START Implementation: A Report

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As an arms control treaty, the Strategic Arms Reduction Treaty (START) of 1991 is one of the largest and most comprehensive post-Cold War agreements. In forty-seven pages of text and 650 pages of protocols, annexes, definitions, statements and memoranda of understanding (MOUs), the treaty codifies in international law specific obligations and rights that the United States and Soviet Union[1] (and its four successor states — the Russian Federation, Ukraine, Belarus and Kazakhstan) had to carry out in reducing their nuclear weapons and delivery systems — the land-based missiles, intercontinental bombers and submarine-launched ballistic missiles (SLBMs). Over nine years of negotiations (1982–1991) produced an extremely detailed treaty that included all of the signatory parties' strategic offensive arms, as well as all strategic delivery vehicles and attributed nuclear weapons. One way to understand the complex fifteen-year international agreement is to focus on four key phrases or words: "arms control", "strategic arms", "reduction" and "treaty".

In seeking to reduce all arms control treaties to their barest essentials, scholars have observed that states engaging in arms control negotiations are "generally military rivals and potential enemies in war".[2] Mutually suspicious, these rival states developed or acquired land and sea-based armaments for national protection, or in the case of these two nations, for nuclear deterrence. During the Cold War (1948–1989), both the United States and the Soviet Union built very large, militarily credible nuclear deterrence forces that consisted of specialized military personnel, intercontinental strategic delivery systems (bombers, missiles and submarines), thousands and thousands of nuclear weapons, national fail-safe command and control systems, and operational war plans. During the first two decades of the Cold War, American and Soviet leaders and their senior military commanders reacted strongly to the perceived threats of each other's military forces. Threatened and genuinely afraid, they engaged in a full-scale nuclear arms race. As a consequence, by the early 1960s both the United States and the Soviet Union had developed and fielded so many bombers, fighters, missiles, artillery and submarines capable of delivering nuclear weapons that they had achieved superpower status.[3]

Then beginning in 1963 and continuing over the next twenty-five years American, Soviet, British, French and other national leaders negotiated and signed a series of arms control treaties and agreements that defined, limited and, to a degree, stabilized the nuclear arms race. The string of treaties began with the Limited Test-Ban Treaty of 1963, continued with the Non-Proliferation Treaty (NPT) in 1967, the Strategic Arms Limitation Interim Agreement and the Anti-Ballistic Missile Treaty in 1972, Strategic

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Arms Limitation Treaty (SALT) II in 1979, the Intermediate-range Nuclear Forces (INF) Treaty in 1987, and START in 1991.[4] All of these treaties represented major, sustained bilateral and multilateral diplomatic efforts. For START, for example, United States Secretary of State James A. Baker testified to the Senate that the United States had sent its negotiators to Geneva for nine years, had conducted special ministerial sessions in Geneva, Washington, DC, Houston and Moscow, and had convened and participated in presidential-level summit meetings in Geneva (1985), Reykjavik (1986), Washington, DC (1987), Moscow (1988), Malta (1989) and Washington, DC (1990).[5] While not every aspect of these high-level ministerial meetings or summits was exclusively devoted to the nuclear arms reduction treaty issues, they were a major part of all of them. For the Soviet Union, negotiating these arms limitation and reduction treaties held a central role in their diplomacy for more than twenty years.[6] By the time that Presidents George Bush and Mikhail Gorbachev signed START in the Kremlin on 31 July 1991, there had been a prolonged effort to craft arms control agreements that would limit and stabilize the superpowers' nuclear forces.

