

## World and Nation

# NASA engineers devise shuttle escape system

SPACE CENTER, Houston (AP) — NASA engineers have concluded that the only practical way for astronauts to escape from the space shuttle in an emergency would be to use small rockets that would yank them out a side hatch and let them parachute to Earth.

The method would work only under certain circumstances, and would not have helped the crew of Challenger. But it would give astronauts in the future "a chance where there is none now," a NASA official said, and the astronauts corps has endorsed the concept.

It has been presented to shuttle chief Richard Truly, but NASA leaders have not given their approval. A decision is expected by March.

Bill Chandler, the Johnson Space Center engineer who directed the escape study, said it could be installed for the resumption of shuttle flights, now set for February 1988. The estimated cost: about \$50 million.

NASA's plans for an astronaut escape always have called for them to ditch the shuttle in the ocean. Experts now believe ditching would provide little chance for the crew to survive, Chandler said.

Chandler said a parachute system is practical only when the shuttle is

in controlled, gliding flight below 20,000 feet. The rest of the time, he said, the craft is traveling too fast or too high.

Challenger's seven crew members died when the spacecraft broke into pieces while two solid rocket engines and the shuttle's three main engines

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— Steven Nagel, astronaut

were firing. The chance of surviving such an accident, Chandler said, "is almost nil," and the astronauts know it.

But Chandler said a parachute system could provide a safe escape in the event the spacecraft fails to reach orbit, is forced to glide toward Earth and is unable to reach a runway landing site. This scenario, which now calls for ditching, could happen if the main engines shut down prematurely during the launch se-

quence, one of the most likely failures that could face a shuttle crew.

He said that the system, while of limited use, would provide astronauts a "comfort factor." "We owe it to them to give them that."

With the system, each crew member must move quickly to give those who follow a chance to get out.

Astronaut Steven Nagel, who worked with the escape engineers, said, "You can't fly someone who is physically incapable of using this system because that would not only endanger himself, but other crew members as well."

As a result, he said, psychological and physical requirements for shuttle crew members could be toughened. That could affect the Citizen in Space program, where ordinary people are to be chosen to fly.

"I'm in agreement with this system," and so is the astronaut office, Nagel said. "A lot of people are going to regard this system as just paying lip service to the problem, but I honestly don't feel that way."

Nagel said the astronauts now spend many hours practicing procedures that would land the shuttle on the ocean.

"It's rather ludicrous to do that if you think you're not going to survive the impact with the water," he said.

# Radio reports 54 killed in plane crash

LONDON (AP) — An Ethiopian air force plane carrying 54 passengers and crew crashed in the Eritrean provincial capital of Asmara on Tuesday and killed everyone on board, the official radio reported.

According to the report on the official Ethiopian Radio, monitored in London by the British Broadcasting Corp., the crash was due to a mechanical failure.

The plane, carrying air force personnel, was en route to the capital of Addis Ababa when the plane suddenly went out of control, the radio said.

"It crashed while it was trying to land after developing sudden problems about three minutes after taking off from Yohannes the Fourth Airport (in Asmara)," the broadcast said.

Ethiopian Radio gave no further details of the crash, BBC said.

An official at the Addis Ababa control tower said in a telephone interview with The Associated Press in Nairobi, Kenya, that he knew of the crash only through the radio report and had no additional details. The official refused to give his name.

Eritrean rebels have been waging a guerrilla war for independence against the country's Marxist government and its predecessor for about 25 years.

# Amtrak train was speeding at time of crash

WASHINGTON (AP) — The Amtrak train that collided with three freight locomotives was exceeding speed restrictions by 23 miles an hour, and investigators are trying to determine if that contributed to the severity of the accident that took 16 lives, officials said Tuesday.

The National Transportation Safety Board investigation, meanwhile, continued to focus on why the engineer of the Conrail locomotives, which also was speeding, apparently did not heed a stop signal until he was almost on top of it, causing the locomotives to skid into the path of the Amtrak train.

Joseph Nall, an NTSB member, said the investigation continues to focus on the "human performance" of the Conrail crew and that no evidence has surfaced to indicate a malfunctioning of either the locomotives' brakes or the track signal system.

The death toll from the Jan. 4 accident at a track junction near Baltimore rose to 16 as one of the passengers, Connie Barry, 31, of Ridgefield, Conn., died in a hospital. Another 175 people were injured in the crash, which was the worst in Amtrak's 15 years of operation.

At a news conference, Nall disclosed that speed recorders showed the Amtrak locomotive, pulling 12 cars, was traveling 128 mph when the brakes were applied. By the time it collided with the locomotives its speed had been cut to 105 mph.

Normally the top speed on that section of track would be 125 mph, but that particular train was restricted to 105 mph because it was pulling a number of older model "Heritage" cars, the officials said.

