse Moore saw the television pictures too but warned against early conclusions.


"It will take all the data and a careful review of the data before we can draw any conclusions," Moore said.

To assure that nothing would be

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◆ The freeze and what it meant to Florida.

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Noel Holston on the ironies in tonight's episode of 'St. Elsewhere' on NBC.

Page E-1

Challenger's gone in ball of fire — nation in shock

By James Fisher

OF THE SENTINEL STAFF

CAPE CANAVERAL — Grief, investigations and soul searching shrouded America's troubled shuttle program Tuesday after the catastrophic explosion of Challenger that took seven lives — the greatest tragedy in man's conquest of space.

"We mourn seven heroes," said President Reagan.

As students around the nation watched on television, schoolteacher Christa McAuliffe and six astronauts perished in a huge fireball when the shuttle was 10 miles high and 8 miles southeast of Cape Canaveral at 11:39 a.m., 75 seconds after launch.

It was the first time American astronauts died in flight, and the worst U.S. space tragedy since Gus Grissom, Ed White and Roger Chaffee died in an Apollo spacecraft fire during a mock countdown Jan. 27, 1967.

Victims of America's 56th manned spaceflight, the 25th of the shuttle program and Challenger's 10th, were commander Francis "Dick" Scobee, 46; pilot Michael Smith, 40; Judith Resnik, 36; Ellison Onizuka, 39; Ronald McNair, 35; engineer Gregory Jarvis, 41; and McAuliffe, 37, the Concord, N.H., social studies teacher chosen from 11,000 applicants to be the first private citizen in space.

Many of their families, including McAuliffe's, watched in horror from nearby sites several miles from refurbished launch pad 39B, used for the first time since 1975.

Hours later, heat-resistant shuttle tiles began washing ashore south of the Cape. Passers-by were taking them to the south

Please see STUNNED, A-3



Nightmare in the sky for Christa's family . . . sister Betsy, parents Grace, Ed Corrigan.

The shuttle explodes

What happened (shown in white) and emergency landing procedures.

The last words

Words from Challenger were all routine through the 75 seconds of flight. There was silence after the spacecraft erupted.

Here is a transcript of those seconds as recorded by NASA.

Launch control public information commentator **Hugh Harris**: 10-9-8-7-6, we have main engine start, 5-4-3-2-1, and liftoff. Liftoff of the 25th space shuttle mission. And it has cleared the tower.

Pilot Mike Smith: Roll program.

Mission control spacecraft communicator: Roger, roll, Challenger.

Mission control public information commentator **Stephen Nesbitt**: Roll program confirmed. Challenger now heading downrange. The engines are throttling down now at 94 percent. Normal throttle for most of the flight is 104 percent. We'll throttle down to 65 percent shortly. Engines at 65 percent. Three engines running normally. Three good fuel cells. Three good APUs (auxiliary power units). Velocity 2,257 feet per second (1,400 mph), altitude 4.3 nautical miles (4.9 statute miles), down-range distance 3 nautical miles (3.4 statute miles). Engines throttling up, three engines now 104 percent.

Mission control spacecraft communicator: Challenger, go at throttle up. **Smith**: Roger, go at throttle up. (Fireball occurs.) **Nesbitt**: We're at a minute 15 seconds, velocity 2,900 feet per second (1,977 mph) altitude 9 nautical miles (10.35 statute miles), range distance 7 nautical miles (8.05 statute miles). (Long silence.)

Nesbitt: Flight controllers are looking very carefully at the situation. Obviously a major malfunction. We have no downlink (communications).

We have the report from the flight dynamics officer that the vehicle has exploded.

Source: NASA

75 seconds
10.35 miles — 8 miles downrange.
1,977 mph.
Full throttle of main engines.

Explosion

2 minutes
28 miles.
3,094 mph.
Boosters jettisoned. Can abort for return to launch site.

4 minutes
Can abort after one suborbit of Earth.

115-169 miles
Shuttle reaches desired orbit.

8 minutes
Main engines cutoff — external tank jettisoned. Can abort to orbit for normal re-entry.

60 seconds
33,600 feet.
Maximum stress on shuttle.

35 seconds
Main engines throttled down to 65 percent to reduce 'G' force.

External tank jettisoned no closer than 24 miles to launch site.

Roll begins after shuttle clears tower.

Launch

30 seconds before launch.
Emergency escape by slide wires to bunker on ground.

Debris impact
18 miles southeast of launch site.

STUNNED

From A-1

gate of the Cape, where they were being driven to the Kennedy Space Center.

Col. Bob Nicholson, an Air Force spokesman, said every available piece of debris would be needed for the investigation. But he said some debris could contain explosives, and said for people to call the Air Force if there is any question about the nature of the debris.

Rescue craft were retrieving other debris, mostly tiles.

Stunned NASA officials refused to speculate on what went wrong, but it appeared trouble could have developed in the huge external fuel tank, launched with 528,000 gallons of volatile liquid propellants.

The 2,200-ton spaceplane, whose boosters carried 2.2 million pounds of solid propellant, lifted off normally at 11:38 a.m. Then the boosters ejected sideways as Challenger and the external tank exploded.

The boosters spiraled away, spinning like skyrockets with flames gushing from their nozzles as they careened toward the Atlantic far below.

There was no sign of life. Television pictures indicated the explosion might have originated in the shuttle's external tank.

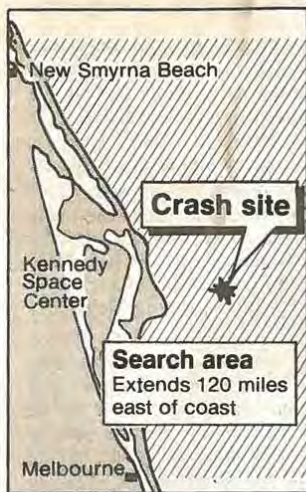
"We will not speculate as to the specific cause of the explosion based on that footage," said NASA shuttle chief Jesse Moore. "It will take all the data, a careful review of that data before we can draw any conclusions on this national tragedy."

He said the space agency is forming an investigating board that will make a "careful review" of all data "before we can reach any conclusions." Two congressional committees announced investigations.

Moore said he had created an interim investigative board "to implement preliminary activities in this tragedy," to secure all data so it can be fully analyzed.

NASA acting Administrator William Graham will appoint an official investigation board within a day or two, Moore said.

"Data from all the shuttle in-



strumentation, photographs, launch pad systems, hardware, cargo, ground support systems and even notes made by any member of the launch team and flight operations team are being impounded for study."

