

A Short History of the Nuclear Arms Race

World War II came to an abrupt end when the United States dropped two atomic bombs on the Japanese cities of Hiroshima and Nagasaki, killing nearly 200,000 Japanese. While the bombs accelerated Japan's surrender, they also forced people to contemplate the reality of weapons of mass destruction. At the same time, the hope for a lasting peace after the war was threatened by the emergence of the United States and the Soviet Union as rivals whose enmity for one another persisted through the 1980s. Based on the tensions and mistrust of the Cold War, the United States and the Soviet Union embarked upon an arms buildup unprecedented in human history, with nuclear arms at the centerpiece.

In 1945 the United States held a monopoly on atomic weaponry. However, the Soviets were eager to catch up with U.S. military power and quickly began to develop nuclear weapons. In 1946 U.S. policymakers recognized the danger of an arms race and took steps to place control of nuclear science and materials in the United Nations, the newly created international organization designed to foster a more peaceful world. However, the United States and the Soviet Union could not agree on a treaty limiting the expansion of nuclear weaponry, so the initiative failed. Instead, both decided to pursue the certainty of a powerful nuclear arsenal rather than the hope of peace through negotiations and international treaties.

U.S. policymakers hoped their nuclear monopoly would last for 10 or 20 years. These hopes were dashed when, in 1949, the Soviets tested their first bomb. In 1952 the United States countered the Soviet success by producing the hydrogen bomb. In 1954 the United States tested a hydrogen bomb that packed the power of 15 million tons of TNT, 750 times more powerful than the bomb that destroyed Hiroshima. In 1953 the Soviets completed their own hydrogen bomb. Within two years, both sides had added this dreaded new weapon to their nuclear arsenals, and they were soon capable of completely destroying each other. As the arms race wore on, both sides continued to rapidly increase the size and effectiveness of their nuclear arsenals, arguing that ever larger arsenals were necessary for national security.

Throughout the 1950s and 1960s the U.S nuclear arsenal grew almost eightfold. By 1954 U.S. planes could drop 150 bombs on Soviet soil in just a few hours. By the early 1960s both countries settled on the concept of Mutual Assured Destruction (MAD) as the guiding principle behind nuclear strategy. For the United States, the aim of MAD was to deter potential Soviet attacks by having enough nuclear weapons to assure the destruction of the Soviet Union, even if it launched a nuclear attack first.

Negotiations between the superpowers to bring the arms race under control were held almost continuously during the Cold War. In spite of numerous agreements, however, tens of thousands of nuclear weapons were assembled. One reason for this was that agreements were difficult to verify. Both countries were insecure about allowing open inspections of nuclear facilities. Another reason was that after each treaty was signed, both sides were so suspicious of the other that they looked for loopholes to allow them to keep ahead of their adversary.

One effort to slow the arms race was the Test Ban Treaty of 1963, which eliminated above-ground nuclear testing. Still, while underground testing proved to be better for the environment, it ultimately allowed both countries to build bigger and more powerful weapons, some as large as 40 million tons of TNT, 40 times the firepower of all the bombs used during World War II. Another short-lived plan to control the arms race came during a period of *détente*, or a relaxation of Cold War tensions. In 1972 the Strategic Arms Limitations Treaty (SALT I) set limits on each country's long-range nuclear warheads. Yet, its effectiveness at halting the race was undermined as both sides built more MIRVs, missiles with multiple warheads that could be simultaneously aimed at a variety of targets. Indeed, this technological development made it more difficult to keep track of the number of long-range missiles on each side since one missile could have 5 or 10 warheads.

The Anti-Ballistic Missile Treaty (ABM) of 1972 was another attempt to curtail the arms race. This treaty limited the number of defensive missiles each country could have to one per site. In the 1980s, however, President Ronald Reagan advocated a shield of satellites and lasers to defend against nuclear weapons, a seeming violation of the ABM agreement. He argued that the so-called Star Wars defense system did not violate the treaty since it would be space based rather than land based. During the early 1980s the weapons tally continued to skyrocket despite the advancements of the second Strategic Arms Limitations Treaty (SALT II) of 1979, in which both powers agreed to limit MIRVs. Soon after the treaty, both powers developed cruise missiles, which fly close to the ground, making radar detection difficult.

Finally, in the late 1980s, major changes in the arms buildup occurred after the Soviet Union and Eastern European Communist bloc fell apart, the Cold War fizzled, and the arms race ended. Immediately, leaders of both the United States and the former Soviet Union took steps to reduce the threat of nuclear attack. This included pulling intermediate range nuclear missiles out of Western Europe and the far-reaching Strategic Arms Limitations Treaty (START) of 1991. START called for a 70 percent reduction in the total number of nuclear warheads in the arsenals of both countries. In 1993 the United States and Russia agreed in START II to reduce the number of deployed strategic warheads to no more than 3,500 each by January 1, 2003. To help limit the spread of nuclear weapons, 168 nations met in 1995 and agreed to extend the Nuclear Non-Proliferation Treaty (NPT) of 1970, which prohibited the transfer of nuclear weapons or technology into any non-nuclear weapon states.

Nonetheless, disarming the world's nuclear arsenal remained a major challenge in the late 1990s. Not only were the existing weapons difficult to dismantle, but the technology to build them—which had been sold on the black market—and the manufacture of new ones were difficult to prevent or regulate. The United States and others pushed countries such as Iran, Iraq, Pakistan, North Korea, and India to limit nuclear technology to civilian uses. Yet, monitoring such is difficult. The potential for accidental or irrational use of nuclear weapons remains an international threat, making the complete elimination of all nuclear arms—and their potential for mass destruction—a necessary goal for humankind.