

Directions: Read the following section on Nuclear Proliferation and answer the questions that follow.

Nuclear Proliferation

The nuclear age began in August 1945, when the United States ended World War II by dropping atomic bombs on the Japanese cities of Hiroshima and Nagasaki. Horrified by the enormous death and destruction in these cities, the Japanese government surrendered. Since 1945, the United States has sought to limit *nuclear proliferation*-that is, the spread of nuclear weapons.

Cold War Developments

The United States did not enjoy its nuclear monopoly very long. The Soviet Union exploded its first atomic bomb in 1949. In the years that followed, the two superpowers engaged in an arms race that produced thousands of nuclear weapons.

One type of nuclear device, the *strategic weapon* (so-called because it forms part of a nation's overall strategy), travels great distances and aims to destroy key sites in an enemy's homeland. *Ballistic missiles*, which have a high, arching flight, include intercontinental ballistic missiles (ICBMs) that can travel more than 9,000 miles. *Cruise missiles* fly low in order to escape radar detection.

The other type of nuclear device, the *tactical weapon*, is designed for use at close range in a battle or similar situation. Tactical weapons include intermediate-, medium-, and short-range ballistic missiles. Nuclear power is also used in artillery shells, land mines, and depth charges.

Throughout the 1950s, the United States had overwhelming nuclear superiority. By 1960, however, the Soviet Union had built a nuclear stockpile large enough to ensure that any attack upon it would be met with full retaliation. By the late 1960s, the Soviet nuclear arsenal was roughly equal to that of the United States. Out of this balance of power arose the belief in *mutual assured destruction* (MAD). Its proponents reasoned that neither the U.S. nor the U.S.S.R. would resort to the use of nuclear weapons if each had the ability to destroy the other. Each nation, therefore, developed and maintained enough nuclear weapons to deter an attack by the other. MAD provided both the United States and the Soviet Union an incentive to maintain the nuclear balance. It was recognized that the development of an imbalance would jeopardize international security.

This interdependence led the United States and the Soviet Union to seek ways to assure stability. Beginning in the 1960s, they negotiated arms control agreements to maintain a balance of nuclear weapons and to curb weapons systems that might upset the balance of power

Nuclear Arms Control. Nuclear weapons have not been used in warfare since 1945. The Soviet Union did not use them in Afghanistan. The United States did not use them in Vietnam or Iraq. However, the possibility that nations with nuclear arsenals would use them has caused widespread concern.

An early effort at control was the founding of the International Atomic Energy Agency (IAEA) in 1957. The 128 members of this independent United Nations agency work to encourage peaceful uses of atomic energy. They also try to discourage the construction of nuclear weapons and to prevent the conversion of nuclear plants from civilian to military use.

Another step was the Nuclear Nonproliferation Treaty of 1968. This is an agreement signed by 185 nations to halt the spread of nuclear weapons to other countries and to support an international authority for the development of peaceful nuclear technologies. The treaty's signers pledged to allow inspections of their nuclear facilities by the IAEA.

An important treaty between the United States and the Soviet Union was signed by President Richard Nixon and the Russian leader Leonid Brezhnev in 1972. It grew out of Strategic Arms Limitation Talks (SALT) that began in 1969. The SALT I treaty, as it was called (although a SALT II treaty was never approved), limited each nation's long-range missiles.

The London Suppliers Agreement of 1976 is designed to prevent the export of any nuclear materials or technology with military potential to nations that do not possess nuclear weapons. Also, EURATOM, the Western European nuclear authority, has an independent legal responsibility for ensuring that nuclear material in its non-weapons state is not diverted to nuclear weapons or nuclear explosives. The EURATOM Commission can directly penalize any person or organization that violates its rules and bring an offending nation before the European Court of Justice.

While governments tried to control nuclear arms by treaty, a strong popular movement—the *nuclear freeze movement*—arose in the United States and elsewhere. Local and national campaigns against nuclear weapons research, production, and testing reached a peak in the early 1980s. In April 1982, 81 percent of U.S. citizens polled were in favor of a freeze. The movement declined after the 1984 reelection of President Ronald Reagan.