"There were no signs of abnormalities on the screens" as flight controllers monitored Challenger's liftoff and ascent, said an official at the Johnson Space Center in Houston. He said the blast came "unexpectedly and with absolutely no warning."

The shuttle's three main engines had just returned to full power after they had been cut to 65 percent power to reduce stress from gravity and other forces in the first minute of launch.

"We have a major malfunction," came a voice over the loudspeakers.

Seconds later a spokesman in Mission Control at Houston said:

"We have a report from the flight dynamics officer that the vehicle has exploded. The flight director confirms that. We are checking with the recovery forces to see what can be done at this point."

Jess Parrish Memorial Hospital in Titusville, the first stop for injured astronauts, never was put on alert. Within five minutes of the explosion, NASA "informed us they wouldn't need us," said hospital administrator Richard Lind.

The impact area is about 60 by

120 miles, beginning about 50 miles southeast of the launch pad, said Air Force Col. Nicholson. The area is centered about 18 miles south-southeast of Cape Canaveral.

Recovery ships and aircraft were prevented from entering the recovery area for almost an hour afterward because radar indicated debris was still falling, Nicholson said.

The purpose of the mission was to release and retrieve one satellite to study Halley's comet and launch another to become part of the space-based shuttle communications network.

McAuliffe was to teach two 15-minute lessons on the fourth day of the mission. Public Broadcasting Service was to carry the telecast live, and hundreds of schools planned to tune in.

Linda Long, who had been an aide to McAuliffe since last September, said she anticipated the flight almost like the way you anticipate riding a roller coaster," Long said.

Tuesday morning, Long told McAuliffe she thought the shuttle would lift off.

"She said 'great.' She turned around and smiled. She was ready to go."

Among those who witnessed the explosion were McAuliffe's husband Steve, an attorney, and their two children, Scott, 9, and Caroline, 6. Also on hand were members of Scott's third-grade class from Concord, N.H., displaying a large "Go Christa" banner.

McAuliffe's parents, Ed and Grace Corrigan, of Framingham, Mass., stood silently during the launch, arm in arm. A NASA official climbed up rows into the bleachers, walked to them and said, "The vehicle has exploded."

Mrs. Corrigan looked back at him. "The vehicle has exploded?" she asked. He nodded silently and the Corriganes were quickly led away.

All 1,200 students at McAuliffe's Concord High School were cheering the televised launch when a teacher yelled for them to be silent because something appeared to be wrong.

The U.S. House interrupted its

session and the chaplain delivered a prayer for the astronauts. The House then adjourned.

The flag at Kennedy Space Center rested at half-staff after the explosion.

"There was absolutely no pressure to get this particular launch off," Moore said.

"We have always maintained that flight safety is our top priority. All of the people involved in the program, to my knowledge, thought that Challenger was quite ready to go, and I made the decision along with the ... support team that we launch."

Moore said he has suspended operation of the shuttle program "for a few days so we can sit down and assess this. We are not going to pick up any flight activity until we fully understand what the circumstances are."

When launches will resume "is very difficult to estimate at this time. It's going to be a function of what the board finds were the difficulties today and what corrective actions have to be taken," he said.

Rockwell International, the shuttle manufacturer, is continuing to build shuttle spare parts and could supply another shuttle if NASA and the government decide to get another, Moore said.

He said the shuttle program did not necessarily have to have four shuttles to meet its goals.

Asked if the shuttle is too complex to be reliable, Moore said, "I don't want to speculate on that at this point in time. It will be a logical question for somebody to ask."

Vice President George Bush, Ohio Sen. John Glenn, an early astronaut, and Utah Sen. Jake Garn, who flew on the shuttle last April, arrived at Kennedy Space Center about 6 p.m. to offer their condolences to the victims' families.

To schoolchildren, Bush said, "You must try to understand that spirit, bravery and commitment are what make not only the space program, but all of life worthwhile."

"We must never ... stop hoping, stop exploring or stop discovering."

Glenn said, "In nearly a quarter of a century, we thought this might happen sometime, but we delayed that day until today."

"While we have many tri-

Flood of calls shuts down Brevard, KSC phone lines

By John Wark

OF THE SENTINEL STAFF

Circuits overloaded and long-distance telephone lines to the Kennedy Space Center jammed Tuesday almost immediately after the shuttle explosion that millions saw on television.

So many calls were placed to Brevard County that the local telephone system "locked up," said Larry Strickler, a Southern Bell Telephone Co. spokesman.

"It reached a saturation point and wouldn't take any more," he said.

Strickler said Southern Bell workers had to take direct control over switching equipment in Orlando to handle the problem. That meant blocking a surge of calls from around the

nation and the world "to minimize the number of calls" passing through switching equipment in Orlando, Strickler said.

From 11:40 a.m. to 12:20 p.m. most callers to Brevard could get only a busy signal or a recording saying all circuits were busy, Strickler said.

By early afternoon, telephone company workers were succeeding in managing the calls in and out of the space center, Strickler said, but service remained spotty.

Strickler said there also was a dramatic surge in the number of calls made locally in Orlando. During the first 15 minutes after the tragedy the switching station on Magnolia Avenue in downtown Orlando handled 73,125 calls, 50 percent more than normal.

umpns, many of them, once in a while there is tragedy," said Glenn, first American to orbit Earth.

The immediate families of the seven crew members watched the launch from atop the launch control center. Parents and other relatives watched from the VIP bleachers near the press site about two blocks away.

The recovery force included two C-130 Coast Guard planes, two Patrick Air Force Base H-3 Jolly Green Giant helicopters, the solid rocket booster recovery ship Liberty, a Coast Guard hydrofoil boat, two Navy H-3 helicopters, and a Coast Guard cutter from Grand Bahamas Island. Later, other ships joined the search.

A parachute was attached to one piece of debris, possibly from one of the rocket boosters.

The water in the recovery area is about 120 feet deep.

Aircraft crews were pointing out debris for the ships to pick up, but at one point low clouds made visibility too poor for the aircraft to be much help.

The planes had to give up the search because of darkness Tuesday evening, but the ships were

expected to stay in the area.

The launch, postponed six times because of weather and problems with the previous Columbia mission, had been set for 9:38 a.m. But replacement of some launch pad circuitry overnight related to the fire extinguisher system delayed it an hour. It was further delayed to allow for inspection for ice Tuesday morning.

When liftoff occurred, the sky was perfectly clear.

Challenger was considered the workhorse of NASA's shuttle fleet.

The fiery explosion, including the separation of the boosters, could be seen plainly from as far away as Tampa, witnesses reported.

Reagan watched tape replays in "stunned silence," and postponed the State of the Union message he was to deliver Tuesday night. He made an evening Oval Office speech on the tragedy and sent Bush to Florida to convey his sympathies to the families of the crew members.

