Proliferation of Chemical Warfare: Challenge to Traditional Restraints

TERRY M. WEEKLY

Ypres, Belgium, 22 April 1915: It was late afternoon and the setting sun cast long shadows over the battle-scarred terrain. In the distance could be heard the faint sounds of large-caliber artillery. Suddenly, at 1724 hours, three flares rose from an observation balloon and German artillery commenced a fierce bombardment of the areas to the rear of French and British trenches. At 1800 hours, the shelling ceased and an eerie silence fell over the area.

Chancing to rise and peer across the battlefield, the men of the French and Algerian divisions saw a thin blue-white haze rising from the German trenches. It swirled about, gathered into a greenish cloud, and began to slowly drift across the terrain at a height of about six feet. Settling into every depression as it went, the cloud finally came spilling into the French trenches, silently enveloping the occupants in an acrid green cloud so thick they could not see their neighbors. Seconds later they were clutching their throats, fighting for air.[1] In an effort to escape, some attempted to bury their mouth and nose in the earth. Others panicked and ran, which only resulted in deeper breaths and more acute poisoning. Faces turned blue and some suffered ruptured lungs from coughing.[2] To the north and south of the cloud-enshrouded French positions, British and Canadian troops watched in amazement as soldiers emerged from the cloud, staggering about and running wildly for the rear. Soldiers streamed by, "blinded, coughing, chests heaving, faces an ugly purple color, lips speechless with agony." Surprise was complete. The two French divisions collapsed, leaving a gap four miles wide in the Ypres front.[3]

Thus, the specter of large-scale toxic chemical warfare was unleashed upon the world. That this was a clear violation of international treaty, codified by the Hague Convention of 1899, did not stop the major powers from embarking on a course of action consisting of increasingly lethal chemical agents and the unrestricted use of toxic gas on all significant war fronts.

As a direct result, nearly 1.3 million military gas casualties were to be suffered by the seven primary belligerents by the end of the war.[4]

Following World War I, the global revulsion at the horrors of chemical warfare caused it to be banned by international protocol. World War II was fought on an unlimited scale, including the introduction of nuclear warfare, without resort to the battlefield use of chemical weapons (with a few exceptions). Later, the prolonged Korean and Vietnam conflicts were also fought without resort to toxic chemical warfare. The last decade, however, has seen a dramatic proliferation of chemical warfare capability among Third World nations with an accompanying escalation in the use of lethal chemical agents both on the battlefield and against civilian population centers, the most notable being the events of the recent Iran-Iraq War.

This article surveys the circumstances surrounding the initiation of chemical warfare in World War I and the subsequent international response. It then views the restraints that worked successfully against chemical warfare during World War II in relation to the current world situation to determine how and why these restraints have been challenged in recent years.

World War I

The agent used to initiate chemical warfare at Ypres was chlorine, a gas released from metal cylinders emplaced in the German trenches. Chlorine poisons not by suffocation, but by stripping the lining of the bronchial tubes and lungs, producing severe inflammation. This in turn results in the production of massive amounts of yellow fluid which fills the lungs, blocks the windpipe, and froths from the mouth. Death actually results from the victim's drowning in his own fluids. A correspondent visiting a French medical facility shortly after the chlorine attack reported seeing hundreds of wounded with "faces, arms, and hands of a shiny grey-black color" sitting "with mouths open and lead-glazed eyes, all swaying slightly backwards and forwards trying to get breath." In this surprise initiation of chemical warfare, French casualties were 5000 dead and 10,000 wounded. Thirty-six hours later, a second German gas attack, this time on Canadian forces, produced another 5000 dead.[5]

The introduction of chemical warfare by the Germans resulted in an immediate scramble by both sides to develop not only defensive measures,

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but also more deadly offensive chemical agents and techniques. By September 1915, the Western Allies had responded with their own use of chlorine gas. The race was on.

