

The Status Of Treaties

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Abstract for The Status of Treaties

Continuing discussions beginning soon after WWII did not succeed in preventing increases in Nuclear weapons, delivery systems, or countries that had these weapons. Gradually the two main protagonists in the cold war moved toward bilateral agreements that put limits on the weapons and associated systems including Inter-Continental Ballistic Missiles (ICBMs), Submarine Launched Ballistic Missiles (SLBMs), and long range bombers as well as associated Anti-Ballistic Missile (ABM) systems. The cornerstone of these treaties, the Strategic Arms Reduction Treaty (START), expired in December of 2009, and efforts for a formal reduction in numbers and agreed to verification protocols remain under discussion. Multilateral treaty reviews are scheduled in 2010 and others are being proposed for ratification. These treaties have been aimed at preventing other "nuclear nations" from developing new weapons or non-nuclear nations from acquiring these weapons. This article also describes the historical, political, and technical background for each of the important treaties that play a role in the upcoming debates.

Back story:

The Strategic Arms Reduction Treaty (START I) was signed by the U.S. in 1991 and went into force in 1994. The Treaty expired in December of 2009 and efforts for a formal reduction in numbers and agreed to verification protocols remain under discussion. Currently there will be no formal verification measures between the two countries. The Non-Proliferation Treaty (NPT) is due for its five-year review meeting in Vienna in May of 2010. President Obama has indicated that he wants the Senate to ratify the Comprehensive Test Ban Treaty (CTBT) in advance of the May meeting to signal a firm commitment, to strengthen the international arms control regime. The U.S. did not ratify the original CTBT because of concerns regarding the validity or effectiveness of verification methods. In recent years verification technology and the global infrastructure to detect and report violations or tests have improved immensely.

Much has changed in the world since the League's position on Arms Control was approved in 1983. Yet, the language of the original position is still largely applicable today. The major change is that in addition to the original five nuclear powers (China, UK, Russia, USA, and France) the list now includes Israel, India, Pakistan and North Korea and there is the possibility that Iran is developing a weapon. This proliferation of nations with weapons and fissionable material leads to another change of the specter of non-state actors obtaining weapons or fissile materials because of poor security and a black market network. While Russia and the United States have made some bilateral progress in reducing the numbers of their weapons, the global nuclear weapons status has the potential of spinning out of control without a renewed dedication to reductions and placing greater controls on the fissionable material. Several of the new nuclear countries are on the verge of being failed states with embedded insurgencies and thereby leading to greater concerns. With these growing international complexities, the treaties and proposed agreements will become the focus of heated national debates and this series of articles is intended help educate and inform our membership.

Relevant Treaty Summaries:

The treaties summarized below are at the center of the coming arms control debates and are central to U.S. strategic planning. A review and understanding of these treaties will help to inform the discussions on U.S. national security.

Strategic Arms Limitation Talks (SALT I)

Attempts to move forward with arms reduction talks after the signing of the Non-Proliferation Treaty (1968) were not successful until the first series of SALT talks that extended from November 1969 to May 1972. A major result was the Treaty on the Limitation of Anti-Ballistic Missile Systems that were seen by opponents as spurring additional competition in offensive weapons. This treaty was signed by President Nixon and

General Secretary Leonid Brezhnev on May 26, 1972, and was subsequently ratified by the Senate. The treaty included an "Interim Agreement" on offensive weapons and delivery systems, as the U.S. and the U.S.S.R. were not able to arrive at a final position. The ABM Treaty as it is now known is discussed further in a subsequent section. One of the main roadblocks in arriving at an arms control treaty is the issue of verification. In this treaty verification was to be accomplished by "national technical means," generally recognized as satellite resources. Each side was to avoid concealment or other means that would impede verification.

SALT II discussions began in Geneva in November of 1972 and focused on offensive weapons, and the mix of missiles, aircraft and submarine launched missiles. Multiple Independently-targeted Re-entry Vehicles (MIRVs) introduced technologies that complicated the negotiations and strategic thinking by each side on the balance of forces at the center of the Mutually Assured Destruction (MAD) approach that prevailed during the Cold War. In this case multiple warheads would be launched on a single missile and could be sent to separate targets. These discussions served as the precursor to the meetings that extended into the 1980s and led to the START Treaty.