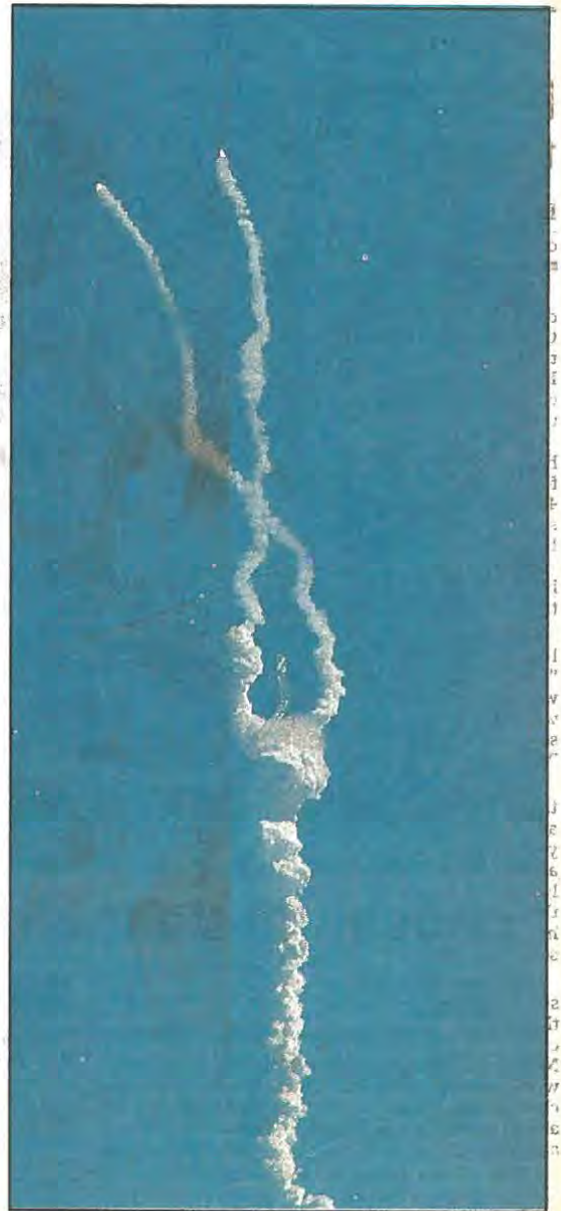
Sentinel reporters Charlie Jean and Jim Leusner contributed to this story.



RED HUBER/SENTINEL



RED HUBER/SENTINEL



GEORGE SKENE/SENTINEL

After Challenger lifts off from pad 39B (left), zigzagging trails of smoke tell the stark story of the explosion — the solid rocket boosters career crazily through the sky.

Slowly, surely — horror sinks in

By Jay Hamburg

OF THE SENTINEL STAFF

Across Central Florida, people shared a reaction. They stopped. A strange feeling chilled them. Had something gone wrong? They hoped and prayed. Then, running for a television or radio, they knew.

At the Kennedy Space Center, shuttle heat tile specialist Michael Duda watched in the Vehicle Assembly Building 3 miles from the launch pad with about a half-dozen other workers.

For several seconds after the explosion, they did not speak.

Duda said to himself, "This isn't happening. It's a dream. It isn't real."

A Lockheed worker from Orlando, Duda, 35, has seen every shuttle launch. He had helped ready the Challenger for this one.

The workers on the ground tried to make sense of the confusion of smoke in the sky. "We were hoping that the shuttle got away," Duda said. "Then we saw all kinds of pieces coming down. We thought we had lost everything."

In tears, Orange County Commissioner Vera Carter rushed out of her office to tell staff members.

Commissioners, their aides and staff members crowded around a color television in a staff lounge. They watched replays of the explosion in silence. One scene showed a parachute floating to the ground. They hoped it was a good sign.

Then television announcers said the parachute held no crew.

"It's a tragedy," one aide said.

"It's worse than that," County Administrator Tom Sewell said.

They left in silence.

The white streams of the explosion lingered in the sky. The radio reported a disaster.

Tractor-trailers slowed along Interstate 4. Cars and pickups pulled off to the sides of the road and stopped, their drivers looking east.

Couples held hands, and three men hugged each other.

Drivers and passengers dried tears from their eyes, glancing repeatedly to the east where the white shuttle trail twisted, 10 miles high.

In bright daylight, nearly all the drivers turned on their headlights in what might have been an expression of hope for the seven crew members — or a final salute.

A regular event in Central Florida, launches still draw visitors from other parts of the country.

Chester and Sam Arthur thought it was important enough to take their 7-year-old daughter, Rachel, out of school in Milton, Pa., their home.

With others on the State Road 528 causeway north of Cocoa, they watched the explosion.

Rachel said later, "My heart just left the place it's supposed to be when they said it exploded."

Many compared that sick feeling to the loss they felt when President Kennedy was shot in Dallas.

"We haven't had such a feeling in the pit of our stomachs since the day Kennedy was assassinated," said Linda Kobal, a travel consultant in Winter Park.

Reaction: Florida



TOM BURTON/SENTINEL

Terry Williams watches tragedy in a TV department at Orlando's Fashion Square.

Barbara and Ray Giulioli, visiting Walt Disney World's Epcot Center from Michigan, felt the same.

"It's just a tragedy," said Giulioli. "It's the same feeling as when John Kennedy was assassinated."

At the Columbia Restaurant at St. Armand's Key near Sarasota, where people were gathering for lunch, the presidential tragedy also was recalled.

"We just couldn't believe our eyes," said Casey Gonzmart, 37, the manager. "It was the same gut feeling I had when I was in high school in Tampa and they said President Kennedy had been shot."

After the explosion had been replayed several times, Gonzmart had the television turned off. "I couldn't watch it anymore."

Others watched again and again to try to understand.

In stores at Colonial Plaza and Fashion Square malls, shoppers and employees gathered around televisions to watch replays.

Most people watched quietly, shaking their heads in disbelief.

Kathy Hudson, a Sears employee, said she believed the fire was from the booster separation.

"At first, that's what I thought it was doing. But it was too much of an explosion."

When the solid rocket boosters flew in separate directions, they crisscrossed, leaving a weird trail of smoke that hung a long time.

Felicia Sherman, 32, was watching from outside a travel store in Pine Hills.

"I was petrified. I was shaking like a leaf."

Through binoculars, she saw a parachute.

"I was hoping and I was praying."

After the shock, the realization sank in. Eleanor Fisher, whose son, Bill, flew on a previous shuttle mission, was sitting at home in Winter Park when she heard the news.