The next toxic agent introduced by the Germans, in December 1915, was phosgene, a gas attacking the respiratory system and producing effects similar to chlorine, but estimated as 18 times more powerful. Then, on 12 July 1917, once again at Ypres, the Germans unleashed mustard agent, which dwarfed the horror of anything that had gone before. Initially, its victims could see or feel no ill effects. But even the slightest contact with this seeming innocuous, garlic-smelling liquid could, in a few hours, produce intolerable pain in the eyes, vomiting, massive yellow blisters up to a foot long, and havoc on the respiratory system. Dying was a slow and agonizing process marked by incessant and useless coughing as the windpipe became totally clogged. The agent was persistent, remaining in the soil over long periods of time.[6] Worst of all, a respirator or gas mask was no longer adequate by itself to provide protection because the liquid mustard could contaminate and penetrate clothing. The powerful impact of this new agent is graphically demonstrated by British gas casualty statistics. During the 27 months from the initiation of chemical warfare in April 1915 to the introduction of mustard in July 1917, the British suffered approximately 20,000 gas casualties. From the point when mustard was first used to the end of the war, a period of only 16 months, over 160,000 gas casualties were sustained.[7]

The horror of chemical warfare, however, was not limited just to front-line troops. Massive chlorine gas attacks could generate dense clouds capable of producing significant casualties as far back as 30 kilometers from front-line trenches.[8] Gas attacks caused panic among troops billeted in towns and villages many miles behind the lines. When the approach of a gas cloud was detected, alarm bells rang and soldiers and civilians alike, clutching respirators, made their way to the top rooms of houses. All doors and windows were tightly closed as the gas cloud drifted by below.[9]

Nor were the effects limited to humans. The gas clouds wiped out horses and wild game, rats and mice, birds, insects, and vegetation. A German phosgene cloud is said to have reached a height of 60 feet in one location, killing thousands of birds nesting in trees. In Monchy Woods, an area subjected to repeated gas attacks, all the leaves fell from the trees three months before autumn. Chlorine gas also tarnished metal, turning buttons, watches, and coins a dull green. Rifles rusted and looked as if left out in the weather for months. Breech blocks on cannons became unusable.[10]

By the time of the Armistice ending World War I, development of the airplane had raised gas warfare to the threshold of becoming a strategic as well as tactical weapon. Whether this forbidding prospect would be realized in future war depended on the reaction of world opinion and national decision-makers.[11]

The International Response

By the end of World War I, strain and exhaustion were universally evident. The enthusiasm and hope for a more perfect world order which had characterized many nations' approach to the war gave way to disillusionment. The war seemed to have solved little.[12] And worst of all, with the introduction of chemical warfare, existing international law and protocol concerning the rules of war had failed to prevent the elevation of warfare to new levels of horror.

Before World War I there was already a considerable body of widely accepted international law prohibiting chemical warfare. As early as 1868, the St. Petersburg Declaration had stated that no weapon could be used that created superfluous suffering or made death inevitable.[13] The First Hague Convention in 1899, which deliberated the laws of warfare, declared in Article 23: "The contracting powers agree to abstain from the use of projectiles, the sole object of which is the diffusion of asphyxiating gases." The same article also forbade the use of weapons causing "unnecessary suffering." In 1907, the Second Hague Convention validated the declarations of the first and added: "It is especially forbidden to employ poison or poisoned weapons."[14] Both protocols were signed and ratified by all 1915 World War I participants except Serbia and Turkey.[15]

The failure of international law to prevent initiation of chemical warfare did not deter continued efforts toward that goal. In fact, owing to the

