

CONTROLLING THE PROLIFERATION OF CHEMICAL WEAPONS: CAN THE GENIE BE PUT BACK IN THE BOTTLE?

I. INTRODUCTION

“[T]he general rule is that these weapons [poison gas] should not be used, and this is a rule which we believe in. But I would like to say that if this is the rule, then for every rule there is an exception.”

—Iraq Defense Minister Adnan Kheirullah¹

The Geneva Protocol banned the use of chemical weapons in warfare in 1925. More than 140 nations, including Iraq and Iran, signed the treaty.² Until recently, the Protocol has succeeded in preventing chemical weapons from being used as a viable military option. Nevertheless, Iraq's recent blatant use of poison gas to stop Iran's drives into its territory³ and its subsequent chemical weapons attack on the Kurdish population⁴ have dispelled the world's complacency about chemical weapons. The potential of these weapons to incapacitate and to kill, their relatively low cost, and their ease of production make them a very real threat to world security.⁵

Iraq's violation of the Geneva Protocol, which it does not dispute,⁶ and the world's tepid response raise the question of the effectiveness of the Protocol to curtail the use of chemical weapons.⁷ Chemical weapons capability is a genie out of its bottle, as more and more countries obtain the capacity to make them.⁸ Progress in restricting the production of

1. Fialka, *Fighting Dirty: Western Industry Sells Third World the Means to Produce Poison Gas*, Wall St. J., Sept. 16, 1988, at A14, col. 1 (Southwest ed.).

2. N.Y. Times, Jan. 12, 1989, at A1, col. 2, and A4, col. 4 (National ed.). Iran and Iraq signed the Protocol in 1925. Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases and of Bacteriological Methods of Warfare, June 17, 1925, 26 U.S.T. 571, T.I.A.S. No. 8061 (effective Feb. 8, 1928) [hereinafter Geneva Protocol].

3. See *infra* text accompanying notes 15-21.

4. See *infra* text accompanying notes 22-25.

5. Fialka, *supra* note 1, at 14, col. 1.

6. Greenberger, *Iraq Opened Dangerous Pandora's Box by Using Chemicals in War With Iran*, Wall St. J., Aug. 1, 1988, at A11, col. 5 (Southwest ed.). According to American officials, Iraqis say they were fighting for their survival, and that under such conditions they do not see the West's moral distinction between killing with bullets and killing with chemicals. *Id.*

7. See *infra* text accompanying notes 21 and 311-20.

8. Greenberger, *supra* note 6, at A11, col. 5. According to a U.S. State Department official, "The bottom line is the genie is out of the bottle. . . . The unfortunate but realistic

these weapons is urgently needed to prevent them from becoming an accepted military option.

This comment describes and analyzes the development of existing chemical weapons accords and their present effectiveness. Responses by the United States and the Soviet Union, with those of other nations, are discussed. Finally, the current provisions of the Draft Convention on Chemical Weapons are analyzed and its prospects for eliminating the production and use of chemical weapons are evaluated.

This comment concludes that the moral force of world opinion may be the only viable restraint upon the proliferation of chemical weapons.

II. THE LATEST VIOLATION OF THE GENEVA PROTOCOL: USE OF CHEMICAL WEAPONS BY IRAQ

A. *Background to the Iran-Iraq War*

After aiding Brigadier Qasin in taking power in Iraq in 1958, the Kurds (a people who live primarily in northeastern Iraq but consider themselves separate from the Arab Iraqis) began to press for independence.⁹ Violence and fighting continued during the 1960s and 1970s, with the Kurdish resistance secretly aided by the Iranian government.¹⁰ On March 6, 1975, Iran and Iraq signed a treaty that called for non-interference in each other's internal affairs.¹¹ Control of the Shatt-al-Arab waterway, Iraq's only coastal outlet, was given to Iran.¹² The Iraqis immediately launched a successful attack to crush the Kurds, and by April 1979, 220,000 Kurds had been deported to southern Iraq.¹³ Subsequent civil unrest in Iran and the coming to power of the Ayatollah Khomeini in 1979 provided the opportunity for Iraq to regain control of the Shatt-al-Arab waterway, as well as to pursue oil fields in Iran. On September 11, 1980, Iraq's first offensive began the Iran-Iraq war.¹⁴

lesson learned is that these things are pretty cheap to make and can be delivered through relatively unsophisticated methods." *Id.*

9. Christensen, *Iraq's Kurds Receive Welcome in Turkey, Despite Old Animosities*, Wall St. J., Sept. 14, 1988, at A1, col. 1 (Southwest ed.). The twenty million Kurds have lived for 3,000 years in the corner where Turkey, Iran, and Iraq now meet. They share a common culture, language, and religion and have sought independence for hundreds of years. *Id.*

10. Tucker, *Armies of the Gulf War*, 1987 ARMED FORCES 319. The Shah of Iran believed a strong Kurdish resistance would divert Iraqi attention from possible aspirations towards southern Iranian territory. *Id.*

11. *Id.* Iraq signed the treaty to ensure Iran would no longer aid the Kurds in their fight against Iraq. *Id.*

12. N.Y. Times, Oct. 28, 1988, at A3, col. 1 (National ed.). Iran and Iraq have fought for centuries over ownership of the Shatt-al-Arab waterway, which serves as a border between the two countries. The waterway is currently closed to shipping, due to the accumulation of silt, sunken ships, and unexploded ordnance left over from the eight-year Iran-Iraq war. *Id.*

13. Tucker, *supra* note 10, at 319.

14. *Id.* Iraq felt the Ayatollah, as a religious leader, would be a weaker opponent than the Shah, who had been deposed in August 1979. *Id.*

B. Use of Chemical Weapons Against Iran

According to the Iranians, Iraq used chemical weapons almost from the beginning of the war.¹⁵ Chemical bombs were allegedly used by Iraqi forces in Iran in November 1980.¹⁶ The first confirmed use of chemical weapons by Iraq against Iran occurred in 1984.¹⁷ At this time, Iraq had been placed in a defensive posture against Iranian attacks designed to break through to Baghdad. Chemical weapons were thought to have been resorted to in order to stop the human waves of Iranians, who were hurling themselves against the Iraqi ranks. Casualties from the chemical weapons were approximately 3,500, according to Iranian sources.¹⁸

A United Nations' special investigation team has verified Iranian reports that Iraq used chemical weapons against Iran four times since 1984.¹⁹ Mustard gas use has been proven, while the use of nerve gas (tabun) is suspected.²⁰ The world's response to Iraq's use of chemical weapons has been mild. Although the United Nations passed a resolution deploring the attack, the major powers' previous tilt towards Iraq in the Iran-Iraq war prevented a strong response.²¹

15. Statement by the Iranian Foreign Minister (Velayati), Documents on Disarmament, 1984 (Document 29) at 79.

16. J. GOLDBLAT, AGREEMENTS FOR ARMS CONTROL: A CRITICAL SURVEY 100 (1982). In November 1980 a U.S. secret intelligence report said Iraq had been actively acquiring chemical weapons capabilities since the mid 1970s. The first report of Iraq's use of chemicals against Iran was in November 1980 at Hoveizeh in the south. Additional use of chemical weapons and napalm by Iraq was reported in January 1981 but few details were given and the incidents received little publicity. Perera, *Britain Aids Gulf Chemical Warfare*, NEW SCIENTIST, Dec. 22/29, 1983, at 867.

17. Ember, *Worldwide Spread of Chemical Arms Receiving Increased Attention*, CHEMICAL & ENGINEERING NEWS, Apr. 14, 1986, at 8. Iraq first attacked Iran with lethal chemical weapons in late February 1984. A United Nations investigating team identified the chemicals used as sulfur mustard gas and the nerve gas tabun. Charges that yellow-rain toxins were also used were not confirmed by the UN team. *Iraq Believed Using Chemical Arms Again*, CHEMICAL & ENGINEERING NEWS, Feb. 24, 1986, at 6.

18. J. ROBINSON, CHEMICAL AND BIOLOGICAL WARFARE DEVELOPMENTS 6 (1985). The Iranians claimed Iraq was using mustard gas against its forces. Wounded soldiers were flown to European hospitals for treatment in order to prove the veracity of their claims. The Iraqis suggested that the Iranian mustard gas victims were actually the victims of an industrial accident in Iran, possibly as part of Iran's build-up of chemical weapons capability. *Id.* at 7, 10.

19. Ember, *Iraqi Use of Chemical Arms Condemned Again*, CHEMICAL & ENGINEERING NEWS, Aug. 8, 1988, at 5. The first chemical weapons attack occurred in February 1984, the second in early 1985, the third in June 1987, and the fourth on August 2, 1988. *Id.*

20. *Id.* After a four-day investigation in July 1988, the investigators confirmed the use of mustard gas by medical and chemical analysis. Chemical tests cannot confirm use of nerve gas or cyanide because their components dissipate rapidly, especially in high temperature areas. The investigators arrived too late to collect viable samples. Nerve gas is usually used in front line attacks to instantly incapacitate the opponent while mustard gas is used in rear attacks to prevent counter attacks. *Id.*

21. Ember, *supra* note 17, at 11. The western nations tilted towards Iraq in part because of the American hostages episode and the perceived irrationality of the Iranian rulers. *Id.*

C. *Use of Chemical Weapons Against the Kurds*

After entering into a truce with Iran in July 1988, Iraq commenced military action against its Kurdish minority.²² Refugees who fled to Turkey asserted that chemical weapons were used to obliterate scores of Kurdish villages.²³

The United States asserts that it has solid evidence that Iraq began using chemical weapons against the Kurds on August 25, 1988.²⁴ Intercepted military communications outlining Iraqi use of these weapons during the attack were said to be the proof.²⁵

D. *The Proliferation of Chemical Weapons*

Chemical weapons, agents made from various chemicals which incapacitate or kill upon contact, are made from readily available commercial chemicals which can be purchased on the world market.²⁶ It is uncertain which countries, besides the United States, the Soviet Union, France, and now Iraq, possess chemical weapons.²⁷ Nonetheless, the United States contends that more than twenty countries possess them, a three-fold increase since the 1960s.²⁸ As many as thirty-one countries are alleged to have chemical weapons capability.²⁹ The list includes Israel, Egypt, Syria, North Korea, South Korea, Iraq, Iran, Libya, and Taiwan.³⁰ Libya is reported to be on the verge of full scale production of these weapons. According to U.S. intelligence reports, Libya has built the largest chemical weapons plant in the Middle East.³¹ The plant is believed to be capable of producing tissue-searing mustard gas and instantly lethal sarin gas. At full capacity, the plant could produce an

22. Marshall, *Chemical Genocide in Iraq?*, 1988 *SCIENCE* 1752. Two staffers of the Senate Foreign Relations Committee traveled to Turkey in mid-September 1988, and interviewed over 200 Iraqi refugees. They reported that up to 65,000 Kurds may have fled to Turkey, and hundreds of thousands may have died from the Iraqi offensive. *Id.*

23. *Id.* In light of the examined wounds, the Iraqis appear to have used mustard gas and tabun, a form of nerve gas which kills instantly when inhaled or absorbed. More than 4,000 persons were reported killed. Greenberger, *supra* note 6, at 11.

24. Marshall, *supra* note 22, at 1752. The United States denounced Iraq's use of chemical weapons as a gross violation of international law. *Id.*

25. *Id.*

26. Ember, *supra* note 17, at 12. For example, the same chemicals used to make lubricants, paints and ink, can be synthesized to make various chemical weapons.

27. *Id.* at 8. The United States and the Soviet Union are the only nations which admit to producing and stockpiling chemical weapons.

28. *Id.* at 11. According to a 1984 Central Intelligence Agency report, there was an ominous proliferation of chemical weapons occurring in the Third World nations of the Middle East, Southeast Asia, and the Horn of Africa. *Id.*

29. *Id.* at 8.

30. Fialka, *Chemical Weapons Spread in Third World, Pose Challenge to West*, Wall St. J., Sept. 15, 1988, at A1, col. 1 (Southwest ed.). Afghanistan is also suspected of possessing chemical weapons. *Id.*

31. N.Y. Times, Jan. 12, 1989, at A5, col. 3 (National ed.). The United States intelligence

arsenal equal to that held by Iraq, with excess amounts available to provide to terrorists.³² When the United States accused Libya of producing chemical weapons, Libya denied the charge. It claimed it was making pharmaceuticals.³³

The spread of chemical weapons to Third World countries is beginning to cause serious concern due to the concurrent availability of long-range ballistic missiles to willing buyers.³⁴ These missiles can be used to extend the range of chemical weapon attacks because missiles can easily be fitted with chemical weapons.³⁵ Israel believes it is now vulnerable to

community spotted the Rabta construction site in December 1987. Hous. Chron., Jan. 1, 1989, at 26A, col. 6. Since then, the U.S. has taken highly precise aerial photographs of the chemical weapons facility. The complex is heavily defended by Soviet-made surface-to-air missiles. U.S. intelligence sources say the facility is part of a larger complex located approximately forty miles southeast of Tripoli. The complex contains a metal works plant built by Japan Steel Works, which is believed to be destined for the manufacture of aerial bombs and canisters. These canisters will be ideally suited for carrying poisonous gases. Hous. Chron., Dec. 22, 1988, at 1A, col. 6, and at 15A, col. 3. West Germany was made aware of German industry's involvement in the plant's construction in November 1988. Chancellor Helmut Kohl was briefed by U.S. officials on November 15, 1988. (The briefing information was made public on January 1, 1989.) At the briefing, C.I.A. director William Webster confronted Mr. Kohl with previously unknown information, including satellite photos of the complex, on-the-ground intelligence, and wiretapped telephone conversations emanating from the complex. Wall St. J., Jan. 1, 1989, at A12, col. 5 (Southwest ed.).

32. *How Qaddafi Built His Deadly Chemical Plant*, BUS. WK., Jan. 23, 1989, at 50. Israeli intelligence says the Rabta plant is capable of producing forty-two tons of mustard gas and sarin gas a day. Sarin is an odorless, colorless gas or vapor which kills in minutes after being inhaled or absorbed through the skin. E. SPIERS, *CHEMICAL WARFARE* 13 (1986). U.S. officials are especially concerned because of reports another West German company is helping Libya develop the capacity for air to air refueling of its fighter bombers. This capacity would allow Libya to drop chemical bombs on Israel and Europe. Hous. Chron., Jan. 1, 1989, at 35A, col. 3.

33. Hous. Chron., Jan. 9, 1988, at 6A, col. 1. American intelligence evidence for believing the plant is intended for chemical weapons production was summarized by William F. Burns, Director of the Arms Control and Disarmament Agency: (1) the plant's remote location, which is unusual for a pharmaceutical plant; (2) its being surrounded by a high wire fence and a sophisticated air defense system; and (3) its observable facilities for safeguarding employees from poison gas. Burns believes the plant could be shifted in a matter of days to a nonmilitary use. Wall St. J., Jan. 5, 1989, at A12, col. 3 (Southwest ed.). U.S. intelligence has acquired aerial photos showing the complex is heavily defended by Soviet-made surface-to-air missiles, which is not customary for pharmaceutical factories. Wall St. J., Dec. 27, 1988, at B2, col. 3 (Southwest ed.). The U.S. also has telephone intercepts from the summer of 1988 between Libya and the Imhausen company, in which the Libyan plant managers are frantically asking for advice in dealing with an accidental spill of toxic chemicals that occurred during an attempted test run of the plant. N.Y. Times, Jan. 14, 1989, at A5, col. 1 (National ed.).

34. N.Y. Times, Oct. 27, 1988, at A6, col. 6 (National ed.). The missiles are those once held by the superpowers which are now insufficient in range and accuracy to carry nuclear warheads. They are sold on the international black market. Fialka, *supra* note 30, at 22, col. 1.

35. See Fialka, *supra* note 30, at 22, col. 1. An example is the Scud B missile introduced by the Soviet Union in the mid 1960s. It can deliver a ton of explosives to within a half mile of a target 170 miles away. According to the U.S. State Department and the C.I.A., Libya is trying to buy missiles with a range of up to 3,000 miles. N.Y. Times, Oct. 27, 1988, at A6, col. 1 (National ed.).

a chemical weapon attack by missile strike.³⁶ After Iraq's success against Iran, more and more Third World nations are seeing chemical weapons as a "poor man's atom bomb" which can put them on a more nearly equal footing with greater powers.³⁷ The world's laissez-faire attitude towards Iraq's use of chemical weapons has increased the danger of their becoming as conventional as tanks.

III. THE DEVELOPMENT OF INTERNATIONAL CHEMICAL WEAPONS REGULATIONS

The use of weapons in war is regulated, proscribed, or permitted based on international laws of war, involving rules and principles.³⁸ Principles and rules of international law are the norms whereby international society tries to curtail the unrestricted use of belligerents' power.³⁹ Most of the principles and rules derive from treaties signed and adhered to by various countries.⁴⁰

To claim that wars are governed by rules of law may seem inconsistent. However, society has long sought to reduce the harshness of war by the moderating influences of law.⁴¹ The two main principles which make up generally recognized international law are (a) military necessity, which holds that a belligerent can use the amount and kind of force necessary to defeat his enemy as quickly as possible, with the least loss of life, and (b) humanity, which prohibits violence not necessary to defeat an enemy.⁴²

The generally accepted doctrine of international law is that belligerents are bound to the law of war.⁴³ They cannot claim military necessity to justify violating the rule that hostile parties are limited in their choice of weapons or means to defeat an enemy. This rule is accepted by the

36. Horwitz, *Israel's Enemies Develop Alarming Poison-Gas Potential*, Wall St. J., Sept. 15, 1988, at A22, col. 1 (Southwest ed.).

