A Warfighter's Guide to WMD Policy & Agreements

by

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I. Introduction

Nuclear, chemical and biological weapons, collectively referred to as "weapons of mass destruction," are widely considered to be the greatest current threat to military and civilian targets. The destructive potential of just one of these weapons, as well as the ease with which it might be employed against any target anywhere, make weapons of mass destruction (WMD) a primary concern of US policy-makers.

Recognizing that WMD could be used against the US, at home or abroad, at any time, it is important for commanders fully to understand US rights and responsibilities in the area of nuclear, biological and chemical (NBC) warfare. The conflict in the Persian Gulf, in which the US-led coalition faced an enemy with both chemical and biological warfare capabilities, was a taste of things to come for US commanders.[2]

The following text presents a brief history of each class of NBC weapons, gives a description of current and historic international agreements in the area and touches on US policy with regard to the weapons.

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[2] For a detailed discussion of the Iraqi chemical and biological warfare threat and actions taken by the coalition to guard against and combat that threat, *see* Appendix Q, DoD Final Report to Congress, *Conduct of the Persian Gulf War* (Apr. 1992).

II. Nuclear Weapons

A. Brief History

The race to develop atomic weapons in the 1940s was truly seen as a life and death struggle. Allied leadership believed that the course of W.W.II rode on which side could first field atomic weapons. German deployment of V-type rockets late in the war made the situation even more desperate; they could deliver a weapon at great, if not wholly accurate, distances. Fortunately, the US-led Manhattan Project prevailed in the contest. By July 1945 the US owned the only atomic weapon. To President Truman, who had succeeded to the presidency only a few months before, fell the momentous decision of whether to actually use the "gadget." He determined that it should be used, against a military target in Japan. The first weapon, about fourteen kilotons in yield, was delivered on Hiroshima, Japan on 6 August 1945. A second bomb was dropped on Nagasaki, Japan two days later. Permission to drop the second device was inherent in the order delivered before Hiroshima; it gave military commanders authority to drop additional weapons on the list of targets as they became available. Shortly after the bombing of Nagasaki, however, the Japanese surrendered. These have been, to this point, the only two wartime uses of nuclear weapons. Some nations see the US as lacking credibility in its role as a nuclear peace-maker when it is the only nation that has ever employed nuclear arms.

Shortly after W.W.II the relationship between the US and USSR, who had been W.W.II allies, degenerated. In 1948, the USSR blockaded the Western-occupied sector of Berlin. To preserve the city's freedom, the US led the Berlin Airlift, the first major operation of the Cold War. The Soviets exploded their first atomic device in 1949; the Cold War was responsible for the later construction of the tremendous nuclear arsenals of the foes. The Cold War lasted until the demise of the Soviet Union in 1991.

In 1996, the US nuclear arsenal included about 10,000 nuclear warheads. This is a significant reduction from the Cold War peak of over 30,000. Russia still maintained over 11,000.

China maintained 450 nuclear warheads, as of 1996. The other declared nuclear powers, France and the United Kingdom, had 500 and 300, respectively. In 1998, India and Pakistan declared themselves nuclear powers. It is widely considered that Israel also has nuclear weapons. The numbers of weapons held by these three nations are not readily available, although Israel apparently has fewer than 100 nuclear warheads.[3]

B. International Law

The use of nuclear weapons in armed conflict is not unlawful. Although Article 35 of Additional Protocol I to the Geneva Conventions (Additional Protocol I)[4] prohibits use of weapons that cause superfluous injury or unnecessary suffering, the US signing of Additional Protocol I was subject to the understanding that "the rules established by this protocol were not intended to have any effect on and do not regulate or prohibit the use of nuclear weapons."[5] Additionally, the US Senate never ratified the agreement. Many of the Additional Protocol I rules are, however, considered customary international law.

Article 23(e) of the earlier Hague Regulations, contains similar language prohibiting weapons that cause unnecessary suffering.[6] In 1907, of course, there were no nuclear weapons. It is sometimes argued that the US reservations to Protocol I makes the Hague Regulations equally inapplicable to nuclear weapons.

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[3] *Stockholm International Peace Research Institute (SIPRI) Yearbook* 612 (1996).
[4] "Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts," Art. 35, para. 2, 16 I.L.M. 1391, (Reprinted in DA Pamphlet 27-1-1 (1979)) (hereinafter Additional Protocol I).
[5] Reprinted in DA Pamphlet 27-1-1, p. 138 (1979); "Prospects for United States Ratification of Additional Protocol I to the 1949 Geneva Conventions," 85 *Am. J. Int'l. L.* 1 (1991).
[6] "Regulations Respecting the Laws and Customs of War on Land, Annex to the Hague Convention No. IV," 36 Stat. 2277, T.S. No. 539 (18 Oct. 1907), reprinted in DA Pamphlet 27-1, Chapter 2 (1956) (hereinafter Hague IV), .

The United Nations (UN) General Assembly has passed several resolutions purporting to prohibit the use of nuclear weapons.[7] As the General Assembly lacks legislative powers, however, these resolutions had no binding effect.

More recently, the International Court of Justice (ICJ) issued an advisory opinion addressing the law surrounding the use of nuclear weapons.[8] The ICJ concluded that use of nuclear weapons would generally be illegal, but that the use might be legal if the survival of a state were at stake. The opinion was merely advisory, not binding, and the conclusion was murky, as a state's "survival" is a slippery concept. Does survival demand that a state continue with the same form or government and economy, or merely continue to exist? The most important point to take from the opinion, for US policy makers, is that the ICJ did not find nuclear weapons in all cases illegal.

General Constraints. Although use of nuclear weapons in armed conflict is not illegal, such use is not totally unconstrained.[9] Nuclear weapons, like all other weapons, are subject to the general law of war limitations established by the Hague and Geneva Conventions. "The right of belligerents to adopt means of injuring the enemy is not unlimited."[10]

Although the US has not ratified Additional Protocol I, it has expressly recognized the requirement to protect civilian populations and civilian objects as a valid component of customary international law.[11] Accordingly, no weapons,

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[7] *Declaration on the Prohibition of the Use of Nuclear and Thermonuclear Weapons,* United Nations General Assembly (UNGA) Res. 1653 (XVI), Nov. 24, 1961; *Non-Use of Force in International Relations and Permanent Prohibition of the Use of Nuclear Weapons,* UNGA Res. 2936, Nov. 29, 1973; *Convention on the Prohibition of the Use of Nuclear Weapons,* UNGA Res. 47/53C (1992).

[8] *Legality of the Threat or Use of Nuclear Weapons,* Gen. List No. 95 (Advisory Op. of the Int'l. Court of Justice, Jul. 8, 1996).