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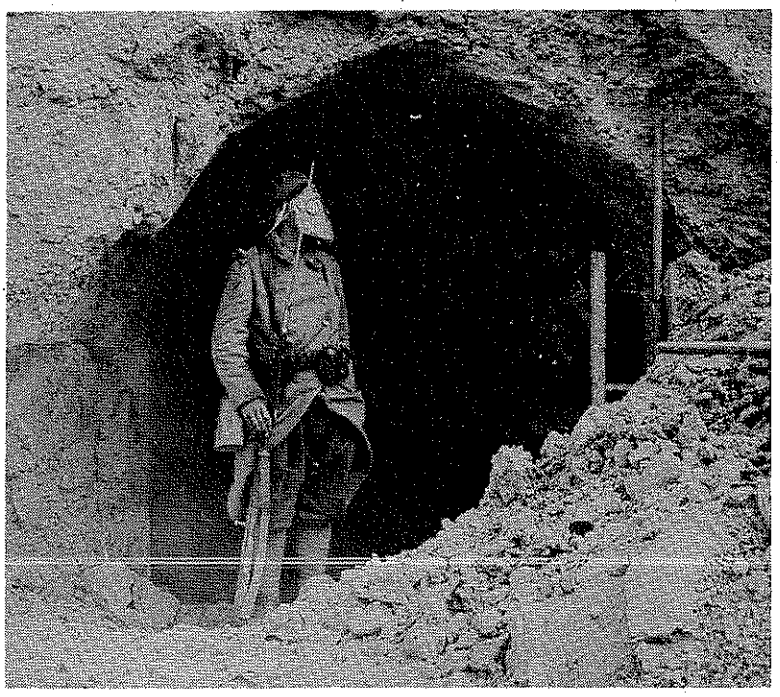

A French soldier stands guard in World War I. The place and date of the photo are unknown.

repugnant nature of gas warfare, efforts toward its prohibition were redoubled. The Versailles Treaty imposed on the Central Powers at the end of the war stated: "The use of asphyxiating, poisonous, or other gases and all analogous liquids, materials, or devices being prohibited, their manufacture and importation are strictly forbidden." A few years later, participants in the Washington Armament Conference of 1921-1922 (Britain, France, Japan, Italy, and the United States) drafted an article that essentially restated the Versailles Treaty and Hague Conventions. The article declared that chemical warfare, "having been justly condemned by the general opinion of the civilized world, and a prohibition to such use having been declared in treaties, . . . the Signatory Powers . . . declare their assent to prohibition." To be valid, however, the treaty had to be signed by all five participants. Because of disagreement over another article concerning submarine warfare, France refused to sign, thereby rendering the protocol invalid.[16]

It is significant to note that some national leaders were already starting to question the value of international treaties on the prohibition of chemical warfare. Britain and France pointed out that previous treaties had been violated with impunity and that since there were no sanctions involved, compliance could only be ensured by national readiness. This was a conclusion that many in the United States were also reaching.[17]

In 1925, the premier international agreement concerning chemical and biological warfare was negotiated in Geneva. Known as the Geneva Protocol of 1925, it is still in force today—though it has proven ineffective. While the protocol prohibits the *use* of chemicals of all kinds, it does not prohibit the production and stockpiling of chemical weapons. Further, it provides for no means of verification and no formal sanctions should the treaty be violated. When the protocol was ratified, some 30 nations entered reservations that permitted retaliatory use of chemical weapons if first used against them, thus making the protocol at best a "no first use" agreement rather than a total prohibition.[18] While until recently the promise of "no first use" has generally been observed, this has resulted not so much from the prohibition embodied in the protocol, but from mutual fear of retaliation.[19] It should be noted that while the United States has continuously declared a "no first use" policy, it did not ratify the Geneva Protocol until 1975, 50 years after the treaty's birth. This delay primarily centered on chemical readiness issues and the feeling that the protocol was not enforceable. At the time of ratification in 1975, the United States also entered a "right to retaliation" clause.

While there have since been numerous international forums concerning prohibition of chemical warfare, the Geneva Protocol of 1925 is the last substantial effort to be universally recognized and ratified (by 123 countries to date). It remains today, even with its inherent weaknesses, the touchstone for discussions of chemical disarmament.