37. N.Y. Times, Jan. 19, 1989, at A5, col. 3 (National ed.). This belief makes them suspicious of the attempts by Western nations to control the spread of chemical weapons. *Id.*

38. A.V.W. THOMAS and A.J. THOMAS, JR., LEGAL LIMITS ON THE USE OF CHEMICAL AND BIOLOGICAL WEAPONS 39 (1970) [hereinafter THOMAS & THOMAS]. This assumes the adversaries are a part of a world community and follow general rules of civilization. In reality, the "laws of war" are entirely voluntary and depend on nations' good faith and sense of decency to be effective. *Id.*

39. *Id.* Principles are general goals or statements which bear on the commencement of war, its legal effects, the conduct of hostilities, weapons, military occupation and the conclusion of war. A rule would be more precise and limited to a specific situation. An example would be how a prisoner should be treated. *Id.*

40. *Id.* The terms of treaties may gradually become part of the rules of international law because a majority of nations follow them. *Id.*

41. *Id.* at 40. For example, the ancient Indian Code of Manu prohibited poisoned arrows or flame throwing torches. Islam has always forbidden the poisoning of water supplies. *Id.*

42. *Id.* at 40. Weapons intended to cause a long, agonizing death would be prohibited as would be the massacre of surrendered soldiers. *Id.*

43. *Id.* at 41.

U.S. Army Field Manual and by most countries.⁴⁴ In the last decade of the nineteenth century, most of the world's military powers began to issue similar manuals governing the conduct of war. The manuals did not create international law but did have important effects on the continuing development of conventional and customary international laws of war. These effects include norms governing the types of weapons and the degree of permissible force.⁴⁵

A primary rule of international law is that hostile parties are limited in their choice of weapons to defeat an enemy.⁴⁶ In the current environment, this general rule would seem to prohibit the use of chemical weapons.

A. *Treaties as Sources of International Law*

Treaties signed and adhered to are the current source of international law relating to warfare. They are based on existing customary law and include new rules for future conduct for participating states.⁴⁷ Nevertheless, treaties are binding only on the signing parties, unlike customary law, which is binding on all states.⁴⁸ The new treaty's norms may, over time, become customary rules recognized by other nations and become applicable to nonsignatories.⁴⁹

In attempting to codify a law of war, nations have always sought to limit the use of certain weapons, including those of a chemical and biological nature.⁵⁰ The conventions and treaties in the table below (with their section references in this paper) trace this development as it relates to chemical weapons.

St. Petersburg Declaration of 1868	III-A(1)
The Hague Gas Declaration of 1899	III-A(2)
The Hague Peace Conference of 1907	III-A(2)
Treaty of Versailles (1919)	III-A(4)
The Washington Treaty (1922)	III-A(5)

44. *Id.* at 41. The Field Manual, published in 1956, defines military necessity as "that principle which justifies those measures not forbidden by international war, which are indispensable for securing the complete submission of the enemy as soon as possible." Dept. of the Army Field Manual, *The Law of Land Warfare* 4 (FM27-10 1956), cited in THOMAS & THOMAS, *supra* note 38, at 41.

45. THOMAS & THOMAS, *supra* note 38, at 41.

46. *Id.* Again, this rule only applies to a nation willing to follow it.

47. *Id.* at 44. Customary law is the set of procedures followed by most countries which developed from customs and evolved over many years. An example is the respecting of a white flag of surrender without shooting the surrendering persons. *Id.*

48. *Id.* at 45. A treaty is considered a legal contract between the parties which they have publicly agreed to uphold. Customary law is more a general tacit agreement or moral understanding between nations. *Id.*

49. *Id.* at 44.

50. *Id.*

Geneva Protocol (1925)	III-A(6)
McCloy-Zorin Joint Statement (1961)	III-D(1)
Biological Weapons Convention (1972)	III-D(2)
Paris Declaration (1989)	IV-E
Draft Convention on Chemical Weapons	III-F

(1) St. Petersburg Declaration of 1868

In 1868, Czar Alexander II of Russia convened an international military commission which renounced the use in battle of any explosive projectile.⁵¹ The convention was instigated by the invention of a bullet which exploded upon impact with a human. This was thought to be an unnecessarily cruel weapon and was banned under the Declaration.⁵² The Declaration's preamble prohibited the "employment of arms which uselessly aggravate the sufferings of disabled men, or render their death inevitable . . . [as] contrary to the laws of humanity."⁵³ The Declaration was signed by seventeen European states, Persia, Turkey, and Brazil.⁵⁴ Today, the Declaration is not considered binding as to its prohibition against exploding bullets. Nonetheless, its prohibition against the use of weapons which cause superfluous injury was a strong influence on later treaties and protocols.⁵⁵

(2) The Hague Peace Conferences of 1899 and 1907

At the initiation of the Czar of Russia in 1874, the Conference of Brussels, composed of representatives of all European powers, met and issued a code entitled "Project of International Declaration Concerning the Laws and Customs of War."⁵⁶ The code did not mention chemical weapons, but expressly prohibited the "employment of poison or

51. Declaration of St. Petersburg of 1868 to the Effect of Prohibiting the Use of Certain Projectiles in Wartime, *opened for signature* Nov. 29, 1868, *reprinted in* J. GOLDBLAT, *supra* note 16, at 120. The precise wording was "[The] contracting parties engage, mutually, to renounce, in case of war among themselves, the employment . . . of any projectile of less weight than four hundred grammes which is explosive, or is charged with fulminating or inflammable substances." *Id.*

52. THOMAS & THOMAS, *supra* note 38, at 44.

53. Declaration of St. Petersburg, *in* J. GOLDBLAT, *supra* note 16, at 20.

54. *Id.* Other signers included Austria-Hungary, Baden, Bavaria, Belgium, Denmark, France, Great Britain, Greece, Italy, The Netherlands, Sweden, Norway, Switzerland, and Wurttemberg. *Id.*

55. THOMAS & THOMAS, *supra* note 38, at 65-66. The St. Petersburg Declaration's prohibition against explosive and incendiary bullets of less than fourteen ounces was loosened by the experience of World War I. Ordinary bullets were ineffective in destroying German observation balloons and zeppelins which were used to observe troop movements and bomb Britain. A new incendiary bullet was developed which when striking an object, set it afire. The usefulness of this bullet led to the gradual irrelevance of the Declaration. *Id.*

56. THOMAS & THOMAS, *supra* note 38, at 45.

poisoned weapons."⁵⁷ The Brussels Declaration was not adopted by the governments represented, but it exercised a strong influence on the prevailing law of war. It formed the basis of the convention respecting the laws and customs of war adopted by the Hague Conferences of 1899 and 1907.⁵⁸

The Hague Gas Declaration of 1899 banned "the use of projectiles, the sole object of which is the diffusion of asphyxiating or deleterious gases."⁵⁹ Twenty-seven states ratified the provision.⁶⁰ Gas weapons were prohibited based on the belief that they were barbarous, treacherous, and cruel and would cause more civilian deaths than ordinary shells.⁶¹ The Declaration's narrow wording, which only prohibited gas diffusion by the use of projectiles, was later proven a serious weakness.⁶²

In 1907, another Hague Conference was held. It produced Convention IV, Respecting the Laws and Customs of War on Land.⁶³ Article 23 of the Annex to Convention IV prohibited the use of poison or poisoned weapons.⁶⁴ The prohibition was accepted by forty-eight countries including the United States and was considered a codification of existing customary international law.⁶⁵ Its current applicability to chemical weapons depends on the extent to which they are viewed as poisonous weapons. Poisonous weapons are generally defined as weapons containing a substance or agent which causes death or injury to a living organism introduced to it.⁶⁶ The substance must kill or injure with only a

57. Art. 13(a) of the Project, *cited in* THOMAS & THOMAS, *supra* note 38, at 45. *See also* SCOTT, DOCUMENTS RELATING TO THE PROGRAM OF THE FIRST HAGUE PEACE CONFERENCE 30 (1921). It was thought that a provision forbidding the use of poison and poisoned weapons would also cover substances which spread contagious diseases. *Id.*

58. THOMAS & THOMAS, *supra* note 38, at 46. Its primary contribution was the condemnation of the use of poison and poisonous weapons in war. *Id.*

59. Declaration (IV, 2) Concerning Asphyxiating Gases, First Hague Peace Conference, July 29, 1899, *reprinted in* J. GOLDBLAT, *supra* note 16, at 121. Declaration (IV, 3) banned the use of dum dum bullets which expand or flatten easily upon contact with a human body.

60. THOMAS & THOMAS, *supra* note 38, at 47. The United States refused to sign on the grounds that chemical weapons had not been tested and were not any crueler than existing weapons. It also disliked the Russian proposals to prohibit the use of new weapons, such as more powerful explosives, submarines, torpedo boats, and vessels with rams. Except for the United States and Great Britain, all states represented accepted the declaration. *Id.*

61. *Id.* at 41. The idea was that shells would be used only against enemy military and naval forces while asphyxiating bombs would be used against civilians in cities. *Id.*

62. *Id.* Germany would later legally diffuse poison gas by using another means than projectiles. *Id.*

63. Convention IV, Respecting the Laws and Customs of War on Land, Second Hague Conference, October 18, 1907, *reprinted in* J. GOLDBLAT, *supra* note 16, at 122.

64. *Id.* Article 23 provides that: "In addition to the prohibitions provided by special conventions, it is especially forbidden—(a) To employ poison or poisoned weapons; . . . (e) To employ arms, projectiles, or material calculated to cause unnecessary suffering . . ." *Id.* at 122-124.

65. THOMAS & THOMAS, *supra* note 38, at 49. In effect, the prohibition confirms a rule already obligatory on all states. *Id.*

66. *Id.*

small dosage.⁶⁷ Most chemical agents seem to fit this definition. However, most legal authorities believe the contracting parties would not intend to include gas under the more general prohibition of poison when they had already provided for its prohibition specifically in the Hague Gas Declaration.⁶⁸ Regardless of the ambiguity, the Hague Peace Conference's prohibition on poison remains a useful prohibition and has become part of customary international law.⁶⁹ Nevertheless, most legal authorities feel it has been replaced by the Geneva Protocol.⁷⁰

(3) World War I: Background to the Treaty of Versailles and the Geneva Protocol

During World War I, approximately 124,200 tons of poison gas were used in combat.⁷¹ Germany had signed the Hague Peace Conference Code of 1899, which prohibited the use of projectiles, the sole purpose of which is the diffusion of asphyxiating or deleterious gases.⁷² Nonetheless, Germany, along with Britain and France, had continued research into producing effective chemical weapons.⁷³ In August 1914, the French fired cartridges filled with ethyl bromoacetate, a mildly suffocating and nonlethal drug, into German lines with special rifles known as *fusils lance-cartouches éclairantes*. This was the first use of a practical chemical weapon.⁷⁴

The German use of lethal chemical weapons initially came through the firing of chlorine gas in clouds from cylinders placed in front-line trenches.⁷⁵ When released on April 22, 1915, at Ypres, the gas clouds moved slowly toward the French troops, who were unprepared and surprised. Men choked, turning black and green, and many died instantly.⁷⁶

67. *Id.*

68. *Id.*

69. Reizenstein, *Chemical and Biological Weapons—Recent Legal Developments May Prove to be a Turning Point in Arms Control*, 12 BROOKLYN J. INT'L L. 97 (1986).

70. THOMAS & THOMAS, *supra* note 38, at 57. The restrictive wording and uncertainty as to the scope of "poison" are the major reasons Convention IV is considered ineffective. *Id.*

71. E. SPIERS, *supra* note 32, at 13 (1986). Both sides used the lethal agents chlorine, phosgene, and mustard gas, along with many other less toxic agents. Once introduced on a significant scale (3,870 tons) in 1915, it was used more and more each year (16,335 tons in 1916, 38,635 tons in 1917, and 65,160 tons in 1918). *Id.*

72. Declaration (IV, 2) Concerning Asphyxiating Gases, *supra* note 59.

73. E. SPIERS, *supra* note 32, at 14. The British War Office authorized tests on non-toxic lachrymators (irritants or tear gas) in the spring of 1914. The French developed a hand grenade containing a mildly suffocating and nontoxic tear gas which was used by the French police dating from 1912.

74. *Id.* The Germans retaliated with tear gas artillery shells. In March 1915, the French used gas-filled hand grenades in the Argonne. S. HERSH, *CHEMICAL AND BIOLOGICAL WARFARE: AMERICA'S HIDDEN ARSENAL* 6 (1968).

75. E. SPIERS, *supra* note 32, at 15. German soldiers spent two months placing 6,000 cylinders along a six kilometer front. *Id.*

76. *Id.* at 15-17. More than 5,000 soldiers were killed and another 10,000 injured. The gas caused panic and mass confusion, resulting in a total retreat of the French army. S.

The clouds forced the French troops to withdraw over four miles, leaving Ypres unprotected. The Germans had not foreseen such a retreat and lacked the reserves to take the town.⁷⁷ The use of poison gas was quickly seen as an underestimated weapon. Seeing its effectiveness, the Allies immediately retaliated with their own chemical weapons, even while decrying the immorality of such weapons.⁷⁸

The use of poison gas in the war steadily increased in lethality. Chlorine replaced tear gas, phosgene replaced chlorine, and mustard gas followed phosgene.⁷⁹ Phosgene, six times as toxic as chlorine, was first used by the Germans but became the main offensive battle gas of the Allies.⁸⁰ Mustard gas, developed by the Germans, proved extremely effective. Its slight odor, persistence, and many-sided action defied defensive precautions.⁸¹ The gas's persistence enabled the Germans to render vast areas impassable. Attrition was the main purpose of cloud gas attacks—the demoralization and fatigue which came from the long wearing of gas masks and protective clothing.⁸²

In the end, World War I produced 1.3 million casualties, including over 100,000 deaths directly due to chemical weapons.⁸³ In the post-war years, gas and chemical weapons were denounced as immoral and more cruel than other weapons. More passion was expended over the morality of using chemical weapons than over their tactical effectiveness.⁸⁴ The

HERSH, *supra* note 74, at 5-6. However, this claim (made by the Germans) lacks substantiation according to one source, and may be much too high. *Id.* at 32.

77. *Id.* at 16.

78. *Id.* at 18. The Germans were technically within the bounds of the 1899 Hague Gas Declaration, since the gas was diffused through canisters lit to release the gas. The Declaration only prohibited gas diffusion through projectiles. This ease in evading the prohibition only proved the Declaration's weakness. The British in retaliation launched their first chlorine attack on September 25, 1915, at the battle of Loos. *Id.*

79. S. HERSH, *supra* note 74, at 6.

80. E. SPIERS, *supra* note 32, at 22. Phosgene was more useful than chlorine and was seen as an offensive gas. It could be inhaled in fatal doses without undue discomfort and was nearly odorless. It had a delayed action effect, whereby the victim would seem fine, yet die suddenly within three to twenty-four hours after the attack. *Id.*

81. *Id.* at 25. Mustard gas produced massive casualties. In the first three weeks of mustard gas shelling beginning in July 1917, the British incurred more casualties (14,216) and more deaths (500), than they had suffered from all previous gas shellings. *Id.*

82. *Id.* at 22. Gas attacks were inherently unpredictable since they depended on the speed and direction of the wind. Soldiers had to be prepared almost constantly for an attack. *Id.*

83. [1985] 10 U.N. Disarmament Y.B. 315. Gas accounted for 27.4% of America's total casualties of 258,338. E. SPIERS, *supra* note 32, at 25-26. However, even with improved tactics, gas was never a decisive battlefield weapon. Only in the first attack upon Ypres, when Germany gained ground that had been held for more than two and a half years, was there a gain which could be directly attributed to gas. Gas was considered valuable for causing heavy casualties and for undermining morale by forcing soldiers to wear bulky protective clothes for long periods.

84. E. SPIERS, *supra* note 32, at 30. The morality of chemical weapons seems boosted by the fact that gas weapons generally cause less suffering than wounds from other weapons. Lethal gases cause a less painful death than do bullets, bayonets or cannonballs. *Id.*

Allied governments contributed to this perception by their vehement denunciations of the German gas attack of 1915 and their subsequent secrecy about their own operations.⁸⁵ Even though gas weapons had proved very useful to the Allies, the dominant feeling of the European powers after World War I was that such weapons should be outlawed.⁸⁶

(4) Treaty of Versailles

In January 1919, the successful Allied nations of the United States, Great Britain, France, and Italy gathered in Paris to write a peace treaty with Germany and its allies.⁸⁷ The Versailles Treaty was signed on June 28, 1919, between the Allies and Germany.⁸⁸ Treaties subsequently signed with the other defeated nations had nearly identical language.⁸⁹

Article 171 concerning chemical weapons was placed in the chapter dealing with disarming Germany and limiting its future armaments.⁹⁰ The pertinent phrase was "Production or use of asphyxiating, poisonous or similar gases, any liquid, any material and any similar device capable of use in war are forbidden."⁹¹ The provision's location implied that it applied only to Germany.⁹² The British were apprehensive of Germany's chemical manufacturing capacity and the difficulty in ensuring chemical

85. *Id.* During World War I and for years afterwards, news of the war was censored. Information released was designed to develop unquestioning support for the Allies and build distrust and hatred of the Germans. A.J.P. TAYLOR, *THE FIRST WORLD WAR* 56-57 (1963).