Treaty negotiations were always prolonged and difficult. Over and over the same problems surfaced. Mutual suspicions meant that verification methods would remain outside of national territories: no intrusive on-site inspectors would be prying around sensitive military bases and facilities. Asymmetrical force structures made resolution on equal numerical reductions a problem. Then there was the continuing problem of the military services and scientific laboratories developing significant new technologies and modern strategic weapons, such as road- and rail-mobile intercontinental ballistic missiles (ICBMs), SLBMs, multiple independently targeted re-entry vehicles, and long-range cruise missiles. These new technological developments complicated treaty negotiations significantly when it came to defining new types of weapons, accounting for them when deployed, and verifying their distinguishing characteristics during proposed on-site inspections. There were times when national negotiators were instructed to exclude discussions of the new technologies, because military commanders and strategists believed that they made their nuclear forces stronger.[7]

Further complications came in the late 1970s and 1980s. Both the United States and the Soviet Union developed and fielded new ballistic missile systems that caused an expansion in the superpowers' nuclear forces. With microelectronics, new gyroscopes and reengineering, the size and weight of the nuclear warheads were reduced. By 1979, the Soviet Union had developed, tested and fielded 308 SS-18 ICBMs with ten nuclear warheads each. The United States began deploying large, modern Trident submarines with ten warheads per missile. In addition, the Soviet Union was fielding a powerful force of more than 650 road-mobile SS-20 intermediate-range ballistic missiles with three nuclear warheads each. These missiles placed all of NATO at risk. In response, the United States, with the concurrence of the alliance nations, deployed in Western Europe 234 modern Pershing II missiles and 443 mobile ground-launched cruise missiles capable of launching nuclear warheads. These new missiles threatened the Soviet Union and the other Warsaw Pact nations. By the mid-1980s it seemed as if both of the world's superpowers were engaged in a renewed nuclear arms race. To some strategists and senior leaders in both the Soviet Union and the United States, the existence of a strong nuclear deterrence force was seen as superior to signing and implementing incomplete and unverifiable arms control treaties.[8]

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Consequently, by the late 1980s there were two powerful, often conflicting forces in every serious negotiation over the future of the American and Soviet nuclear forces. The first imperative was to limit the nuclear arms race by negotiating, signing, ratifying and implementing nuclear arms control treaties, which sought to define, channel and constrain nuclear weapons. In both nations, national leaders, congressional representatives and Duma legislators endorsed these treaties. At the same time the second driving force was the development of new weapons and technologies that promised an ever more invulnerable nuclear force that could ensure national survival, deter aggression

and lessen any attempts at national or alliance intimidation. If the object was national survival, then modern nuclear forces were not just desirable but necessary. Most of the same leaders, representatives and legislators who endorsed the arms control agreements, supported — even demanded — modernization of their nation's nuclear forces. START ended this dichotomy.

A Treaty That Imposed Controls Over all Strategic Offensive Arms

In START, "arms control" meant capping the bilateral nuclear arms race in two ways. First, it established numerical ceilings, called "central limits", on strategic delivery vehicles and deployed warheads. Seven years after the treaty entered into force, the United States and Soviet Union had to have no more than 1,600 strategic delivery vehicles — bombers, ballistic missiles and submarines; and no more than 6,000 deployed warheads. These limits are in effect for fifteen years; only withdrawal from the treaty could alter these numerical ceilings and reignite a nuclear arms race. The treaty contained sublimits for two types of strategic offensive weapons. For deployed mobile ICBMs, there could be no more than 1,100 warheads, and for the Soviet's multiple-warhead, fixed-silo SS-18 ICBM force, there could be no more than 1,540 warheads. A further provision limited the number of ballistic missile warheads, as opposed to strategic bombers, to 4,900 warheads. Second, the treaty closed off several types of future strategic weapons, either by banning them outright or by setting up a system to carefully monitor the advent of new missile technologies. Thus, there was an outright ban on the development of any new type of ICBMs or SLBMs with more than ten warheads. Treaty negotiators reached agreement on a series of definitions that detailed what constituted a "new" type of ballistic missile and how warheads would be attributed to these future systems. The treaty also banned development of multiple-warhead, long-range, nuclear air-launched cruise missiles. It limited the number of ballistic missiles in storage depots and training facilities. There were several other limitations on ballistic missile launchers and attributable warheads.