[9] Charles J. Dunlap, Jr., "Taming Shiva: Applying International Law to Nuclear Operations," 42 *A.F.L. Rev.* 157 (1997); Michael N. Schmitt, "The International Court of Justice and the Use of Nuclear Weapons," *Naval War Coll. Rev.* 91 (Spring 1998); Bunn, "US Law of Nuclear Weapons," *Naval War Coll. Rev.*, (Jul.-Aug. 1984).

[10] Hague IV, *supra* note 6, Art. 22.

[11] AFP 110-31, *International Law -- The Conduct of Armed Conflict and Air Operations* 5-7 (Nov. 19, 1976); AFP 110-34, *Commander's Handbook on the Law of Armed Conflict* 3-1 (Jul. 25, 1980); NWP 1-14M, *The Commander's Handbook on the Law of Naval Operations* 11-1 (Oct. 1995).

including nuclear weapons, may be used for the primary purpose of killing, injuring or terrorizing civilians.

Other international agreements have also been cited as prohibiting the use of nuclear weapons. The US does not, of course, recognize the validity of these arguments, but some are summarized below.

An early argument against the use of nuclear weapons was the Hague IV prohibition of the use of poison or poisoned weapons. The reasoning was that radiation was poison, so the use of nuclear weapons was an unlawful use of poison.

Similar rationale was applied to the Geneva Gas Protocol. That convention prohibited poisonous gases and analogous devices, the argument being, of course, that nuclear weapons were *analogous* to poisonous gas.

Both of the poison arguments against nuclear weapons have been rejected for the same reason: poison has an ordinary meaning that does not include nuclear weapons. The term is left undefined in both conventions, so the ordinary meaning applies. Further, poison is most closely associated with chemical weapons, which are considered distinct from nuclear weapons, as evidenced by the term "NBC."

Another argument against the legality of nuclear weapons has centered around Genocide Convention of 1948.[12] The Genocide Convention prohibits actions intended to destroy national, ethnic or other groups. Nuclear weapons *could* be employed in that fashion, but, as they can also be employed in a non-genocidal conflict, this agreement has not been found to totally prohibit nuclear weapons.

The UN Environmental Modification Convention (ENMOD) is sometimes cited as limiting the use of nuclear weapons.[13] It prohibits military or other actions taken against an enemy that would have a long-lasting or severe effect on the environment. The actions contemplated must persist for about a season

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[12] "Convention on the Prevention and Punishment of the Crime of Genocide," 78 U.N.T.S. 277 (Dec. 9, 1948).

[13] "Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques" (1978).

or affect several hundred square kilometers. Severe is defined as involving significant disruption to human life, resources or other assets. The US has thus far rejected the notion that ENMOD significantly limits nuclear actions. The US ratified the convention in 1979.

C. Specific Treaties and International Agreements

Many treaties and agreements regulate US development, acquisition and use of nuclear weapons. As a result of the dissolution of the Soviet Union, the threat of a massive nuclear exchange between the superpowers is generally thought to have decreased. Many of the bilateral agreements between the US and the USSR are now of largely historical value. They are presented as a reference and to aid in an understanding of evolving international relationships.

The agreements between the US and the USSR have been acceded to by Russia, which is the only nuclear weapons state to emerge from the former Soviet Union.[14]

In the nuclear area, nonproliferation treaties and nuclear weapons free zones are still viable; chemical and biological weapons agreements are also of continuing concern. All are discussed below.

1. Nonproliferation Agreements

Nuclear Non-Proliferation Treaty. All the world's declared nuclear powers and nearly all the non-nuclear nations, as well, are signatories of the Treaty on Non-Proliferation of Nuclear Weapons (NPT).[15] Nuclear signatories are prohibited from transferring nuclear weapons or nuclear technology to non-nuclear states. Non-nuclear signatories agree not to attempt to acquire or manufacture nuclear weapons. The NPT was originally effective for 25 years,

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[14] "Agreements Establishing the Commonwealth of Independent States, Armenia-Azerbaijan-Belarus-Kazakhstan-Kyrzyzstan-Moldova-Russian Federation-Tajikstan-Turkmenistan-Uzbekistan-Ukraine," 31 I.L.M. 138 (1991).

but in 1995 it was extended indefinitely. There are currently over 180 members of the NPT.

Missile Technology Control Regime. The Missile Technology Control Regime (MTCR) was formed in 1987 by the US and its G-7 economic partners (Canada, Germany, Italy, Japan, France and the UK). Membership in the MTCR has now grown to 29 member nations.[16] The MTCR is not an international agreement but is a voluntary arrangement among countries that wish to reduce the proliferation of missiles, unmanned aerial vehicles and WMD delivery systems. The arrangement seeks to control proliferation of the items through export controls. The controlled items include technologies such as rocket, propulsion and guidance systems, and stealth and nuclear hardening technology and materials.[17]

Nuclear Material Convention. The international transport of nuclear materials is safeguarded under this 1987 treaty. The convention provides guidance for cooperation between nations in protecting nuclear materials; and in the recovery of stolen nuclear material. It was ratified by the US.

2. Nuclear Weapons Free Zones

A number of treaties prohibit the placement and use of nuclear weapons in specified areas. This is a vibrant area of nuclear international law. The US supports creation of such zones, subject to the following considerations.

The initiative for creating a nuclear weapons free zone (NWFZ) should come from the region concerned; all major states in the region should participate; the treaty should provide for adequate verification; the zone must not disturb existing security arrangements to the detriment of international peace;

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[15] 21 U.S.T. 483, T.I.A.S. No. 6839 (1970). A current list of signatories of the NPT, and of most other treaties in the arms control arena, is available on the Internet at <http://www.acda.gov>.
[16] "Agreement on Guidelines for the Transfer of Equipment and Technology Related to Missiles, Canada-France-Federal Republic of Germany-Italy-Japan-United Kingdom-US," 26 I.L.M. 599 (Apr. 7, 1987).
[17] ACDA web site, *supra* note 15.

and the treaty must not interfere with freedoms of navigation.[18] If all these criteria are met, the US will normally support the creation of the zone.

If the US agrees that a NWFZ is properly formed, it will generally participate in treaty protocols by agreeing to abstain from stationing or using nuclear weapons in the covered areas. US agreement to such protocols creates a negative security assurance, discussed below.[19]

It is important for commanders to realize that, despite US understandings and declared intentions, some nations may believe that NWFZs preclude navigation of US platforms with nuclear weapons aboard.[20] This will not necessarily impede US navigation, but should certainly be taken into consideration.

Latin American Nuclear Weapons Free Zone (Treaty of Tlatelolco). The Treaty of Tlatelolco established the first of the NWFZs. The Brazilian delegate to the United Nations originally proposed the zone in 1962; the US was an early supporter of the zone. The treaty was eventually signed in 1967 in Tlatelolco in Mexico City.