86. *Id.* at 30-31. This belief seems shortsighted, considering that gas caused relatively less suffering than wounds from other weapons. Gas sufferers appeared to recover faster than conventional casualties: In 1926, only 638 men were receiving pensions for gassings while in 1920, 65,000 were still in hospitals recovering from shell shock. The comparatively lower mortality rate of gas compared to other weapons is shown by the official statistics. In analyzing the war casualties of Britain, France, the United States and Germany, Prentiss found only 2 to 4.5 percent of gas casualties died compared to 24 to 36.5 percent deaths from conventional arms. A. PRENTISS, *CHEMICALS IN WAR* 670-71 (1937), *cited in* E. SPIERS, *supra* note 32, at 31.

87. THOMAS & THOMAS, *supra* note 38, at 58. The war had been speedily concluded after the entry of the United States in April 1917. A.J.P. TAYLOR, *THE FIRST WORLD WAR* 169-71, 214-51 (1963). Germany's allies were Austria, Bulgaria, Hungary, and Turkey. *Id.* at 18-19.

88. *Id.* The treaty with Germany was considered the definitive treaty ending the war. The Versailles Treaty has become synonymous with the group of treaties which concluded the war. A.J.P. TAYLOR, *THE FIRST WORLD WAR* 271 (1963).

89. THOMAS & THOMAS, *supra* note 38, at 58. These treaties were known as the "Treaties of the Paris Suburbs." Austria signed in September 1919, Bulgaria in November 1919, Hungary in June 1920, and Turkey in 1920. Turkey never ratified the treaty, and it was never effective. *Id.*

90. *Id.* at 59. The chapter was seen as an ingenious method of limiting Germany's power for aggression. *Id.*

91. *Id.* at 59. The prohibition was considered along with a prohibition on the importation of arms, munitions and war material to prevent Germany's rearming by import or by internal production. *Id.*

92. *Id.* at 19. At the time, the British General Staff wanted to preserve the tactical option of gas warfare, since Britain had benefited from the use of gas during the war. In addition, Britain wanted to be able to use gas in minor colonial campaigns against unprotected tribesmen. Records of the conference show the phrase was inserted in an attempt to force the Germans to reveal their secret process for manufacturing chemical weapons. *Id.* at 6.

weapons were not produced.⁹³ The treaty was approved with this phrase applying to chemical weapons but by its terms it only applies to Germany.⁹⁴

The final English version is a general prohibition on the use of all gas while the French version prohibits only gases of a specific type.⁹⁵ Each subsequent treaty had similar language prohibiting the use of chemical weapons by the defeated country in question.⁹⁶

The Paris Peace Treaties were signed by twenty-six of the Allied nations, with only China refusing to sign.⁹⁷ Each treaty, except for the one with Turkey, was ratified by the defeated country. Among the Allied signatories, only the United States refused to ratify, primarily due to domestic opposition to the idea of the League of Nations.⁹⁸

The Versailles Treaty was an important step in the development of an international ban on chemical weapons. Nevertheless, it and the other treaties were criticized and broken so often before World War II that they were not a relevant part of conventional international law by 1936.⁹⁹ Germany breached all of the Treaty's military clauses by amassing forbidden weapons and reinstating its army.¹⁰⁰ The Allies did nothing, although each was fully aware of the breaches. By remaining silent, they implicitly accepted the idea that the treaty was dead.¹⁰¹

93. E. SPIERS, *supra* note 32, at 25. Britain's request to have Germany transfer its chemical weapons manufacturing processes to the Allies was opposed by the United States on economic grounds. *Id.*

94. *Id.* at 34-35. The final English version of Article 171 included the following: "The use of asphyxiating, poisonous or other gases and all analogous liquids, materials or devices being prohibited, their manufacture and importation are strictly forbidden in Germany. The same applies to materials specially intended for the manufacture, storage and use of said products or devices." THOMAS & THOMAS, *supra* note 38, at 59.

95. THOMAS & THOMAS, *supra* note 38, at 59-60. The final English version had the words "asphyxiating, poisonous or other gases" while the French version prohibited "gaz asphyxiants, toxiques ou similaires." The French version seems limited to a special type of gas. Since both languages are authentic, the correct interpretation is open to question. *Id.*

96. *Id.* at 60-61. In reality, Article 171 lacked any real measure of disarmament. The chemical combine IG had fueled the German war effort and had huge productive capacity. Unless Germany's chemical industry, especially IG, was controlled, Germany was not effectively disarmed and the Allies could not proceed with mutual disarmament with any confidence. *Id.*

97. *Id.* at 61-62.

98. *Id.* The idea of a League of Nations was opposed by many conservative Democrats and a majority of Republicans. The United States eventually had to negotiate separate peace treaties with Germany, Austria, and Hungary, which were signed in August, 1921. *Id.* at 61.

99. *Id.* The treaty in general lacked enforcement procedures and allowed Germany to retain its factories. The treaty's harsh reparations requirement and the feeling Germany had been tricked into surrendering created resentment and the desire for revenge among Germans. W. MANCHESTER, *THE LAST LION* 58, 60 (1988); A.J.P. TAYLOR, *THE FIRST WORLD WAR* 263-70, 285 (1963).

100. THOMAS & THOMAS, *supra* note 38, at 62. Under the treaty, Germany was forbidden to have an army greater than an insignificant number or to rebuild its military. Existing arms were destroyed under Allied supervision. W. MANCHESTER, *THE LAST LION* 58, 60 (1988).

101. THOMAS & THOMAS, *supra* note 38, at 62. Under the generally accepted laws of

(5) The Washington Treaty

After the Versailles Treaty was enacted, but not signed by the United States, American public opinion, led by General John J. Pershing, began to push for a ban on armaments, including chemical weapons.¹⁰² In 1921 in Washington, the Harding Administration held the first session of a conference on the limitation of chemical armaments.¹⁰³ On January 6, 1922, Elihu Root, the American chief delegate, proposed that the conference recognize the condemnation of gas warfare by "the general opinion of the civilized world" and that its prohibition be "universally accepted as part of international law."¹⁰⁴

In February 1922, the conference finally produced the Washington Treaty. Article V incorporated Root's proposed wording, whereby the use of chemical weapons was prohibited.¹⁰⁵

The Treaty's disarmament clause was proclaimed a great success and was approved by the U. S. Senate in March 1922.¹⁰⁶ However, the treaty failed and never came into force.¹⁰⁷ As a result, the major powers retained their chemical warfare capabilities and the right to use them.¹⁰⁸

(6) The Geneva Protocol

After the failure of the Washington Treaty, the League of Nations

treaties, "most governments will recognize the failure of one party to invoke a treaty or the acquiescence of that party to a violation by another party, will in time, justify the violating party in regarding the treaty as lapsed." MCNAIR, *LAW OF TREATIES* (1961), *quoted in* THOMAS & THOMAS, *supra* note 38, at 62.

102. THOMAS & THOMAS, *supra* note 38, at 62. Most Americans felt the war had been caused by the oversupply of weapons and that disarmament was the way to peace. The goal of the United States and Great Britain at this time was to reduce the burden of national armaments through international agreements for general disarmament. *Id.*

103. E. SPIERS, *supra* note 32, at 40-41. Countries invited were Britain, France, Italy, Japan, China, Holland, Belgium, and Portugal. THOMAS & THOMAS, *supra* note 38, at 63. Harding sought another international prohibition of poison gas to reaffirm the Hague Declaration and to produce a statement the United States would ratify.

104. E. SPIERS, *supra* note 32, at 42. There was much disagreement about the actual danger of chemical weapons and whether they were really more inhumane than conventional arms. The British delegation believed research and production of poison gas could not be curtailed by an international ruling. They felt no nation should jeopardize its safety by depending on other nations' compliance with such a prohibition. *Id.*

105. THOMAS & THOMAS, *supra* note 38, at 65. The treaty stated "[T]o the end that this prohibition shall be universally accepted as a part of international law, binding alike on the conscience and practice of nations, the signatory powers declare their assent to such prohibition, agree to be bound thereby, as between themselves and invite all other civilized nations to adhere thereto." 4 Naval War College, *International Law Documents 1921*, "Conference on the Limitations of Armaments" 24 (1923), *quoted in* THOMAS & THOMAS, *supra* note 38, at 65.

106. E. SPIERS, *supra* note 32, at 43. This was the first American endorsement of an international ruling on chemical weapons. *Id.*

107. THOMAS & THOMAS, *supra* note 38, at 66-67. France refused to ratify it because of the limits on submarine development and use. Article IV stated the treaty would go into effect only when all signatory nations deposited their ratifications. Great Britain, Italy, Japan and the United States were the only ones to ratify. *Id.*

108. *Id.*

moved to arrange another convention on the subject of chemical warfare.¹⁰⁹ In 1924, at the first meeting of the Temporary Draft Commission, the American delegation submitted a draft convention which reproduced the wording of the failed Washington Treaty. The convention added language prohibiting the export of asphyxiating, poisonous, or other gases which were intended for military uses.¹¹⁰

Many states objected to the proposed convention.¹¹¹ Nevertheless, under the emotion of vivid descriptions of the horrors suffered by soldiers in "the Great War," the conference approved a protocol on June 17, 1925.¹¹² The signatories agreed to a prohibition of the use in war of asphyxiating, poisonous or other gases and agreed to extend the prohibition to biological weapons.¹¹³ However, the Protocol was an impotent prohibition because it contained no verification or enforcement provisions.¹¹⁴

Forty-one powers signed the Protocol, including the United States, France, Germany, Poland, Italy, Japan, and Britain.¹¹⁵ Most of the existing powers eventually ratified the treaty, but the United States, which had led the fight for the Protocol's chemical weapons prohibition, did not.¹¹⁶ Lt. Colonel Amos A. Fries, head of the U. S. Chemical Warfare Service, marshalled the opposition of various interest groups and deluged the Senate with information proving gas was the "least cruel of weapons in its effect on combatants." The lobby was so overwhelming that the

109. *Id.* The League of Nations had been formed in February, 1920, as part of the Versailles Treaty to provide a world body for preventing future wars. It had no enforcement procedures and was dissolved at the start of World War II in 1938. The United States had refused to ratify the Versailles Treaty because of concern the League would restrict United States sovereignty. *Id.*

110. League of Nations, *Report of the Temporary Mixed Committee for the Reduction of Armaments* (1924), cited in E. SPIERS, *supra* note 32, at 44. A report prepared by scientists from eight nations on chemical weapons stated that possession of gas weapons would confer a great advantage on a hostile power and that chemical weapons were easily hidden. THOMAS & THOMAS, *supra* note 38, at 63.

111. THOMAS & THOMAS, *supra* note 38, at 72. Nonproducing nations feared producing nations could continue production. Others felt a ban would not be effective without some method of verification. *Id.*

112. Geneva Protocol, *supra* note 2. "Whereas the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials or devices, has been justly condemned by the general opinion of the civilized world; and Whereas the prohibition of such use has been declared in Treaties to which the majority of Powers of the World are Parties; and To the end that this prohibition shall be universally accepted as a part of International Law, binding alike the conscience and the practice of nations; DECLARE: That the High Contracting Parties, so far as they are not already Parties to Treaties prohibiting such use, accept this prohibition, agree to extend this prohibition to the use of bacteriological methods of warfare and agree to be bound as between themselves according to the terms of this declaration." *Id.*

113. *Id.*

114. E. SPIERS, *supra* note 32, at 51.

115. Geneva Protocol, *supra* note 2, at 575-82; E. SPIERS, *supra* note 32, at 46.

116. E. SPIERS, *supra* note 32, at 46. A clear lead was expected from the United States since the Senate had endorsed the Washington Treaty. The Protocol was first ratified by France on May 9, 1926. In 1928, Italy, Russia, Austria and Belgium ratified, followed by Germany in 1929. Great Britain ratified in 1930. *Id.*

Protocol was withdrawn from Senate consideration.¹¹⁷ It was finally re-submitted by President Nixon in August 1970 and ratified under President Ford in 1975.¹¹⁸

As of January 12, 1989, the Geneva Protocol has been signed by 141 nations, with North and South Korea as the latest signatories.¹¹⁹ It has been ratified by 131 nations.¹²⁰ The Protocol remains a broad proscription against the use of chemical and biological weapons in war and has been generally respected for nearly seventy years. The treaty is currently the only one in effect dealing with chemical weapons.¹²¹ However, the Protocol does not ban the production or stockpiling of chemical weapons and contains no mechanism to enforce its prohibition.¹²² Three main defects combine to limit its effectiveness.

(a) *Lack of sanctions*

The Protocol lists no procedure for verifying charges of violations of its prohibition against the use of chemical weapons. It simply says the parties "agree to be bound as between themselves according to the terms of this declaration."¹²³ The Protocol also lacks any arrangement for punishing violators or for enforcing the ban by export controls or international sanctions.

(b) *Restrictions*

According to the words of the Protocol, its prohibitions apply only

117. *Id.* Various interest groups, such as the American Legion, Veterans of Foreign Wars, Association of Medical Surgeons, and the American Chemical Society, opposed the Protocol. The Protocol remained with the Senate committee until 1947 when President Truman withdrew the executive request for Senate approval. *Id.*

118. UNITED STATES ARMS CONTROL AND DISARMAMENT AGENCY, ARMS CONTROL AND DISARMAMENT AGREEMENTS 11-13 (1984) [hereinafter ACDA]. The U.S. position is that the Protocol does not apply to the use in war of riot-control agents and herbicides. In order to obtain Senate consent to ratification of the Protocol, a new approach was used which retained the U.S. position but restricted the use of these chemicals as a matter of policy. The Ford Administration therefore renounced, as a matter of national policy: first use of herbicides in war, except for control of vegetation within and around the defensive perimeters of U.S. military bases; and first use of riot-control agents in war, with certain defensive exceptions. The delay in ratifying the Protocol put the United States in an awkward position in later United Nations negotiations on banning the production of chemical weapons. *Id.*

119. N.Y. Times, Jan. 12, 1989, at A1, col. 6 (National ed.); N.Y. Times, Jan. 10, 1989, at A6, col. 1 (National ed.).

120. Hous. Chron., Jan. 8, 1989, at 26A, col. 1. Ratifying nations include Iran, Iraq, Vietnam, and the Holy See. Iraq ratified on September 8, 1931 as Siam and Iran ratified on July 4, 1929 as Persia. ACDA, *supra* note 118, at 16.

121. Hous. Chron., Jan. 8, 1989, at 26A, col. 1.

122. Geneva Protocol, *supra* note 2, at 575.

123. *Id.* At the time of the Protocol's negotiation, none of the leading powers could agree on a means of enforcing the ban. E. SPIERS, *supra* note 32, at 61.

in cases of war and only between parties who have signed the Protocol.¹²⁴ In addition, the Protocol states that it will come into force for each signatory "as from the date of its ratification, and, from that moment, each Power will be bound as regards other powers which have already deposited their ratifications."¹²⁵ This wording implies signing parties are only bound as to parties who have already ratified the treaty and not as to any who may ratify it after the party in question has done so.¹²⁶ This limitation is inconsistent with another clause which states that the Protocol is to become universally accepted as customary international law.¹²⁷ The prohibition, if binding on all states as customary international law, would not become nonbinding on nonsignatory states.¹²⁸ This poses the question whether the Protocol is only in effect for its signatories or for all nations.

(c) *Reservations*

The Geneva Protocol is, in reality, a prohibition only on the first use of chemical weapons. All significant military powers have ratified it subject to a "no first use" reservation and retain the right to use chemical weapons against countries who first use the weapons against them.¹²⁹ Each reservation emphasizes the contractual nature of the Protocol.¹³⁰ Many reservations are versions of the French double reservation: (1) France agreed to be bound only as to states which have ratified the Protocol or who may later accede to it, and (2) the Protocol ceases to bind France in regard to any enemy state whose military or whose allies fail to follow the Protocol.¹³¹ This reservation, in effect, suspends the Protocol

124. Geneva Protocol, *supra* note 2, at 575. "DECLARE: That the High contracting Parties so far as not already Parties to Treaties prohibiting such use, accept this prohibition . . . and agree to be bound as between themselves according to the terms of this declaration." *Id.*

125. *Id.*

126. THOMAS & THOMAS, *supra* note 38 at 78-79. Under this wording, a signatory could seemingly wage chemical warfare against any nonratifying nation with impunity, and non-signatory nations could also use gas against signatory nations. *Id.*

127. Geneva Protocol, *supra* note 2, at 575. "To the end that this prohibition shall be universally accepted as a part of International Law, binding alike the conscience and the practice of nations . . ." *Id.*

128. THOMAS & THOMAS, *supra* note 38, at 79.

129. *Id.* The significant military powers include the Soviet Union, the United States, Great Britain, and France.