World War II

As the international tension and military muscle-flexing leading up to World War II increased, there was little confidence that international bans against chemical warfare would work in any future conflict. Prominent observers such as H. G. Wells and Bertrand Russell warned their countrymen on the eve of World War II that they could expect to be showered with poison gas in the event of another world war.[20]

Happenings on the world scene certainly did nothing to dispel such fears. In late 1935, Italy invaded Abyssinia (Ethiopia), a backward country with a highly outnumbered army. Italy needed a quick victory. The Abyssinians were mostly barefoot and lacked protective clothing. The use of mustard, therefore, could produce a significant military advantage.[21] The Italians used mustard bombs first, followed by aerial spraying by groups of 9 to 15 aircraft. Soldiers, women, children, cattle, rivers, and pastures were drenched with this deadly rain. The result was appalling death and suffering by the defenseless natives. In effect, Abyssinia was little more than a proving ground for the Italians. The general public sentiment in the Western World was expressed by British Prime Minister Stanley Baldwin: "If a great European power, in spite of having given its signature to the Geneva Protocol against the use of such gases, employs them in Africa, what guarantee have we that they may not be used in Europe?"[22]

In the eyes of many world leaders, Italian defiance of the Geneva Protocol only confirmed the obvious—"A major power could get away with limited violations of the [Protocol's anti-gas provisions] provided these did not threaten the interests of other major powers. . . . The Protocol's 'no-gas' rule in fact meant 'only a limited amount of gas,' provided there is no threat of escalation."[23]

Meanwhile, on the other side of the world the Japanese were at war with China, another poorly trained and backward opponent. The Japanese had been party to the Hague Conventions of 1899 and 1907, but had not ratified the Geneva Protocol of 1925. Although they had not participated in gas warfare in World War I, they nonetheless believed that they must be ready for it. This required knowledge of the effects of using chemicals in combat, and China provided the perfect opportunity for field testing with no fear of retaliation. From 1937 onward, the Japanese made extensive use of poison gas (frequently mustard) against the Chinese. By 1939, the Chinese claimed that chemical agents had been used against them in 886 separate instances. Formal protests to the League of Nations brought no relief or assistance.[24]

At the same time, the Germans in the mid-1930s were struggling to recover from the anti-chemical restraints placed upon them by the Versailles Peace Treaty and to rebuild their chemical arsenal. In December 1936, they made a discovery with the potential to provide a significant swing in the military balance of power. Conducting research in insecticides, a German

scientist, Dr. Gerhard Schrader, recognized the military potential of Tabun (GA), a nerve agent. When used on dogs or monkeys the agent produced loss of muscular control, shrinking of the eye pupils, frothing at the mouth, vomiting, diarrhea, twitching and jerking, convulsions, and—in 10 to 15 minutes—death. Dr. Schrader was summoned to Berlin for a demonstration, and the value of Tabun as a war gas was quickly recognized. It was colorless, practically odorless, and could poison either by inhalation or penetration through the skin. Plans for production began immediately. Later, in 1938, the Germans discovered Sarin (GB), a nerve agent ten times as toxic as Tabun, and then in 1944, Soman (GD), which was even more toxic. (The existence of these agents was a well-kept German secret throughout the entire war. It was not revealed until April 1945, when the Allies overran stocks of nerve agent munitions and were shocked to discover their existence.)

By the outbreak of World War II in 1939, the stage had been set. All major powers had adopted the position that chemical readiness was the best deterrent and all had at least some offensive chemical capability. Chemical munitions had already been used on a large scale by two major powers between the wars. It seemed certain that World War II would see the resumption of gas warfare where World War I had left off, but with a quantum and frightening difference. The airplane made chemical warfare a genuine strategic threat with the associated specter of long-range gas bombing of cities and industrial centers.

Yet, surprisingly, and despite the war's unlimited scale—including mass casualties caused by conventional bombardment of cities, the overrunning and unparalleled destruction of whole countries, and the introduction of nuclear weapons—World War II would run its course without resort to gas warfare.[25] The system of restraints that had evolved between the wars to discourage gas warfare will be discussed later. It was not, however, for lack of tempting opportunity or capability on either side that chemicals were not used. While initial capabilities were indeed limited, both sides engaged in a rapid buildup of chemical agent stockpiles and delivery means. Once started, production never slackened. For nearly six years, the initiation of gas warfare was regarded as a day-to-day possibility, and by 1945 over a half million tons of chemical weapons had been readied.