The Treaty of Tlatelolco established Latin America as a nuclear weapons free zone.[21] Latin American countries signatory to the treaty, agree not to possess, test, use, manufacture, produce or acquire nuclear weapons. The treaty does not prohibit the peaceful use of nuclear technology or material, but member states must permit inspections of their nuclear programs.

Protocol I is open to non-Latin American nations with territory in the treaty area. Signatories of this protocol agree to obey the terms of the base treaty with regard to their Latin American territory. Protocol II is open to nations possessing nuclear weapons. Signatories are prohibited from using or threatening to use nuclear weapons against any treaty party.[22]

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[18] Zachary S. Davis, "The Spread of Nuclear-Weapon-Free Zones: Building a New Nuclear Bargain," *Arms Control Today* 15 (Feb. 1996).
[19] *Infra* at p. 21.
[20] Mark E. Rosen, "Nuclear-Weapons-Free Zones," *Naval War Coll. Rev.* 57 (Autumn 1996).
[21] "Treaty for the Prohibition of Nuclear Weapons in Latin America, with additional Protocols I and II," 634 U.N.T.S. 281, 6 I.L.M. 521 (Feb. 14, 1967).
[22] "Additional Protocol II to the Treaty for the Prohibition of Nuclear Weapons in Latin America," 22 U.S.T. 754, T.I.A.S. No. 7137, 634 U.N.T.S. 364 (Feb. 14, 1967).

The US signed and ratified both protocols, subject to stated understandings.[23] The understandings are that: the US can transport, but not maintain, nuclear weapons through US-controlled areas; other treaty parties can permit the same transportation through their territories; and treaty obligations are void if a treaty party is assisted in an armed attack by a nuclear weapon state. These protocols, like other NWFZ protocols, constitute legally binding negative security assurances.[24]

South Pacific Nuclear Free Zone (Treaty of Rarotonga). In 1986, a number of South Pacific states entered into the South Pacific Nuclear Free Zone Treaty.[25] The treaty is open to South-West Pacific nations, including Australia, New Zealand and Fiji. Within the territory of the member states, the agreement prohibits the stationing or testing of nuclear weapons, and the dumping of nuclear waste. Signatories are also required to cooperate with nuclear non-proliferation goals. Parties to the treaty may grant transit rights to other nations' vessels, regardless of cargo or armament.

The treaty has three protocols. The first applies to nuclear weapons nations controlling territory within the zone; two and three apply to nuclear weapons states. Protocol II prohibits the use or threatened use of nuclear weapons against treaty parties, and Protocol III prohibits nuclear testing with the treaty area. The US has signed but not ratified the protocols.

African Nuclear Weapons Free Zone (Treaty of Pelindaba). This 1996 treaty follows the traditional pattern of nuclear weapons free zones. It prohibits the research, manufacture and possession of nuclear explosive devices. The treaty area includes the entire continent of Africa and several islands that are claimed or controlled by African nations. Protocols I and II of the treaty require signatories to agree not to use or threaten to use nuclear explosive devices against treaty parties, and requires them to abstain from nuclear weapons testing

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[23] *Treaty for the Prohibition of Nuclear Weapons in Latin America: Its status and the Status of Additional Protocols I and II*, 28 I.L.M. 1400 (1989).
[24] *Infra* at 21.
[25] "South Pacific Forum: The South Pacific Nuclear Free Zone Treaty," 24 I.L.M. 1440 (1985).

in the treaty area. All five declared nuclear powers signed the protocols in 1996; the US has not ratified the protocols.

Other Nuclear Weapons Free Zones. A nuclear weapons free zone in Southeast Asia has been completed, but none of the declared nuclear powers are signatories. Several other nuclear weapons free zones are under discussion. The areas under discussion include Central Asia, Mongolia, the Middle East and Central and Eastern Europe.[26]

Antarctic Treaty. The Antarctic Treaty is a multilateral treaty reserving Antarctica for peaceful purposes. The treaty entered into force in 1961. It forbids the use, deployment or testing of nuclear weapons in the treaty area; i.e., that part of the globe south of the sixtieth parallel.[27] Military maneuvers and bases are also prohibited, although military personnel and equipment may be used for scientific purposes. The Antarctic Treaty also includes an inspection regime covering ships and aircraft in the treaty area.

Outer Space Treaty. As early as 1957 the US was proposing the partial demilitarization of outer space. In 1963, the United Nations General Assembly called upon all nations to refrain from placing WMD in space. The Outer Space Treaty, ratified by the US and effective in 1967, prohibited the placement of nuclear weapons or other weapons of mass destruction in orbit, on celestial bodies to include the moon, or in outer space.[28] It also prohibited the testing of any weapons on celestial bodies, and prohibited the establishment of military bases and military maneuvers on such bodies.

Seabed Arms Control Treaty. This treaty prohibited the placement of WMD on the ocean floor at any point outside the 12-nautical mile territorial seas.[29] The language of the treaty clearly prohibits nuclear land mines on the

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[26] Roland Timerbayev, "Global Security Through Nuclear-Free Zones?," *Moscow News* 5 (No. 14 April 11-17, 1996); Nuclear Weapons: A Comprehensive Study 125 (UN, 1991).
[27] "Antarctic Treaty," 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71 (Dec. 1, 1959).
[28] "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies," 18 U.S.T. 2410, T.I.A.S. No. 6347, 610 U.N.T.S. 205 (Jan. 27, 1967).
[29] "Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof," 23 U.S.T. 701, T.I.A.S. No. 7337 (Feb. 11, 1971).

seabed, but would not prevent the use of other nuclear devices, such as nuclear depth charges and nuclear torpedoes, that are not affixed to the seabed or ocean floor. The multilateral treaty entered into force in 1972; it was ratified by the US.

3. Nuclear War Risk Reduction Agreements

These agreements are between the US and Russia, but most of them were entered into during the tenure of the Soviet Union.

Hotline Agreements. In 1963, the US and USSR, to reduce the danger of accidental nuclear war, acted to ensure more open communications between the two nations. The original agreement established a direct communications line, known as the hotline, between Washington and Moscow. The communications consisted of a wire telegraph circuit and a back-up radio telegraph circuit.[30]

Since then, the agreement has been updated several times. The hot line system now consists of two satellite circuits with both voice and facsimile capability. The radio telegraph circuit was retained as a back-up capability.[31]

Accidents Measures Agreement. In 1971 the US and USSR agreed on procedures to be followed in the event of an accident involving nuclear weapons.[32] The agreement required both nations appropriately to guard against the accidental or unauthorized use of nuclear weapons, and mandated immediate notification of any nuclear weapons incident. Notifications take place over the communications links established by the hotline agreements. Also, the agreement required the nation concerned to take immediate action to destroy the weapon or render it harmless.

