Accidents at Sea

For decades, American and Soviet nuclear submarines engaged in continual undersea military manoeuvres in the Arctic. While Soviet attack submarines endeavoured to protect their northern waters and ballistic missile submarines, their U.S. counterparts attempted to shadow and monitor the Soviet vessels. From 1945 to 1988, more than 20 naval accidents involving nuclear-armed or nuclear-propelled submarines or warships occurred in northern seas.5

A number of these naval accidents have been quite recent. In February 1992, a U.S. Los Angeles-class nuclear-powered submarine collided underwater with a Russian Sierra-class submarine in the Barents Sea just off the coast of Russia. Both vessels were reported to be carrying nuclear torpedoes and both vessels were damaged. If they had collided at a different angle, both might have sunk instantly, with no opportunity to shut down their nuclear reactors. The result could have been an environmental catastrophe. In March 1993, the American nuclear-powered attack submarine U.S.S. Grayling and a Russian Delta-class nuclear submarine on routine patrol collided off the coast of the Kola Peninsula. According to one report, if the Grayling had been just five seconds slower, it would have struck the Russian vessel' s missile bay and thereby could have sunk the submarine and scattered its nuclear warheads over the ocean floor.

This interaction of U.S.-Russian nuclear-powered attack submarines (SSNs), and its attendant risks, seems destined to continue despite the decline in Russian naval activity. Although the recent collisions have prompted the U.S. to restrict and review naval operations in the Barents Sea, SSNs continue to patrol beneath the arctic ice. Even as the U.S. Navy is shifting its focus from global threats to regional challenges and opportunities, recent statements illustrate that the navy remains committed to maintaining a forward presence in the Arctic.

Other incidents have raised additional concern. Most notably, technical malfunctions have resulted in the sinking of a number of U.S. and Soviet nuclear submarines along with their nuclear warheads at the bottom of the ocean. Over the past three decades, the U.S. Navy has lost two nuclear submarines, the Thresher and the Scorpion, and has admitted to dumping one nuclear reactor from the Seawolf, in 1959. More recently, in April 1989, a ship-board fire resulted in the sinking of the Komsomolets, a Soviet (Mike-class) SSN carrying two nuclear-armed torpedoes. Since then, the vessel has been the source of much controversy, largely because of its radioactive threat to the arctic environment.

The Komsomolets currently lies 1450 m underwater 240 km southwest of Bear Island, north of the Arctic Circle. It is leaking cesium 137, a carcinogenic isotope that can be stored in biological tissues. While investigations have so far shown no abnormal levels of radiation, scientists have expressed concern about future leaks and their long-term effects on the arctic ecology and food chain. Some scientists contend that a more intense leakage of radioactive materials may begin by 1995. Russian scientists have reported that the submarine's hull is damaged and that the torpedoes are no longer watertight.

A number of scientists have noted that even if leaks occur, the plutonium will be absorbed by the sediments on the ocean floor and remain localized. Others suggest that currents in the area of the wreck may be more violent than was originally thought and could distribute the

sediments throughout the region. They also note that other radionuclides such as cesium 137 are mobilized much more easily than plutonium and could ultimately become widely dispersed throughout the Arctic Ocean.

Officials from Norway and the Russian Navy have denied that there is an immediate danger, but they continue to monitor the submarine closely. In August 1993, a U.S.-Russian research team investigated the Komsomolets and concluded that the danger of widespread contamination was negligible: any leakage of radioactive material most likely would settle on the sea floor near the vessel. Just one month later, however, other Russian officials announced that Moscow had decided to seal off the corroding nuclear torpedoes with a polymerizing gel to attempt to prevent plutonium leaks. Work is scheduled to begin by summer 1994 with or without western financing.