Investigators emphasized that the collision could not have been avoided even if the train had complied with the speed restriction. Nall said, however, the safety board wants to determine whether the lower speed might have reduced the force of the impact, making the accident — and perhaps some injuries — less severe.

The speed recorders, in the meantime, showed that the Conrail locomotives were traveling 63 to 64 mph before emergency brakes were applied when the engineer noticed a halt signal ordering him to give way to the Amtrak train.

Nall said the exact location where the Conrail engineer, Richard Gates, applied his brakes has yet to be determined. But he said "it's obvious the braking occurred close to the (stop) signal" that is only 384 feet from the track interchange and site of the collision.

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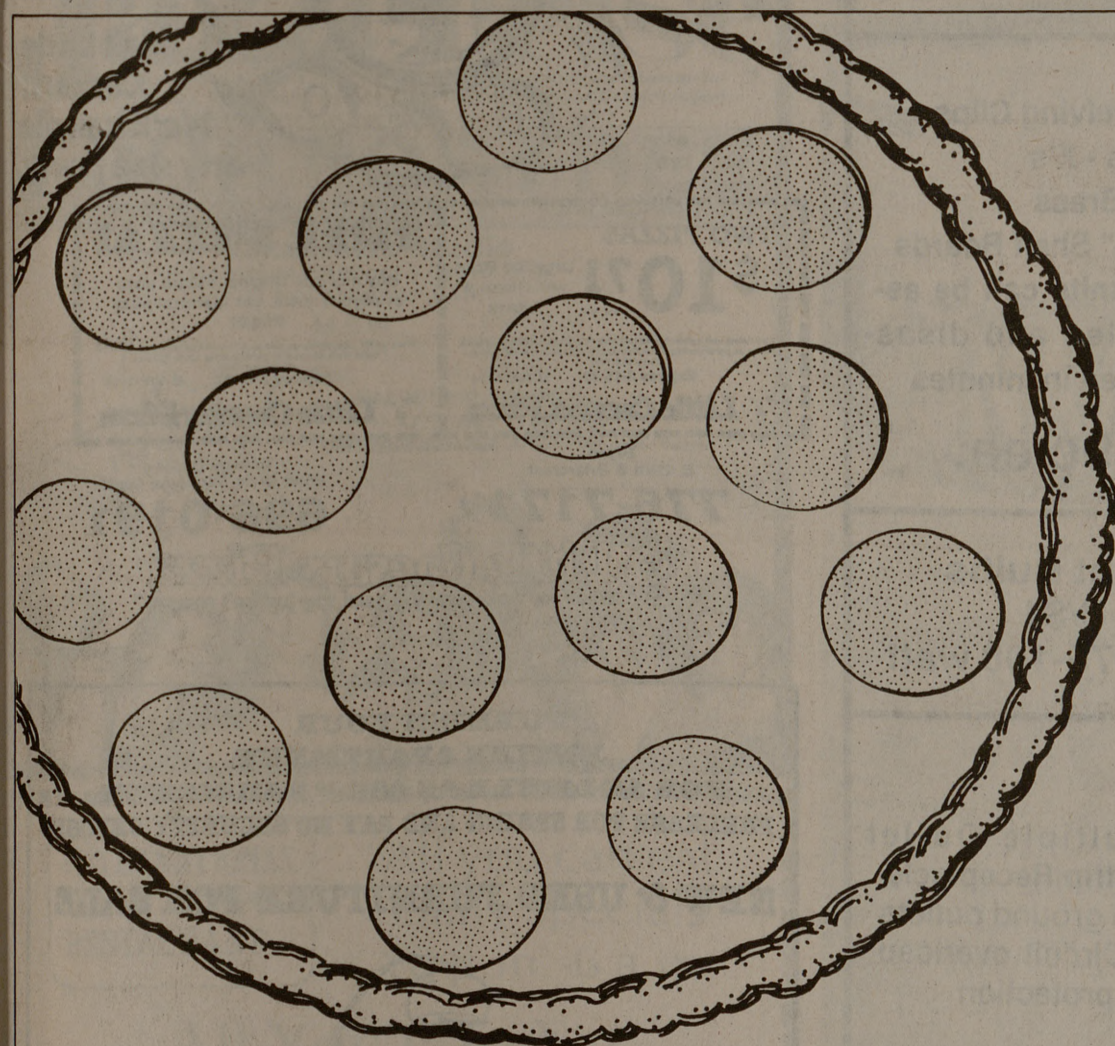
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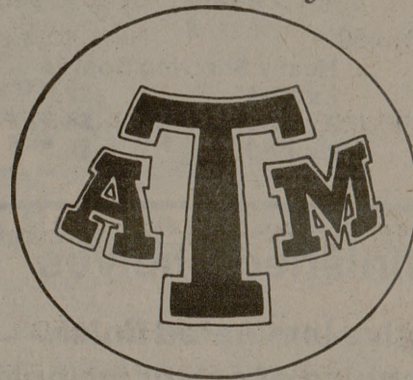


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