# If space shuttle is doomed, do you tell the crew?

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WASHINGTON (AP) -- A NASA top official wrestled with what he thought was a hypothetical question: What should you tell the astronauts of a doomed space shuttle Columbia?

When the NASA official raised the question in 2003 just days before the accident that claimed seven astronauts' lives, managers thought - wrongly - that Columbia's heat shield was fine. It wasn't. Columbia, NASA's oldest shuttle, broke apart over Texas 10 years ago Friday upon returning to Earth after a 16-day mission.

But the story of that question - retold a decade later - illustrates a key lesson from the tragedy, says Wayne Hale, a flight director who later ran the shuttle program for NASA.

That lesson: Never give up. No matter how hopeless.

And to illustrate the lesson, Hale in his blog tells for the first time the story of his late boss who seemingly suggested doing just that. The boss, mission operations chief Jon Harpold, asked the now-retired Hale a what-if question after a meeting that determined - wrongly - that Columbia was safe to land despite some damage after takeoff.

"You know there is nothing we can do about damage to the (thermal protection system)," Hale quotes Harpold a decade later. "If it has been damaged, it's probably better not to know. I think the crew would rather not know. Don't you think it would be better for them to have a happy successful flight and die unexpectedly during entry than to stay on orbit, knowing that there was nothing to be done until the air ran out."

When Harpold raised the question with Hale in 2003, managers had already concluded that Columbia's heat shield was fine. They told astronauts they weren't worried about damage from foam insulation coming off the massive shuttle fuel tank during launch, hitting a wing that allowed superheated gases in when the shuttle re-entered the atmosphere. No one was aware of the seriousness of the damage at the time.

This was a what-if type question that conveyed a fatalistic attitude about the heat shield system being unfixable, which was "a wrong-headed cultural norm that we had all bought into," Hale said in a Thursday telephone interview.

"There was never any debate about what to tell the crew," he said.

In fact, NASA officials were overconfident in the heat shield on Columbia. A day after launch, NASA saw video of the foam from the shuttle's fuel tank hit the shuttle

wing, something that had happened before. NASA officials studied the damage and determined it wasn't a problem.

NASA managers even sent the crew a 15-second video clip of the foam strike and "made it very clear to them no, no concerns," according to the independent board that later investigated the accident. Eight times, NASA had the opportunity to get a closer look at the damage- using military satellites - and NASA mistakenly ignored those chances to see how bad the problem was, the accident board concluded.

And had NASA realized the severity of the problem, the space agency would not have just let the astronauts die without a fight or a word, despite Harpold's hypothetical question, Hale said.

"We would have pulled out all the stops. There would have been no stone left unturned. We would have had the entire nation working on it," Hale said. Ultimately, Hale said he thinks whatever NASA would have tried in 2003 with limited time and knowledge probably would have failed.

And the astronauts would have been told about the problem and their fate had engineers really known what was happening, Hale said.

When NASA started flying shuttles again, Hale told the new team of mission managers: "We are never ever going to say that there is nothing we can do."

NASA developed an in-flight heat shield repair kit.

The space shuttles were retired in 2011. Harpold died in 2004.

Hale said he is now writing about the issue because he wanted future space officials not to make the mistakes he and his colleagues did. The loss of the Columbia astronauts - people he knew - still weighs on Hale.

"You never get over it. It's always present with you," Hale said. "These are people I knew well. Several of them, I worked closely with. I was responsible for their safety. It's never going to go away."

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