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[30] "Memorandum of Understanding Regarding Establishment of a Direct Communications Link," 14 U.S.T. 825, T.I.A.S. No. 5362, 472 U.N.T.S. 163, 2 I.L.M. 793 (Jun. 20, 1963).
[31] "Agreement on Measures to Improve the Direct Communications Link," 22 U.S.T. 1598, T.I.A.S. No. 7187, 806 U.N.T.S. 402, 10 I.L.M. 1172 (Sep. 30, 1971); "Memorandum of Understanding on Direct Communications Link," 23 I.L.M. 1393 (1984), as modified by "Exchange of Notes at Washington, DC," 27 I.L.M. 1700 (Jun. 24, 1988).
[32] "Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War: Nuclear Accident Measures," 22 U.S.T.S. 1590, T.I.A.S. No. 7186, 807 U.N.T.S. 57, 10 I.L.M. 1172 (Sep. 30, 1971).

The nuclear accident measures agreement also required that, if one of the member state's missile warning systems detect unidentified objects, it notify the other. The agreement for the first time imposed a requirement for prior notification of planned ballistic missile launches if the projected impact point is outside the continental territory of the nation concerned.

Finally, both members agreed to continue working to maintain and improve safeguards against accidental or unauthorized use of nuclear weapons.

Agreement on Prevention of Nuclear War. In 1973, the US and the USSR agreed that preventing nuclear war was a primary element of their foreign policy.[33] Subject only to their inherent right of self-defense, the agreement required urgent consultation between the parties should a situation appear to involve the risk of nuclear conflict. It expressly included situations that could involve nuclear conflict with third countries, making it a bilateral treaty with multilateral implications.

Nuclear Risk Reduction Center Agreement. This 1987 agreement required the US and USSR to establish, in their respective capitals, Nuclear Risk Reduction Centers (NRRCs) to improve information exchange on nuclear weapons issues.[34] The satellite communications capability offered at the centers is similar to, but completely separate from, that maintained under the hotline agreements. The NRRCs are used to transmit information about other nuclear agreements, or any issues with nuclear implications, between the US and USSR.

Ballistic Missile Launch Notification Agreement. As noted above, the Nuclear Accident Measures Agreement in part requires that, if the US or USSR plans to launch ballistic missiles whose impact point will be outside the continental territory of the launching country, that nation must provide notice of the launch to the other party. In 1988, a new agreement expanded that requirement to encompass all peacetime launches of intercontinental ballistic

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[33] "Agreement on the Prevention of Nuclear War," 24 U.S.T. 1478, T.I.A.S. No. 7654 (Jun. 22, 1973).

[34] "Agreement on Establishment of Nuclear Risk Reduction Centers," 27 I.L.M. 76 (Sep. 15, 1987).

missiles (ICBMs) and submarine launched ballistic missiles (SLBMs).[35] The Ballistic Missile Launch Notification Agreement requires both nations to give at least 24 hours notice of all ICBM and SLBM launches. The launching nation must indicate the date of the launch, the launch area and the impact area. The notification is effective for four days, but if the delay is more than four days a new notification is required.

Exercise Notification Agreement. This 1990 agreement between the US and USSR permitted both signatories to conduct one major strategic forces exercise each calendar year. The nation conducting the exercise must give at least fourteen days advance notice, through the Nuclear Risk Reduction Centers, of the beginning of the exercise.[36]

Detargeting Initiatives. In 1994, both the US and Russia announced that in peacetime their nuclear missiles would either contain no targeting data, or would be targeted at the ocean. Shortly thereafter, both China and the United Kingdom entered into similar agreements with Russia.[37] These agreements were meant to reduce the threat of an accidental offensive launch. The agreements are largely cosmetic, however, as re-targeting can occur in short order.

4. Arms Control and Disarmament Treaties and Agreements

Anti-Ballistic Missile Treaty. In 1972, the US and the Soviet Union agreed to forgo deploying defenses against strategic nuclear missiles. The main rationale for the agreement was to avoid the deployment of the further nuclear weapons that might have been built to overwhelm any defenses.[38] The Anti-Ballistic Missile (ABM) Treaty specifically limits the ABM systems each country

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[35] "Agreement on Notification of Launches of Intercontinental Ballistic Missiles and Submarine Launched Ballistic Missiles," 27 I.L.M. 1200 (May 31, 1988).
[36] "Agreement on Reciprocal Advance Notification of Major Strategic Exercises," 28 I.L.M. 1436 (Jun. 12, 1989).
[37] Marco de Andreis & Francesco Calogero, The Soviet Nuclear Weapon Legacy 67 (1995).
[38] "Treaty on the Limitation of Anti-Ballistic Missiles," 23 U.S.T. 3435, T.I.A.S. No. 7503 (May 26, 1972).

may deploy. ABM systems include interceptor missiles, launchers and ABM radars.

Initially, the treaty limited each side to deployment of no more than two ABM systems, one centered on each country's national capital and a second on an area containing ICBM silo launchers.

In 1974, the US and Soviet Union completed a protocol to the ABM Treaty further limiting the deployment of ABM systems.[39] The protocol reduced the number of permissible ABM systems from two to one, with the categories remaining the same. The USSR chose Moscow as the site of its one permitted system; the US chose Grand Forks AFB in North Dakota.

The US asserted that ABM rules did not preclude it from working to develop President Reagan's Strategic Defense Initiative. Similar questions have arisen with regard to recent work on theater missile defenses, and to the work being done to develop a national missile defense.[40]

US strategists see a need for a theater ballistic missile defense (TMD) to protect forward-deployed troops against a potential tactical threat. One such system under development is the US Army's Theater High-Altitude Area Defense (THAAD). The US has argued that tactical missile defenses are not prohibited by the ABM treaty. On the other hand, the US is also researching and developing a new national missile defense, and is seemingly intent on ending its compliance with the ABM treaty. Both of these issues have raised concerns in Russia.[41]

Strategic Arms Limitation Talks (SALT) I AND II. In the 1970s, the US and USSR engaged in the Strategic Arms Limitation Talks. There were early disagreements on what weapons should be included, caused by the differing focus of the two nations. The US had treaty obligations requiring it to defend far-flung allies; the Soviet allies were generally located near USSR borders.

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[39] "Protocol to the Treaty on the Limitation of Anti-Ballistic Missile Systems," 27 U.S.T. 1645, T.I.A.S. No. 8276 (Jul. 3, 1974).
[40] Lisbeth Gronlund, "ABM: Just Kicking the Can," *The Bulletin of the Atomic Scientists*, 15 (Jan./Feb. 1998).
[41] SIPRI, *supra* note 3, at 650-55 (1996).