130. *Id.* at 78-79. The reservations are spelled out in each country's ratification document which is signed as a separate contract between that nation and the group of all other signatories. Reservations may modify the terms significantly and create a different operating rule for one nation compared to other nations. *Id.*

131. *Id.* at 79. The first reservation, limiting the binding force of the agreement to ratifying nations, is inconsistent with another clause in the ratified Protocol which seeks to establish the prohibition as universally accepted customary law. "Whereas the prohibition of such use has been declared in Treaties to which the majority of Powers of the world are parties; and [t]o the end that this prohibition shall be universally accepted as a part of International Law. . . ." Geneva Protocol, *supra* note 2.

whenever an enemy resorts to chemical or biological weapons, whether used against a signatory or a nonsignatory.¹³² Another question raised by the reservation concerns what occurs after a war involving chemical or biological weapons use is concluded. No reinstatement provisions are included.¹³³

Signing a treaty subject to reservation is tantamount to a modification of the treaty.¹³⁴ The effect of such reservations has been the subject of many international studies, since the practice of including reservations with a treaty signature is increasing. Most authorities agree with the opinion of Hackworth: reservations in a ratification must be brought to the attention of the other contracting powers and receive their approval to be binding.¹³⁵ This notification is required, because a reservation is a modification of the original accord or contract.¹³⁶

There has never been any clarification of the status of the reservations.¹³⁷ One could argue that by not objecting to reservations expressed more than thirty years ago, the signatory countries have implicitly given consent. The Protocol is probably binding among ratifying countries with no reservations and among nations with similar reservations.¹³⁸ In summary, the Protocol is unclear as to its binding power due to the many reservations and the number of years between the first signatory's ratification and those made more recently.¹³⁹

The Geneva Protocol remains a legally binding prohibition against the use of chemical and biological weapons in war.¹⁴⁰ However, its lack

132. THOMAS & THOMAS, *supra* note 38, at 79. For example: If a signatory state B used chemical or biological weapons against nonsignatory state A, which is an ally of signatory state C, then under the reservation, state C would no longer be bound by the Protocol. The Russian reservation is broader than that of France. The Soviet Union is bound only as to other ratifying or acceding states. The Protocol will cease to be binding with regard to all enemy states whose armed forces or whose allies in fact do not respect the restrictions of the Protocol. Any nation which has not ratified the Protocol can be equated with a nation which in fact does not respect the restrictions. This wording would allow the Soviet Union to feel free to resort to chemical or biological weapons against any enemy signatory of the Protocol which was allied with a non-signatory, even if neither had used chemical weapons against the Soviet Union. *Id.*

133. *Id.* Usually when a treaty ceases to be binding on two signatories, it becomes a dead issue as to those parties, unless a provision is made within the treaty for its reinstatement. *Id.*

134. 5 HACKWORTH, *DIGEST OF INTERNATIONAL LAW* § 482 (1943), *cited in* THOMAS & THOMAS, *supra* note 38, at 80.

135. *Id.*

136. *Id.* Signatories who have already deposited their ratifications before a reservation-controlled ratification is adopted, would seem to have to show acceptance of this reservation by some positive act. Subsequent signatories would be held to have accepted previous ratifications with reservations if no objection was made. *Id.*

137. *Id.*

138. THOMAS & THOMAS, *supra* note 38, at 80-81.

139. *Id.* at 80.

140. E. SPIERS, *supra* note 32, at 175; Almond, *Control over Chemical Weapons—Personal Perspectives on the Emerging United States Position*, 13 U. TOL. L. REV. 1205 (1982). In spite of many attempts to negotiate or pass an international convention, only the Geneva Protocol was signed and ratified by a great enough number of states to make it an expression of a

of sanctions or enforcement mechanism, and confusing ratification arrangement make its binding authority and enforceability uncertain. It seems to rely on moral generalities instead of specifics and is unclear on the extent of prohibition.¹⁴¹ Despite its weaknesses, the Protocol has served to prevent the adoption of chemical weapons as a common and acceptable weapon of war.¹⁴² Without it, chemical weapons would undoubtedly have been made an important part of each country's defensive and offensive arsenal.

B. Pre-World War II Developments in the Restriction of Chemical Weapons

(1) World Conferences

In the years immediately after the Geneva Protocol was signed, support for disarmament grew in Europe.¹⁴³ The British Labor government, eager to push for further international disarmament agreements, pressed the League of Nations to convene a World Disarmament Conference. A prohibition against chemical weapons production was to be one of its objectives.¹⁴⁴

During the plenary sessions, problems in devising a prohibition of gas weapons use caused prospects for a ban to dim. Each country agreed in general that chemical weapons were a serious threat and that a ban should cover wartime use of all types of gases. However, the sticking point was in agreeing on how such a ban would be realized, monitored, and enforced.¹⁴⁵

multilateral rule of international law concerning chemical weapons. More than 140 nations unanimously re-affirmed the Geneva Protocol at an international conference held in Paris from January 7-12, 1989. See *infra* text accompanying notes 321-328. The ratifying nations committed themselves to uphold the Protocol's ban on the use of chemical weapons and to work to enlist new signatories. Of the 131 currently ratifying nations, forty have ratified with reservations. ACDA, *supra* note 118, at 16.

141. Geneva Protocol, *supra* note 2, at 575. It is unclear whether later ratifying states are bound to previous ratifying states. In addition, it supplies no specific guidelines on what constitutes a violation and provides no method of enforcing the prohibition. *Id.*

142. N.Y. Times, Jan. 19, 1989, at A5, col. 3 (National ed.). The recurring violations (see *infra* note 204) and Iraq's recent success in using chemical weapons against Iran (see *supra* text accompanying notes 9-21) have put this statement in question.

143. E. SPIERS, *supra* note 32, at 49. The push for disarmament was fueled by memories of World War I and the assumption that gas would be used in any future conflict. The speculation of Lord Halsbury, former chief of the Explosives Department of Great Britain, was widely quoted as a reason to disarm. He asserted that a single gas bomb dropped on Piccadilly Circus would kill everybody in an area from Regent's Park to the Thames. *Id.*

144. J. GOLDBLAT, *supra* note 16, at 12. The general international feeling was that competition in armaments had caused World War I. Reduction and limitation of armaments and the total prohibition of chemical weapons were considered essential. Added to this was the considerable importance the League itself attached to the disarmament process. It was organized to oversee disarmament after World War I and had disarmament as a general goal. E. SPIERS, *supra* note 32, at 56.

145. E. SPIERS, *supra* note 32, at 50. Arguments arose over whether such a ban should be

Each country was being asked to open national chemical industries to international inspection by the League and to cease its research into offensive and defensive chemical warfare. A country would have to have complete confidence in the process of monitoring and policing an international prohibition agreement before agreeing to such steps.¹⁴⁶

In 1932, relations between France and Germany were deteriorating.¹⁴⁷ France refused to treat Germany as an equal in such an arrangement and insisted on an effective system of sanctions for violations.¹⁴⁸ The U.S. and Great Britain could not agree to collective reprisals, which would be the only way to ensure an effective, preplanned sanction procedure.¹⁴⁹

In March 1933, Britain presented a draft disarmament convention to the World Disarmament Conference, which prohibited the preparation and use of any chemical, incendiary or bacteriological weapon in any form.¹⁵⁰ The proposal conspicuously lacked any arrangement for a collective security agreement to enforce the ban.¹⁵¹

The draft treaty, which was a reaffirmation of the Geneva Protocol with no enforcement procedures, was never accepted.¹⁵² When Germany withdrew from the League in 1933, confidence in such a prohibition dissolved.¹⁵³ The Disarmament Conference had its last meeting in 1934.

relative and allow states the right to retaliate with gas weapons if attacked with gas weapons. There were differences over whether a ban should cover peacetime preparation for chemical, biological and incendiary warfare and whether manufacture and storage should also be prohibited. There was even greater disagreement on how to enforce any prohibition. *Id.*

146. *Id.* Complete compliance by all nations was believed to be impossible to verify. Therefore, no nation could safely stop its own defensive research and production. *Id.*

147. *Id.* Hitler's National Socialist Party was growing in strength and was advocating abrogation of the Versailles Treaty. Germany was also threatening to occupy the demilitarized Rhineland which had been set up as part of France after World War I. W. MANCHESTER, *THE LAST LION* 62-63, 136-37, 147, 170-78 (1988).

148. E. SPIERS, *supra* note 32, at 51. France insisted that the agreement be supervised and contain an enforcement provision to prevent Germany from using chemical weapons again. *Id.*

149. *Id.* The United States Secretary of State, Henry L. Stimson, precluded any commitment by the United States to collective action. "Although public opinion in the United States would be against the violation, I do not think it possible for this government to pledge itself to affirmative action." Letter from H.L. Stimson to H. R. Wilson (Nov. 12, 1932), *quoted in* E. SPIERS, *supra* note 32, at 52.

150. THOMAS & THOMAS, *supra* note 38, at 99-100. The prohibition was stated as part of international law. Each country was to inform a Permanent Disarmament Commission of its chemical stocks held for medical or protective research. Charges of violations of the ban were to be investigated by the Commission. *Id.*

151. *Id.* Even though the violation reports were to be investigated, no sanctions for resort to chemical weapons were included in the draft. France and Yugoslavia emphasized the necessity for sanctions if such a treaty was to be successful. No country wanted to sacrifice its national sovereignty to arrange such an enforcement provision. *Id.*

152. E. SPIERS, *supra* note 32, at 52.

153. *Id.* With Germany, the main country with expertise in chemical warfare, no longer reachable by a prohibition, the remaining nations felt they would have to retain chemical weapons capabilities to protect themselves. *Id.*

By that year, the political climate had eliminated any feeling of unity among states which would be vital for a disarmament convention.¹⁵⁴ The World Disarmament sessions continued until 1937, but the efforts were ineffective in prohibiting chemical weapons.¹⁵⁵

(2) Violations of the Geneva Protocol

Although the Geneva Protocol had been signed by both Ethiopia and Italy, Italy used gas weapons against Ethiopia in the Italo-Ethiopian Wars of 1935-1936.¹⁵⁶ After Emperor Haile Selassie brought his case to the League, the League's Committee of Thirteen gathered graphic photos of mustard gas wounds and of aerial gas attacks and proof of shipments of gas and bombs through the Suez Canal for use in the war.¹⁵⁷ Italy finally implicitly admitted its use of gas weapons by asserting the right to avenge Ethiopian atrocities.¹⁵⁸

The British and French governments failed to support Ethiopia, and the League simply reminded the warring countries of "the importance of their commitments under the Geneva Protocol."¹⁵⁹ The Protocol was thus proven to be useless in preventing the use of chemical weapons.

Italy's use of gas against a fellow Protocol signer and the resulting failure of the League to act effectively gave rise to the fear that a country could feel free to use chemical weapons in Europe as well as in Africa.¹⁶⁰ During this period, the Soviet Union, Japan, Germany, and Italy were known to have chemical weapons and were considered likely to use them.¹⁶¹

By the beginning of World War II, deterrence in chemical warfare

154. THOMAS & THOMAS, *supra* note 38, at 101.

155. *Full Committee Briefing on the Recently Proposed Chemical Arms Treaty: Hearing Before the House of Representatives Committee on Armed Services*, 98th Cong., 2d. Sess. 7 (1984) (statement of David F. Emery, Deputy Director, U.S. Arms Control and Disarmament Agency) [hereinafter *1984 Hearings*].

156. This was the first proven violation of the Protocol. E. SPIERS, *supra* note 32, at 53; S. MURPHY, A. HAY, & S. ROSE, *NO FIRE, NO THUNDER* 10 (1984) [hereinafter MURPHY, HAY, & ROSE].

157. E. SPIERS, *supra* note 32, at 53.

158. *Id.* Italy also charged that Great Britain and France had used chemical weapons in their colonial conflicts. No proof was ever presented to verify this charge. *Id.*

159. *Id.* Both France and Great Britain had tried to appease Mussolini during the conflict. In addition, Britain felt unable to intervene without the full support of France in the Mediterranean. French public opinion was divided and no support was available. The League of Nations did impose mild economic sanctions. *Id.*

160. *Id.* at 53. Stanley Baldwin, the Prime Minister of Great Britain, asked in a speech to Parliament, "[I]f a great European nation, in spite of having given its signature to the Geneva Protocol against the use of gases, employs them in Africa, what guarantee have we that they may not be used in Europe?", *The Times* (London), Apr. 20, 1936, at 8, *quoted in* E. SPIERS, *supra* note 32, at 53.

161. *Id.* at 54-55. Germany was known to be testing various gases with the Russians and building a large gas plant. Italy had an industry capable of producing stocks of mustard, lewisite, and phosgene. The Japanese had a wide range of chemical weapons capabilities. *Id.*

had replaced the idea of chemical weapons disarmament as a policy for the major powers.¹⁶² Disarmament had failed for many reasons, primarily due to the inability of the powers to draft a convention which could be monitored, verified, and enforced.¹⁶³ Lacking a disarmament agreement with such an enforcement mechanism, the world was left with the Geneva Protocol, with its moral inhibiting force, as the only international prohibition against the use of chemical weapons.¹⁶⁴

C. World War II

During World War II, new and more toxic gases were developed by both the Allied and Axis powers.¹⁶⁵ Nevertheless, the fear of retaliation by chemical weapons seemed to inhibit their use. Both sides knew or believed that the other had the capacity to use chemical weapons and were deterred from being the first to use them.¹⁶⁶

All the principal belligerents, apart from the United States and Japan, who entered the war in 1941, had signed and ratified the Geneva Protocol.¹⁶⁷ Each claimed to be honor bound to forego chemical weapons.¹⁶⁸ However, the legal constraints claimed to be felt were really only a cover for more pragmatic concerns. None of the powers possessed

162. *Id.* at 59. The British cabinet approved the production of forty tons of mustard gas per week in October, 1938 to offset the German chemical weapon threat. France had prepared four and one half million grenades of phosgene and mustard gas for land attacks. The United States had also maintained its chemical weapons capabilities. *Id.*

163. *Id.* at 51. The British draft treaty of 1933 proved the inability of the Allies to agree on an enforcement mechanism. *Id.* at 51-52.

164. *Id.* at 61. The Geneva Protocol continues as the only prohibition relating to chemical weapons as of 1989. *Id.*

165. 1984 Hearings, *supra* note 155, at 7. Examples include an anthrax bomb, which held a deadly virus, arsenic trichloride, and mustard lewisite. The countries also developed new methods of delivery such as aircraft spraying, bombs, artillery shells and mortars, chemical tanks and smoke candles. *Id.*

166. *Id.* Germany was believed to be able to conduct offensive gas warfare on a large scale while Japan was also thought to have advanced chemical weapons capability. The Germans, in contrast, felt they lagged behind the Allies in chemical weapons ability. During the first fifteen years before the mid-1930s, each side assumed the other had greatly improved its capability to wage gas warfare. In the early stages of the war, neither Germany nor Japan needed to use gas since conventional invasions were successful. When France fell in 1940, Great Britain faced a threat of invasion and seriously considered gas as a defensive option. During the next two years, Britain built its stockpile of both mustard gases and phosgene. The Royal Air Force eventually was prepared for a retaliatory strike with mustard gas within nine hours. By the spring of 1943, Britain had a stockpile of 18,283 tons of poison gas. For all the Allies and Axis powers, the main constraint on the use of gas was the fear of retaliation. *Id.*

167. Geneva Protocol, *supra* note 2.

168. E. SPIERS, *supra* note 32 at 62. At the beginning of the war, Britain and France issued a joint communique through the Swiss government that they would abide by the terms of the Geneva Protocol. The United States also stated its intention of following its ban. On June 8, 1943, President Roosevelt stated: "Use of such [chemical] weapons has been outlawed by the general opinion of civilized mankind. This country has not used them, and I hope we never will be compelled to use them. I state categorically that we shall under no circumstances resort to the use of such weapons unless they are first used by our enemies." 1984 Hearings, *supra* note 155, at 7.

enough stocks of chemical weapons to launch a decisive attack, and none had fully incorporated such weapons into their military training.¹⁶⁹ More importantly, each believed, erroneously, that the other nations were capable of massive retaliation.¹⁷⁰

D. Post World War II Developments

(1) United Nations Negotiations

After World War II, efforts to control chemical weapons were usually combined with negotiations on nuclear and conventional weapons. In 1947, the Commission for Conventional Armaments was created by the United Nations' Security Council.¹⁷¹ The Commission, in setting out its terms of reference, stated that it considered lethal chemical and biological weapons as weapons of mass destruction with the capability of causing casualties on the same scale as nuclear weapons.¹⁷²

In the 1950s, the United Nations' disarmament efforts and various resolutions implicitly took chemical and biological weapons into account when dealing with reduction of armaments.¹⁷³ In 1953, the Disarmament Commission was established to succeed the Commission for Conventional Armaments. The new commission arranged a five-power subcommittee to negotiate a comprehensive disarmament plan. From

169. E. SPIERS, *supra* note 32, at 62. Both Great Britain and France had adequate preparations for defensive warfare, but were not producing enough gas for large scale offensive use. Great Britain was only producing 120 tons per week. France's chemical weapons plants for offensive gases (adamsite and lewisite) were incomplete in 1940. Germany had 10,000 tons of blister gases but most were not in filled canisters for use. The new nerve gases tabun and sarin would not be in production until 1942. *Id.*

170. *Id.* at 78-79. Germany's fear of retaliation became increasingly dominant as the Allies gained air superiority in 1943. The defensive use of gas could theoretically have been used to impede the Normandy landings. Large sectors of the coastline could have been drenched with mustard gas, forcing the invading forces to wear gas masks and protective clothing and to bring along decontamination equipment. Morale might have been seriously impaired. However, had Germany used chemical weapons, the Allies planned to launch two 400-plane retaliatory attacks within the following 48 hours, each carrying 100 percent toxic agent payloads. *Id.*

171. THOMAS & THOMAS, *supra* note 38, at 103. The United Nations was chartered in July, 1945 in San Francisco, as a world body to deal with inter-nation conflicts. In late 1945, the "Three Nation Agreement on Atomic Energy" (the United States, Great Britain, and the Soviet Union) advised the setting up of a commission under the United Nations charter to work for controlling atomic energy. Its secondary goal was to work to eliminate all other major sources of mass destruction. *Id.*

172. Lawler, *Progress Towards International Control of Chemical and Biological Weapons*, 13 U. TOL. L. REV. 1221 (1982). Due to Soviet vetoes, the commission was given jurisdiction only over conventional and nonlethal chemical weapons. Its 1948 report on the world situation was also vetoed by the Soviet Union and sent to the General Assembly without comment. *Id.*

173. *Id.* at 1222. Various resolutions dealing with reduction of armaments used such terms as "other" or "all" weapons of mass destruction. *Id.*

1954 to 1957, it included chemical and biological weapons in its consideration of various proposals for disarmament.¹⁷⁴

The McCloy-Zorin Joint Statement of agreed principles for disarmament negotiations, issued by the U.S. and the U.S.S.R. in 1961, formalized the idea of dealing with chemical and biological weapons as part of a general program of disarmament.¹⁷⁵ After receiving this statement, the General Assembly established the Eighteen-Nation Committee on Disarmament (ENCD) as a negotiating group to work on the problem of disarmament.¹⁷⁶ This group was expanded to become the Conference of the Committee on Disarmament (CCD) in 1969, and in 1979, it was renamed the Conference on Disarmament (CD).¹⁷⁷

The U.S. and the U.S.S.R. have been primary leaders in proposals to eliminate chemical weapons. In the 1962 session of the ENCD, both the U.S. and the U.S.S.R. offered proposals for general and complete disarmament including provisions for eliminating chemical weapons.¹⁷⁸

In 1968, Great Britain urged the United Nations to complete a treaty dealing with biological weapons as a supplement to the Geneva Protocol.¹⁷⁹ The Soviet Union opposed this idea, claiming the Geneva Protocol covered both chemical and biological weapons.¹⁸⁰ To resolve the dispute, a study of the two types of weapons was commissioned.¹⁸¹

174. *Id.* at 1223. In 1953, the Disarmament Commission was instructed to prepare a disarmament treaty. The treaty was to include the elimination of bacteriological, chemical and other weapons of mass destruction. For the next few years, negotiations centered on this goal. *Id.*

175. *Id.* One of the provisions to be included in such a program was: "The elimination of all stockpiles of nuclear, chemical, bacteriological and other weapons of mass destruction, and the cessation of the production of such weapons." *Id.* (quoting the *Joint Statement of Agreed Principles for Disarmament Negotiations* (September 20, 1961), circulated to the United Nations General Assembly, 16th Session).