Germany initially possessed only limited toxic stocks. They began an immediate buildup, however, starting construction in January 1940 on a massive nerve agent factory located in the forests of Silesia in western Poland. This facility was fully operational by early 1942, capable of producing 3000 tons of nerve agent per month. By mid-1943, the Germans had a score of factories producing up to 12,000 tons of various toxic agents each month, and had accumulated a vast arsenal of chemical munitions.[26] They had also built an extensive shelter system and issued over 28 million gas masks to the German people.[27]

Among the Allies, both Britain and the United States also entered the war with only sparse chemical warfare capability. At the outbreak, the British stockpile was limited to a small quantity of mustard. Intensive production was initiated immediately, however, and by December 1941 the British possessed sufficient stocks on hand or in production to conduct effective ground and air retaliation. The strongest element of British gas warfare readiness was its emphasis on civil defense. By 1939, over 38 million gas masks had been issued to the civilian populace.[28] In the United States a similar buildup of toxic stocks occurred, with 13 new chemical agent plants opened within three years of the start of war.[29]

Not only were toxic munitions being hurriedly produced, they were also made available at the battle front. Throughout the entire war, the Axis and Allies secretly moved chemical weapons and protective equipment into strategic locations for rapid access in case they were needed.[30] This led to at least two recorded instances of accidental release of chemical agents by the United States. In the first and worst case, an Allied supply ship loaded with 100 tons of mustard gas bombs was hit by a German JU-88 bomber while anchored in the harbor at Bari, Italy. The ship blew up, contaminating the harbor and causing severe casualties to sailors and local civilians. Reported casualties from the mustard were 83 dead and 617 injured.[31] In the second instance, a German projectile hit a gas-shell dump in the Anzio bridgehead and the gas drifted toward German lines. By quickly communicating with his German counterpart, the US commander was able to convince the enemy that he hadn't intended to use gas, thus defusing a potentially disastrous situation.[32]

In reviewing the history of World War II, one finds numerous opportunities when the initiation of chemical warfare might have been decisive in an operation or campaign, if not the war itself. The outcome of the Dunkirk evacuation might have been different if chemical weapons had been unleashed by the Germans. Shortly thereafter, faced with a possible German invasion (Operation Sea Lion), the British seriously debated the use of toxic gas. Later, in mid-1942, Churchill was so sure that the Germans were about to employ gas on the Eastern Front that he offered to send Stalin 1000 tons of mustard for retaliation purposes.[33] In the Pacific, the island-hopping campaigns against the Japanese could well have benefited from use of toxic chemicals. Such use was, in fact, discussed and then rejected in the planning for the invasions of both Iwo Jima and the Japanese homeland.[34]

In July 1944, the British again seriously considered using chemical warfare in retaliation for the German V-1 attacks against London. The British Joint Planning Staff recommended against this action primarily because it would likely bring about widespread chemical warfare in Europe. (Recall that they had no knowledge of German nerve gas.) Churchill strongly opposed the recommended position and in a bluntly worded minute to his staff on 6 July

1944, directed them to restudy the situation. A feel for just how close the world came to chemical warfare in World War II is reflected in the following excerpt from the Churchill minute:

> I want you to think very seriously over this question of using poison gas. I would not use it unless it could be shown either that (a) it was life or death for us or (b) that it would shorten the war by one year. . . . I want a cold-blooded calculation made as to how it would pay us to use poison gas . . . principally mustard. . . . I should be prepared to do anything that would hit the enemy in a murderous place. We could *drench the cities of the Ruhr and many other cities in Germany* in such a way that most of the population would be requiring constant medical attention. . . . I want the matter studied in cold blood by sensible people and not by that particular set of *psalm-singing uniformed defeatists* which one runs across now here, now there.[35] (Emphasis added.)