The reason that the comprehensive treaty contains so many provisions, annexes, statements and protocols controlling these strategic weapons is that the two signatory nations had agreed after nine years of negotiations to reduce their nuclear forces by only 40%. This meant that nearly 60% of the nuclear delivery systems and warheads would remain deployed in the field with the operational military commands. Those nuclear forces would constitute each nation's strategic deterrence forces. An implicit assumption, which emerged during treaty negotiations, was that both the United States and the Soviet Union would be modernizing their operational nuclear forces in the future. Consequently each demanded assurances in the treaty that the other nation could not exploit new weapons technologies to gain a strategic advantage, either through developing new weapons or by modifying existing ones. Future technologies, especially ballistic missiles, were subject to limits, testing restrictions, special monitoring, cooperative measures and special on-site inspections. Controlling future strategic arms modernization efforts became one rationale for negotiating and agreeing to START's complex and comprehensive verification system. It was designed to monitor both future and existing strategic nuclear operational forces.

With regard to the existing strategic forces, both sides acknowledged that over the fifteen-year duration of the treaty their nuclear combat commands would be experiencing constant changes. In normal times, there would be routine deployments of submarines at sea, movement of road-mobile missile regiments across land roads and fields, flights of long-range heavy bombers, periodic maintenance of ballistic missiles located in the fixed ICBM silos, and all sorts of exercises for operational, security and safety reasons. In abnormal times there would be major changes in the structure of the nuclear forces.

When the Soviet Union collapsed and the geopolitical system changed in the early 1990s, there were huge shifts in the composition and character of the nuclear forces. Ukraine, Belarus and Kazakhstan agreed in the May 1992 Lisbon Protocol that they would be parties to START and would eliminate all of their inherited strategic missiles, bombers and warheads. They also declared their intention to sign and ratify the 1967 NPT. The Lisbon Protocol and the NPT drove the Ukrainian, Belarusian and Kazakh decisions to eliminate their ballistic missiles and bombers, as well as transfer their warheads to the Russian Federation for reprocessing and destruction. In every treaty nation, including the United States and the Russian Federation, there were reductions in strategic bombers, ICBM missiles and silos, ICBM road-mobile launchers, and SLBM missiles and submarines. In addition, excess submarine facilities, air bases and missile fields were being closed.

Two treaty nations, the United States and the Russian Federation, were modernizing a part of their nuclear forces with new ballistic missiles at the same time they were reducing older weapons. In both nations, selected ICBM launchers were being converted from older to newer missiles. As a consequence, new facilities were being opened. Also, from 1995–1998, ballistic missiles were being flight-tested to measure reliability, accuracy and performance. In addition, production continued on certain types of new ballistic missiles, their launchers and new strategic bombers. These new strategic weapons were being deployed to operational units in the field. Essentially, START established an "arms control" system to monitor all of the activities of the operational nuclear forces whether they were deployed, stored, transported or being reduced, over the vast territories of the former Soviet Union and the United States.

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The treaty's monitoring system began with a provision authorizing the use of, and non-interference with, a signatory nation's National Technical Means (NTM). This term, NTM, meant that each signatory nation had the right in international law to unimpeded use of its national satellite and other monitoring systems to verify treaty compliance. First authorized in the SALT I Interim Agreement in 1972, NTM had become so accepted in international arms control treaties by 1991 that it became the cornerstone for monitoring all of the strategic offensive weapon systems included in START. Recognizing the primacy of the existing NTM monitoring system, the treaty authorized specific, additional "cooperative measures". Seven times a year, one party could request another to display their open road-mobile launchers, rail-mobile launchers and heavy bombers at their operational bases for observation by NTM. During every missile test flight, parties were obligated to exchange telemetry data tapes, interpretative data and acceleration profiles. This telemetry data allows all parties to ensure that the missiles being flight-tested do not exceed the agreed criteria for new missile types.