Although Reagan was a cold warrior who denounced the Soviet Union as an "evil empire," he did meet with Soviet leader Mikhail Gorbachev. In 1987, the two signed the Intermediate Nuclear Forces Treaty, which called for the destruction of missiles with ranges of 300 to 3,400 miles.

Reagan's successor, George Bush, met with Russian leaders to sign two Strategic Arms Reduction Treaties (START). The first, START I, was signed in 1991 and reduced each nation's long-range missiles by about a third. The second, START II, signed in 1993, cut the number of U.S. and Russian missiles to about half the number proposed by START I.

1. Define nuclear proliferation.

2. What are the goals of the International Atomic Energy Agency? 3. List four measures taken to prevent nuclear proliferation.

Directions: Read the following section on nuclear testing and answer the questions that follow.

An End to Nuclear Testing?

Efforts to halt nuclear testing have been under way since the 1950s. At the time, a major concern was the health threat posed by radiation that was released into the atmosphere by aboveground nuclear tests. In 1963, the United States, Britain, and the Soviet Union signed the Limited Nuclear Test Ban Treaty. The treaty pledged those nations not to test nuclear weapons in the atmosphere, under water, or in space. It allowed underground tests to continue. In recent years, the other two declared nuclear powers, China and France, have observed the same restrictions.

In October 1992, a *moratorium*, or temporary halt, in nuclear weapons testing went into effect. It was the result of an agreement among the United States, Russia, France, and Britain. Meanwhile, representatives of 38 nations began meetings in Geneva, Switzerland, to hammer out an agreement on a more comprehensive test-ban treaty. This kind of treaty bans all types of tests, including those underground. A key issue at the Geneva talks was whether or not to continue to allow very small underground nuclear tests. The United States and Russia said they needed such tests in order to be sure of the safety and reliability of their weapons. Non-nuclear states strongly opposed any such loopholes. In August 1995, President Clinton dropped the U.S. request for small tests and said a new test ban should be both comprehensive and complete. That put pressure on Russia to go along.

When the Nuclear Nonproliferation Treaty came up for renewal in 1995, the nations that had signed the treaty met to discuss what to do. Should they extend the treaty indefinitely? That was what the United States and other nuclear powers wanted. Or should they limit the extension to 25 years? That was what many nonaligned nations proposed. The smaller nations did not want an indefinite extension until they felt confident that the nuclear nations would someday keep their promise to give up their own nuclear arms. That vague promise was part of the original treaty. After a four-week conference in New York, the signatory nations accepted the U.S. position and extended the treaty indefinitely. In order to win the extension, the nuclear powers had to repeat their old promise. They also made new promises-including a pledge to conclude a comprehensive ban on nuclear testing by the end of 1996.

In 1996, the U.N. General Assembly overwhelmingly approved the Comprehensive Test Ban Treaty (CTBT). The world's five major nuclear powers agreed to sign it. But it would not formally go into effect until all 44 of the nations with nuclear reactors ratified it.

Nuclear Tests in 1998. In May 1998, both India and Pakistan, geographic neighbors and longtime political foes, conducted underground nuclear tests. Neither had signed the Nuclear Non-Proliferation Treaty or the Comprehensive Test Ban Treaty. The world had long known of India's nuclear capability, and observers believed that the new Hindu nationalist government was showing its military strength in response to Pakistani missile tests. It was also claimed that Pakistan's nuclear capability had been supplied by the Chinese government, which, in turn, may have obtained "sensitive" technology from United States missiles makers. In retaliation for the prohibited tests, the United States government imposed economic sanctions on both India and Pakistan, including freezes on large International Monetary Fund loans that they needed for vital economic development.

- 1. Explain how the Geneva talks on a comprehensive test-ban treaty were related to the extension of the Nuclear Nonproliferation Treaty.*
- 2. How did President Clinton's 1995 decision on small underground tests affect the prospects for a comprehensive test-ban treaty?*