"I don't want to think about my son being up

there," she said. "I feel so sorry for those other families. They are so careful down there I just couldn't see how a thing like this could happen."

Nearly 60 angry callers grounded a skywriter for the Rosie O'Grady's Flying Circus Tuesday after the pilot drew happy faces over Orlando while smoke from the explosion lingered.

"People were asking if we had lost our minds," said Bob Bernard, marketing manager for the Orlando entertainment complex.

The pilot was called down immediately. "Once we realized there were fatalities, we stopped," said Joe Kittinger, manager of the Flying Circus. He would not identify the pilot.

Kittinger said the plane took off as the shuttle accident happened, but the pilot went ahead with the advertising.

"All other advertising kept going, like on the radio," said Kittinger. "We're just more visible."

All across Central Florida, people felt a personal loss. All across the state, they tried to understand.

"Why? Why? I guess that's like saying, 'Why did somebody die in a car accident?' The world just seems to be falling apart," said Lisa Crystal Ball, 21, a public relations student at Daytona Beach Community College.

Streams from the explosion remained in the sky southeast of DeLand for about 45 minutes. Pedestrians along the street occasionally would stop and glance up at them.

"I hope it was at least quick for them," said Bill Maurellis, as he looked up at the streams of white smoke from his DeLand service station. "It must have been. They couldn't have even known what hit them."

Orlando Sentinel staffers Geri Throne, Jim Jennings, Ruth Rasche, Donna Bouffard, Scott Rodrian, Tom Scherberger, Mildred A. Williams, Rick Toney, Charlene Hager and Craig Crawford contributed to this story.

Memorial services planned for crew

By Laura Ost

OF THE SENTINEL STAFF

Some political and government activities were canceled Tuesday in the wake of the shuttle tragedy, and several memorial services were scheduled.

Gov. Bob Graham ordered flags at the state Capitol flown at half-staff in memory of the shuttle crew.

In Brevard County, Cocoa and Titusville canceled city council meetings. The county commission adjourned its meeting when it learned the news. Flags flew at half-staff throughout Brevard.

Brevard schools were scheduled to open with a moment of silence today in memory of the crew.

Elsewhere, a boys' basketball game scheduled between Jones High School in Orlando and Kissimmee Osceola High School was canceled, because of both the shuttle disaster and lack of heat in a gym, an official said.

A few area churches and synagogues scheduled memorial services, including Goldenrod Baptist Church and Redeemer Lutheran Church in Winter Park. Both planned services Tuesday night and at 7:30 tonight.

Congregation Ohev Shalom in Orlando scheduled a service for children at 4 p.m. today and Rollins College in Winter Park planned to hold a prayer service today at 4 p.m. in Knowles Memorial Chapel.

Services also were scheduled at First Presbyterian Church in Orlando at 5:15 p.m. today and First Baptist Church of Clermont at 7:15 p.m.

Normal schedules were kept at Orange and Seminole County schools, the Seminole County Commission, the John Young Planetarium in Orlando, the Ocean Center in Daytona Beach, Walt Disney World and Epcot Center, officials said.

The New York Stock Exchange, the American Stock Exchange and the NASDAQ over-the-counter exchange will observe one minute of silence today on the trading floor.

Spaceport will stay open

KENNEDY SPACE CENTER — Spaceport USA, the public showcase for NASA and U.S. space travel, will be open today but without bus tours that take tourists into Kennedy Space Center training and launching areas.

"All of the other attractions will be open. You still will be able to spend three good hours there," said George Meguiar, spokesman for the center.

Meguiar said it is too early to determine whether any changes in exhibits at the center will be made.

Kennedy Space Center, which includes Spaceport USA, closed its gates to the public immediately after the explosion.

By 12:15 p.m. signs were placed along the intersections of U.S. Highway 1 and the NASA Causeway stating that only authorized personnel were allowed on the causeway.

Those already inside the attraction were quickly ushered out. A bus full of elementary schoolchildren from Citrus County and a charter bus from Miami sat in the parking lot as the stunned occupants made plans to return home.

Meguiar said the gates would be open to allow the public to visit the Spaceport center today.

The shuttle tragedy



ASSOCIATED PRESS

Team formed by need to get jobs done: Front row, Smith, Scobee, McNair; in rear, Onizuka, McAuliffe, Jarvis and Resnik.

7 chosen to do their work added up to a lot of firsts

By Michael McLeod

OF THE SENTINEL STAFF

Being first at something had become all but a routine among space shuttle crews. Even so the seven persons selected for the crew of Flight 51 L seemed to have more than their share of firsts.

Publicity focused on teacher Christa McAuliffe, the first private citizen aboard a shuttle flight. But there were other firsts among the Challenger's crew — firsts that symbolized the melting pot atmosphere that has built up during the years of NASA spaceflights.

Mission specialist Ellison Onizuka, 39, was the first Japanese-American astronaut.

Mission specialist Judith Resnik, 36, was the first Jewish astronaut and the second American woman to be in the crew of a spacecraft in orbit.

Mission specialist Ronald McNair, 35, was one of

The crew

the first blacks in space and was said to represent the new kind of astronaut, with a background in the physical sciences rather than aeronautics.

It was the first shuttle flight for payload specialist Gregory Jarvis, 41, but only because of an irony of fate. Jarvis, who had been awaiting a mission for years, was bumped from two missions, including a Columbia flight in December, after NASA assigned U.S. Rep. Bill Nelson, D-Melbourne, to the crew as a congressional observer.

And it was the first mission for pilot Michael Smith, 40, a highly decorated Navy fighter pilot and Vietnam veteran who became an astronaut in 1980.

Smith, McNair, Resnik, Onizuka and spacecraft commander Francis Scobee, 46, had known for a year that they were scheduled for Flight 51 L. Janet Ross, speaking for NASA at Johnson Space Center in Houston, said the announcement that they were

assigned to the flight was made Jan. 29, 1985 — one year ago today.

Originally, said Ross, the space shuttle Atlantis was scheduled to make Flight 51 L. Preliminary plans also suggested that the flight could be used to return to orbit one of two communications satellites that had malfunctioned in space and been retrieved by a shuttle flight in November 1984.

Astronauts are assigned to shuttle flights on the basis of missions and jobs to do, Ross said. She noted that there is no automatic rotation for shuttle crews. Astronauts spend a year in a candidate program before they enter the pool of astronauts who are eligible for spaceflights.

Some flights call for crew members with a particular specialty. Jarvis, an engineer with Hughes Aircraft Co., was assigned to the Challenger crew to conduct six days of orbital experiments in fluid dynamics, research meant to help build longer-lasting satellites. He had said that he was "excited but not nervous."