Prior to the signing of the treaty in July 1991, the United States and the Soviet Union had exchanged extensive data on the numbers, locations and facilities of all of their strategic offensive forces. Later in January 1995, following the last of the five nations' ratification and the treaty's entry into force in December 1994, new, updated force data was exchanged by all signatory nations. Since then, the five nations have exchanged updated force data every January and July. It is this force data that is compared with the information independently gleaned by each nation's NTM. Not only does the treaty require the parties to exchange this semi-annual data, but it also requires special notifications on the movement of non-deployed ICBMs, SLBMs and heavy bombers. When a strategic bomber, equipped with a long-range air-launched cruise missile, takes off for a training mission for longer than twenty-four hours, a message must be sent to the other treaty signatory nations. Given the complexity of the nuclear forces, thousands and thousands of messages are transmitted each year under the treaty.

The treaty's "arms control" system consists of the authorized use of NTMs, the mandatory biannual force data, the nearly continuous notifications and data derived from twelve types of on-site inspections and exhibitions. They are: baseline data inspections, data update inspections, new facility inspections, suspect site inspections, re-entry vehicle inspections, post-exercise dispersal inspections, conversion or elimination inspections, close-out inspections, formerly declared faculty inspections, technical characteristics exhibitions, distinguishability exhibitions and heavy bomber baseline exhibitions. In addition, the treaty authorizes the national inspectors of the United States and the Russian Federation to conduct continuous monitoring at the perimeter of one mobile ICBM assembly facility in each nation.

A Treaty That Incorporated All Strategic Offensive Arms

In July 1991, the date of the treaty signature, the United States stated in its official declaration that it had 2,246 ICBMs, SLBMs and heavy bombers, and 11,769 warheads.[9] The Soviet Union stated that it had 2,498 strategic delivery vehicles and 10,271 warheads.[10] On 31 July 1991, the United States declared that it had deployed 1,000 ICBMs in three weapon systems — Minuteman II, Minuteman III and Peacekeeper. The United States had 672 SLBMs deployed in three systems — Poseidon, Trident I and Trident II. For the long-range, heavy bombers, the United States declared 574 aircraft in two systems, the B-52 (H, G models) and the B-1B. A heavy bomber was defined as a bomber with a range of greater than 8,000 kilometres, or equipped for delivering long-range nuclear air-launched cruise missiles (ALCMs). During treaty negotiations, each of these ICBM and SLBM weapon systems were assigned, according to an agreed-upon formula, an "attributable" throw-weight and number of warheads. In the same way, treaty negotiators assigned a number for the nuclear weapons, including ALCMs, attributable to each deployed long-range bomber. The United States' treaty weapon systems, warheads and sites are included in Table 1.

The Soviet Union's strategic nuclear forces included a larger number of weapon systems than the United States. By 1991 when the treaty was signed, the Soviet Union had developed, tested and deployed in its nuclear force ICBMs in multiple systems — SS-11s, SS-13s, SS-17s, SS-18s, SS-19s, SS-24s and SS-25s. One of these ICBM types, the SS-25, was a road-mobile missile system; one was a rail-mobile system, the SS-24; while six were deployed in fixed silo-based launchers — SS-11s, SS-13s, SS-17s, SS-18s, SS-19s and SS-24s. Within its nuclear forces, the Soviet Union had 940 SLBMs deployed in five systems — SS-N-6s, SS-N-8s, SS-N-18s, SS-N-20s and SS-N-23s. Each of these ICBMs and SLBMs was assigned, according to a negotiated treaty formula, an "attributable" number of warheads and throw-weight. For long-range bombers, the Soviet Union declared 162 aircraft in two types, with several variants. The types were the TU-160 Blackjack bomber and the TU-95 Bear bomber. For the TU-95s there were seven variants. Associated with the Soviet long-range bombers were two types of long-range, nuclear air-launched cruise missiles — AS-15As and AS-15Bs. All of the Soviet Union's bombers, missiles and sites declared as treaty items in START are included in Table 1.