176. *Id.* at 1223-24. The committee began meeting in March 1962 and has met intermittently since then. Various general and complete disarmament draft treaties have been discussed, each mentioning the need to eliminate stockpiles of chemical and biological weapons. However, no tangible progress has been made to date. *Id.*

177. *Id.* at 1225. The CD was charged with negotiating a convention which would prohibit the development, production, and stockpiling of biological and toxic weapons. *Id.*

178. *1984 Hearings, supra* note 155, at 7. The two treaties differed in their verification requirements and definition of chemical weapons. The Soviets were pushing for complete disarmament prior to verification as to existing stockpiles. *Id.*

179. E. SPIERS, *supra* note 32 at 176. Britain felt the Geneva Protocol was not sufficient to control biological weapons. Most other nations agreed. They felt an agreement banning biological weapons would be easier to pass than one dealing with chemical weapons. Britain also wanted a treaty with enforcement and verification provisions. *Id.*

180. Lawler, *supra* note 172, at 1225. The Soviets contended the Protocol covered all weapons existing in 1925 and those which had been developed since. However, it did not seem concerned with the Protocol's lack of verification procedures. *Id.*

181. *Id.* at 1225.

The report found both to be extremely dangerous to attacking and attacked countries alike.¹⁸² It defined chemical weapons as chemical substances, whether a gas, liquid, or solid, which might be employed because of their toxic effect on man, animal, or plant.¹⁸³

The United States, along with Great Britain and other Western states, then adopted the position that the biological weapons question should not be linked with the prohibition of chemical weapons.¹⁸⁴

President Richard M. Nixon ordered a review of the U.S. chemical and biological weapons stockpiles after coming into office.¹⁸⁵ On November 25, 1969, he reaffirmed that the U.S. would not be the first to use chemical agents and unilaterally renounced the use of any biological weapons.¹⁸⁶ Any further biological research would be confined to strictly defensive measures, and existing stocks of biological weapons would be destroyed.¹⁸⁷ On February 14, 1970, the ban was extended to cover toxins.¹⁸⁸

This unilateral action was generally welcomed. The United Kingdom, Canada, and Sweden then announced they had no biological weapons and would not produce them.¹⁸⁹ Nevertheless, the Soviet Union and its satellites continued to claim that a single treaty should cover both chemical and biological weapons. They felt a separate treaty for biological weapons would delay a chemical weapons treaty.¹⁹⁰

182. CHEMICAL AND BACTERIOLOGICAL (BIOLOGICAL) WEAPONS AND THE EFFECTS OF THEIR POSSIBLE USE, U.N. Sales No. E.69.I.24 (1969), *quoted in* Lawler, *supra* note 172, at 1225. The report also stated that no one could predict how enduring the effects would be and how chemical weapons would affect the environment. The report is still considered authoritative today. Lawler, *supra* note 172, at 1225.

183. *Id.*

184. ACDA, *supra* note 118, at 121. Many of the nations that maintained chemical weapons in their arsenals would have been reluctant to give up their retaliatory capabilities without reliable assurance that other nations were not developing, producing, and stockpiling chemical weapons.

185. *Id.*

186. ACDA, *supra* note 118, at 121. The President's action was motivated in part by a desire to add impetus to the biological weapons convention negotiations and by criticism that the United States had still not ratified the Geneva Protocol. *Id.*

187. *Id.* President Nixon stated: "As to our Chemical Warfare program, the United States reaffirms its oft repeated renunciation of the first use of lethal chemical weapons, extends the renunciation to the first use of incapacitating chemicals. . . . Biological weapons have massive unpredictable and potentially uncontrollable consequences. They may produce global epidemics and impair the health of future generations. I have therefore decided that the U. S. shall renounce the use of lethal biological agents and weapons and all other methods of biological warfare. The U. S. will confine its biological research to defensive measures such as immunization and safety measures." *Reprinted in* J. COOKSON and J. NOTTINGHAM, A SURVEY OF CHEMICAL AND BIOLOGICAL WARFARE 385 (1969).

188. ACDA, *supra* note 118, at 121. Toxins are substances falling between biologicals and chemicals in that they act like chemicals but are produced by biological or microbic processes. *Id.*

189. *Id.* The Soviet Union announced it did not possess any bacteriological agents or toxins. J. GOLDBLAT, *supra* note 16, at 48.

190. Lawler, *supra* note 172, at 1227. Many felt that the Soviets opposed the biological

(2) The Biological Weapons Convention

After another year of negotiations, the Soviet Union and its allies changed their position and introduced a draft convention prohibiting the development, production, and stockpiling of biological weapons and toxins.¹⁹¹ The treaty also called for the destruction of existing stockpiles.¹⁹²

On September 29, 1971, a revised draft of this convention was submitted to the U.N. General Assembly.¹⁹³ Revisions included provisions to prohibit further development, production, and stockpiling of weapons and provisions for notice to the Secretary General of each signer's destruction of existing weapons.¹⁹⁴ Most countries supported the convention, feeling that it strengthened the obligations of the 1925 Geneva Protocol.¹⁹⁵

The Biological Weapons Convention was opened for signature on April 10, 1972.¹⁹⁶ The convention recognized the Geneva Protocol as a starting point for mitigating the horrors of war, recognized the urgency of eliminating chemical and biological weapons from states' arsenals, and stated that a prohibition on biological weapons was a first step towards achieving a prohibition on the development of chemical weapons.¹⁹⁷

Since they are uncontrollable and unpredictable, biological weapons have always been considered of little use.¹⁹⁸ The Biological Weapons Convention was intended to eliminate the possibility that scientific advances could make them more useful. Another intention was to prevent the spread of biological weapons to countries which did not already have them.¹⁹⁹

weapons convention to prevent any restrictions on non conventional weapons. As long as the biological issue was tied to chemical weapons, the verification issue would prevent an agreement, and the Soviet Union would remain free to develop both types of weapons. *Id.*

191. *Id.* at 1228-29. The Soviet Union and its allies submitted a revised draft convention on March 30, 1971. It was then possible for the co-chairmen of the CCD (the U.S. and Soviet representatives) to negotiate a revised draft, as they had done with the nonproliferation and seabed treaties. On August 5, 1971, the U.S. and the Soviet Union submitted separate but identical texts of a convention. ACDA, *supra* note 118, at 121-22.

192. Lawler, *supra* note 172, at 1227. The Soviets again claimed they did not possess any biological agents. *Id.*

193. *Id.* at 1230. The convention did not ban the use of biological weapons because use was assumed to be banned under the Geneva Protocol. *Id.*

194. Lawler, *supra* note 172, at 1230.

195. *Id.* The language "never in any circumstances to develop, produce, stockpile or otherwise acquire or retain" of Article I was felt to ensure that the ban would apply in times of war or of peace. *Id.*

196. Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, April 10, 1972, 26 U.S.T. 583-92, T.I.A.S. No. 8062 (effective March 26, 1975) [hereinafter Biological Weapons Convention].

197. *Id.* at 585-86.

198. J. GOLDBLAT, *supra* note 16, at 89. Biological agents depend on multiplication within the target organism and are intended to cause disease or death in man, animal or plant. *Id.*

199. *Id.* at 48. Biological weapons have always been considered together with chemical

The Biological Weapons Convention is unusual in that it is the first international agreement since World War II which requires some military sacrifice.²⁰⁰ Signers are required to destroy all agents, toxins, weapons, and means of delivery which were held by the country before the treaty. However, there is no provision for control or verification procedures.²⁰¹

The signers of the Biological Weapons Convention recognized the convention as only a first step towards an agreement to eliminate chemical weapons. This was a major understanding of those countries which signed the convention.²⁰² As of December 31, 1985, the convention had been signed by 125 countries and ratified by 104.²⁰³

E. Current Developments Toward A Chemical Weapons Convention

There have been numerous allegations of chemical warfare since World War II. In most cases, the weapons have only been used when there was an imbalance of power and the user was certain his opponent could not retaliate.²⁰⁴ Reports of chemical weapons use by Vietnam during the 1970s and the Soviet Union during 1979 were investigated by the

weapons since the 1920s and are usually considered the same by the general public. At the time of the treaty, only the United States had admitted to possessing biological weapons. It had begun destroying them in 1969. *See supra* text accompanying notes 186-87.

200. J. GOLDBLAT, *supra* note 16, at 48. Most treaties and agreements on disarming only require the signatories to halt production of the weapon and to verify the amount of existing stocks. *Id.*

201. *Id.* For example, after the entry into force of the Convention, the United States stated its entire stockpile of biological and toxic weapons had been destroyed. However, there was no way for other nations to verify this claim. *Id.*

202. *Id.* at 49. Nations first realized that biological weapons were created in ways very similar to those used to create chemical weapons, and they were as effective and as easily hidden. A complete ban of biological weapons was seen as a way to forestall a new threat to the world. It was also seen as an important step in eliminating chemical weapons. *Id.*

203. E. GEISSLER, *BIOLOGICAL AND TOXIN WEAPONS TODAY* 18, 150-51 (1986). France and China refused to sign the Biological Weapons Convention. France argued it did not include a satisfactory provision for international control and that biological weapons should not be separated from consideration with chemical weapons. However, in 1972, France adopted a law with similar provisions. China criticized France for not including chemical weapons and for not explicitly banning the use of biological weapons. Parties include Laos, Vietnam, the United States, the Soviet Union and Afghanistan. J. GOLDBLAT, *supra* note 16, at 48-49.

204. The following allegations of chemical weapons use have been recorded:

Laotian and Vietnamese forces in Laos	1975-1981
Both sides during Shaba rebellion in Zaire	May 1977
S. African forces in air attack on Kassanga, Angola	May 1978
Vietnamese forces in Kampuchea	1978-1981
Vietnamese forces against China	February 1979
Chinese forces in Vietnam	February 1979
Soviet forces in Afghanistan	1979-1981
Insurgent forces in Afghanistan	1980-1981
Ethiopian forces against Eritrean successionists and against Somalia	Summer 1980- April 1981
Iraqi forces in occupied Iran	November 1980

United States. The United States claimed its intelligence found proof of chemical weapons use and of involvement by the Soviet Union.²⁰⁵ Both Vietnam and the Soviet Union denied the report.²⁰⁶

Although some western governments and NATO foreign ministers have endorsed the American findings, the lack of conclusive evidence has hindered the international community from making a strong response.²⁰⁷ The recent incontrovertible proof of Iraq's use of chemical weapons has also elicited a muted response.²⁰⁸ The international community seems willing to overlook such an act if it seems politically expedient.²⁰⁹ The Geneva Protocol seems to have little constraining force.

In response to these reports of chemical warfare and intelligence reports of a growing Soviet arsenal of chemical weapons, the United States and NATO have rebuilt their chemical weapons capabilities.²¹⁰ The

Salvadorean army against guerillas in El Salvador	1981
Iraq against Iran in Iraq	1984-1988
Iraq against the Kurds in Iraq	1988
Chadian government against local guerillas	December 1988

J. GOLDBLAT, *supra* note 16, at 100, table 4.2.

205. 1984 Hearings, *supra* note 155, at 8; J. ROBINSON, *supra* note 18, at 11. The U. S. alleges that the Soviet Union supplied yellow rain toxins to its ally Vietnam, which in turn used them on defenseless people in Laos and Kampuchea from the mid-1970s to about 1983. Ember, *supra* note 17, at 9. Involvement of certain toxic agents which are alleged to have been used would be a violation of the Biological Weapons Convention. J. ROBINSON, *supra* note 18, at 11. The U. S. has alleged that tens of thousands have died as a result of the attacks. However, only one autopsy has been made public, and the ambiguous results fail to conclusively prove yellow-rain toxins were the cause of death. Ember, *Autopsy is ambiguous in 'yellow rain' case*, CHEMICAL & ENGINEERING NEWS, Sept. 23, 1985, at 22-23. The U. S. alleges that a variety of lethal chemical warfare agents, including nerve agents and toxins, have been used by the Soviet Union in Afghanistan from 1978 through at least 1982. Ember, *supra* note 17, at 9.

206. J. ROBINSON, *supra* note 18, at 11. The Soviets countercharged that the United States had used chemical weapons earlier in Vietnam and was spreading lies to cover its own misdeeds. MURPHY, HAY, & ROSE, *supra* note 156, at 49.

207. E. SPIERS, *supra* note 32, at 106-14. Because it was difficult to verify these reports, the international response to American charges was lukewarm. *Id.* at 117. Many countries rejected them as fabrications or believed the casualties resulted from something besides international weapons. Many believed the "Yellow Rain" was actually only bee feces spread by wind and rain. However, chemical analysis proved the substances contained man-made toxins. *Id.* at 113-16. Finding incontrovertible proof of chemical weapons use requires both timely and unhindered access to the reported use site and access by neutral observers. This was not possible in this case. The long delay between a reported event and the taking of samples allows much of the chemical evidence to dissipate. *Id.* at 117.

208. See *supra* text accompanying notes 15-25. The United Nations passed a resolution deploring the use of chemical weapons by Iraq in August 1984, but no other action was taken. Ember, *supra* note 19, at 5.

209. The United States is the only nation to have acted on sanctions to punish Iraq. Even then, Congress' move in September 1988 to pass a sanctions bill was opposed by the Reagan Administration. It did not want to jeopardize ongoing diplomatic negotiation to persuade Iraq not to use chemical weapons. Other nations have only joined the United Nations' general condemnation. Wall St. J., Sept. 23, 1988, at A6, col. 3 (Southwest ed.).

210. E. SPIERS, *supra* note 32, at 58. The United States resumed chemical weapons production in 1987 and continues to have on hand approximately 30,000 tons of older chemical weapons. NATO's chemical weapons deterrent is the United States stockpile in Europe.

weapons are seen as a deterrent. At the same time, the U.S. and other allies have continued to work for a comprehensive treaty to prohibit the production of chemical weapons.²¹¹

Various draft conventions modeled on the Biological Weapons Convention have been presented to the United Nations Conference on Disarmament.²¹² Draft discussions, held under the auspices of the Conference of the Committee of Disarmament (CCD), were overshadowed by bilateral talks on the same topic being held between the U.S. and the Soviet Union in Geneva from 1972 to 1980.²¹³ The bilateral talks waxed and waned with the quality of relations between the two countries. The Soviet Union continued to refuse to allow on-site inspections, which the U.S. said were necessary to an effective treaty. The bilateral talks were recessed in 1980 and were not resumed.²¹⁴

In 1981, the new Reagan Administration felt it was useless to negotiate about chemical weapons with the Soviet Union when the United States was in a position of weakness.²¹⁵ The Administration decided to keep future discussions within a multilateral framework which would meet the concerns of nonaligned nations and allow open discussions.²¹⁶ Negotiations were stopped in 1979 when the U.S. protested alleged Soviet use of chemical weapons in Afghanistan and IndoChina. Convinced of Soviet duplicity and disregard for existing treaties, the U.S. government emphasized the importance of verification and compliance in any future treaties.²¹⁷

However, NATO allies are considering preparing more efficient stockpiles and delivery systems. *Id.*

211. *Id.* at 119. Since 1968, the United States and NATO have worked in the United Nations for a complete ban on the development, production, and stockpiling of chemical weapons. The talks have been stagnant due to several disagreements about verification requirements. *Id.*

212. *Id.* at 180. The drafts have nearly all provided for an international verification agency to ensure compliance with agreed destruction of existing weapons. *Id.*

213. *Id.* The talks were initiated by the Soviet Union, which proposed that the United States and itself conclude a separate ban on chemical weapons. The United States agreed to the talks since the two were thought to be the only nations possessing chemical weapons. *Id.*

214. *Id.* at 180-81. The United States ended the talks because of the Soviet invasion of Afghanistan and the continuing reports of chemical weapons use by Soviet agents in Laos and Vietnam. The United States also suspected the Soviets were using chemical weapons in Afghanistan. *Id.*

215. *Id.* At that time, the United States had been unilaterally operating under a moratorium on the production of chemical weapons since 1969. Meanwhile, the Soviet Union had pushed ahead with its chemical weapons program. *Id.*

216. *Id.* at 182. The change would not preclude future informal talks with the Soviet Union but would eliminate the procedural problems of bilateral talks. The confidential nature of the talks would be eliminated so that issues such as "Yellow Rain" could be openly debated. Some officials felt the Soviets had exploited the secrecy of the bilateral talks to convey the impression of being generous and earnest, knowing the United States could not reveal the true state of affairs. *Id.*

217. *Id.* at 187; Reizenstein, *Chemical & Biological Weapons May Prove to Be Turning Point in Arms Control*, 13 BROOKLYN J. INT'L L. 117, 121 (1986); 1984 Hearings, *supra* note

F. U.S. Draft Convention to Prohibit Chemical Weapons

In April 1984, Vice President George Bush presented a U.S. draft of a treaty for the prohibition of chemical weapons to the U.N.'s Conference on Disarmament.²¹⁸ In his presentation speech, he expressed the hopes of the Reagan Administration that a verifiable ban on chemical weapons production could eventually result in a world free of chemical weapons.²¹⁹ Bush stressed the need for verification: "For any chemical weapons treaty to work, each party must have confidence that other parties are abiding by it. No sensible government enters into an international treaty unless it can ascertain it is getting what it contracted for."²²⁰

The draft treaty is a comprehensive document of eighteen articles

155, at 9. In addition, the talks were stalled due to the existence of two ideologically opposed blocs and the failure to reach a consensus on the scope of the talks. E. SPIERS, *supra* note 32, at 187.