ASSOCIATED PRESS

Challenger zooms upward
... flag in foreground just after shuttle lifts off.

Flying a way of life, death for Smith

Shuttle pilot Michael J. Smith learned how to fly before he learned how to drive.

Born on a farm in Beaufort, N.C., he grew up within walking distance from the town's municipal airport. He took his first solo flight on his 16th birthday. When the young aviator left home to attend the U.S. Naval Academy, townspeople knew it would be for a future in flight.

A Navy commander, Smith, 40, was one of the astronaut corps' most experienced fliers. He had logged more than 4,300 hours in 28 types of planes. He flew combat missions over Vietnam and was decorated with several medals, including the Navy Distinguished Flying Cross and the Vietnamese Cross of Gallantry with Silver Star. He also served two tours of duty in the Mediterranean Sea aboard the carrier USS Saratoga.

Smith graduated from the Naval Academy in 1967. In 1968 he earned a master's degree in aeronautical engineering from the U.S. Naval Postgraduate School, which boasts of 14 graduates who are present or former astronauts.

Although Smith had been an astronaut since 1980, Tuesday's flight was his first shuttle assignment. He had been on the support crew for several earlier missions, but this one was different: The man who was born to fly was going into space.

He went with the 4,000 residents of Beaufort behind him. His family owns one of the largest farms in town. A neighbor, Bob Burrows, taught Smith how to fly and traveled to Florida to see his pupil fly the shuttle.

This was Mike Smith Week in the town. The mayor sent the astronaut a telegram of good wishes and promised a huge celebration when Smith returned. For weeks, Beaufort ministers and congregations had mentioned Smith in their sermons and prayers. Besides watching the liftoff, area schoolchildren were going to see Smith during space lessons by teacher-turned-astronaut Christa McAuliffe. She was sup-



Michael J. Smith

Pilot

Age: 40.

Family: Married, three children.

Education: B.S. in naval science from the U.S. Naval Academy, M.A. in aeronautical engineering from U.S. Naval Postgraduate School.

Background: A naval aviator, Smith was one of the most experienced pilots in the astronaut corps, logging more than 4,300 hours in 28 kinds of aircraft. Smith held the Navy Distinguished Flying Cross, three Air Medals and the Vietnamese Cross of Gallantry with Silver Star. He completed jet training in 1969 and was assigned to the advanced jet training command, where he served as an instructor from May 1969 through March 1971. He joined NASA as an astronaut in 1980.

Source: Associated Press, United Press International.

posed to introduce Smith and Commander Dick Scobee and explain their jobs to the nation's young.

"He took a town flag with him into space," said Elaine Davis, a secretary at the town hall. "He was going to autograph it while he was up there and then bring it back to us."

Smith and his wife, Jane, had three children, Scott, 17, Allison, 14, and Erin, 8.

Opal Hill, 60, a court clerk in Beaufort and a family friend, said someone had asked Mrs. Smith recently if she was afraid about her husband's mission. "She said after two tours in Vietnam she wasn't afraid," Hill recalled. "All Mike ever wanted to do was fly. The town knew that, and we and his family were behind him."

Angela Stanley, 32, a Beaufort native who grew up with Smith, summed up the feelings of many residents. "We were so proud of him," she said. "When I heard, I thought, if he had to die, at least he was doing what he wanted to do, what he loved — flying."

— WENDY SPIRDURO

McAuliffe: Don't fear dreaming

Sharon Christa McAuliffe never worried about the potential danger of flying into space. Instead she told students and friends, "We need to teach children not to fear dreaming," recalled Mel Myler, executive director of the National Education Association-New Hampshire.

Myler, who had known McAuliffe for the last four years, was at the space center Tuesday.

He and educators who trained McAuliffe for the teaching profession knew why she was selected from among more than 11,000 applicants for the space shuttle flight.

"She was enthusiastic about her work. She had a tremendous personality. And the students were attracted to her," said Joseph Boothroyd, who supervised McAuliffe's first teaching experience, when she was a student teacher in Framingham, Mass.

Myler also recalled that McAuliffe, enjoying her status as a celebrity of the Teacher in Space Project, began signing autographs with the words: "Reach for the stars."

McAuliffe, 5-foot-5, 130 pounds and with a hair style that seemed to confound gravity, was a 37-year-old mother of two who taught such courses as law, economics and the social history of women to juniors and seniors at Concord High School.

She was born Sept. 2, 1948, in Boston, the daughter of Grace and Edward Corrigan of Framingham. In 1966 she graduated from Marian High School in Framingham and in 1970 received her bachelor's degree from Framingham State College.

In an interview after her selection last July as astronaut-teacher, McAuliffe said that she became a teacher almost by default, believing that women had limited career choices in the 1960s. "I kind of didn't know what else to do," she said.

McAuliffe taught in several Maryland schools between 1970 and 1978, when she moved to Bundlett Junior High School in Concord. Her most recent teaching assignment was at Concord High School. It was



Sharon Christa McAuliffe

Teacher

Age: 37.

Family: Married, two children.

Education: B.A. degree in education from Framingham State College, Mass.; M.S. in education from Bowie State College, Md.

Background: McAuliffe was a social studies teacher at Concord High School in Concord, N.H. She was selected from more than 11,000 teacher applicants to become the first private citizen to fly aboard a space shuttle.

Source: Associated Press, United Press International.

there that she devised her own history and social studies course on the American woman.

She was married to her high school sweetheart, lawyer Steven McAuliffe. They were the parents of a son, Scott, 9, and a daughter Caroline, 6.

Aside from her teaching, McAuliffe was active as a volunteer with the YMCA and an organization called A Better Chance, which brought poor children from the inner cities to rural New Hampshire for a few weeks in the country. "She and her husband had children stay at their home," Myler said.

McAuliffe, who earned a master's degree in education in 1978, was chosen from 11,400 applicants for the ride on the shuttle. Despite 114 hours of flight training before the flight and plans for years of public relations tours after the mission's conclusion, McAuliffe did not lose her sense of humor.

After tasting freeze-dried scrambled eggs and dehydrated creamed spinach that would be a meal in space, McAuliffe remarked, "After school cafeteria food, everything tastes terrific."

Myler said, "She was like everybody else. She wasn't from MIT or Duke. She came from a state college and taught in a middle-sized town. She was just a damned good teacher. I think that's why NASA chose her."

— PETER ADAMS

McNair kept hometown in his heart

Ronald E. McNair, who became the second black American astronaut in space as a crew member aboard Challenger almost two years ago, never lost sight of his South Carolina home, friends there remembered Tuesday.

