

# NASA patches air-purifying system on space station

July 26 2009, By MARCIA DUNN , AP Aerospace Writer

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In this photo provided by NASA, almost lost to the vision among tons of space hardware, astronauts Christopher Cassidy, partially in frame at upper left, and Tom Marshburn, mission specialists for STS-127, share duties on the fourth spacewalk of Endeavour's current mission and its crew's joint activities with the space station. Eleven astronauts and cosmonauts remained inside the international space station and the shuttle to which it was docked, while the two continued work on the orbital outpost, Friday, July 24, 2009. (AP Photo/NASA)

(AP) -- A space station air purifier was working again Sunday after it shut down at the worst possible time, when company was still visiting and had swollen the on-board crowd to a record 13.

The repair by flight controllers, albeit temporary, came as a great relief to NASA.

Even if the carbon dioxide-removal system had remained broken, [shuttle Endeavour](#) would not have had to undock early from the [international space station](#), said flight director Brian Smith. But the system needs to work to support six station residents over the long term, he said.

The machine for cleansing the station atmosphere, on the U.S. side of the sprawling outpost, failed Saturday when it got too hot and tripped a circuit breaker.

Flight controllers managed to get the unit up and running again 8 1/2 hours later in manual mode. That means extra people are needed in Mission Control - six each day - to handle the approximately 50 computer commands that need to be sent up every few hours.

Normally, the system runs automatically. Smith said engineers hopefully will come up with a software solution soon to have the system back in automatic.

An air-cleansing system on the Russian side of the station is working fine. In addition, the station has about three weeks' worth of canisters for removing the carbon dioxide exhaled by six crew members. The astronauts would have relied on those canisters to prevent an early undocking of Endeavour, if the U.S. carbon-dioxide removal machine not been coaxed back into operation.

The shuttle and its crew of seven will depart Tuesday, as originally planned.

Before leaving, the shuttle astronauts have their fifth and final spacewalk to perform.

During Monday's [spacewalk](#), Christopher Cassidy and Thomas Marshburn will rearrange some power cable hookups, fold down a piece

of popped-up insulation on the station's smaller, dexterous [robotic arm](#), and install TV cameras on the brand new porch of Japan's space station lab.

A spare carbon-dioxide removal system, meanwhile, will be launched at the end of August on the next shuttle flight, a plan put in place long before this weekend's trouble.

NASA has wrapped up extensive testing of the foam insulation on the fuel tank for that mission, and so far everything looks to be in good shape. Engineers wanted to make sure that the insulation was attached properly after considerable foam was lost during Endeavour's July 15 launch. The tests delayed Discovery's mission by a week.

Liftoff is now targeted for Aug. 25 at the earliest.

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On the Net:

NASA:

[http://www.nasa.gov/mission\(underscore\)pages/shuttle/main/index.html](http://www.nasa.gov/mission(underscore)pages/shuttle/main/index.html)

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