218. 1984 Hearings, *supra* note 155, at 9. The forty member Conference on Disarmament meets in Geneva. It has been holding negotiations on chemical weapons since the mid 1970s. Vice President Bush's speech was a culmination of President Reagan's concern about the use of chemical weapons by Iraq against Iran and the Administration's belief that the chemical weapons' threat was growing. *Id.*

219. Address by Vice President George Bush, Conference on Disarmament: Chemical Weapons Convention (April 18, 1984), *printed in* DOCUMENTS ON DISARMAMENT, 1984, at 299-303 [hereinafter Bush speech]. Bush stated that "until an effective agreement can be achieved, the United States must continue to ensure that it can deter the use of chemical weapons against its citizens and friends." *Id.*

220. *Id.* On September 26, 1989, President Bush proposed a joint reduction in chemical weapons stockpiles by the United States and the Soviet Union. In his speech to the United Nations, Bush announced that he was willing to destroy eighty percent of the U.S. stockpile if the Soviet Union reduces its amount of chemical weapons to match the amounts held by the U.S. The proposal was made to encourage progress at the forty-nation Conference on Chemical Weapons. The conference has been meeting in Geneva since January and is seeking a global ban on such weapons. N.Y. Times, Sept. 26, 1989, at A1, col. 6.

Under Bush's proposal, the U.S. would destroy more than ninety-eight percent of its current chemical weapons stockpile within eight years after a chemical weapons convention, including the U.S.S.R., is completed. The remaining two percent of the stockpile would be destroyed within the next two years, after all nations capable of producing chemical arms had signed the convention (President Bush states that twenty nations presently have that capability). During efforts to complete the convention, the United States would ask the Soviet Union to join it in destroying a major portion of the two countries' chemical weapons stockpiles. The reduction would be to an equal amount for both countries. (The U.S. presently has an estimated 30,000 tons of poison gas while the Soviet Union is estimated to have more than 300,000 tons of chemical weapons but claims to have only 50,000 tons.) Finally, the U.S. will work to accelerate its efforts to improve verification procedures. *Id.*

Under current congressional legislation, the U.S. is required to destroy its old chemical weapons by 1997 as it produces the new binary weapons. Many critics feel Bush's proposal was merely an "empty gesture." *Id.*

The Soviet Union responded on September 27, 1989. It offered to *totally* eliminate its chemical weapons if the United States would agree to do the same. However, it stated it would not sign such an agreement unless the U.S. stopped its current production of chemical weapons. Soviet Foreign Minister Shevardnadze stated that the U.S.S.R. has already ceased its production. The U.S. had stated on September 26, after Bush's speech, that it would continue to modernize its chemical weapons until the multilateral treaty is signed. Wall St. J., Sept. 27, 1989, at A24, col. 1.

which address the scope of prohibition, the definition of chemical weapons, verification and compliance features, activities permitted under the treaty, and administrative requirements.²²¹ The institutional structure of such a convention would include a consultative committee composed of each ratifying nation. The committee would select an executive council, technical secretariate, and a fact finding panel. International on-site inspections would be systematic for some tasks and "ad hoc" for others. A "challenge inspection" would occur to investigate allegations of violations.²²²

Under the treaty, after ratification, a nation would disclose all locations and quantities of existing chemical weapons. The report would be filed with the Consultative Committee. Within twelve months of ratification, a signing nation would begin destroying its weapons. The process would be required to be completed within ten years.²²³ Until the ban is in place and all weapons destroyed, nations would be allowed to produce and retain toxic chemicals for protective purposes.²²⁴ Such protective use reserves would have to be produced in one designated facility disclosed to the Committee.²²⁵

After all chemical weapons are destroyed, each nation's facilities

221. United States Draft Convention Submitted to the Conference on Disarmament: Prohibition of Chemical Weapons, April 18, 1984, *printed in* DOCUMENTS ON DISARMAMENT, 1984, at 269-99 [hereinafter Draft Convention].

222. Tanzman, *Constitutionality of Warrantless On-Site Arms Control Inspections in the United States*, 13 YALE J. INT'L L. 29-31 (1988). Under the Convention's organization, the Fact Finding Panel will be in charge of arranging and carrying out immediate "challenge" inspections which are the main provisions for ensuring compliance with the Convention. The panel will consist of members elected to two-year terms and a representative of each Permanent Member of the Security Council (members are the Soviet Union, United States, United Kingdom, France and China). Upon receiving an allegation of chemical weapons use by a signatory nation, the panel will request an immediate inspection of the alleged violator country's chemical facilities. The challenged party will be required to allow an inspection by a group made up of a person from each country on the panel within twenty-four hours of receiving the complaint. If the party does not comply, the refusal will be reported to the Security Council for its action. The inspection team will conduct a thorough investigation of the facilities and the alleged use site and present a written report to the United Nations. Because of the unique character of chemical weapons, physical on-site inspections are necessary to monitor and verify a chemical weapons ban. They are virtually identical in appearance to ordinary chemicals, and the plants for producing them are difficult to distinguish from plants producing chemicals for industry. Inspections to ensure a country is maintaining only medicinal or protective stockpiles would be a systematic procedure, while inspections to ensure chemical plants are not producing chemical weapons would need to be by surprise in order to serve as a deterrent. N.Y. Times, Nov. 16, 1987, at A6, col. 1 (National ed.).

223. Draft Convention, *supra* note 221, Article V. Each step would be accompanied by international inspections. Reports would be filed on each destruction or transfer event. Each aspect would be overseen by the Consultative Commission and its Executive Committee. *Id.*

224. Draft Convention, *supra* note 221, Article III. This is to prevent current nonpossessing nations or those with small chemical weapons stockpiles from being in an inferior position to nations with large stockpiles. E. SPIERS, *supra* note 32, at 90.

225. *Id.* The Convention limits each nation's allowed protective use reserve to one metric ton, a militarily insignificant amount. *Id.*

would be periodically inspected to ensure they are not producing chemical weapons. The protection provided by periodic inspections will be complemented by the "challenge" inspection for suspected violations.²²⁶

The convention also recognizes the right of any party to withdraw from the convention when it feels its national interests are threatened. The withdrawing nation is required to give three months notice to the Consultative Committee and give its reasons for withdrawing.²²⁷

The draft leaves room for further negotiations. However, Bush stressed that the U.S. will not accept a treaty with less than strict verification procedures. Anything less would reduce the treaty to another Protocol with no enforcement mechanisms and thus, no real force.²²⁸

G. Considerations in Draft Negotiations

The main weakness of the Geneva Protocol is its lack of a verification or enforcement mechanism.²²⁹ It depends on voluntary compliance and gives signatory nations no way to stop or prevent violations.²³⁰ An effective chemical weapons convention should include a ban on the production and stockpiling of such weapons to add further incentive to obey the ban on use. On-site monitoring of each country's chemical plants and stockpiles would be necessary to ensure compliance. International surprise inspections would also be needed to investigate reports of violations.²³¹ Verification procedures are essential to the effectiveness of a chemical weapons convention.²³²

On-site inspections would require chemical companies to open their plants for inspection by United Nations inspectors. Many United States companies fear disruption of their production and disclosure of trade secrets.²³³ Military secrets could also be revealed because chemical

226. Draft Convention, *supra* note 221, Article X and Annex II. See *supra* notes 178-81 and accompanying text.

227. Draft Convention, *supra* note 221, Article XVI. This provision recognizes the prospect of a ratifying nation being threatened by a nonratifying nation or by a convention violator. *Id.*

228. Bush speech, *supra* note 219, at 302.

229. E. SPIERS, *supra* note 32, at 175. The Protocol simply states that all nations are bound by conscience and their agreement. Geneva Protocol, *supra* note 2. See also *supra* note 123 and accompanying text.

230. Geneva Protocol, *supra* note 2, at 575; 1984 Hearings, *supra* note 155, at 7. See *supra* notes 129-42 and accompanying text.

231. Geneva Protocol, *supra* note 2, at 575. Currently under the Protocol, a nation can produce, develop, stockpile, and transfer chemical weapons. The main weakness of the Protocol is its lack of a formal complaint and investigation procedure. 1984 Hearings, *supra* note 155, at 7.

232. Geneva Protocol, *supra* note 2, at 575. Without a verification procedure, law abiding nations are dependent on the good will and honor of other nations if the lawful nations comply with the treaty. Because of national sovereignty concerns, it is very difficult to determine what a country's factories are producing.

233. *Id.* Since the 1984 draft chemical weapons convention was proposed by the United

weapons are often stored with other weapons.²³⁴ On-site inspections would also be needed to monitor the destruction of existing weapons and production facilities.²³⁵

Chemicals and technology used in making chemical weapons are very similar to those used in the manufacture of pesticides and other legitimate products. Factories and plants can easily be switched from producing chemical weapons to legitimate chemicals to foil an inspection.²³⁶ Dual-purpose chemicals are especially difficult to monitor because they have both a legitimate use and a chemical weapons use.²³⁷

Systematic inspections should help to build confidence in a chemical weapons convention. Eventually, the number of human inspectors could be reduced, replaced by on-site chemical and physical monitoring instruments.²³⁸ Of course, these instruments would have to be protected by tamperproof seals, containers, and television cameras, and checked periodically by international inspectors.²³⁹

Plants which produce key chemicals required for super toxic agents could be monitored by random on-site inspection, organized by the Consultation Committee.²⁴⁰ Dual purpose chemicals, which have an innocent use and can also be used to produce chemical weapons, are more difficult to control. Strict quotas for production of such chemicals and certification that they are being sold only for legitimate purposes may be

States, American chemical companies have expressed concern over the intrusion of international inspectors. Secretary of State George Shultz has stated American companies will be required to open their operations to inspection. In October 1987, the Chemical Manufacturers Association, a trade group, adopted a policy committing the chemical industry to work for a chemical weapons treaty. Kyle B. Olsen, director, said he expects any verification system will result in significant losses of confidential business information and require costly compliance work. N.Y. Times, Jan. 3, 1989, at A1, col. 6 (National ed.).

234. E. SPIERS, *supra* note 32, at 190. The United States Army usually stores its prepared chemical weapons on the same military bases as conventional arms. *Id.*

235. *Id.*

236. Ember, *supra* note 17, at 12-13. The main problem in controlling chemical weapons is that the chemicals which go into making agents are compounds readily available for sale and which have legitimate uses. For example, the chemicals used to make sarin (a deadly nerve gas) are also used in making pesticides and in the textile industry. Isopropyl alcohol is a widely used chemical, but is also used in making sarin. Precursor chemicals used in forming the nerve gas VX also are useful in the agrochemical industry (in the production of herbicides). Thiodiglycol is a key element in making mustard gas and is a basic chemical in the chemical industry. Chemical plants and chemical weapons plants have very similar processes and can be easily changed from one use to another. *Id.*

237. *Id.*

238. E. SPIERS, *supra* note 32, at 186-87. The initial inspector would have to insure the non-human inspectors were placed at all chemical plants in the designated country. *Id.*

239. *Id.*

240. *Id.* at 187. An agreed number of visits preceded by a limited warning would be held in each involved country. Inspectors would verify that the quantities of chemicals produced and stockpiled at each factory met agreed levels, and that the factories had not been changed to produce chemical weapons. *Id.*

the only way to ensure they are not used to make chemical weapons.²⁴¹

Verification by challenge will be the ultimate security provision of the proposed convention.²⁴² Nevertheless, even if inspections are fully implemented, they will not provide 100% detection of violations. They can only provide a high probability of discovering a militarily significant breach and provide a form of deterrence to blatant chemical weapons production. Through the inspection process, nations will be continuously reminded that they have signed a legally binding treaty. If a violation is proven, the offending nation will appear to be less than trustworthy to the rest of the world.²⁴³

IV. RESPONSES TO THE PROLIFERATION AND USE OF CHEMICAL WEAPONS

The proliferation of chemical weapons is considered a growing threat to world peace.²⁴⁴ The confirmed use of chemical weapons in the Iran-Iraq war has brought into question the effectiveness of the existing international regulatory framework discussed above. Alternative responses to the chemical weapons threat are discussed below.

A. *Condemnation*

World opinion usually condemns the use of chemical weapons.²⁴⁵ Outrage is formally expressed in forums such as the United Nations and at the Conference on Disarmament. U.N. Security Council Resolution 612, adopted unanimously on May 9, 1988, acknowledged that chemical weapons continue to be used in the Iran-Iraq conflict and condemned

241. *Id.*

242. *Id.* This is specifically implied in the draft and is understood to be the major security feature by the Commission on Disarmament. It is the major difference between the Geneva Protocol and the 1972 Biological Weapons Convention. These do not contain a verification provision. Geneva Protocol, *supra* note 2; Biological Convention, *supra* note 196.

243. *Id.* at 188-89. This sanction may be of little effect after the Iraqi violation. The United Nations condemnation of 1984 did not prevent Iraq from using chemical weapons against the Kurds in 1988. *See supra* notes 20-25 and accompanying text.

244. N.Y. Times, Oct. 27, 1988, at A6, col. 6 (National ed.). William H. Webster, Director of the Central Intelligence Agency, told the World Affairs Council that he feels the current spread of chemical weapons is a major threat to peace. Every low budget conflict has the potential for gas deployment, because many Third World and East Bloc nations are obtaining chemical weapons. Third World nations, particularly, see gas as an inexpensive and deadly weapon they should be allowed to possess, in order to offset western nations' nuclear advantages. Hous. Chron., Jan. 9, 1989, at 6A, col. 1. Mr. Webster also has testified before the Senate Governmental Affairs Committee that Iraq, Syria, and Iran are continuing to assemble arsenals of poison gas. The growing stockpiles are estimated to have a ten- to twenty-year capacity, increasing the risk that poison gas could fall into the hands of terrorists. Wall. St. J., Jan. 10, 1989, at A4, col. 3.

245. Ember, *supra* note 17, at 10. In general, most nations agree that chemical weapons should be banned totally, and the majority of nations have signed the Geneva Protocol. However, condemnations have not been consistent or unbiased, as shown by the reaction to Iraqi attacks on the Kurds. *See infra* notes 311-20 and accompanying text.

such use.²⁴⁶ However, condemnation is often withheld by the United Nations for political reasons.²⁴⁷

B. Rearmament

As a result of the repeated violations of the Geneva Protocol and the chemical weapons imbalance between the Soviet Union and the United States, the United States has resumed production of chemical weapons.²⁴⁸ By the mid-1970s, the United States realized its unilateral moratorium on chemical weapons production had not affected the Soviet Union, which had continued to produce and stockpile chemical weapons.²⁴⁹ After repeated requests for appropriations during the 1980s, Congress finally authorized funding of \$1.3 billion for production of binary chemical weapons.²⁵⁰ A certification of security interest need was signed by President Reagan on October 16, 1987, and production began December 16, 1987.²⁵¹

The resumed production ends an eighteen-year moratorium on producing chemical weapons begun in 1969 under President Nixon.²⁵² At the time, the U.S. hoped its action would induce the Soviet Union to follow suit. This proved a fleeting hope, however, as intelligence reports

246. Reprinted in DEP'T ST. BULL., July 1988, at 69. The resolution stated that "[t]he Security Council . . . [c]ondemns vigorously the continued use of chemical weapons in the conflict between Iran and Iraq contrary to the obligations of the Geneva Protocol." *Id.*

247. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). The United Nations General Assembly has become dominated by Third World and East Bloc nations, who lean towards the Soviet Union. At the recent Paris Conference to reaffirm the Geneva Protocol, *see infra* text accompanying notes 321-29, these nations made it impossible even to mention Iraq as a violator of the Protocol. Attention was deflected to charges that Israel had nuclear weapons and that a chemical weapons ban should not be passed until Israel was forced to disarm. *Id.*

248. N.Y. Times, Dec. 18, 1987, at A10, col. 1 (National ed.). The United States resumed production in December 1987 while continuing to discuss a ban on chemical weapons with the Soviet Union and other nations. *See supra* note 204 regarding alleged violations of the Geneva Protocol.