The 35-year-old astronaut was "an outstanding example of the brilliant potential that rests in the minds of our people," South Carolina Gov. Dick Riley said in a statement.

McNair was the Palmetto State's Renaissance man: an expert in laser physics, a NASA mission specialist, a saxophone player, a runner, a boxer and a karate expert. He was married to the former Cheryl Moore of Jamaica, N.Y., who works at the Johnson Space Center in Houston.

The son of an elementary school teacher and an auto body repairman, McNair left Lake City, S.C., after he graduated from Carver High School. He received an undergraduate degree in physics from North Carolina A&T State University in 1971, and a doctorate in physics from the Massachusetts Institute of Technology in 1976. McNair won several fellowships, studied in France and worked as a staff physicist with Hughes Research Laboratories in Malibu, Calif., before he was selected as an astronaut in 1978.

But McNair, whose mother and aunts stayed in Lake City, returned to the small tobacco farming town whenever he could. There were homecoming celebrations to greet him after his first shuttle flight. The stretch of U.S. Highway 52 that runs through the Lake City limits was renamed Ron McNair Boulevard, and he was awarded South Carolina's highest honor, the Order of the Palmetto, by special decree.

He took the letter "C" off his old football letter jacket into space on his first mission, said Barry Myers, publisher of the weekly Lake City News and Post. It now hangs in the Lake City Junior High School building.

Those who knew McNair said



Ronald McNair

Mission specialist

Age: 35.

Family: Married, two children.

Education: B.S. degree in physics from North Carolina A&T State University, doctorate in physics from Massachusetts Institute of Technology.

Background: He became an astronaut in 1978 and was aboard the 10th space shuttle flight in February 1984. McNair, a civilian, also was the second black American astronaut to fly in space. At various times in his academic career, he was named a Presidential Scholar, a Ford Foundation Fellow, a National Fellowship Fund Fellow, a NATO Fellow and winner of the Omega Psi Phi Scholar of the Year award.

Source: Associated Press, United Press International.

he seemed unfazed by his accomplishments.

"He was the same Ron McNair we knew before," said Carlton Gaskins, mayor of the town of about 7,000. McNair was "the kind who would walk with the kings and keep his common touch," said P.C. Lemmon, McNair's principal at Carver High School.

He also made the rounds of local schools and talked enthusiastically about the space program.

"He was wonderful with the schoolchildren in trying to encourage them to hang in there and finish school," Gaskins remembered.

McNair was an exceptional and ambitious student who was "aggressive with his ability," said his elementary school principal, T.R. Cooper. "If he knew something, you could not convince him he didn't know it."

McNair used to talk about becoming an astronaut with the same certainty and determination, Cooper said. "He died doing what he wanted to do."

— MOIRA BAILEY

School ties important to Scobee

When Francis "Dick" Scobee piloted his first shuttle mission on Challenger in April 1984, he took along a medallion from his alma mater, the University of Arizona, and a banner from his high school in Auburn, Wash.

Scobee, who graduated from Auburn High in 1957, had plans to return there in the spring to talk to students about this week's shuttle mission, of which he was commander, Auburn counselor Ed Bean said.

"We have stereotypes of test pilots as brash young men, but Dick was not that way at all," said Bean, who helped coordinate the astronaut's visit to his former high school two years ago after his first shuttle mission. "He was very humble, a low-key person."

During his visit, Scobee presented the school with the banner that made the space trip with him, Bean said. It read, "Trojans fly high with Scobee."

Bean described Scobee, who participated in track and football at the school, as an "all-American student."

His message to the students "was really to select a goal and work toward it," Bean said. "He told me he really loved to fly and that his goal was to get back into the shuttle."

University of Arizona professor Edwin Parks, who taught aerospace and mechanical engineering to Scobee during his senior year, called the astronaut "a good, motivated student."

During his two years at the Tucson university, Scobee was a member of the university honors program and Tau Beta Pi, an engineering honor society.

Scobee was born May 19, 1939, in Cle Elum, Wash. His parents, Mr. and Mrs. Francis Scobee, who were watching the blastoff from the VIP viewing



Francis "Dick" Scobee
Shuttle commander
Age: 46.
Family: Married, two children.
Education: B.S. degree in aerospace engineering from the University of Arizona.
Background: Scobee was the pilot aboard Challenger in April 1984. He worked briefly for the Boeing Co. in Seattle before joining the Air Force in 1957.
Source: Associated Press, United Press International.

area at Cape Canaveral, are residents of Yakima, Wash.

Scobee's wife, June, and two children, Kathie, 25, and Richard, 22, of Houston, were also in the viewing area.

The first enlisted serviceman to become an astronaut, Scobee joined the Air Force before enrolling at the University of Arizona. He graduated in 1965 with a degree in aerospace engineering.

Scobee completed Officer Candidate School, trained as a test pilot and flew a combat tour in Vietnam. Later he was a test pilot at Edwards Air Force Base, logging more than 6,500 hours in 45 different aircraft. He joined NASA in 1978.

Scobee's first Challenger mission in 1984 was the most ambitious of its time — to capture and repair the faltering Solar Max satellite.

Described by Bean as "sensitive, warm and compassionate," Scobee was also a realist.

In one interview, the pilot said, "When you find something you really like to do and you're willing to risk the consequences of that, you really ought to go do it."

— SANDRA MATHERS

Launch was 1st close up for Jarvisses

By Prakash Gandhi

OF THE SENTINEL STAFF

It was the first shuttle launch Bruce and Ellen Jarvis had seen up close. Bruce's son, Gregory, was a payload specialist on it.

"We took pictures. We were applauding," Ellen Jarvis said. "We didn't know it was an explosion."

Hours afterward, Jarvis' stepmother said she and her husband were still hoping that he was alive.

"We are just numb. It hasn't sunk in," Ellen Jarvis said at her home at 2952 Plaza Terrace Drive in the Audubon Park area of Orlando.

Later, after the deaths of the crew were confirmed, she said, "Life just goes on. We are still very proud of him. He was a person to be proud of."

She said her husband was examined by a doctor at the Kennedy Space Center because he was in mental shock after he heard about the disaster. But he was all right and sleeping Tuesday night, she said.

Jarvis, a payload specialist for the Hughes Aircraft Co. in Los Angeles, was on his first shuttle flight. He was picked from 700 Hughes employees who applied for the flight to experiment on fluid dynamics.