In any event, the talks ultimately resulted in two agreements, SALT I and SALT II. The purpose of the agreements was to limit the number of offensive strategic weapons held by each nation. SALT I prohibited the modernization of several types of nuclear weapons systems, and also limited numbers of submarine-launched ballistic missiles.[42] SALT I was an interim agreement that was designed to last only five years, but both the US and USSR agreed to continue to observe the limitations even after the agreement expired.[43]

SALT II was signed in 1979, but the US never ratified the treaty. After the Soviet invasion of Afghanistan, President Carter asked the Senate to delay consideration of the treaty. Like SALT I, it was designed to address strategic offensive arms limitations, but it was not to be temporary.[44] Despite its failure to ratify SALT II, the US continued to abide by the treaty terms. In 1986, after the Soviet Union repeatedly failed to abide by SALT II guidance, President Reagan announced that the US was no longer bound by the SALT agreements. The US stated policy became the maintenance of whatever nuclear force was necessary to counter the actual Soviet threat, although the intention to maintain a strategic balance with, rather than superiority over, the USSR was expressed.[45]

Intermediate-Range Nuclear Forces (INF) Treaty. With the 1987 signing of the INF by the US and USSR, intermediate-range nuclear missiles, those with a range of 500-5500 kilometers, were to be eliminated.[46] Agreements to permit inspection of missile sites in Warsaw Pact nations, and of US missile sites in NATO countries, were also executed, as were agreements to permit the inspection of production facilities.[47] This agreement marked the first time an entire class of nuclear missiles was eliminated.

Strategic Arms Reduction Treaty (START) I. Negotiations for START I began early in the Reagan Administration. It was the first treaty that provided for

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[42] "Interim Agreement on Certain Measures with Respect to the Limitation of Strategic Offensive Arms, with Protocol," 23 U.S.T. 3462, T.I.A.S. No. 7504 (May 26, 1972).
[43] 77 *Dept. State Bulletin* 642 (1977).
[44] "Treaty on the Limitation of Strategic Offensive Arms" (Jun. 18, 1979).
[45] *Department of State Bulletin* at 36-43 (Aug. 1986).
[46] "Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles," 27 I.L.M. 84 (Dec. 8, 1987).
[47] Copies of the agreements may be found at 27 I.L.M. 58, *et. seq.*

the reduction of levels of strategic nuclear armaments. It called for a phased reduction in nuclear weapons, and limited the number of deployed ICBMs, SLBMs and heavy bombers. START I further limited the total number of nuclear warheads, and limited the payload of ballistic missiles.[48]

Ratification of START I was jeopardized by the break-up of the Soviet Union in 1991 and the resulting emergence of four new nuclear nations: Russia, Ukraine, Kazakstan and Belarus. Fortunately, all four nations assumed USSR responsibilities under the treaty, and then the three smaller nations rid themselves of their nuclear weapons.[49] The three have become non-nuclear signatories of the NPT. The US ratified START I, and it entered into force in 1994. It called for reductions to under 4900 total ballistic missile warheads.

START II. START II, ratified by the US in 1996, called for nearly two-thirds cuts in the strategic nuclear arsenals of both the US and USSR.[50] The agreement called for the eventual elimination of all land-based strategic ballistic missiles equipped with multiple, independently-targeted re-entry vehicles, and the elimination of all heavy ICBMs. The number of warheads deployed on submarines were also reduced by about fifty percent. The final number of warheads is limited to no more than 3500.

If the Russians ratify START II, the US must re-ratify to approve the intervening changes to the agreement, and then the treaty will be in force.

START III. The US and Russia have agreed that, once START II enters into force, they will begin negotiations on START III. The next START agreement would, among other things, work to establish lower numbers of nuclear warheads for each side and to increase the transparency of nuclear inventories and required warhead destructions.[51]

Cooperative Threat Reduction Act. Responding to a perception that the break-up of the Soviet Union had to potential to unleash nuclear materials and expertise on the world, the US passed the Cooperative Threat Reduction Act,

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[48] "Treaty on the Reduction and Limitation of Strategic Offensive Arms," Art. II (Jul. 31, 1991).
[49] "Protocol to the Treaty between the US and the USSR on the Reduction and Limitation of Strategic Offensive Arms (Lisbon Protocol)," (May 23, 1992).
[50] "Treaty on Further Reduction and Limitation of Strategic Offensive Arms" (Jan. 3, 1993).

also known as Nunn-Lugar.[52] Funds were appropriated to assist in storing, safeguarding and disposing of elements of the Soviet nuclear arsenal in Russia and other former Soviet republics.

Although some of the spending under the act has been controversial, it is generally thought to have helped reduce the risk of nuclear proliferation.

Open Skies Treaty. The purpose of the 1992 Open Skies Treaty was to increase the transparency among nations of military forces and activities.[53] By providing a means directly to gather information about the military forces and activities of other participants, the treaty is intended to increase trust among member countries. The treaty gives each member state the right to make a certain number of observation flights over any part of the territory of other parties, without providing any exceptions for "national security." Observation flights are conducted with unarmed, fixed-wing aircraft. All data collected during an observation flight must be provided to the observed state and be made available for purchase by other signatories to the treaty.

President Bush's Nuclear Initiatives. In 1991, President Bush announced a number of initiatives affecting US nuclear weapons. The three most important of them are outlined below.

One initiative eliminated ground-launched theater nuclear weapons. Another removed tactical nuclear weapons from attack submarines, surface ships and naval aircraft bases. The third stood down strategic bombers from alert, and removed their nuclear weapons for storage in secure areas.[54]

5. Nuclear Weapons Testing Agreements

Limited Test Ban Treaty (LTBT). This first nuclear weapons testing agreement came about only after years of debate. The need for a treaty was

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[51] *Joint Statement on Parameters of Future Nuclear Reductions* (Helsinki Mar. 21, 1997).
[52] Pub. Law 103-160, Title XII, 107 Stat. 1777 (Nov. 30, 1993); Pub. Law 103-337, Title XII, 108 Stat. 2282 (Oct. 5, 1994).
[53] US Department of State, Bureau of Public Affairs, Fact Sheet, *Open Skies Treaty* (Mar. 26, 1992).
[54] *Presidential Initiative on Nuclear Arms,* White House Press Release (Sep. 27, 1991).

first pointed up by the 1952 and 1953 explosions of hydrogen devices by the US and the USSR, respectively. These devices resulted in much higher yields than prior weapons, as evidenced by a 1954 US test explosion at Bikini Atoll. That device yielded, at 15 megatons, almost twice what had been expected. The fallout contaminated a Japanese fishing vessel, *Lucky Dragon*. A later Soviet hydrogen explosion spread radioactive fallout on Japan.

Two major obstacles stood in the way of a test ban treaty. One was reliable verification, the other was the linkage demanded by Western nations between nuclear testing and conventional arms reductions. Both of these issues were eventually worked through, and the LTBT was ratified by the US in 1963 after eight years of discussions. The USSR and UK were also treaty parties.

