

Ill-Fated Challenger mission remembered

Seventeen years after disaster, U.S. astronauts, space shuttle missions are safer

By Johnathan Daugbjerg
THE BATTALION

Today marks the 17th anniversary of NASA's ill-fated 25th space shuttle launch, the Challenger. Astronauts Michael Smith, Dick Scobee, Judith Resnik, Ronald McNair, Ellison Onizuka, Gregory Jarvis and Christa McAuliffe were killed when the Challenger exploded 73 seconds after lift-off. The cause of the disaster was attributed to a failed rubber seal in the right solid rocket booster, NASA Chief Roger Boisjoly said in a February 2002 visit to the A&M campus.

Questions were then raised about NASA's system of checks and balances that allowed the orbiter to fly that day. Boisjoly voiced his concerns about the 1985 Challenger mission when tests showed unsatisfactory — and unsafe — results, he said. The 1985 Challenger mission went on, however, despite Boisjoly's objections.

Boisjoly also said NASA recognized the questionable safety of O-rings that might not seal well due to the cold weather. NASA took the chance and went ahead with the flight as scheduled.

"What you hear is not always what you want to know," Boisjoly said.

According to NASA's official flight record, the

first visible evidence of a problem occurred only 0.6 seconds into the flight when launch pad 39B cameras detected several dark plumes of smoke in the vicinity of the bottom field joint of the right solid rocket booster (SRB). Approximately 37 seconds into the flight, Challenger encountered heavy wind shears as it prepared to throttle its engines up to 100 percent. The first small flame escaped from the right SRB's O-ring seal approximately 58 seconds after launch. The shuttle's telemetry — data sent from the shuttle to mission control in real-time — showed a loss of pressure in the fuel tank, suggesting a fuel leak.

According to the official analysis of NASA's flight video, flame breached the large, orange external tank 64 seconds after lift-off. Eight seconds later, the lowest of the two struts linking the external tank and the right SRB failed, allowing the booster to rotate on the remaining strut. The SRB collided with the external tank, and the resulting mixture of flame, liquid hydrogen, and liquid oxygen enveloped Challenger in a massive fireball that destroyed the shuttle and claimed the lives of its crew.

A presidential commission was formed in the months following the disaster to review existing data and determine why the accident happened. The SRB's joint failure was attributed to a design flaw in the SRB's O-ring assembly and air temperatures 15 degrees colder than any previous launch.

According to the commission's report, one test concluded that "a compressed O-ring at 75 degrees Fahrenheit is five times more responsive in returning to its uncompressed shape than a cold O-ring at 30 degrees Fahrenheit." Since a cold O-ring could not easily return to its normal shape, tests concluded

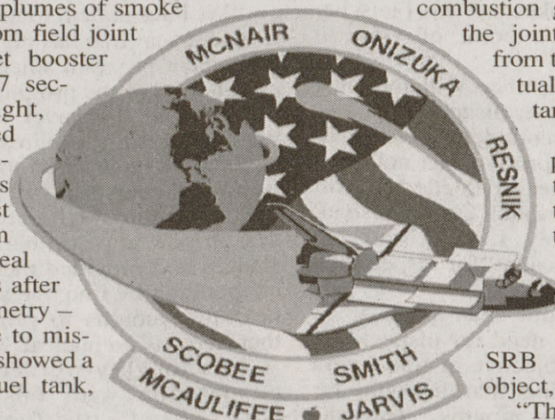
that the ring was unable to seal properly, and the joint was eventually eroded from the booster's hot combustion gases. This erosion caused the joint to fail, allowing flames from the SRB to escape and eventually compromise the external tank.

The commission also pointed out several flaws in the built-in flight safety system that allowed Challenger to launch. SRB contractor Thiokol's management initially opposed the launch, but decided to authorize it even though SRB engineers continued to object, the commission reported.

"The unremitting pressure to meet the demands of an accelerating flight schedule might have been adequately handled by NASA if it insisted upon the exactly thorough procedures that were its hallmark during the Apollo program," the commission said in its report.