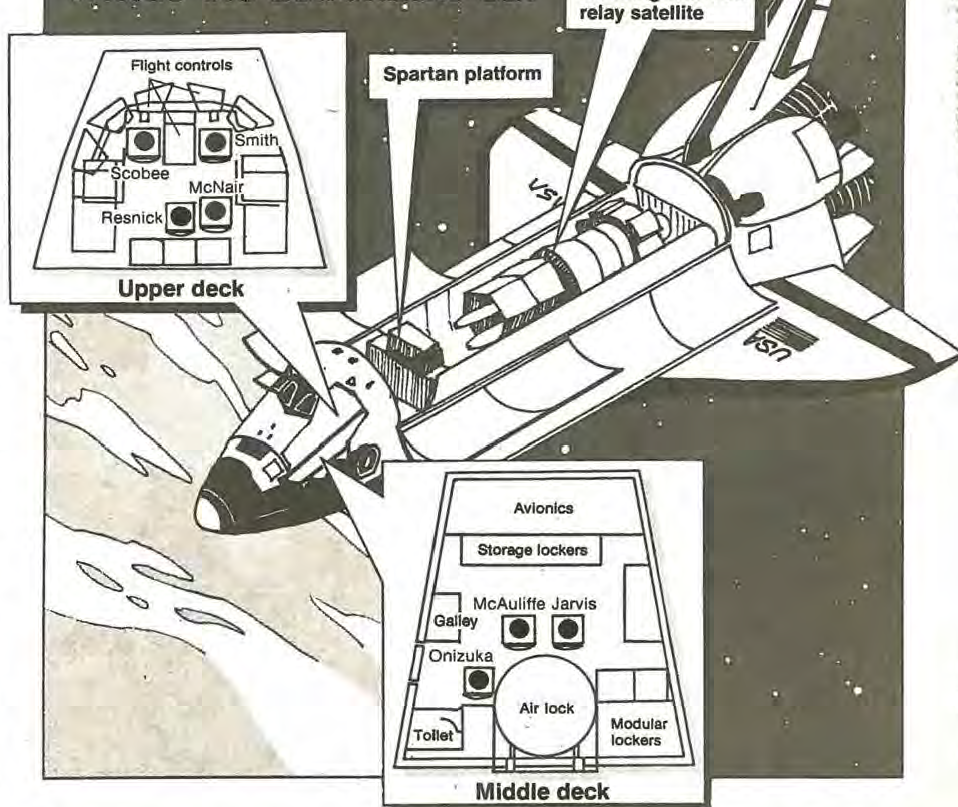
Bruce and Ellen Jarvis moved to Orlando 11 years ago from Mahaw, N.Y. The couple moved to their present home about three months ago, neighbors said.

Before the launch, Ellen Jarvis said she was excited with anticipation. She said Gregory never lived in Orlando but visited when he got the chance, such as when he was at Cape Canaveral.

Lorraine Daly, 2938 Plaza Terrace Drive, said the Jarvisses are "supernice people."

"They are a very happy couple ... ideal neighbors. They have made themselves a friendly part of the neighborhood."

Where the astronauts sat



Flight plan grew routinely despite delays

By Charlie Jean

OF THE SENTINEL STAFF

Challenger's flight had been delayed six times but otherwise shaped up as a routine shuttle flight.

Its most publicized aspect was the presence of Christa McAuliffe, selected Aug. 27, 1984, as the first teacher to fly in space.

Mission planning invariably changes during the months and years leading to a flight, and this one was no exception.

It was decided last year that the mission would conduct 40 hours of observations of Halley's comet and would put out NASA's second tracking and data relay satellite.

Problems with the satellite system had postponed earlier scheduled launches.

The mission

Rookie payload specialist Gregory Jarvis was added to the crew late last year. He had been scheduled to fly on Columbia, which went up this month, but was bumped to make way for Rep. Bill Nelson of Melbourne.

Challenger's launch was postponed by one day six times.

It was postponed three days because of delays connected to Columbia's mission earlier this month. Weather overseas and in Florida caused three other delays.

The tragedy came within one day of the anniversary of the Apollo fire that killed astronauts Gus Grissom, Ed White and Roger Chaffee on Jan. 27, 1967.

Onizuka: Job, family was his life

When Air Force Lt. Col. Ellison S. Onizuka, 39, was growing up in Kona, Hawaii, he used to tell his friends and relatives that he would someday be a space explorer.

Onizuka's dream was realized in 1978 when the former aerospace engineer and pilot was selected as an astronaut by the National Aeronautics and Space Administration.

He was a crew member aboard the space shuttle Discovery almost exactly a year ago for the 15th shuttle mission. He was a mission specialist aboard the ill-fated space shuttle Challenger.

"Ellison always wanted to be an astronaut," said Gilbert Onizuka, 71, the astronaut's uncle, in a telephone interview from Hawaii. "Ever since he was a small boy he said he wanted to be in the space program."

Onizuka was born in Kealahou, Kona, Hawaii in 1946. He graduated from Kona Waena High School in 1964 and received his bachelor's degree and master's degree in aerospace engineering from the University of Colorado in June and December of 1969 respectively.

After receiving his commission at the University of Colorado in 1970 through an ROTC program, Ellison entered active duty with the Air Force. He became a test flight engineer with the Sacramento Air Logistics Center at McClellan Air Force Base in California.

Onizuka was a crew member on a secret Department of Defense space shuttle flight in January 1985. The Challenger mission was to be his second flight.

Family and friends said Onizuka was a bright, hard-working and modest individual who was dedicated to his job and his family.

"He was a really nice guy," said Valerie Onizuka, 23, a cousin, in a telephone interview from Hawaii. "Everyone was proud of him. He was a very bright man but he was also humble."

Albert Ikeda, 52, Ellison's high school counselor and base-



Ellison S. Onizuka
Mission specialist
Age: 39.
Family: Married, two children.
Education: B.A. and M.A. degrees in aerospace engineering from the University of Colorado.
Background: An Air Force lieutenant colonel, Onizuka was selected as an astronaut by NASA in 1978 and was a crew member aboard Discovery in January 1985. Onizuka was assigned to the Air Force Flight Test Center at Edwards Air Force Base, Calif., in 1975 and logged more than 1,600 hours flying time.
Source: Associated Press, United Press International.

ball coach, said the astronaut was "your all-American boy. He always gave 100 percent."

Ikeda, speaking from Hawaii, termed Onizuka's death "a big loss not only to our school and our community but also to the state and the country."

In an interview this month, Onizuka said he developed an interest in aircraft and aviation in school and was inspired by the Mercury space flight program that began in 1959.

As a mission specialist aboard the shuttle Challenger, Onizuka would have been responsible for deploying a large communication satellite. He also was scheduled to help deploy another satellite to study Halley's comet.