Following the collapse of the Soviet Union in December 1991, its strategic offensive weapons were divided among four of its successor states — the Russian Federation, Kazakhstan, Belarus and Ukraine. The Russian Federation, as the direct successor state inherited the bulk of all the strategic nuclear forces. Essentially, the other three states received those strategic forces that were based, stored, tested or manufactured on their national territory. In real terms, the Russian Federation's SRF and its Air Force operated, maintained and secured all of the operational nuclear weapons and warheads, regardless of the national ownership.[11]

Table 1. American and Soviet START nuclear weapon systems in 1991

U.S. nuclear weapon Systems	Quantity Deployed SNDVs	Accountable warheads	USSR nuclear weapon systems	Quantity deployed SNDVs	Accountable warheads
ICBMs:			**ICBMs:**		
MM-11	450	450	SS-11	326	326
MM-111	500	1,500	SS-13	40	40
PK (silo)	50	500	SS-17	47	188
Total	**1,000**	**2,450**	SS-18	308	3,080
			SS-19	300	1,800
			SS-24 (silo)	56	560
			SS-24 (mobile)	33	330
			SS-25 (mobile)	288	288
			Total	**1,398**	**6,612**
SLBMs:			**SLBMs:**		
Poseidon	192	1,920	SS-N-6	192	192
Trident I	384	3,072	SS-N-8	280	280
Trident II	96	768	SS-N-17	12	12
Total	**672**	**5,760**	SS-N-18	224	672
			SS-N-20	120	1,200
			SS-N-23	112	448
			Total	**940**	**2,804**
Heavy bombers:			**Heavy bombers:**		
B-52 (ALCM)	189	1,968	Bear (ALCM)	84	
B-52 (non-ALCM)	290	290	Bear (non-ALCM)	63	63
B-1	95	95	Blackjack	15	120
Totals	**574**	**2,353**	**Totals**	**162**	**855**
Total	**2,246**	**10,563**		**2,500**	**10,271**

SNDV Strategic nuclear delivery vehicle
Sources: Annex A, B & C, *START*, 31 July 1991.

Kazakhstan inherited from the former Soviet Union over 100 ICBMs and strategic bombers. At the large SRF base at Zhangiz-Tobe and Derzhavinsk, the Soviets had 104 SS-18 ICBMs, equally divided between the two sites. Each of the SS-18 ballistic missiles had ten warheads, making a total of 1,040 for these fixed-silo, heavy ICBMs. In addition, the new nation inherited forty TU-95 Bear strategic bombers based at Semipalatinsk. Within Kazakhstan, there were two testing facilities that fell under START, one at Leninsk, the other at Semipalatinsk. Finally, the Soviets had located a rocket motor production facility at Pertropavlovsk in northern Kazakhstan. All of these weapons, warheads and facilities fell under the provisions of START. Kazakhstan was the first of the former republics to ratify the treaty, with its parliament voting its approval in July 1992. Eighteen months later, it acceded to the NPT, which was a condition demanded by the Russian Federation for START to enter into force.[12]

Belarus was the smallest of START nations. It had the fewest nuclear weapons, warheads and facilities of any signatory nation. In the 1980s, the SRF had positioned three regiments of SS-25 road-mobile ICBMs, each equipped with a single warhead, at Mozyr missile base in southern Belarus. In the same decade, the SRF had based another three regiments of SS-25s at Lida. Consequently, when Belarus became an independent nation in late 1991, it inherited a total of fifty-four SS-25 ICBMs,

including their launchers, missiles and warheads. In addition, there was a former Soviet ICBM storage facility at Kolosovo, and an elimination facility at Lesnaya. Belarusian ratification of START and accession to the NPT was aided immensely by the public's reaction to the Cherynobl nuclear disaster five years earlier. The public was overwhelmingly anti-nuclear; consequently when the treaties came before the parliament for a vote, they won easy ratification in February 1993. Later that same year, the United States and other Western nations pledged monetary aid to assist the Belarusian government in destroying the weapons and removing the warheads.[13]