While the world came within a hairbreadth of the reinitiation of gas warfare, it did not happen. For the first time in history, a telling weapon employed with devastating effect in one conflict was not carried forward to the next.[36] It seemed to many that the inhibitions against the use of chemical weapons contained in the Geneva Protocol had been reaffirmed and that a functional set of traditional restraints had been established. But these inhibitions and restraints were already starting to be undermined by world events and technical advances such as the further development of nerve agents, toxins, and the new possibilities presented by biological warfare.[37]

Erosion of Post-World War I Restraints

The restraints against gas warfare that evolved after the First World War proved generally effective for nearly 50 years. Such restraints can be grouped under the following categories, arranged in descending order of effectiveness:

- *Psychological.* Simple fear of retaliation, born of the mutual desire of all parties to the conflict not to have the horrors of chemical warfare visited upon themselves.
- *Military.* Belief by the professional military that the use of gas was an affront to the art, science, and honor of the profession, and that the overall effectiveness of chemical operations on the battlefield was itself questionable.
- *Political.* Inhibitions felt by national leaders stemming from their personal repugnance or that of their people for chemical warfare; limitations upon unilateral action by nations fighting as part of coalitions.
- *Moral.* Recognition by all parties of the brutal, barbaric nature of the effects of poisonous chemicals upon soldiers and civilians alike.
- *Legal.* Realization that resort to chemical warfare violated the letter and spirit of international law.

Unfortunately, as events of the last few years have shown, the restraints listed above have begun to weaken. Let us examine what changes have occurred to reduce their effectiveness today.

Psychological. Not surprisingly, psychological restraints—embodied mainly in the power of retaliation—have been little affected by recent events, remaining the dominant bar to chemical warfare. In wars between belligerents of approximately equal strength or retaliatory capability, the threat of chemical warfare seems no more likely today than during World War II. At the same time, recognition of the value of potential retaliation as a deterrent has itself contributed to the proliferation problem, especially among turbulent Third World countries perceiving external threats to their security. The roster of countries that have either recently acquired or are seeking chemical weapons is growing and now includes such small or developing nations as Iraq, Iran, Egypt, Libya, Syria, Ethiopia, Israel, Burma, Thailand, North Korea, South Korea, Taiwan, Cuba, Vietnam, China, and South Africa.[38] The perception exists that even a relatively weak country may be able to raise the cost of a threatened invasion to an unacceptable level through the threat of chemical response.[39] Additionally, this concept has been elevated to a new plateau in NATO, where it is widely understood that a chemical attack by the Warsaw Pact might well be considered such a grave escalation as to compel a nuclear response.[40]

In short, the effectiveness of fear of retaliation as a restraint remains unchallenged. Since World War I, there has yet to be an instance of poison gas being used against a country possessing a credible chemical response capability.

Military. While fear of retaliation remains an effective restraint, the military aspect of restraint has undergone a significant evolutionary change that has greatly diminished its influence in preventing chemical warfare. The evolution started with the strategic fire-bombing of cities in World War II; it was stimulated by the unleashing of atomic warfare on Japan; and it continues today, as evidenced by the extensive use of poison gas in the Iran-Iraq War.

The use of the atomic bomb to end World War II was a significant event affecting worldwide attitudes concerning weapons of mass destruction. For the first time, such a weapon was used effectively to force a nation to its knees. More important, it was employed by the United States, looked upon in the eyes of the world as a highly moralistic society. Thus, the advent of atomic warfare significantly lowered the threshold for employment of weapons of mass destruction. Some would argue that the US use of riot control agents, napalm, and defoliants in Vietnam also worked to lower the chemical threshold.[41] Coupled with recent Third World uses of toxic agents, the ultimate result is a greatly increased assimilation of chemical warfare by military leaders and planners, especially in the Third World.

Militarily, there are sound reasons why this assimilation has occurred. First of all, in every instance of use in recent years, chemical weapons

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This photo of US troops in a training area in France during World War I was posed to illustrate the effects of phosgene.

have proven quite effective.[42] They cause minimal property damage and can reach the occupants of even heavily fortified structures.[43] Their utility has been reinforced by the advent of nerve agents that are highly suited to mobile warfare.[44] With nuclear capability beyond the reach of many nations, chemical weapons have become the "poor man's atomic bomb."[45] They are relatively cheap, easy to produce, and provide a significant multiplier of combat power. When coupled with a ballistic missile, chemical agents also present a potent strategic threat. (Consider, for example, the Chinese CSS2 missile. Widely marketed in the Middle East, it has a range of 1500 miles and can easily accommodate a chemical warhead.)[46] Even among nuclear powers today, chemical munitions are sometimes viewed as another available step in escalation before resort to nuclear weaponry.[47]