At 39, Onizuka said earlier this month that he hoped to keep participating in NASA space program flights.

"There's no cutoff age for astronauts," he said. "I enjoy what I'm doing right now and hope to continue as long as I can contribute to the program."

The astronaut was married to the former Lorna Leiko Yoshida of Pahala, Hawaii, and the couple had two children, Janelle, 16, and Darien, 10.

— GARY MARX

Jarvis' drive earned him assignment

Gregory Jarvis, 41, the payload specialist, set excellence as his standard for achievement whether working on sophisticated satellite designs or playing a game of squash.

"He studied hard and he played hard," recalled John Kociela, a friend and classmate of Jarvis' at the State University of New York at Buffalo, where they both studied engineering. "He always sought excellence."

That was Jarvis' message in a commencement address last spring at his alma mater. Kociela said he remembers Jarvis challenging graduates to "always do your job well. You never know who might be watching."

It was because Jarvis, a self-described workaholic, did his job well that he was selected in December 1984 from among 700 Hughes Aircraft employees who applied to fly on the space shuttle. Aboard Challenger he was to have conducted six days of orbital experiments in fluid dynamics to figure out better ways to build liquid-propelled spacecraft.

Although Jarvis was twice bumped from shuttle missions over the past year, to make room for U.S. Sen. Jake Garn and U.S. Rep. Bill Nelson, he never lost enthusiasm for the mission.

In fact, just before boarding Challenger Tuesday morning, Jarvis told reporters he was as eager as ever.

"You get very comfortable that for any contingency they know what to do, so I feel very, very comfortable," he said. "I'm excited but not nervous."

Kociela, in an interview from Buffalo, said he and Jarvis frequently exchanged letters and phone calls and that they last spoke two weeks ago.

"He was leaving Houston where they trained and was headed to the Cape," Kociela said. "He was looking forward to his chance of getting on the shuttle. It was very important to him."

Jarvis, whose parents Ellen and Bruce Jarvis moved to Orlando 11 years ago from Mahaw, N.Y., was born Aug. 24,



Gregory B. Jarvis
Payload specialist
Age: 41.
Family: Married.
Education: B.S. in electrical engineering from State University of New York, M.A. in electrical engineering from Northeastern University in Boston.
Background: An engineer with Hughes Aircraft Co., Jarvis was assigned to the crew of Challenger to conduct six days of orbital experiments in fluid dynamics to figure out better ways to build satellites. He had been scheduled to fly aboard the shuttle Columbia in December 1985 but was bumped to Challenger's January flight when NASA assigned Rep. Bill Nelson, D-Melbourne, to Columbia's crew as a congressional observer.
Source: Associated Press, United Press International.

1944, in Detroit. After earning a bachelor's degree in electrical engineering at the State University of New York at Buffalo in 1967 and a master's degree in the same field two years later at Boston's Northeastern University, he joined the Air Force.

In the Air Force, Jarvis specialized in advanced tactical communications satellites. After his discharge with the rank of captain, he joined Hughes Aircraft Co.'s Space and Communications Group. At Hughes in Los Angeles, Jarvis worked on a variety of sophisticated satellite designs.

Jarvis also earned a master's degree in management science at West Coast University in Los Angeles, where he and his wife, the former Marcia Jarboe, lived. The couple had no children.

Jarvis was an avid outdoorsman and enjoyed squash, bicycling, running and racquetball. He also played the guitar.

"He was an active guy," said Kociela. "An active, all-around guy who loved a good time and worked hard."

— JAMES LAWRENCE

Resnik liked a job label with no frills

You may remember Judith Resnik as an astronaut on the maiden voyage of the space shuttle Discovery, which blasted off on a six-day mission on Aug. 30, 1984, and put three satellites in space. Resnik took accolades for conducting solar-power experiments with a 102-foot solar sail that might one day power space stations.

Or maybe you remember all the silliness about her curly hair that went wild without gravity to tame it, or the fanfare about her being the second American woman to soar into space, or the fact that she was the first Jewish astronaut. Some Central Florida residents may remember meeting Resnik in 1981 when she kicked off Women's Awareness Week at the University of Central Florida in Orlando.

Resnik, though, didn't like being pigeonholed as a woman astronaut or a Jewish astronaut. She told her father, optometrist Marvin Resnik of Akron, Ohio, that she wanted to be considered "just another astronaut, period."

Resnik, 36, was aboard Challenger on Tuesday as a mission specialist. She was single, lived near Houston and had logged nearly 145 hours in space.

In Akron, her hometown, Resnik is remembered as "quite a hero for young females," said Don Plusquellic, Akron's city council president. Plusquellic sat beside Resnik when the city held a gala Judy Resnik Day on Oct. 18, 1984. He brought home an autographed photo of Resnik for his 10-year-old daughter, a fan who had shown little interest in the space program until Resnik entered the limelight.

At Akron's Firestone High School, where Resnik graduated in 1966, math teacher Donald Nutter, in an interview with a local radio station, remembered her as an "excellent science and math student, a delightful young lady."

Resnik had no inkling that she wanted to become an astronaut until her late 20s. In 1970 she graduated from Carnegie-Mellon University in Pittsburgh with a bachelor's degree in elec-



Judith Resnik
Mission specialist
Age: 36.
Family: Single.
Education: B.S. in electrical engineering from Carnegie-Mellon University in Pittsburgh, doctorate in electrical engineering from the University of Maryland.
Background: Resnik was among the first female astronauts selected by NASA in 1978. By being named to fly on the initial flight of the shuttle Discovery in August-September 1984, she became America's second woman to fly in orbit.
Source: Associated Press, United Press International.

trical engineering. She received a doctorate in electrical engineering from the University of Maryland in 1977.

She researched the physiology of visual systems, the subject of her doctoral thesis, while at the neurophysiology laboratory at the National Institutes of Health in Bethesda, Md. Jeffery Barker, a colleague of Resnik's in the mid-1970s and now head of the laboratory, described her as "competent, quick and talented. ... Everyone knew that she was destined for stardom, in a sense, because she was so good when she was here working on her thesis."

Resnik didn't earn her pilot's license — her first step toward becoming an astronaut — until she left the National Institutes of Health in 1977 and took a job as a senior systems engineer with Xerox Corp. in El Segundo, Calif. "She never talked about doing anything like flying off into the air, let alone space. I was very surprised when I heard that she was applying to the space program," said Barker.

A poster at Xerox prompted Resnik to apply to NASA, and in 1978 the space agency accepted her into the program. Said Barker, "I think she eclipsed all of her own expectations and made great contributions to the space program."

— LISANNE RENNER