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Ukraine inherited the second largest number of nuclear weapons and warheads from the former Soviet Union. Its nuclear arsenal surpassed China, Great Britain and France, and made it the third largest nuclear power in the world in 1992. Specifically, its nuclear forces consisted of 130 SS-19 ICBMs, each capable of carrying six nuclear warheads. It had forty-six SS-24 ICBMs, each equipped with ten warheads. The nation also inherited twenty-four strategic bombers, which were divided into a wing of heavy bombers located at Priluki, and a wing at Uzin Air Base. In addition, Ukraine inherited large missile production factories at Dnepropetrovsk and Pavlograd; a missile storage facility at Mikhaylenki; a testing facility at Pomerki; a repair facility at Belaya Tserkov; and an elimination facility at Sarny. Initially, all of these missile sites, air bases and facilities were under the control of the Russian SRF and the Air Force. Since Ukraine had the strongest nationalist movement of any of the inheritor states, it asserted its sovereignty over these nuclear forces. The Russian high command resisted, which caused major problems in the Ukrainian parliament, the Rada, when it came time to ratify START and accede to the NPT. START was rejected on several occasions, then approved with so many qualifications as to be unacceptable to the other parties, and finally ratified unconditionally. In early 1994, both the United States and the Russian Federation gave Ukraine security guarantees regarding the permanence of its borders, prior to the Rada's ratification of START and the NPT.[14]

The Russian Federation, as the direct successor state to the Soviet Union inherited the largest part of its nuclear arsenal. Due to the geography of the former Soviet Union, the Russian Federation took possession of all of the nuclear submarines, the SLBMs and warheads. At the time when the treaty entered into force, December 1994, the Russian Federation had 728 SLBMs deployed in five submarine systems — SS-N-6, SS-N-8, SS-N-18, SS-N-20 and SS-N-23. These submarines were located at six submarine bases, four in the Barents Sea, one in the Sea of Japan and another in the northern Pacific Ocean. At that time, Russia also had 419 fixed-silo ICBMs — SS-11s, SS-13s, SS-17s, SS-18s, SS-19s and SS-24s with a combined total of 3,080 attributable warheads. These ICBMs were located in missile fields associated with sixteen SRF bases throughout the Russian Federation. In the area of road-mobile missile systems, it declared that it deployed 318 SS-25 ICBMs, each equipped with single-warheads. These mobile, transporter/erector launchers were based at seven sites in western and central Russia. Only the Russian Federation developed and fielded an ICBM that could be launched from a train. In treaty-terminology, this weapon system was known as a rail-mobile ICBM. Russia had thirty-six missiles mounted on rail cars, each capable of launching a missile with ten nuclear warheads. These rail-mobile systems were based in three separate regiments, located at Bershet, Kostroma and Krasnoyarsk. Finally, there were four air bases — Engels, Mozdok, Ukrainka and Ryazan that based eighty-nine Bear and six Blackjack bombers. All were subject to the multiple layers of monitoring under the provisions of START.[15]

If it seems that all of these descriptions of weapons, warheads and sites are voluminous, remember that these were the largest nuclear arsenals in the world and that the negotiators set out to incorporate all of the nuclear weapons into a single, comprehensive arms control treaty. At the same time, they negotiated a treaty that would actually reduce nuclear weapons and warheads.

A Treaty That Reduced Strategic Offensive Arms

Reductions began before START entered into force. The United States and the Russian Federation led in setting up elimination facilities and initiating programmes to reduce their strategic forces. Thus, by 5 December 1994, the day the treaty actually entered into force, hundreds of bombers, missile silos, missile transporters and submarines had been destroyed. All of this early destruction was done in accordance with the monitoring provisions of the treaty. The experience of the United States illustrates why these weapons were eliminated in lieu of a fully ratified treaty. Because START took nine years to negotiate and over two years to ratify, military planners in the United States Air Force and United States Navy had developed programmes in the late 1980s to modernize their part of the nation's operational nuclear forces throughout the 1990s. Along with these modernization programmes, the military services had requested funds to eliminate obsolete strategic weapons and warheads. Consequently, both the air force and navy initiated major weapons elimination programmes shortly after the treaty was signed in July 1991. By December 1994, the month the treaty entered into force, the United States had already reduced some strategic offensive arms[16] (see Table 2).