Political. If the extent of the changes to military restraints can be described as evolutionary, the changes in political restraints have been revolutionary. The shifting balance of world power, changing norms of acceptable political behavior, and the emergence of terrorism as a tool of diplomacy have all worked to dramatically weaken the effect of traditional political restraints on chemical warfare.

First, the balance of world power has undergone a significant change since World War II, the result of a number of factors such as shifting economic

power, oil politics, and the emergence of Islamic fundamentalism. Where power was once divided primarily between Eastern and Western spheres of influence, the world is now multipolar. The influence of the big powers has been greatly reduced as economic clout has become nearly as important as military might. Emerging Third World countries are more independent and less responsive to outside influence. Further, Islamic fundamentalism has brought a whole new set of non-Western values into the world arena.

A second change reducing the impact of political factors on chemical restraint is the willingness of many Western nations to provide Third World countries with the technology necessary to produce toxic chemical agents. Countries such as Japan, West Germany, and even overseas subsidiaries of some US companies have been implicated in either helping to build facilities or providing constituent materials for toxic agents.[48] Furthermore, it is not always an easy task to ascertain the final product of a planned facility. The same factory that produces pesticides or fertilizer can easily be converted to manufacture poison gas, and the same chemicals that go into textiles, paint, plastic, and ink can also be used for toxic agents. It is estimated that over 100 countries now have the industrial base necessary to produce chemical weapons.[49]

A case in point is the existing Iraqi nerve gas production facility. After chemical engineering firms in the United States, Britain, and Italy refused to design or build a "pesticide" plant in Iraq because it seemed suspicious, a West German firm, Karl Kolb, obliged in the early 1980s. As a result of the recent Iran-Iraq War, it came to light that the "pesticide" plant had been diverted to production of nerve gas since 1984.[50]

A final turn of events with the frightening potential to influence political aspects of chemical restraint is chemical terrorism. Former Senator John Tower here sums up the possibilities:

> What distinguishes the present era from previous periods is the coincidence between vastly greater means available to terrorists and an increase in the number of targets, especially in urban, industrialized . . . societies in a world of political turmoil. In the late twentieth century, terrorism has . . . become a global problem of expanding proportions.

While an incident of chemical terrorism has yet to occur, the potential evokes the disturbing picture of a terrorist organization unleashing toxic chemical agents against a city for purposes of political blackmail or revenge. The idea, however heinous, is not so far-fetched as terrorist organizations continually strive for greater heights of brutality and sensationalism in order to capture headlines and television exposure.[51]

The upshot of all such developments is the increasing difficulty experienced today in attempting to bring political pressure to bear on violators of accepted norms of international behavior, such as the users of chemical

weapons. An entangling web of political and economic interests, coupled with the reduced influence wielded by the major powers, make consensus on any issue extremely difficult.

Moral. For many years following World War II, the moral aspect of chemical restraint remained little changed, with a general undercurrent of world opinion against chemical weapons. Over time, however, public feelings became desensitized by several factors, including the threat of nuclear holocaust, the ever more lethal conventional weapons being deployed on the modern battlefield, and a general increase in the ambient level of violence around the world.[52]

Very recently, however, the publicity given the rapid proliferation of chemical weapons in the Third World, coupled with the events of the Iran-Iraq War, seem to have mobilized world opinion once again. Gas warfare is no longer looked upon as just another aspect of remote Third World conflicts. The issues of indiscriminate mass killing and genocide have come to the forefront. Many government leaders around the world are now calling for international negotiations to ban chemical weapons.