Strategic Arms Reduction Treaty (START I)

President George H. W. Bush and Soviet President Mikhail Gorbachev signed the Strategic Arms Reduction Treaty (START I) in 1991 after negotiations in the 1980s. The START Treaty placed limits on offensive weapons and specified limits to weapons and delivery systems and established conditions for verification procedures. The treaty also established significant accounting provisions including on-site inspections and an accounting for all weapons. It also allowed using other national resources for verification such as imaging and signals intelligence satellites. If the START treaty is allowed to expire with no extension or replacement treaty in December 2009, there will be no operational verification provisions between Russia and the United States.

Shortly after the signing, the Soviet Union dissolved and several newly independent countries remained in possession of nuclear weapons and materials. Through a series of protocols the weapons were removed from Belarus, Kazakhstan, and Ukraine and transferred to Russia. All of the countries eventually became signatories and ratified the Treaty that finally went into force on December 5, 1994 with a fifteen-year duration with provisions for extensions.

The negotiations leading up to the START signing in 1991 and subsequent ratification in 1994 were complicated by President Reagan's introduction of the Strategic Defense Initiative (SDI) in 1983. The resulting delays and restarts lead to immense nuclear weapons build up estimated to total more than 32,000 strategic and tactical warheads in the U.S. and 45,000 in the USSR at the height of the cold war that formed the baseline for the START Treaty.

Ironically, present bilateral negotiations are complicated by the George W. Bush Administration initiative to deploy a missile defense system in Eastern Europe (radars in the Czech Republic and missiles in Poland). The stated aim was to protect European NATO countries from potential nuclear missile attacks from "rogue states" like Iran. The Russians see this as a disguised threat against them and are reluctant to agree to new constraints or reductions in weapons until this ABM system is "off the table." After a "threat analysis" in 2009, the Obama Administration altered the plan and will deploy what they see as a more "effective system" that relies on sea-based interceptors and radars.

The START treaty required limits on the number of strategic weapons (6000 long-range warheads for each side) and on the number of strategic delivery systems such as bombers and land-based and submarine-based missiles (1600 total for each side). By 2001 all former U.S.S.R. weapons had been transferred to Russia. The U.S. and Russia reached the 6000 level of deployed nuclear weapons, representing a 30 to 40% reduction. Today, the U.S. has 3,696 and Russia has 4,237 deployed strategic warheads. Including tactical weapons, the totals are estimated at 10,000 and 15,000 respectively. Both sides reduced the numbers of strategic delivery systems also including the destruction of 365 B-52s by the United States.

In July 2009 Presidents Obama and Medvedev signed a memo of understanding in preparation for

negotiating a new treaty in which both sides would stipulate reducing the number of deployed warheads to 1500 – 1675 and the number of delivery systems to 500 – 1100. They would also try to sign a new treaty before the December 2009 expiration date. One option would be to simply employ a five-year extension to allow more time for discussions. Even if this measure is taken, it will be important to ratify the Test Ban Treaty in order to provide a basis for the Proliferation Treaty review in May of 2010.

Strategic Arms Reduction Treaty II (START II):

The START II treaty was negotiated and signed by President George H.W. Bush and Boris Yeltsin on January 3, 1993. The Senate in 1996 and the Russian Duma in 2000 ratified the treaty. However, the Russian ratification depended on certain contingencies including a commitment by the U.S. to the ABM treaty. As a result START II was never put in force.

In addition to reducing the numbers of weapons, the main objective of the Treaty was to govern the use of Multiple Independently-Targetable Vehicles (MIRVs). Launch vehicles or missiles that could carry these MIRVs would have to be larger and more powerful and so constraints would have to be developed and included in any relevant treaty provisions.

Strategic Offensive Reductions Treaty (SORT):

Presidents George W. Bush and Vladimir Putin signed the Strategic Offensive Reduction Treaty in 2002 and it was placed in force in 2003. It expires in December 2012. Both parties agreed to limit their strategic, operationally deployed warheads to 1700 – 2000. A Bilateral Implementation Commission reviews the "Moscow Treaty" implementation twice a year.

There are critical issues with SORT. There are no formal verification provisions so that the treaty relies on the verification provided in START. Warheads taken away from being operationally deployed do not have to be destroyed so that the weapons can be placed in storage for later deployment. Such reductions do not have to be accomplished until the expiration date of the treaty with no intermediate milestones. Since either party can withdraw with three months notice, it is conceivable that nothing will be done. While this may seem confusing, each treaty is a separate entity and each administration has attempted to insert its own mark on the overall objective of reducing the numbers.

Comprehensive Test Ban Treaty (CTBT):

The objective of the Comprehensive Test Ban Treaty is to ban nuclear testing everywhere on the planet including atmospheric, underwater, and underground testing in order to curb development of weapons (new or improved) and to prevent harm to humans and the environment.