Table 2. United States Strategic Arms Reductions, 1991–1994

ICBMs	377 Minuteman II missiles removed from silos
	450 Minuteman II warheads removed from missiles
	41 Minuteman II silos destroyed
SSBNs	15 submarines eliminated
SLBMs	240 Poseidon and Trident I missiles eliminated
Bombers	205 B-52 C, D & F models destroyed

During the same years, the Soviet Union and the successor states were embroiled in turmoil. Yet, these nations, especially the Russian Federation, began the process of reducing their strategic nuclear forces. From 1991 through 1994, they eliminated 542 launchers, including nearly 300 fixed-silo ballistic missiles, over 200 SLBMs, and virtually all of the Bear strategic bombers.

Once the treaty went into effect (December 1994), there were three mandatory phase points:

- Phase I: entry into force, plus thirty-six months (i.e., December 1997) 2,100 total launchers;
- Phase II: entry into force, plus sixty months (i.e., December, 1999) 1,900 launchers; and
- Phase III: entry into force, plus eighty-four months (December 2001) 1,600.

Each of these phases had an equivalent numerical benchmark for the elimination of the warheads:

- Phase I: 9,150 warheads;
- Phase II: 7,950; and
- Phase III: 6,000.

As of today, reductions have exceeded these mandatory phase points. Table 3 indicates the weapons eliminated from December 1994 through December 1998.

What is the Status of START Today ?

Is START still important today? Well, for the future of nuclear arms control and reductions it remains the founding document for the next century. It is an international legal treaty between sovereign nations. Signed by national leaders, ratified by elected parliaments or congresses, and

implemented under international law, this treaty has a permanence beyond a single administration or government. In times of great stress between nations, such as the war for Kosovo, this treaty possess a legal status and a body of experience that should allow it to bridge national differences.

Besides the authority of international law, START provides all of the parties, and especially the Russian Federation and the United States, with a clear blueprint for controlling all existing strategic offensive arms, all future weapons and technologies, and all changes in the operational nuclear forces. At first glance it may seem that the treaty might be irrelevant for those nations with sophisticated satellite monitoring systems. But that is not the case. START mandates that, in addition to permitting monitoring by NTM, the signatory nation must provide specific data on every weapon system, every movement of the strategic nuclear delivery vehicles, every new system, every closed out system, every site or base, and every reduction/elimination. Each nation has the right to send up to ten inspectors to the missile, submarine and bomber sites in order to conduct intrusive on-site inspections that confirm the accuracy of the mandatory annual data for the weapons and warheads at that site. These inspection teams can go to the production sites, storage sites, training facilities, rail deployment areas and road-mobile repair facilities. Since the treaty entered into force in 1994, hundreds of on-site inspection teams have gone to the respective nations, conducted inspections at the declared START sites in accordance with the treaty's protocols, and returned with reports to their respective nations.

Table 3. START Reductions, 1994–1997

	1991 (Signature)	1994 (entry into force)	1997 (entry into force + 36 months)	1998 (Actual)	2001 (7-year goal)
United States	2,246	1,838	2,100	1,485	1,600
Former Soviet Union	2,498	1,956	2,100	1,594	1,600
Russian Federation		1,596		1,484	
Ukraine		196		110	
Kazakhstan		104		00	
Belarus		36		00	
Category 2: Strategic Warheads					
	1991 (Signature)	1994 (entry into force)	1997 (entry into force + 36 months)	1998 (Actual)	2001 (7-year goal)
United States	11,769	8,824	9,500	7,986	6,000
Former Soviet Union	10,271	9,568	9,500	7,612	6,000
Russian Federation		6,914		6,680	
Ukraine		1,438		932	
Kazakhstan		1,040		00	
Belarus		36		00	

Sources: Annex A, B & C, of START MOU, 31 July 1991; START MOU, January 1995; Arms Control and Disarmament Agency compilation from START MOU, January 1998.

