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Editor's Note

The first article in this issue, by Thomas Jonter, relates the rise and then the end of the Swedish nuclear weapons program. From a period beginning just after the end of WWII, Sweden undertook to develop a nuclear weapons program, more or less in parallel with its determination to develop nuclear power for peaceful purposes. By the 1960s, Sweden had ample scientific and technical expertise to produce nuclear weapons as well as a working research reactor and uranium resources to support a limited weapons program. But by the end of the decade, several factors led Sweden to abandon the program including importantly a tension between civilian nuclear power goals and maintaining maximum freedom of action with respect to weapons; and also important was the strengthening of international non-proliferation efforts during the 1960s, which led ultimately to Sweden joining the Nonproliferation Treaty as a non-weapon state.

The second article, by Ting Wang, analyzes in great detail the debris caused by the collision on February 10, 2009 of the retired Russian Cosmos 2251 satellite and the Iridium 33 satellite, owned privately by a U.S. company. This was the first on-orbit collision between satellites. The article seeks to evaluate the short and long-term hazards the collision fragments will pose in the space environment, analyzing in particular how the shapes of the colliding objects will impact collision probabilities.

Finally, in a research note, R. Scott Kemp estimates the release of uranium-hexafluoride to the atmosphere from both commercial gas-centrifuge plants and conversion facilities where the uranium-hexafluoride gas is produced. Such releases could, in principle, allow detection of clandestine centrifuge enrichment activities. The analysis here follows on to the author's article in Volume 16, No. 3, 2008, "Initial Analysis of the Detectability of UO_2F_2 Aerosols Produced by UF_6 Released from Uranium Conversion Plants."