After many failed attempts, the CTBT was negotiated between 1994 and 1996 in Geneva. However, the treaty it has not gone into force. There are forty-four states listed in the treaty who had nuclear technology in 1996, all of whom must sign and ratify the CTBT before it can go into effect. China, the Democratic People's Republic of Korea (D.P.R.K.), Egypt, India, Indonesia, Iran, Israel, Pakistan, and the U.S. have not completed this requirement. One hundred eighty one countries have signed and one hundred forty nine have ratified the treaty including France, Russia, and the UK.

Between 1945 and 1996, the U.S., U.S.S.R., France, U.K. and China conducted over 2,000 nuclear tests. The major nuclear powers have all participated in a moratorium since that time. Even though the U.S. has not ratified the Treaty, the last U.S. atmospheric test in Nevada was in 1962 and the last underground test was in 1992. The U.S. has continued so-called "subcritical testing" short of explosions as part of the protocol to validate the reliability of the aging nuclear arsenal.

India and Pakistan were not signatories to the NPT and they conducted underground tests in 1998. The D.P.R.K. was a signatory to the NPT but withdrew earlier in this decade and conducted tests in 2006 and 2009. All of these tests were detected by methods deployed for the CTBT as described in the following paragraphs.

In order to move forward with the necessary technology for *verification* the CTBT Organization (CTBTO) was founded in 1996 even though the Treaty was not in force. They are preparing the verification system for operational capability. A 300 person staff with a budget of about \$120M USD carries out the development and deployment. Funding is based on a formula of proportional contributions. Tibor Toth, the present Executive Secretary, is a Hungarian career diplomat.

The CTBTO established a verification regime with the title The International Monitoring System (IMS). It consists of 337 facilities located globally that constantly monitor for nuclear explosions. Over 70% of these facilities are operational and the collected data is forwarded to the International Data Center in Vienna via a system of satellites and ground communication links. Reports are issued within hours of detection. The sensing technologies include:

Seismic – 50 primary and 120 auxiliary stations monitor shock and stress waves in the Earth and can distinguish between earthquakes, mine explosions and or nuclear tests *Hydro-acoustic* – 11 hydrophone stations listen for sound waves in the ocean that can travel great distances

Infrasound – 60 surface stations on the surface detect ultra-low frequency sound waves that are emitted by large explosions

Radionuclide – 80 stations measure for radioactive particles and in conjunction with 16 radionuclide laboratories can assist in eliminating ambiguities

The IMS data are provided to member states and to other international institutions for scientific research related to earthquakes and tsunamis. After the CTBT enters into force, members can request on-site reviews if the data indicate that a nuclear test has taken place.

The U.S. has signed the treaty but has not ratified it. The Senate rejected ratification in 1999, and the Obama Administration has indicated that it plans to submit it to the Senate later this year when the expiring START treaty is extended or modified.

The Congressional Commission on the Strategic Posture of the United States established in 2008 completed its report in 2009 without being able to arrive at a consensus position on the CTBT, largely due to the differing geopolitical outlooks of the members. However, they did recommend a comprehensive net assessment of benefits, costs, and risks that will inform the Senate deliberations. This Commission report will serve to frame the early stages of the debates about whether national security will be well served by limitations in the proposed treaties.

Proponents for ratification argue that:

1. Ratification would place the U.S in a leadership position to persuade or push other countries like D.P.R.K., India and Pakistan to sign
2. Nuclear proliferation and new weapon development would be limited because without testing design and weapons fabrication could not be verified
3. Ratification would not compromise security because the U.S. "Stockpile Stewardship Program" maintains the current nuclear capability without physical detonations through subcritical testing and maintenance of technical personnel and facilities

Opponents argue that:

1. The reliability of nuclear weapons is in doubt if not tested
2. It is asserted that U.S. security is threatened because "others" are modernizing their weapons (Presumably this modernization means the development of weapons such as nuclear bunker busters, an idea suggested by U.S. weapons advocates.)
3. Despite the verification protocols, opponents claim that nations can avoid detection of nuclear testing through extraordinary means such as sensory isolation of underground test tunnels

Whether or not the Proponents are correct in asserting that persuasion from a leadership position would be

effective in these circumstances is debatable. On the other hand, there are many experts who would disagree with the opponents' position that reliability can only be achieved with testing. Furthermore there is no evidence that the "others" such as China or Russia are in fact modernizing their weapons and the ability to avoid detection of testing is not likely especially when other national resources and surveillance means are deployed.