The treaty prohibited all nuclear weapons tests and all nuclear explosions in the atmosphere, in outer space or anywhere underwater, including on the high seas.[55] LTBT did not prohibit underground testing, but it did prohibit test explosions that would result in the spread of radioactive debris outside the testing nation's national boundaries. Finally, LTBT parties may not encourage other nations to conduct, nor may they assist or participate in, nuclear explosions covered by the treaty conducted by another state. The LTBT does not apply in time of war, as withdrawal is allowed with three months notice if "supreme interests" are threatened and, by its terms, the treaty prohibits only test explosions, not shots fired in anger.

Threshold Test Ban Treaty (TTBT). The purpose of the TTBT was to narrow the gap left by LTBT by limiting underground nuclear weapons tests.[56] The TTBT prohibited those tests with yields greater than 150 kilotons. The treaty was between the US and USSR. Both nations also agreed to limit underground nuclear weapons tests to a minimum. A treaty protocol provides for verification

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[55] "Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and under Water," 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43 (Aug. 5, 1963).
[56] "Treaty on Limitation of Underground Nuclear Weapon Tests," 13 I.L.M. 906 (Jul. 3, 1974).

of the treaty obligations.[57] The treaty did not apply to explosions carried out for peaceful purposes.

The US and USSR both agreed in 1976 to follow the 150 kiloton limit, although the treaty was not ratified until the nations agreed on the companion Peaceful Nuclear Explosions Treaty. The TTBT entered into force in 1990.

Peaceful Nuclear Explosions Treaty (PNET). This 1976 treaty covered the peaceful explosions not addressed by the TTBT. Peaceful explosions do not include those for the purpose of researching nuclear weapons. PNET, between the US and the USSR, prohibited explosions in excess of 150 kilotons in yield, and required minimum depths for the explosions. It also required advance notice.[58] A protocol establishing verification requirements was completed in 1990.[59] The US ratified the PNET in 1990.

Comprehensive Nuclear Test Ban Treaty (CTBT). The CTBT forbids each party from carrying out any nuclear test explosions. It also requires them to prohibit any nuclear explosions at any place under its control, and to refrain from encouraging or participating in the carrying out of any nuclear explosion. The treaty has not yet been ratified by the US, although it has been signed.

The strict CTBT regime will create a challenging situation for the US as it tries to maintain proper stewardship of its nuclear stockpile, but Department of Energy experts will undoubtedly rise to the challenge.

D. United States Law and Policy

In addition to international constraints on the possession and use of nuclear weapons, US nuclear weapons policy is circumscribed by domestic law and policy. To ensure that it takes appropriate actions in the arms control area,

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[57] "Verification Protocol to the Treaty on the Limitation of Underground Nuclear Weapon Tests," 29 I.L.M. 969 (1990).
[58] "Treaty on Underground Nuclear Explosions for Peaceful Purposes," 15 I.L.M. 89 (May 28, 1976).
[59] "Verification Protocol to the Treaty on Underground Nuclear Explosions for Peaceful Purposes," 29 I.L.M. 1025 (1990).

the US established the Arms Control and Disarmament Agency.[60] The primary focus of US policy is to avoid the further proliferation of NBC weapons. This policy is clearly in the interest of the US, but is also strongly supported by the international community. The US has incorporated nonproliferation policies into domestic law.[61]

The US has also taken a series of actions to prevent the unauthorized employment of its nuclear arsenal. One is an electronic locking system on warheads and on nuclear bomb bay doors. Others are increased security requirements, such as the Personnel Reliability Program, to ensure that individuals dealing with nuclear weapons are stable and reliable.[62] When nuclear weapons are present, procedures require two individuals to launch a weapon, and the launch code must be communicated to them from higher in the chain of command.[63] In addition to all the other listed safety precautions, only the US president may authorize a use of nuclear weapons.[64]

1. Security Assurances

In the nuclear arena, the US has made several security assurances to other nations. The more important of these are negative security assurances (NSAs). Negative security assurances have been made in two contexts.

First, the US has made given a NSA to all non-nuclear NPT signatories. The US has agreed not to use nuclear weapons against such states except in the case of an attack on the US or its allies by a non-nuclear signatory in association with a nuclear power.[65] These political statements are still in effect, although they have arguably been weakened by recent US assertions that it

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[60] 22 U.S.C. § 2551, *et. seq.* (1990).
[61] 22 U.S.C. § 3201, *et. seq.* (1990).
[62] *See* Bunn, *supra* note 9, at 57; DoDD 5210.42, *Nuclear Weapon Personnel Reliability Program* (May 25, 1993).
[63] Nuclear Weapons 20 (UN, 1991)
[64] AFP 110-31, *supra* note 11; NWP 1-14M, *supra* note 11; Joint Pub. 3-12, *Doctrine for Joint Nuclear Operations* II-1 (Dec. 18, 1995).
[65] First extended in 1978, the pledge was renewed in 1995. Both are reprinted in George Bunn, "Expanding Nuclear Options: Is the U.S. Negating Its Non-Use Pledges?," *Arms Control Today* 7 (May/Jun. 1996).

might use nuclear weapons to respond to any use of weapons of mass destruction.[66]

The second type of NSA are those ascribed to in protocols to NWFZs. These assurances have the binding effect of any treaty. They require the US to avoid the use, and threats to use, nuclear weapons against treaty participants.

Positive security assurances are less frequently discussed. These are agreements by nuclear weapons states to go to the aid of non-nuclear weapons states that are victims of nuclear attacks or threats.[67]

2. First Use of Nuclear Weapons

With respect to the actual use of nuclear weapons, it is important to note that despite almost five decades of nonuse, no declared US policy would preclude a first use of nuclear weapons.[68] US statements do indicate that nuclear weapons would only be used in self-defense, but that is very different than precluding a first use. The US maintains that customary international law recognizes the right of anticipatory self-defense, i.e., the possibility of taking hostile defensive measures without waiting for the first enemy blow to strike.[69]

III. Chemical Weapons

A. Brief History

Chemical weapons have earned a prominent place in the history of warfare. As early as the fourth century BC Scythian archers used poisoned arrows against their enemies. The poison, possibly dipped from a small cup on

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[66] Spurgeon M. Keeny, "Nuclear Policy in Disarray," *Arms Control Today* 2 (Apr. 1996).
[67] UN Security Council Resolution 255 (1968), reaffirmed Apr. 5, 1995.
[68] Bunn, *supra* note 9, at 56-57.
[69] Ian Brownlie, International Law and the Use of Force by States 257 (1963).

the archers' belt buckles, was a horrifying mixture of putrefied human blood and dung, mixed with the poison of decomposed adders.[70]

Chemical weapons gained modern prominence in W.W.I, during which conflict they were first used on 22 April 1915 when German forces released chlorine gas near Ypres, France. Both sides eventually engaged in gas warfare. The most lethal agent employed was mustard gas, used for the first time by the Germans in mid-1917.[71]

The appalling effects of chemical weapons ultimately led to agreement on the Geneva Gas Protocol, and the widespread use of chemical weapons has since been largely avoided. The one exception was during the Iran-Iraq conflict (1980-88), when Iraq used chemical weapons; Iran was also accused of using chemical munitions, but the evidence was equivocal.[72] The US-led coalition was on the wrong side of a near-exception to the rule in the Persian Gulf Conflict. Inspections have since revealed that Iraq had stockpiled hundreds of tons of chemical agents, including sarin, VX and mustard gas.[73] Fortunately, there is no definitive evidence that Iraq employed chemical munitions, despite the belief of some that they might have been a cause of Gulf War Syndrome.