249. 1984 Hearings, *supra* note 155, at 10. David F. Emery, Deputy Director of the United States Arms Control and Disarmament Agency, told members of the House of Representatives Committee on Armed Services in May 1984 that the Soviet Union had continued its chemical weapons buildup while the United States observed a moratorium. He said the Soviets have in place doctrines, plans, personnel, and equipment to support widespread chemical weapons operations. The Soviets frequently test their capability in major military exercises on battlefields. According to Emery, the moratorium observed by the United States since 1969 had placed the country in a vulnerable position. *Id.*

250. J. ROBINSON, *supra* note 18, at 15-16. Of the total \$1.3 billion, \$0.9 billion was for anti-chemical protection, \$0.2 billion was for maintenance of the current chemical weapons stockpile, and \$0.2 billion was for the binary munitions program. *Id.*

251. N.Y. Times, Dec. 18, 1987, at A10, col. 1 (National ed.). The 1986 military bill passed by Congress mandated a sixty-day delay between the date when the President provided required certification to Congress and when production actually began. The weapons consist of cannisters filled with an inert organic chemical, DF, and shells which will contain a separate alcohol solution. The DF cannisters would be loaded into the shells just before firing. The two would mix to form a nerve gas, GB, which kills within minutes of being inhaled. *Id.*

252. *Id.* *See supra* notes 186-87 and accompanying text.

detailed a steady modernization and build up of the Soviet chemical weapon arsenal from 1969 to the present.²⁵³

In light of massive Soviet chemical warfare preparations, extensive training, and an intimidating offensive delivery system, it is believed very likely the Soviets would use chemical weapons on a large scale in a European conflict.²⁵⁴ Since World War II, the Soviets have steadily increased their production of chemical weapons.²⁵⁵

In 1983, the U.S. Department of Defense estimated that the Soviet advantage over the United States was 5:1 in ground capable delivery systems, 25:1 in large mobile reconnaissance and decontamination vehicles, 11:1 in chemical personnel and training facilities, and 14:1 in production facilities.²⁵⁶ In assessing this imbalance, the Pentagon has stated that with the Soviets' vast store of weapons, its immersion in chemical weaponry, tactics, and doctrine, it "would be very odd from a military standpoint if they did not employ them."²⁵⁷ Military officials believe the Soviets have the capability and intention to use chemical weapons in any future war against NATO.²⁵⁸

The United States did not realize the extent of the Soviet readiness for chemical and biological warfare until it studied Soviet equipment captured in the 1973 Middle East war. Chemical, biological, and radiological defenses were standard on all Soviet weapons.²⁵⁹

A review of chemical warfare and intelligence about Soviet capabilities performed in 1980 concluded that the Soviets have also sought to

253. *1984 Hearings, supra* note 155, at 10. *See supra* notes 254-61 and accompanying text.

254. J. ROBINSON, *supra* note 18, at 37. The Soviets are estimated to have more than 80,000 officers and enlisted specialists in chemical warfare, with this total able to be doubled in time of war. Nearly 45,000 are assigned to ground forces. *Id.*

255. E. SPIERS, *supra* note 32, at 120. Since World War II, the Soviets have steadily increased their production of chemical weapons, which was 8,000 tons per month in 1945. They are now estimated to have 700,000 tons of nerve gas available for use. Chemical weapons training and use is handled by the Military Chemical Forces (VKhV, a separate arm of the military). The Soviet army and navy are provided with intense training in the use of chemical weapons and are provided with protective clothing and equipment for use in offensive warfare. *Id.*

256. E. SPIERS, *supra* note 32, at 140.

257. *Id.* at 140-41. The Pentagon pointed out that the Soviets have a special advantage because of limitations in NATO's preparedness or ability to retaliate. NATO also lacks any ability to cause troop degradation in Soviet forces. (Degradation is the wearing down of soldiers physically and mentally from the forced wearing of bulky and hot protective garments when in a chemical weapons situation.) Although the United States is beginning to rearm, NATO remains in a vulnerable position. *Id.*

258. *Id.* at 128. General Creighton W. Abrams, of the United States Army, and Defense Science Board Chairman John M. Deutch of the Massachusetts Institute of Technology, worked together on a six month review of chemical weapons. They report the Soviets have done everything possible to assimilate chemical weapons into their military operations. *Id.*

259. *Id.* General Abrams stated the Army was surprised by the sophistication, completeness, and extensiveness of the chemical weapons found. *Id.*

minimize the reduction of soldiers' effectiveness in a chemical war environment.²⁶⁰ The Soviet Union also has the capability to deliver chemical weapons in ground, air, and naval combat. Its Scud surface-to-surface missiles can deliver a chemical warhead over a range of 65 kilometers.²⁶¹

As earlier discussed, the Soviets are suspected of supplying chemical weapons and equipment for use in Laos and Cambodia, and of actively using them in Afghanistan.²⁶² These developments, along with the chemical weapons imbalance, were major factors in the decision to rearm.²⁶³ The decision was also influenced by the belief that the Soviets will never agree to sign the chemical weapons draft convention as long as they have a superior position.²⁶⁴

The chemical weapons currently being produced in the U.S. are binary weapons.²⁶⁵ Binary weapons contain two relatively non-toxic chemical substances which are mixed during the flight to the target to produce standard nerve gas.²⁶⁶ For example, a canister filled with the inert chemical DF would be loaded into an artillery shell filled with an alcohol solution as the shell is being fired. The chemicals would mix to form the deadly World War II nerve gas GB, which kills within seconds when inhaled.²⁶⁷

The Pentagon is developing a 155 mm GB-2 artillery projectile (M687) and the Bigeye VX-2 bomb.²⁶⁸ The M687 has two components contained in separate canisters separated by rupture discs. When mixed, they produce sarin, a deadly nerve gas.²⁶⁹ The Bigeye contains a core of sulfur separated by a steel diaphragm from a surrounding liquid, ethyl-2 diisopropylamineethyl methylphosphonite. When combined, the two

260. *Id.* at 128. Soviet military men in all branches receive extensive training and practice in conducting military operations while in their protective clothing. They are conditioned to bear the heat and reduction of mobility. Degradation is similar to the attrition which resulted from the use of gas in World War I. *See supra* note 257.

261. *Id.*

262. *See supra* notes 204-06 and accompanying text.

263. E. SPIERS, *supra* note 32, at 130. The Reagan Administration and the Congress felt until the Draft Convention on Chemical Weapons was closer to completion, the United States needed to have a strong chemical weapons capability. *Id.*

264. 1984 *Hearings, supra* note 155 at 10.

265. N.Y. Times, Dec. 18, 1987, at A10, col. 1 (National ed.). Binary weapons have the advantage of being nonlethal until fired deliberately at a target, of being less dangerous to civilians, and remaining fresh and potent for longer periods of time than previously stored mixed chemical weapons. *Id.*

266. *Id.*

267. *Id.*

268. E. SPIERS, *supra* note 32, at 167. The Bigeye VX-2 bomb is being produced partly to replace the aging chemical weapons stockpiles in Europe. The bombs will primarily be stored in West Germany.

269. *Id.* Sarin is a deadly nerve gas which was first developed by the Germans during World War II. *Id.*

agents produce VX, another deadly nerve gas.²⁷⁰

These two systems are planned to be the first step in a modernization program. The existing weapons stockpile of twelve delivery systems will be replaced with four or five systems, with M687 and the Bigeye the first to be produced.²⁷¹ The smaller stockpile will be more efficient militarily and will better match agent and mission. This stockpile will also provide a more credible naval retaliatory capacity, extend the range of the U.S. chemical weapons threat, and deliver a larger tonnage of agent in retaliation.²⁷²

The U.S. is also addressing the problem of training troops to fight in chemical warfare protective clothing.²⁷³ The bulky, confining clothes produce a "degradation factor" in fighting efficiency. The suits reduce mobility, visibility, dexterity, and ability to aim weapons. In addition, they are very uncomfortable over a period of time. Troops must also have contamination-free, airtight shelters available to allow recuperation and sleeping. Work is underway to provide these items and to train NATO and U.S. troops in chemical warfare techniques.²⁷⁴

No NATO countries besides France and the United States currently possess chemical weapons.²⁷⁵ NATO's offensive deterrent rests upon the existing American stockpile of deteriorating weapons.²⁷⁶ The renewal of U.S. weapons production is expected to gradually alleviate that problem.²⁷⁷

French President Francois Mitterand has abandoned a proposal made by previous President Jacques Chirac to create a security stockpile

270. *Id.* VX was first developed by the Allies during World War II, although it was never used during that conflict. *Id.*

271. *Id.* at 170. The United States continues to destroy its old chemical weapons at a pilot destruction plant in Tooele, Utah, as it produces the new ones. N.Y. Times, Dec. 18, 1987, at A10, col. 1 (National ed.).

272. E. SPIERS, *supra* note 32, at 167. Prior weapons, built in the 1950s and 1960s, had a maximum range of twenty-three kilometers. Many were designed for aerial spraying. With today's modern air defenses, this approach is too high, too slow, and too long and would be extremely hazardous. The new weapons are more designed for projection by missiles.

273. *Id.* at 150. To protect themselves from the gases, soldiers must wear tightly fitting helmets and thick, bulky suits. In cases of gas warfare, they must wear them for up to twenty-four hours at a time. *Id.*

274. *Id.* Without extensive training, soldiers' ability to protect themselves would be greatly jeopardized. Degradation is considered a large problem in planning chemical warfare. *Id.*

275. *Id.* The French re-established their chemical weapons production after World War II as part of the decision not to join NATO. The French also provide their own nuclear defenses. After World War II, Great Britain announced it was destroying its chemical weapons and would not produce them. No other NATO member has produced chemical weapons since 1945. The United States agreed to provide nuclear and chemical weapons protection to its NATO allies during the early 1950s. *Id.*

276. *Id.* at 152. The American weapons were stored in Europe beginning in the late 1950s. They were expected to have a shelf life of approximately twenty years and are beginning to lose their power. *Id.*

277. *Id.*

of chemical weapons.²⁷⁸ The new weapons were planned to balance the Soviet Union's stockpile during the ten-year elimination period proposed by the Draft Convention on Chemical Weapons. Mr. Mitterand hints that France may formally decide to produce chemical weapons to prevent a Soviet monopoly in Europe if the Geneva negotiations do not succeed by 1992.²⁷⁹

As in the period before World War II, deterrence is replacing disarmament as the chemical weapons policy of many nations.²⁸⁰ Until the draft convention on chemical weapons is implemented so that nations can confidently eliminate their chemical weapons, this development is likely to continue indefinitely. The new Bush Administration intends to continue the chemical weapon modernization program until the Draft Treaty on Chemical Weapons is completed.²⁸¹

C. Export Controls

The majority of the chemicals and technology needed to produce chemical weapons are also used to make legitimate chemical products, such as pesticides, lubricants, paints, and fertilizers.²⁸² Because of this "dual purpose," it is difficult to stop the transfer of these precursor chemicals and technology by commercial companies.²⁸³ Chemical companies tend to sell to whomever wishes to purchase without further inquiry and are mostly concerned with a sale's profitability.²⁸⁴ Because most chemical companies are located in western nations, they are free of most government oversight.²⁸⁵ Even if restrictions on chemical sales exist, they

278. N.Y. Times, Mar. 12, 1987, at A8, col. 1 (National ed.).

279. *Id.* France has often been the target of various terrorist groups. The prospect of a terrorist gas attack is considered another reason for France's decision. However, the Socialist Party of Francois Mitterand is opposed to the program and is considered likely to disband it if returned to power. *Id.*

280. E. SPIERS, *supra* note 32, at 160. As long as unstable or less trusted nations have a weapon, it seems foolish for other nations to refuse to have the same weapon available for their defense. *Id.*

281. Hous. Chron., Jan. 27, 1989, at 1A, col. 6. The Bush Administration's position was discussed by John Tower, Secretary of Defense designate during his confirmation hearings before the Senate Armed Services Committee, January 26, 1989. *Id.*

282. CHEMICAL & ENGINEERING NEWS, Apr. 14, 1986, at 23. Examples are methyl phosphonic acid (used for pesticides), isopropyl alcohol (used as a basic compound in the chemical industry), and methylphosphonous dichloride (used in agrochemical production). *Id.*

283. *Id.* at 13. Even if every sale was scrutinized, the buyer could use the chemical for a different purpose than he vouched for or could transfer the chemical to a less trustworthy recipient. *Id.*

284. Fialka, *supra* note 1, at 1, col. 1.

285. *Id.* For example, West Germany's Foreign Trade Law supposedly restricts the sale of certain chemicals, but there is actually very little monitoring of sales. The government has only a staff of five people to review more than 100,000 applications per year for export of chemical or nuclear technology. N.Y. Times, Jan. 14, 1989, at A5, col. 1 (National ed.).

can be easily evaded by the use of dummy corporations to divert a supposedly legitimate delivery to a secret buyer.²⁸⁶ Today, most western nations have some export controls on certain chemicals and sensitive technology.²⁸⁷ Nevertheless, the controls have failed to stop the spread of chemical weapons capabilities to Iraq and now Libya.²⁸⁸

In 1984, U.S. chemical companies realized the chemicals they had recently sold to Iraq had been used to produce poison gas.²⁸⁹ For example, in 1983, a Belgian unit of Phillips Petroleum Company sold an Iraqi pesticide company 500 tons of a complex chemical (thiodiglycol) usually used to make pesticides.²⁹⁰ At the time, the sale of the obscure chemical had been considered an achievement. After news of Iraq's poison gas attacks, it was seen as the way Iraq had been able to attack Iran so effectively.²⁹¹

Western intelligence officials pinpointed chemical suppliers as the source of such capabilities after Iranian victims were treated in British hospitals. By determining the wounds resulted from gas attacks, they were able to trace the source of the component chemicals.²⁹²

Meeting in the Australian embassy in Paris in 1984, the Western officials drafted new chemical export regulations for each represented country to adopt.²⁹³ As a result, in 1985, fifteen nations placed export controls on chemicals needed to produce the chemical weapons being

286. BUS. WK., Jan. 23, 1989, at 50. For example, Libya received its chemicals and technology by way of Hong Kong under the name of a shell corporation. The shell corporation was set up by Imhausen-Chemie, the West German company charged by the United States with building and supplying the chemical plant at Rabta. See *supra*, notes 31-33 and accompanying text.

287. N.Y. Times, Sept. 28, 1988, at A4, col. 1 (National ed.). The Coordinating Committee on Export Controls (COCOM) is the group of major western industrial nations charged with keeping strategic materials and technology out of the hands of the Soviet Union and East Bloc nations. Wall St. J., Sept. 19, 1988, at A20, col. 1. Each member of NATO is a member and is supposed to follow the strict guidelines set up by mutual agreement.

288. N.Y. Times, Jan. 19, 1989, at A5, col. 3 (National ed.). The technology to build a chemical weapons plant would certainly be classified as sensitive technology which would be restricted for export under COCOM. *Id.*

289. Fialka, *supra* note 1, at 1, col. 1. For nearly three years, the Middle East had been a growing market for certain chemicals, but the chemical companies had not placed any significance on the fact until Iraq used chemical weapons against Iran. *Id.*

290. *Id.* Thiodiglycol is a relatively obscure chemical and large orders are rare. *Id.* at 1, col. 2.

291. *Id.* at 1, col. 1. When thiodiglycol is combined with hydrochloric acid, it produces mustard gas. Iraq used mustard gas in its attacks on Iranian soldiers in 1984. *Id.* at 1, col. 2.

292. *Id.* at 1, col. 1. After determining mustard gas was the cause of the wounds, the investigators traced the component chemicals back to the American chemical companies which had recently sold them to Iraq. *Id.*

293. *Id.* The group became known as the Australian group. It now includes representatives from nineteen nations and the European Common Market. It continues to work on strengthening export controls. *Id.*

used in the Gulf War: mustard gas and the nerve gas tabun.²⁹⁴ The countries involved included the ten nations of the European Economic Community (EEC), Japan, New Zealand, Australia, Canada, and the United States.²⁹⁵ The countries initially had different chemicals on their respective lists, while the United States controlled more chemicals than did the EEC.²⁹⁶ These differences are being worked out in later meetings. The hope is that the combined lists will help prevent the sale of dangerous chemical ingredients to countries such as Iran and Iraq.²⁹⁷

Nevertheless, export control agreements have been ignored often in the face of profitable contracts for chemical companies.²⁹⁸ West Germany, in particular, is believed to be playing a leading role in exporting chemical weapons technology to the Third World.²⁹⁹ Intelligence reports show West German companies have sold chemical weapons technology to Iran, Iraq, and Syria.³⁰⁰

In July, 1987, the U.S. State Department imposed additional controls on the export of chemicals to Iran, Iraq, and Syria.³⁰¹ Eight additional chemicals besides the ones controlled in 1985 were restricted.³⁰² The State Department said it believed that these countries were attempting to purchase the chemicals for chemical weapons production.³⁰³ In

294. Ember, *supra* note 17, at 12. These include thiodiglycol, chloride, and ethylene (poison gas precursors), and methylchloro phosphene (nerve gas precursor). *Id.*

295. *Id.*

296. *Id.* The United States included more obscure chemicals as well as the most vital and common ones for making chemical weapons. *Id.*

297. *Id.* at 11. Under the export control laws, any request to sell a listed chemical will act as a trigger for careful scrutiny of the requested purchase before the granting of an export license. *Id.*

298. *Bus. Wk.*, Jan. 23, 1989, at 50. In the case of the Libyan chemical plant, the transactions between Libya and the Imhausen Chemie company, which was the principal supplier of the equipment and supplies, began in 1985. The proposal for a lucrative contract motivated the company to set up a dummy recipient company in Hong Kong in order to evade West Germany's export restrictions. *Id.*

299. *N.Y. Times*, Jan. 14, 1989, at A5, col. 1 (National ed.). In 1984, American intelligence reports showed the West German company Karl Kolb had sold the plant and chemicals used by Iraq to manufacture its mustard gas. West German companies are also suspected of selling chemical weapons technology to Eastern Bloc countries. U.S. intelligence shows West German companies have sold machine tools used for military purposes to Warsaw Pact countries, heavy water for nuclear bombs to India and Pakistan, and missile technology to Libya and Egypt. *Id.*

300. *Id.*

301. *Export Controls Imposed on Chemical Weapons Substances*, DEP'T ST. BULL., Oct. 1987, at 49. This was partly in response to Iraq's use of chemical weapons and concerns that Iran and Syria were attempting to buy precursor chemicals to produce their own chemical weapons.

