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The Collision

On June 25, 1997, an unmanned Progress supply vehicle collided with the Mir space station. This "Mir-23 Special Status Report" discusses the event and its immediate aftermath.

"At approximately 5 a.m. EDT (1:18 p.m. Moscow time) the Mir-23 crew informed controllers at the Russian Mission Control Center that the unmanned Progress resupply vehicle had struck the station during a test of a manual redocking system, and that the space station was losing pressure. Later reports from the crew indicated that during the redocking of the ship, Progress struck a solar array and a nearby radiator on the Spektr module. The collision occurred shortly before the beginning of a communication pass with Russian ground controllers. The collision caused the Spektr module to begin losing pressure.

"The crew closed the hatch to the leaking Spektr module and the three crew members reported shortly thereafter that the pressure was stabilizing in the rest of the station. At 5:28 a.m. EDT (1:28 p.m. Moscow time), the crew reported that the pressure in the now isolated Spektr module was continuing to drop to vacuum. At its lowest point, the normal Mir station pressure of approximately 750 millimeters of mercury dropped to 675 millimeters before it began to rise.

"Before the collision, the station commander, Vasily Tsibliev, was guiding the Progress capsule to a manual docking using the teleoperated (TORU) system in the Core module. Tsibliev reported to the ground that the Progress had come in very fast and he couldn't stop it. U.S. astronaut Mike Foale said he felt the impact of the collision of the Progress with the Spektr. Foale, Tsibliev and Flight Engineer Aleksandr Lazutkin were not injured and are in excellent condition. A Soyuz capsule attached to the Mir for use by the cosmonauts to return to Earth was not damaged in the collision.

"The Spektr module contains several NASA science experiments, some stored items, and Foale's personal effects. The Spektr experiments include a centrifuge, radiation monitoring experiment, and Earth observation equipment. The



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ramifications of this potential loss are still being assessed. Food, water and other vital Mir supplies are stored in other modules.

"During a later communications pass at 6:53 a.m. EDT, the crew reported that the station's pressure had stabilized and that the Progress had begun to separate to a safe distance from the Mir. To conserve power, the crew was told to shut down the thermal control systems and the ventilation systems in the Kvant-2 and Kristall modules as well as to shut down the urine processing system. Other Mir systems were also powered off to conserve electricity. The station was initially spinning at approximately 1 degree per second due to the collision, but the spin is now stopped and the Mir is in a stable configuration.

"Russian flight controllers have begun to assess the effect of the depressurization of Spektr and the loss of its solar array power as well as options for the recovery of Spektr electricity. Late today, the cosmonauts reported that they had regained manual control of the tracking of the arrays to the sun, and some power was being restored to Mir systems.

"Among the systems shut down to conserve electricity were the Elektron oxygen-generating system in the Kvant-2 module and the Vozdukh carbon dioxide removal system. Enough oxygen is available for the cosmonauts and oxygen generating candles are available, if necessary, to augment the production of oxygen until the Elektron is reactivated, which could occur within a day or two. Carbon dioxide removal will be handled in the meantime by lithium hydroxide canisters brought to the Mir by the Shuttle Atlantis or by other comparable Russian systems.

"As Russian flight controllers continue to devise plans to bring Mir systems back on line, the cosmonauts will maintain their work schedule, monitoring recovery activity and working with Russian space officials to present options for the restoration of power onboard the station. "

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Page last updated 04/04/2004

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