

## **Boeing Engineers Assist NASA in Shuttle Tile Work**

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Boeing [NYSE: BA] engineers, working closely with United Space Alliance [USA] and NASA, have found a way to prevent gap fillers, thin spacers between the Space Shuttle's heat resistant tiles, from protruding from the belly of the Orbiter.

On the last Shuttle mission, two gap fillers were protruding about an inch between the tiles and had to be removed during a spacewalk when analysis showed it could cause increased heating on the Thermal Protection System (TPS) during reentry into the Earth's atmosphere.

Determining what caused the gap fillers to come out took a little detective work by an integrated team of Boeing, NASA and USA engineers. "The first thing we looked at was the installation process," said Dan Bell, Boeing TPS subsystem manager. There were multiple possible contributing causes why some of the gap fillers were found with various protrusions after the last flight. The cause was narrowed down to the installation process and a new method was developed.

Work is underway on the vehicles to remove those gap fillers. NASA expects to have them removed and replaced on both Atlantis and Discovery in the priority one region (subjected to higher heating) before the next shuttle flight.

"We ended up saving about 15 percent of those gap fillers that were installed with the old process, while all others in our first priority region were replaced," said Bell. About 3,000 gap fillers will be replaced in the priority one area. Bell says all gap fillers will be eventually checked and replaced if needed.

"These changes have made all the difference. It has been a real success," Bell said.

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For further information:

Ed Memi

NASA Systems

(281) 226-4029

[edmund.g.memi@boeing.com](mailto:edmund.g.memi@boeing.com)

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