

Legacy of ISS Computer Crisis
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In a private communication from a high NASA space station official, the initial Russian reaction was defended. "When you have a major failure like we had the first question you ask yourself is 'what was going on at the time'," he wrote. "Both the US and Russian side independently asked this question of themselves. The answer was we mated the new truss element about 1 minute before the failure.

"In addition," he continued, "we have a known difference between the US and the Russian electrical systems. The US grounds to structure and the Russians use a floating ground. Since we were adding a big hunk of metal that is traversing a magnetic field (thanks to mother Earth), there could easily be a new electrical potential difference between the Russian ground and the ISS structure. Both the US and the Russians are very much aware of this (by the way it changes again significantly when we unfurl or retract US arrays). Therefore both sides initially thought that there was some connection between the mating of the truss and the computer problems. There was a strong technical reason behind their thoughts and questions, not just the old Soviet mistrust of the US."

Despite this argument, the Russians did more than merely make a "first assumption" that the US was to blame. Their top officials announced early on that they had concluded this was true. Russian Space Agency head Anatoliy Perminov (Interfax, June 18) declared: "In our opinion, the computer failure resulted from a [powerful and sudden] static surge related to the installation of new [American] solar panels." And ITAR-TASS, on June 18, reported: "An Energia official told Itar-Tass that a fivefold over-voltage resultant from the unfolding of extra U.S. solar batteries caused the computer failure." A few days earlier, Agence France-Presse in Moscow had attributed almost exactly those same words to Irina Gomenyuk, spokesperson for the spaceship vendor, Energiya Space and Rocket Corporation, in Korolev, northern Moscow. All of these knee-jerk 'blame the Americans' announcements were not only inaccurate in hindsight, they could have harmed the progress of the authentic investigation.

In the end, the responding NASA official (with a request his name not be used) argued, "The Russian computer failure actually made our partnership stronger not weaker. The Russians asked us for help and we joined forces. During the event [NASA] had daily conferences with the head of RSC-E (Sevastyanov) and his upper management. The good will created by battling this issue is still with us today." The future will judge how well these lessons have been learned, and how bankable such 'good will' turns out to be.

"The situation was critical," recalled station commander Fyodor Yurchikhin in a post-landing press conference in mid-October. "If we had not restored computers, it would

have been necessary to stop the mission." He reported that the crew stayed without sleep three difficult days, but "confidence that many specialists worked down there, on Earth and were thinking of how to cope with this situation, supported the crew".

At the post-flight press conference, Yurchikhin explained further: "The solution was simple - in the form of a small 'bug', with which we fooled the computer, but we had to know where to put it. And we were the last link in the long chain, in which numerous personnel were engaged," he added.