NASA and its contractors responded to the Challenger disaster by making safety and risk mitigation top priorities. NASA has flown 87 successful missions since returning to shuttle flights in 1988 and is actively pursuing safety and performance upgrades to the orbiter fleet that looks to keep the space shuttle flying well into the 21st century.

On Jan. 21, 2003, NASA announced the debut of the Educator Astronaut Program, a program designed to give educators the chance to fly on future shuttle missions with the goal of cultivating a new generation of scientists and engineers. NASA is also pursuing its goal of the Teacher in Space Program. Barbara Morgan, former teacher and back-up astronaut to Christa McAuliffe on the failed Challenger flight was assigned in December 2002, to flight STS-118, according to NASA's release.



GRAPHICS COURTESY OF NASA

The crew of the ill-fated 1986 Challenger. Back row (from left to right): Ellison Onizuka, mission specialist, Christa McAuliffe, payload specialist, Gregory Jarvis, payload specialist, Judith Resnik, mission specialist. Front row (from left to right): Michael Smith, pilot, Francis Scobee, commander, Ronald McNair, mission specialist.

Kasparov beats chess supercomputer

By Madison J. Gray
THE ASSOCIATED PRESS

World chess champion Garry Kasparov defeated computerized challenger Deep Junior on Sunday in the first of six games pitting human wit against computer logic.

Kasparov forced the Israeli-programmed Deep Junior into a position from which it could not win, compelling the human moving its pieces to resign four hours into the game.

Both players' queens, the most powerful pieces on the board, were captured by the

end of the game, leaving them to use less powerful knights, bishops and rooks. That gave the advantage to Kasparov, who used white pieces and moved first.

"Once he was able to remove the queens from the board, it was just arithmetic," said commentator and international grand master player Maurice Ashley.

Early in the game, Deep Junior stunned experts when it paused for 25 minutes to contemplate a countermove to Kasparov's attack. Kasparov was able to parlay that into dominance for the remainder of

the game, Ashley said.

"The entire time there was no doubt of his superiority during the game," Ashley said.

The game is the first in a six-game series being played through Feb. 7 in New York. The second game is scheduled for Tuesday.

The win is a coup for Kasparov, who was beaten in 1997 by Deep Blue, an IBM supercomputer capable of 200 million chess moves per second. Kasparov claimed humans may have given hints to the computer, which was dismantled after the win.

Kasparov, 39, will be paid

\$500,000 by the World Chess Federation, the game's international governing body, for playing Deep Junior, which has not lost a match to a human opponent in two years. He can earn an additional \$300,000 if he wins the six-game match.

Deep Junior is a three-time world champion and won the last official world chess championship for computers in July. It is capable of processing only 3 million moves per second, but its programmers say it focuses more on strategy than on capturing the opponent's chess pieces quickly, as other programs do.

NEWS IN BRIEF

Heart disease tests look to bloodstream

(AP) — New guidelines issued Monday urge doctors to consider testing millions of Americans at moderate risk of heart disease for signs of inflammation in the bloodstream — a newly recognized cause of heart attacks.

Evidence has been building for several years that painless inflammation is a major trigger of heart trouble, worse even than high cholesterol. But until now, doctors have been unsure how and when to look for the condition, which can be measured with a simple blood test.

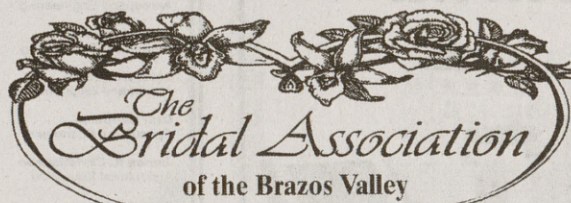
The new recommendations, drawn up by the American Heart

Association and the Centers for Disease Control and Prevention, are the first to propose an important role for inflammation testing.

Twin Mars rovers on track, set for mission

PASADENA, Calif. (AP) — NASA is readying identical twin rovers for a mission to Mars, where the six-wheeled buggies will prospect for geologic evidence that the Red Planet was once wet enough to support life.

Engineers at the space agency's Jet Propulsion Laboratory are scrambling to finish assembling and testing the two rovers for launch on separate rockets in May and June.



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