B. International Law

Chemical weapons are subject to the same general constraints as any other weapons; they cannot indiscriminately be employed against civilian populations and non-military targets.[74] Further, all activities concerning these weapons are constrained by international agreements.

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[70] Adrienne Mayor, "Dirty Tricks in Ancient Warfare," *Military History Quarterly* Vol. 10, No. 1, 32, 34 (Autumn 1997).
[71] Martin Gilbert, The First World War 144, 204 (1994).
[72] Leonard A. Cole, The Eleventh Plague 91 (1997). There have been threats and allegations, such as in Bosnia and Angola, but no definitive, large-scale uses. SIPRI Yearbook, 323-326 (1994).
[73] SIPRI, *supra* note 3, at 697.
[74] *Supra* at 5.

Geneva Gas Protocol. The 1925 Geneva Gas Protocol prohibited the use in armed conflict of asphyxiating, poisonous or other gases.[75] The US ratified the agreement in 1975, but reserved the right to respond in kind if an enemy violated the treaty prohibitions, leaving the US with a "no first use" policy.

The Geneva Gas Protocol restricted the use of deadly chemical weapons, but it did not prohibit the development, production or possession of chemical weapons of any sort, including lethal weapons.[76]

Verification and Destruction of Chemical Weapons Agreements. In 1989, the US and USSR agreed to a temporary verification regime to test whether a ban on chemical weapons could be enforced.[77] The agreement required an exchange of chemical weapons data, and verification inspections. In 1990, the two nations initiated the first agreement calling for the destruction and non-production of chemical weapons.[78]

The Chemical Weapons Convention. When it was bound only by the Geneva Gas Protocol, the US continued to maintain a chemical weapons capability for deterrence and as a possible response to chemical use by enemy forces. This capability continued until the early 1990s. With the 1997 ratification of the Chemical Weapons Convention (CWC), any possibility of regaining that capability was disallowed.[79]

The CWC prohibited parties from developing, producing, acquiring, stockpiling and using or preparing to use chemical weapons. The CWC further

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[75] "Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases, and of Bacteriological Methods of Warfare," 26 U.S.T. 571, T.I.A.S. No. 8061, 94 U.N.T.S. 65 (Jun. 17, 1925).

[76] NWP 1-14M, *supra* note 11, at 10-2. *See also* "Arms Control: Declaration of the Paris Chemical Weapons Conference-Final Declaration of the Paris Conference on the Prohibition of Chemical Weapons," 30 *Harv. Int'l. L.J.* 495, 496 n. 11 (Spring 1991).

[77] "Agreement Regarding a Bilateral Verification Experiment and Data Exchange Related to Prohibition of Chemical Weapons," 28 I.L.M. 1438 (Sep. 23, 1989).

[78] "Agreement on Destruction and Non-Production of Chemical Weapons and on Measures to Facilitate the Multilateral Convention on Banning Chemical Weapons," 29 I.L.M. 932 (Jun. 1, 1990). For a discussion of the impact of this agreement, *see* "Arms Control and Chemical Weapons - Agreement on Destruction and Non-Production of Chemical Weapons," 32 *Harv. Int'l. L.J.* 497 (Spring 1991).

[79] "Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction" (Jan. 13-15, 1993).

required the destruction of existing chemical weapons stocks and production facilities.

The CWC also prohibited the use of riot control agents (RCAs) as a method of war. Appropriate inspections are authorized to verify compliance by each party to the convention.

C. US Policy

The US has specific policies governing the use of chemical agents, divided into wartime and peacetime uses.

During wartime, the president must approve any use of RCAs or chemical herbicides. The US will engage in first use of RCA only in a defensive mode in order to save lives. It will use chemical herbicides first only on base defensive perimeters or consistent with domestic regulations.[80]

In peacetime, herbicides will be used only consistent with host nation laws. RCAs will only be used when US troops are not parties to a conflict (i.e., are acting as peacekeepers), or on US installations or embassies for protection.

IV. Biological Weapons

A. Brief History

There are two classic historic uses of biological weapons in the history of warfare. The first took place in 1346 when the Mongols laid siege to the impenetrable Crimean seaport of Kaffa. Frustrated by three year's of failing to penetrate the city's defenses, the Mongols began hurling the plague-infested

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[80] Chairman of the Joint Chief of Staff Instruction (CJCSI) 3110.07A, *Nuclear, Biological and Chemical Warfare; Riot Control Agents; and Herbicides* (Jul. 3, 1995).

corpses of their comrades over the city walls. The Genoese occupants were eventually forced to give up the city to flee the plague.[81]

The other classic historical case is Lord Jeffrey Amherst's infestation of American Indians with smallpox. In 1763, after a rebellion, he ordered his subordinates to deliver blankets infected with the disease to the natives. Smallpox later broke out among the Indians and caused many deaths.[82]

Germany was accused of attempting purposely to spread disease in W.W.I, but it was W.W.II that saw the first real preparation to use biological warfare. Japanese experiments resulted in the deaths of thousands of prisoners of war. Gruinard Island off the coast of Scotland was infected with anthrax from British tests with biological bombs, and was considered unsafe to visit for over 50 years.[83]

Iraq, as a result of a program starting in 1974, had stockpiled thousands of liters of botulinum toxin, anthrax and aflatoxin.[84]

B. International Law

Because of their indiscriminate and uncontrollable nature, use of biological weapons has long been prohibited by international law.[85] DoD defines biological agents as materiel that projects, disperses or disseminates a microorganism that causes disease in personnel, plants or animals or causes the deterioration of materiel.[86]

Geneva Gas Protocol. In addition to prohibiting gas warfare, the Geneva Gas Protocol bans use of bacteriological methods of warfare.[87] In agreeing to the protocol, the US accepted this prohibition, so use of such weapons by US

