

As a headline, “No gas leak on the International Space Station” ranks alongside recent news stories, such as “ [Mild earthquake in North Texas – no damage reported](#) ” and “ [No-one hurt in bedroom fire](#) ”. But behind what, thankfully, seems to be a non-story, lies a salutary tale of the problems which can arise in an environment where everything relies on computer control.

Early in the morning on January 14, the International Space Station (ISS) crew members were directed to don masks and evacuate the main control part of the space station. They were instructed to take shelter in the second module, known as the Russian segment. The reason for the evacuation was an alarm indicating that ammonia, a toxic gas, was leaking from the external cooling system into the interior of the ISS. The sensor measurement was accompanied by an apparent increase in pressure in the module, implying that gas was indeed leaking inwards.

There was a rapid response to the emergency from the control centre. In the words of one of the operators: “We started up the node 2LPL and have indication that the system is normal.” This roughly translates as, “We switched the box off, and then back on again, and the problem has gone away.”

So there was no ammonia leak, just a glitch in some hardware. This is the sort of issue that anyone who has ever sat in front of a computer knows is a regular hazard, sometimes culminating in the “ [blue screen of death](#) ” or the “ [spinning beachball of death](#) ”, depending on your operating system.

Switch glitch

The event highlights at least two noteworthy issues. The first is that the emergency evacuation procedures worked smoothly and that the apparent system breakdown could be isolated in one part of the ISS while the crew remained safe in a different area. That is definitely excellent news – and a testament to the training and professionalism of the crew and the ground support teams, as well as the thoroughness of the procedures in place.

The second issue is more worrisome, and a reflection of something that is likely to become more common as the ISS ages. An error message on a sensor – is it a real message, saying something has gone wrong (leaking coolant)? Or is it a hardware or software glitch, caused by

who knows what?

The error message about the coolant led to automatic deployment of a sequence of actions put in place to mitigate such a leak, including switching off a pump. This did result in a rise in pressure in the module which took a few hours to sort out. So what was initially a glitch became a physical situation requiring intervention. It took about 12 hours before ground control was satisfied that the crew could return to the main part of the ISS and continue working.

Want flies with that?

We have to keep their strength up.

[Listening to a NASA manager](#) going through whether any research might have been compromised – the main concern seemed to be whether or not the fruit flies needed feeding. So what might have been a serious situation turned out to have only minor consequences for the occupants of the ISS. The ISS flight programme will benefit from the day's events, which drew attention to the importance of even the most minor fluctuations in sensor performance.

Whether or not the fruit flies got a late breakfast will also be recorded for posterity in the science laboratory notes.

Monica Grady does not work for, consult to, own shares in or receive funding from any company or organisation that would benefit from this article, and has no relevant affiliations.

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