The Non-Proliferation Treaty (NPT):

The Non-Proliferation Treaty aims to limit the spread of nuclear weapons, to encourage disarmament, and to establish ground rules for the peaceful application of nuclear technology. Signing of the treaty began in 1968 and was ratified by the United States and other countries in 1970. There are one hundred eighty nine signatories to the treaty including the five original nuclear countries of the U.S., UK, Soviet Union, France and the Peoples Republic of China. Four additional sovereign states are now recognized as possessing weapons and are not signatories to the treaty including India, Pakistan, Israel, and North Korea.

The treaty has been extended indefinitely by all the parties and is reviewed every five years with the next review scheduled for May of 2010. The International Atomic Energy Agency (IAEA) provides safeguards to verify compliance with the NPT objectives. Set up originally as the "Atoms for Peace" organization in 1957, the IAEA now reports to the UN Security Council under a special agreement. Its funding comes from member countries with a budget established by a board of governors. In 2008 this budget was over \$350M USD with additional contributions of about \$80M USD.

There is some disagreement as to whether Article 6 of the Treaty requires the member states to actually reduce their weapons or whether it simply means not proliferating. This disagreement and the issue of how to deal with fissile materials and their possible distribution remain as issues for the conferences to resolve. The spread of enrichment and processing technology that may result from commercial power generation also represents a major challenge for the treaty interpretation and enforcement as exhibited in the case of Iran.

The Anti-Ballistic Missile Treaty (ABM)

The Anti-Ballistic Missile Treaty (ABM Treaty-a byproduct of the START II Treaty) between the Soviet Union and the United States was signed in 1972 by President Richard Nixon and the General Secretary Leonid Brezhnev. The final version of the treaty allowed each side to defend a city and a selected location of ballistic missiles. The treaty was in force for thirty years until the United States under President George W. Bush unilaterally withdrew in 2002. The Missile Defense Agency was subsequently created by the United States.

Prior to the treaty, original systems called Sentinel and Safeguard were partially deployed using Nike Zeus and Sprint Missiles. It soon became apparent that MIRVs and the use of decoys would render the defensive systems ineffective. The overall strategies between the two countries evolved into the Mutually Assured Destruction (MAD) in which neither side could avoid retaliatory destruction if they launched an attack first. There is some question as to whether the Soviet Union subscribed to this philosophy and they retained the view that an ABM system might enable a first strike capability while avoiding catastrophic damage. In 1983 President Reagan announced plans for a Strategic Defense Initiative (SDI) or "Star Wars." Considerable research and development spending went into this program into the mid 1990s. Some credit the spending as contributing to the Soviet Union collapse, although there were many other forces at play and a change in Soviet leadership to Mikhail Gorbachev undoubtedly had a major affect.

After the U.S. withdrawal from the treaty in 2001 spending was increased on ABM systems and there are presently systems installed in Fort Greely, Alaska and at Vandenberg Air Force Base, California. The systems depend on a complex array of warning systems including satellites and radars and sensor- tipped interceptor missiles that have been tested with random successes. Today's rationale for the ABM systems is to protect the United States and allies from rogue states like North Korea and Iran who presently do not have long-range missile capabilities.

The overall ABM system is multilayered and includes an Airborne Laser Program in which a high energy

laser is mounted in a modified 747 aircraft along with a pointing and control system that would allow it to track a missile during its launch phase and burn a hole in the structure causing its destruction. Other elements include sea-based interceptors and radars. When these and the space borne sensors and components are included the overall spending for ABM Research and Development has exceeded \$10B per year for over a decade.

Fissile Materials Cutoff Treaty (FMCT)

At this time there is no treaty governing the disposition and security of fissile materials. However, an International Panel on Fissile Materials (IPFM) has been working on a draft treaty that would ban the production of fissile materials for use in nuclear weapons. This was presented at the UN in May of 2009. It is presumed that if the CTBT can be brought into force and ratified by all appropriate parties, then the FMCT could be agreed to and signed also. The reader should refer to some of the references to see how complicated the security of these materials can be. It should also be noted that to make a modern thermonuclear weapon requires only four kilograms of plutonium and 25 kilograms of Highly Enriched Uranium (HEU). The production, proliferation and dissemination of these materials is perhaps more complex an issue than the weapons themselves because of the traceability problems, the synergy with commercial power generation, and the relative ease of transporting the materials.

Chemical and Biological Weapons:

The control of biological and chemical weapons has not been included in this paper. However, it is discussed in a subsequent paper and the reader is encouraged to review the web sites below for The Biological and Toxin Weapons Convention and The Chemical Weapons Convention.

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