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[81] Jeanne McDermott, The Killing Winds 21 (1987); Erhard Geissler, Biological and Toxin Weapons Today 7 (1986).
[82] McDermott, *supra* note 81, at 21-22.
[83] Robert Harris & Jeremy Paxman, A Higher Form of Killing 68, 74 (1982); SIPRI, *supra* note 3, at 687.
[84] SIPRI, *supra* note 3, page 698.
[85] AFP 110-31, *supra* note 11, at 6-4; NWP 1-14M, *supra* note 11, at 10-4.
[86] Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Jun. 10, 1998).
[87] 1925 Geneva Gas Protocol, *supra* note 4.

forces is prohibited.[88] The US also considers the prohibition against biological warfare to include use of toxins.[89] Toxins are not living organisms and could be categorized as chemicals, but the US and most other countries consider them biological agents. Further, because the prohibition against biological warfare is now part of customary international law, the US position is that the ban applies to all nations, whether or not they are parties to the 1925 Geneva Gas Convention.[90]

Biological Weapons Convention. In 1972, a new multilateral convention was initiated to place further restrictions on biological weapons.[91] The convention prohibited signatories from developing, producing, stockpiling, acquiring or retaining biological agents.[92] The same rules apply to toxins. Any existing stockpiles of biological weapons were also required to be destroyed. The convention had no effective enforcement provisions.

C. United States Law and Policy

The US renounced its offensive biological program in 1969.[93] It maintains only a defensive capacity to, for instance, develop vaccines. US law restricts the transportation, open air testing, deployment and disposal of biological weapons.[94]

V. Conclusion

This is an ever-changing area. New threats are identified, and new solutions sought, at frequent intervals. A brief understanding of where we are,

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[88] AFP 110-34, supra note 11; FM 27-10, *The Law of Land Warfare* 3 (Jul. 18, 1956, w/ C1, Jul. 15, 1976); NWP 1-14M, *supra* note 11, at 10-4.
[89] FM 27-10, *supra* note 88, at 3.
[90] NWP 1-14M, *supra* note 11, at 10-2.
[91] "Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction," 26 U.S.T. 583, T.I.A.S. No. 8062 (Apr. 10, 1972).
[92] *Id.*, Article I.; FM 27-I0, *supra* note 88, at 3.
[93] 18 U.S.C. § 175 (1999).
[94] 50 U.S.C. §§ 1512, 1513 (1991).

along with some historical context, should stand commanders in good stead to scan the future landscape for significant changes.

WMD Treaties & Agreements

Anti-Ballistic Missile (ABM) Treaty (1972). US-USSR treaty limiting the defensive nuclear weapons capability of each side. Missiles, launchers, and radar systems are affected.

African Nuclear Weapons Free Zone (1996). Multilateral treaty, with protocols, prohibiting development, use or deployment of nuclear weapons in Africa.

Antarctic Treaty (1961). Multilateral treaty prohibiting use or deployment of nuclear weapons in Antarctica.

Biological Weapons Convention (1972). Multilateral treaty prohibiting the development, production, stockpiling, acquisition or retention of biological agents

Chemical Weapons Convention (1993). Multilateral convention banning development, production, stockpiling and use of chemical weapons and requiring their destruction.

Biological Weapons Convention (1972). Multilateral convention outlawing biological weapons.

Exercise Notification Agreement (1989). Agreement between the US and USSR requiring 14 days notice of major strategic exercises.

Geneva Gas Protocol (1925). Multilateral convention prohibiting gas and biological warfare. US has reserved right to use chemical weapons in response

to an enemies use of the same, but has made no such reservation with respect to biological weapons.

Intermediate-Range Nuclear Forces (INF) Treaty (1988). US-USSR treaty eliminating intermediate-range and shorter-range nuclear missile forces.

Latin American Nuclear Weapons Free Zone (1967). Multilateral treaty, with protocols, prohibiting use or deployment of nuclear weapons in Latin America.

Launch Notification Agreement (1988). US-USSR agreement requiring 24 hours advance notice of all peacetime ballistic missile launches.

Nuclear Non-Proliferation Treaty (1970). Multilateral treaty prohibiting transfer of nuclear weapons and nuclear weapons technology to non-nuclear weapon states.

Nuclear Weapons Free Zone. *See* African Nuclear Weapons Free Zone, Latin American Nuclear Weapons Free Zone and South Pacific Nuclear Free Zone. *See also* Antarctic Treaty, Outer Space Treaty and Seabed Arms Control Treaty.

Open Skies Treaty (1992). Multilateral treaty establishing a regime of unarmed aerial observation flights over the territory of its signatories. Its purpose is to decrease international tension and the potential for armed conflict by promoting openness and transparency of military forces and activities.

Outer Space Treaty (1967). Multilateral treaty prohibiting placement of nuclear weapons in orbit, on the moon, or in outer space.

Seabed Arms Control Treaty (1972). Multilateral treaty prohibiting placement of nuclear weapons on the seabed or ocean floor.

South Pacific Nuclear Free Zone (1986). Multilateral treaty, with protocols, prohibiting use or deployment of nuclear weapons in the South Pacific.

Strategic Arms Reduction Treaty (START) I (1991). US-USSR treaty limiting number of deployable strategic nuclear delivery vehicles and the number of nuclear warheads; includes a verification and inspection regime. Later agreed to by nuclear CIS states after dissolution of USSR.

START II (1993). US-Russian Federation treaty limiting the number of strategic nuclear weapons.

Treaty of Pelindaba. *See* African Nuclear Weapons Free Zone.

Treaty of Rarotonga. *See* South Pacific Nuclear Free Zone.

Treaty of Tlatelolco. *See* Latin American Nuclear Weapons Free Zone.

US-USSR Chemical Weapons Agreement (1990). Bilateral agreement calling for non-production of chemical weapons and destruction of existing stocks.

Treaty Terms

Accession. When a state expresses its consent to be bound by a convention drafted by other states through a procedure the acceding state did not participate in or when the state did not sign the convention. Accession must be permitted by the treaty, at least by implication.

Initialing. May be either the equivalent of signature or, more frequently, a preliminary step that stabilizes a negotiated text so that it can be referred to higher authority.

Party to a treaty. A nation that has consented to be bound by a convention and for whom the convention is in force.

Ratification. Approval of an international agreement after it has been signed. For the US, this action is taken by the president with the advice and consent of the Senate.

Signature. Usually is not binding as it is normally subject to later ratification. Instead, it signifies political approval and engenders a moral obligation to seek ratification.

Succession. Arises when a given state is replaced by another. Whether the new state succeeds to the predecessor's treaties is a question answered on a case-by-case basis.

More detailed information on treaty terminology is available at the sources of this summary: THE FOREIGN RELATIONS OF THE UNITED STATES, RESTATEMENT OF THE LAW § 312 (3d ed. 1987) and the VIENNA CONVENTION ON THE LAW OF TREATIES.