

SCI|TECH

NASA: Broken insulation could have been Columbia's undoing

By Marcia Dunn
THE ASSOCIATED PRESS

Houston — NASA acknowledged Monday that its "best and brightest" minds may have gotten it wrong when they concluded in a report four days before Columbia disintegrated that a flying, 2 1/2-pound chunk of insulation did no serious damage to the shuttle's thermal tiles during liftoff.

Shuttle program manager Ron Dittemore said the agency will redo the entire analysis from scratch.

"We want to know if we made any mistakes," he said.

Practically from the start, investigators have focused on the possibility that a 20-inch piece of foam insulation that fell off the shuttle's big external fuel tank during liftoff Jan. 16 doomed the spacecraft by damaging the heat tiles that keep the ship from burning up during re-entry into the atmosphere.

While Columbia was still in orbit, NASA engineers analyzed launch footage frame-by-frame and were unable to determine for certain whether the shuttle was damaged. But they ran computer analyses for different scenarios and different assumptions about the weight of the foam, its speed, and where under the left wing it might have hit, even looking at the possibility of tiles missing over an area of about 7 inches by 30 inches, NASA said.

The half-page engineering report — issued on Day 12 of the 16-day flight — indicated "the potential for a large damage area to the tile." But the analyses showed "no burn-through and no

safety-of-flight issue," the report concluded, according to a copy released by NASA on Monday.

High-level officials at NASA said they agreed at the time with the engi-

neers' assessment.

"We were in complete concurrence," Michael Kostelnik, a NASA spaceflight office deputy, said at a news conference Monday with NASA's top

spaceflight official, William Ready.

"The best and brightest engineers we have who helped design and build this system looked carefully at all the analysis and the information we had at this time, and made a determination this was not a safety-of-flight issue."

The analyses spanned a week and no one on the team, to Dittemore's knowledge, had any reservations about the conclusions and no one reported any concerns to a NASA hotline set up for just such occasions.

"Now I am aware, here two days later, that there have been some reservations expressed by certain individuals and it goes back in time," Dittemore said. "So we're reviewing those reservations again as part of our data base. They weren't part of our playbook at the time because they didn't surface. They didn't come forward."

On Monday, Ready said the damage done by the broken-off piece of insulation is now being looked at very carefully as a highly possible cause of the tragedy.

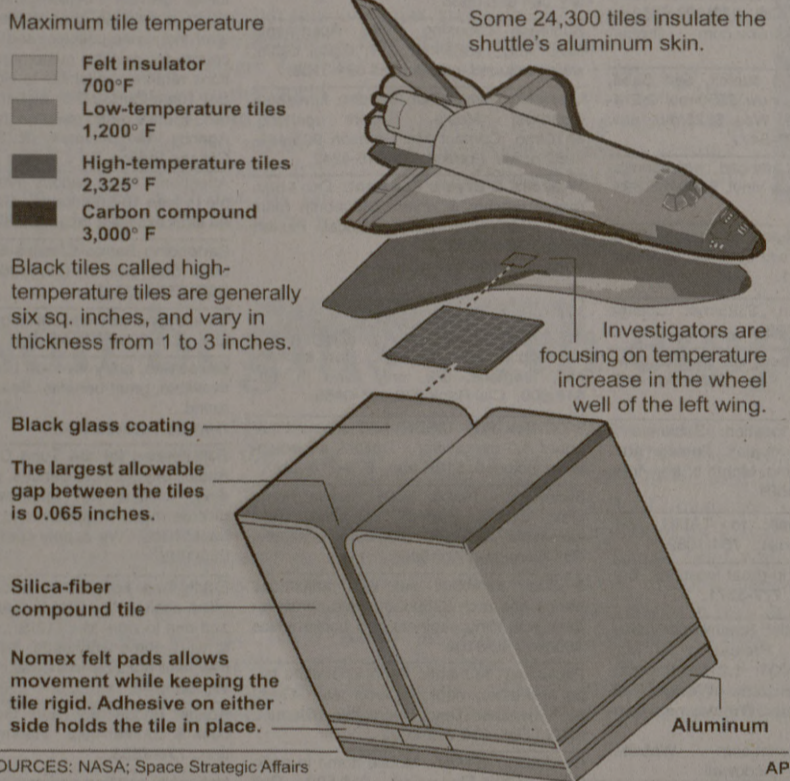
"Although that may, in fact, wind up being the cause — it may certainly be the leading candidate right now — we have to go through all the evidence and then rule things out very methodically in order to arrive at the cause of the incident," he said.

Monday night, searchers found the front of the shuttle's nose cone buried deep in the ground near the Louisiana border. But even more valuable in trying to piece together what happened would be to locate any tiles from Columbia's left wing.

"That's the missing link that we're trying to find," Dittemore said.

Investigators focus on protective tiles

NASA said Monday that damage to Columbia's thermal tiles during liftoff is the leading theory in the investigation of the disaster. Missing tiles could have exposed the spacecraft to destructive temperatures upon re-entry into Earth's atmosphere — temperatures that are hot enough to melt steel.



NEWS IN BRIEF

Court delays Microsoft anti-trust injunction

SEATTLE (AP) — An appeals court Monday delayed an order requiring Microsoft to include Sun Microsystems' Java programming language in its Windows operating system.

The decision came the day before the lower-court order was to take effect, requiring Microsoft to include the latest version of Java in its Windows XP software within 120 days.

The 4th U.S. Circuit Court of Appeals in Richmond, Va., stayed the order while it considers Redmond-based Microsoft's appeal.

"We believed all along it was appropriate that this matter be decided by the circuit court before we move forward with implementing the injunction," said Jim Desler, a Microsoft spokesman.

Ephedra unsafe even when used properly

PHILADELPHIA (AP) — Ephedra, an herb found in weight-loss and bodybuilding supplements, is unsafe even when taken in recommended doses and should be restricted, according to doctors who studied reports of bad reactions to the herb.

U.S. poison control centers reported 1,178 adverse reactions to ephedra dietary supplements in 2001, said the study, which was to be posted on the Annals of Internal Medicine's Web site Tuesday and published next month. Ephedra accounted for 64 percent of all adverse reactions involving herbs, even though it is found in fewer than 1 percent of all herbal products sold.

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