If there was a dispute on-site, or an unresolved question concerning access to the weapons or facilities, then each signatory nation had the right to take that issue to a treaty-authorized commission, the Joint Compliance and Inspection Commission (JCIC). Its responsibility is to take up implementation issues and recommend solutions. The JCIC began meeting in Geneva, Switzerland a few weeks after the treaty's signature in July 1991, and it has met periodically ever since. To date, there have been twenty sessions, usually lasting five to six weeks, and the joint five-nation commission has issued forty-two agreements and more than fifty joint statements. During the past eight years, this small commission has functioned as a technical policy body regarding treaty implementation issues.

In addition, there are START's sequenced reduction goals, as noted above. To have these specific end-state numbers, to complete all reductions in seven years, and to do it by closing off technological and quantitative options, goes far beyond any benefits that a single nation would accrue from having a good satellite monitoring system. Further, START II builds directly on the first treaty.[17] It sets lower central limits, lowering the total strategic warheads to 3,000 to 3,500 in a two-phased reduction. It establishes incentives for future force modernization programmes away from launchers and systems capable of launching multiple warheads, to deployed systems with single warheads. All of the existing comprehensive data, monitoring and verification systems of START I would remain in effect.

Two scholars, Gloria Duffy and Richard Dean Burns, have written works which allow us to set this vary large, multi-year START arms control and reduction treaty into perspective. Duffy, writing in an essay on treaty compliance, reminds us that the negotiating phase is only the prelude. She observes that "the real substance of arms control lies in whether or not the parties are successful in accomplishing the objectives set out by the agreement, that is, whether they uphold the agreement over time." Contrasting the drama and publicity of the treaty signatures and ratifications with the slow, persistent work of actual implementation, she argues that "it [compliance] is arguably the most substantial and significant aspect of the arms control process."[18]

Finally, Burns reminds us that in the past government leaders, diplomats and scholars came to expect too much of these arms control treaties. When making judgements on a treaty's success or failure, he would encourage us to ask a simple question: "What should one reasonably expect an arms control and disarmament agreement to accomplish?"[19] His answer, which can apply to START, is that it can achieve only two objectives: to reduce the feasibility of electing war by reducing the armaments available; or, if that should fail, to lessen the military violence in any subsequent hostility. Seen in this way, START is a specific, phased nuclear arms reduction treaty that is reducing the feasibility of nuclear war through its continuing implementation over time.

Notes

1 When the Soviet Union dissolved in December 1992, three new nations (Ukraine, Belarus and Kazakhstan) signed the Lisbon Protocol in May 1992 thus becoming signatories to START, along with the United States and the Russian Federation, the Soviet Union's direct successor state.

2 Allan Krass, "Arms Control Treaty Verification", in Richard Dean Burns (ed.), *Encyclopedia of Arms Control and Disarmament*, vol. 1, Charles Scribenr's & Sons, New York, 1993, pp. 297–315, quotation on p. 297.

3 McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years,* New York, Random House, 1988; John Lewis Gaddis, *The Long Peace,* New York, Oxford University Press, 1987; Michael J. Sadaro, *Moscow, Germany, and the West from Khruschev to Gorbachev*, Cornell University Press, Ithaca, 1990.

4 The best sources for these treaties are: Richard Dean Burns (ed.), *Encyclopedia of Arms Control and Disarmament,* Charles Scribenr's & Sons, New York, 1993, 3 volumes; and the annual *SIPRI Yearbook, World Armaments and Disarmament,* Oxford University Press, London.

5 Letter of Transmittal by Secretary of State James A. Baker, 20 November 1991, published in United States Senate, 102d Congress, 1st Session, *Treaty Document 102-20 (The START Treaty),* pp. viii-ix.

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[17] US Senate, 103d Congress, 1st Session, Treaty Document 103-1, *Message from the President of the United States Transmitting the Treaty with the Russian Federation on Further Reductions and Limitation of Strategic Offensive Arms (START II Treaty),* Washington, DC, 1993; David B. Thomson, *The START Treaties*, report LA-UR-97-2045, Center for International Security Affairs, May 1987.
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