302. *Id.* These include chloroethanol, dimethylamine, dimethylamine hydrochloride, dimethyl methylphosphonate, methylphosphonol difluoride, phosphorus oxychloride, potassium fluoride, and thiodiglycol. Thirty-seven other precursor chemicals are subject to national security export controls under the Export Administration Act of 1979, 50 U.S.C. § 2401-20 (1982). They require validated export licenses for export to all countries except Canada. *Id.*

303. *Id.*

addition, four chemicals, which were previously controlled only to Iran, Iraq, and Syria, will now be controlled for export to any country except Canada.³⁰⁴

These actions, taken in coordination with similar actions by other industrialized nations, are intended to curb the flow of chemical weapons precursor chemicals to nations suspected of producing and using chemical weapons.³⁰⁵

In the latest example of the need for export controls, a West German chemical company was accused of supplying Libya with the facilities and chemicals for the largest chemical weapons plant in the Third World.³⁰⁶ The plant is believed capable of producing mustard gas and sarin, which kills instantly upon contact.³⁰⁷ As a result of the revelation by United States intelligence agents, the West German government has promised to tighten controls on the export of chemical weapons materials.³⁰⁸ All exports to Libya are being delayed and examined. The United States hopes the disclosure will keep Libya from acquiring the materials needed to complete the plant.³⁰⁹ However, officials believe Libya will eventually be able to purchase what it needs from other willing sellers.³¹⁰

Export controls, if enforced, would be the best way to prevent the spread of chemical weapons. Nonetheless, as long as nations are able to

304. *Id.*

305. *Id.*

306. Hous. Chron., Jan. 1, 1989, at 35A, col. 3; Wall St. J., Jan. 12, 1989, at 11A, col. 4.

307. See *supra* note 32 and accompanying text.

308. N.Y. Times, Jan. 11, 1989, at A1, col. 4 (National ed.); Wall St. J., Jan. 11, 1989, at A14, col. 4 (Southwest ed.). The U.S. first became aware of the nature of the plant in May, 1988, when a team of U.S. specialists talked to Japanese companies working on the project. The Japanese, probably unwittingly, had built a plant to make high technology plastic bottles, which, when filled, could be placed in a warhead. The plastic matched samples found in the Iran-Iraq war, in which chemical weapons were used. The U.S. conveyed to the West Germans the information that the Libyan plant was a chemical weapons plant and that a number of West German companies were contributing to it. Wall St. J., Feb. 13, 1989, at A10, col. 5 (Southwest ed.). The West German government at first rejected the U.S. charges. It later admitted it had known of the sale by Imhausen-Chemie to Libya before the United States revealed it, but the information was then insufficient to bring a court action against the company. N.Y. Times, Jan. 14, 1989, at A1, col. 6 (National ed.).

309. Wall St. J., Jan. 12, 1989, at A11, col. 4 (Southwest ed.). The U.S. hopes the action taken by West Germany will put the Libyan plant out of commission and eliminate the need for U.S. military action against it. The negative global reaction to news of Libya's plant has temporarily prevented further deliveries to it. N.Y. Times, Jan. 14, 1989, at A5, col. 1 (National ed.). American efforts to block the export of chemical weapons precursor chemicals to Libya appears to have worked. On March 1, 1989, Bush administration officials stated they believed the Rabta chemical plant was being turned into a pharmaceutical manufacturing plant. The officials said Colonel Moammar Qaddafi is seeking to hire technicians who would refit the plant so it can produce pharmaceuticals. However, Libya is believed to have already produced some quantities of mustard gas at the Rabta plant. N.Y. Times, Mar. 2, 1989, at A4, col. 1.

310. N.Y. Times, Jan. 14, 1989, at A5, col. 3 (National ed.). Administration officials predict that the problem of how to react to Libya's chemical weapon capability will reappear as an issue for the Bush administration. *Id.*

pay for chemical weapons ingredients, companies are likely to sell them, regardless of the end result.

D. Sanctions

In response to Iraq's use of chemical weapons against the Kurds, the U.S. Senate passed a bill imposing stiff economic sanctions on Iraq in early September, 1988.³¹¹ The bill would have prohibited U.S. credit and sale of sensitive materials to Iraq, required the U.S. to vote against loans to Iraq by international financial agencies, and barred importation of Iraqi oil. The Senate unanimously and swiftly passed the bill.³¹²

On September 27, 1988, a similar bill was introduced in the U.S. House of Representatives.³¹³ Although weaker than the Senate bill, the bill would have banned U.S. sales to Iraq of materials which could be used for military purposes.³¹⁴ The President would have been required to impose additional sanctions under certain circumstances. These sanctions could have included restrictions on agricultural exports from the U.S. to Iran, downgrading or suspension of diplomatic relations, and a denial of loans and loan guarantees.³¹⁵

The Reagan Administration opposed using trade sanctions in this situation, preferring to use diplomatic pressure to dissuade Iraq from using chemical weapons.³¹⁶ The bills eventually died in the closing days of the Congressional session.³¹⁷

The Reagan administration's opposition to sanctions was a reflection of the effect of political and economic considerations.³¹⁸ Oil imports

311. Wall St. J., Sept. 28, 1988, at A48, col. 3 (Southwest ed.). The Senate's strong response was motivated by the report of staff members of the Senate Foreign Relations committee who had met with Kurdish refugees in Turkey during September 1988. See *supra* note 22.

312. *Id.*

313. N.Y. Times, Sept. 28, 1988, at A4, col. 1 (National ed.). The bill passed by a vote of 388 to 16, with a bipartisan majority of 233 Democrats and 155 Republicans. The President would have no discretion in selecting penalties. *Id.*

314. *Id.* Sponsors of the bill said it was totally inappropriate for the State Department to insist on quiet diplomacy and "leisurely negotiations" as the best way to stop the use of chemical weapons. See *infra* note 316 and accompanying text.

315. *Id.* The President would be required to impose additional sanctions unless he certified Iraq had stopped using chemical weapons and agreed to reliable means of verification, such as an on-site inspection by a U.N. team. *Id.*

316. Wall St. J., Sept. 23, 1988, at A6, col. 1 (Southwest ed.). A. Peter Burleigh, a Deputy Assistant Secretary of State, said, in testifying on the House bill, "We cannot support this legislation because we do not believe sanctions now would bring us closer to the objective of ending chemical weapons use by Iraq." *Id.*

317. Wall St. J., Oct. 24, 1988, at A11, col. 4 (Southwest ed.). The bills were opposed by many in the construction and oil industries, who were hoping to acquire contracts for new construction in Iraq after the war. *Id.*

318. Wall St. J., Sept. 16, 1988, at A14, col. 5 (Southwest ed.). On September 8, the Administration had charged Iraq with using poison gas against the Kurds and condemned the act as abhorrent and unjustified. However, a State Department official said the House bill would undercut efforts to negotiate with Iraq and undercut U.S. exports. *Id.*

from Iraq totaled \$490 million during the first half of 1988, up from \$487 million in all of 1987.³¹⁹ In addition, the U.S. has tilted towards Iraq during the Gulf War and sees Iraq as more stable than Iran for strategic considerations. The United States was the only nation to call for sanctions against Iraq for its attack on the Kurds.³²⁰ Other nations simply utilized the United Nations for registering their concern.

Even in the face of chemical weapons use against civilians, world governments apparently feel they can do little to punish the user. Political considerations seem to outweigh concerns about the ever increasing use of chemical weapons and the message sent to the world body by such a passive response. Sanctions require unanimity in purpose and act to be effective. To date, they have not been applied to chemical weapons users.

E. International Conference

At a chemical weapons conference in Paris on January 11, 1989, more than 140 nations unanimously re-affirmed the Geneva Protocol's ban on the use of chemical weapons.³²¹ The conference was jointly sponsored by France and the United States as a response to Iraq's use of poison gas against Iran.³²² The conference's final declaration condemned the use of chemical weapons and called for an accelerated effort to complete the 1984 Draft Convention on Chemical Weapons.³²³

Ironically, Iraq was not mentioned in the declaration nor exposed to any form of disapproval during the conference.³²⁴ The United States had

319. *Id.* The amount of Middle East oil imported daily into the U.S. rose substantially during 1988. *Id.*

320. *Id.* The international community generally said the United States Congress was being too hasty in condemning Iraq. *Id.*

321. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). The delegates expressed their support of the Geneva Protocol in the following words: "The participating states recognize the importance and continuing validity of the protocol for the prohibitions of the use in war of asphyxiating, poisonous or other gases and bacteriological methods of warfare, signed on June 17, 1925. The states parties to the protocol solemnly reaffirm the prohibition as established in it." Declaration from the Paris Conference on Chemical Weapons, January 12, 1989, *reprinted in* N.Y. Times, Jan. 12, 1989, at A4, col. 1 (National ed.) [hereinafter Paris Declaration].

322. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). France had called for the conference in October 1988. President Reagan requested it during his farewell speech to the United Nations in November 1988. *Id.*

323. "The participating states stress the necessity of concluding, at an early date, a convention on the prohibition of the development, production, stockpiling and use of all chemical weapons, and on their destruction. This convention shall be global and comprehensive and effectively verifiable. To this end, they call on the Conference on Disarmament in Geneva to redouble its efforts, as a matter of urgency, to resolve expeditiously the remaining issues and to conclude the convention at the earliest date." Paris Declaration, *supra* note 321.

324. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). The Third World nations supported Iraq and refused to let this issue be discussed. The final Declaration only obliquely referred to the event with these words: "The States . . . deem it necessary in the meantime, for each state to exercise restraint and to act responsible in accordance with the purpose of the present declaration." Paris Declaration, *supra* note 321.

hoped for a commitment to tighten export controls on precursor chemicals, but to ensure a unanimous declaration, this was not discussed.³²⁵

During the conference, many Third World countries rejected the idea of a ban on chemical weapons production.³²⁶ They felt Western nations were operating under a double standard: trying to stop the spread of chemical weapons, while developing new ones themselves.³²⁷

The conference did emphasize the seriousness of the chemical weapon threat. Its unanimous declaration of support adds a stronger moral force to the Geneva Protocol.³²⁸ The Conference on Disarmament reconvened in Geneva in late January to continue the on-going negotiations on the proposed chemical weapons convention.³²⁹

F. Military Action

Libya's nearly completed chemical weapons plant, which is surrounded with Soviet surface to air missiles, is seen as a threat to world safety.³³⁰ If ever operational, the plant could supply terrorists the means to attack the United States during naval operations and to terrorize other nations.³³¹ A pre-emptive military strike to eliminate the plant is believed to be a legal defense option under the general wording of the United Nations' Charter.³³² The Charter suggests that any group of nations which feel threatened may act in self defense.³³³

Military action should be a last resort and would always provoke

325. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). The conference was set up in advance to be a consensus arrangement, therefore, one member could have a veto power. The unanimous declaration was sought to give moral backing and strength to the reaffirmation.

326. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.); Hous. Chron., Jan. 9, 1989, at 6A, col. 1. Many expressed the feeling that western nations were trying to restrain the Third World's economic growth by attempting to restrict chemical and technology exports. N.Y. Times, Jan. 11, 1989, at A6, col. 1 (National ed.).

327. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). Many nations claimed they had the right to chemical weapons because Israel had nuclear weapons. This issue took up most of the week. *Id.*

328. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). In the reaffirmation of the Geneva Protocol by the unanimous vote of more than 140 nations, the question of the current legality of the Protocol is laid to rest. However, its effectiveness remains questionable so long as no verification or enforcement procedures are included. *Id.*

329. *Id.* The forty-nation conference has been meeting periodically since the mid 1970s, and has been negotiating the 1984 Draft Convention on Chemical Weapons. *Id.*

330. *How Qaddafi Built His Deadly Chemical Plant*, BUS. WK., Jan. 23, 1989, at 50. Libya is generally considered an exporter of terrorism and believed to be willing to provide terrorists chemical weapons to use against Americans, Europeans, and Israelis. *Id.*

331. *Id.* The Pentagon is reported to be concerned that Libya will use gas to disrupt U.S. naval exercises in the Persian Gulf and the Mediterranean. *Id.*

332. Wall St. J., Jan. 5, 1989, at A3, col. 2 (Southwest ed.). William F. Burns, Director of the United States Arms Control and Disarmament Agency, stated that he felt military action against a chemical weapon facility would be justified under the United Nations Charter. *Id.*

333. *Id.* Chapter I of the U.N. Charter gives one purpose of the U.N. as "to take effective collective measures for the prevention and removal of threats to the peace." Charter of United Nations and International Court of Justice, 59 Stat. 1037 (1945).

international criticism. Nevertheless, as the 1986 bombing raid on Libya has proved, military retaliation does tend to inhibit terrorism.³³⁴ A military strike to prevent the means of future terrorism would be one effective response to a chemical weapons threat.³³⁵

V. CONCLUSION

The Geneva Protocol, which prohibits the use of chemical weapons, was reaffirmed unanimously by 140 nations in January 1989.³³⁶ However, the reaffirmation only serves to further highlight the unresolved problems concerning chemical weapons which are currently faced by the international community. The use of chemical weapons is banned, but no mechanism exists to enforce the ban or to punish violators. Progress is urged on banning the development and stockpiling of the weapons; yet countries make little attempt to control the export of chemicals and technology used to produce the weapons.³³⁷ The latest country proven to have used these weapons says it sees no moral difference between killing with gas and killing with bullets. In an ironic twist of fate, the country which introduced chemical weapons and whose use of them in World War I was the impetus for the Geneva Protocol, is the country whose chemical company has supplied chemical weapons capability to Libya, the leading terrorist state.³³⁸

Since its adoption in 1925, the Geneva Protocol has been repeatedly violated, with little response from its signatories.³³⁹ In each case, the world has concerned itself with arguing about standards of proof and the veracity of the victims.³⁴⁰ As with the Versailles Treaty, a protocol which is continuously violated with impunity eventually becomes void.³⁴¹ With each passively accepted use of chemical weapons, the Protocol becomes less relevant. As Vice President Bush said in his 1984 speech to the Conference on Disarmament, the danger of having no way to prevent the use of chemical weapons is "the chance that the world might actually get callous. . . . It might come numbly to accept these

334. Wall St. J., Dec. 7, 1988, at B2, col. 3.

335. *Id.* In December 1988, President Reagan stated that a military strike against the Libyan plant was being discussed as an option by the United States and its NATO allies. *Id.*

336. N.Y. Times, Jan. 12, 1989, at A1, col. 2 (National ed.). See *supra* notes 321-323 and accompanying text.

337. *Id.* The Conference failed to discuss export controls or sanctions. However, it did recommend that the U.N. Secretary General be given authority to investigate all allegations of chemical weapons.

338. N.Y. Times, Jan. 12, 1989, at A11, col. 4 (National ed.). The country referred to is West Germany.

339. See *supra* notes 204-206 and accompanying text.

340. J. GOLDBLAT, *supra* note 16, at 100.

341. See *supra* notes 99-101 and accompanying text.

weapons and abandon efforts to rid future generations of this peril."³⁴²

The Draft Convention on Chemical Weapons has been under consideration for four years. Until an inspection provision is agreed upon, it will remain only a proposal. The world is left with only the ban on chemical weapons use, set out in the Geneva Protocol. Even if this problem is resolved, the problem of nations that have chemical weapons but refuse to sign the convention will remain a serious concern.

The recent use of chemical weapons by Iraq has been useful in highlighting the major issues relating to chemical weapons proliferation. First, it confirms the utility of chemical weapons in a conflict where one adversary lacks its own weapons or a reasonable defense. Their use has brought no punishment or sanctions and any negative publicity has been a temporary irritant. Second, the use or suspected use of such weapons creates difficult problems for all nations. Responses must be weighed with consideration for the political situation and security interests. Third, even if an effective control convention is enacted, the question of what to do after detection of a violation will remain. If current international law prohibiting chemical weapons use cannot be upheld and properly enforced, chemical weapons will proliferate and be used despite further control agreements. The moral sanctions of the international community may remain the only deterrent available to inhibit the spread of these weapons. To date, the moral force of world opinion has been insufficient to force the chemical weapons genie back into its bottle.

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342. Bush speech, *supra* note 219, at 301.