Legal. As with moral restraints, until a recent flurry of activity little of substance had occurred with legal constraints since the Geneva Protocol of 1925. While there has been debate and posturing in the United Nations over various allegations of poison gas usage, no sanctions stronger than condemnation by the Security Council have ever been imposed.[53]

The recent concern generated by the Iran-Iraq War, however, has elevated chemical warfare to top priority on the international agenda. The United States and Soviet Union are conducting bilateral negotiations over chemical reductions. The long-running Geneva Conference on Disarmament, involving 40 nations, is considering a ban on both possession and production of chemical munitions.[54] Former President Reagan, in a speech before the United Nations General Assembly on 26 September 1988, called for "all civilized nations to ban, once and for all, and on a verifiable and global basis, the use of chemical and gas warfare."[55] A few days later, French President Mitterand urged the United Nations to endorse an international embargo of "products, technologies and . . . weapons" against any nation using poison gas.[56] On 25 September 1989, President Bush, in his first speech to the United Nations as US President, pledged his support to the Geneva Conference and called for a world ban on chemical weapons. "Let us act together," he said, "to rid the Earth of this scourge." More specifically, President Bush proposed that the United States and Soviet Union take a step together toward that goal by agreeing to cut their chemical arsenals drastically, to an interim level equal to 20 percent of the current US stockpile. He further said the United States would destroy 98 percent of its chemical weapons within eight years of the signing of a Geneva treaty, if the Soviet Union also signs the agreement. The

remaining two percent would be destroyed only after all nations possessing chemical weapons agreed to the ban.[57] On the very next day, Soviet Foreign Minister Eduard Shevardnadze, from the same UN podium, not only generally accepted President Bush's proposals but indeed proposed initiatives that went even further.[58]

In January 1989, France sponsored the highly publicized 149-nation conference in Paris designed to galvanize world opinion against chemical weapons and extend coverage of the 1925 Geneva Protocol. The results of the conference, while not all that was hoped for, were nevertheless encouraging in many respects. Through compromise, a "no-use" declaration was forged and unanimously endorsed by all nations represented. The communiqué stated that the parties to the conference "solemnly affirm their commitments not to use chemical weapons and condemn such use." In recognizing the urgency of the current situation, the communiqué declared: "The states participating in the conference are gravely concerned by the growing danger posed to international peace and security by the risk of the use of chemical weapons as long as such weapons remain and are spread." Support for a UN role in investigating future charges of poison gas use was also included in the declaration, as was an exhortation for early completion of the total-ban treaty under discussion at the Geneva Conference. An additional achievement of the week-long conference was that ten more nations, including North and South Korea, signed the 1925 Geneva Protocol, bringing total signatories to 123.[59]

It was disappointing that US-proposed export controls and economic sanctions against users of poison gas were omitted from the final document. "The Third World sees an issue like sanctions as a red flag," stated one senior American official. "They believe it is aimed at preventing their economic growth."[60]

Also of significance is the opposition to use of the word "proliferation" in the final communiqué. Failure to include this word in effect puts possession of chemical weapons by the United States and other developed nations on the same level as acquisition by Libya or similar nations in highly unstable areas.[61] This action further emphasizes how important it is for the United States and Soviet Union to take the lead in chemical disarmament and to reach an early bilateral agreement.

While the conference did not accomplish all that was hoped for, it did achieve a conspicuous success with the unanimous "no-first-use" endorsement, which should make it more difficult for a nation to employ chemical weapons in the future. Major General William F. Burns (USA Ret.), who headed the US delegation, stated that the conference "forged a powerful global consensus" against further poison gas use.[62] Unfortunately, however, the questions of verification and tough international sanctions remain troubling, unresolved issues.

In Sum

Out of the perceived horrors of gas warfare in World War I emerged a worldwide revulsion manifesting itself in a system of restraints that proved largely effective for nearly 50 years in preventing a repeat of massive chemical warfare. During this period, World War II was fought on an unlimited scale, including the introduction of nuclear warfare, without resort to the battlefield use of toxic chemical agents.

The past two decades, however, have witnessed a near-total erosion of the traditional restraint system, as evidenced by widespread proliferation and the use of chemical weapons in Third World conflicts. The result is that fear of retaliation remains the dominant and only effective restraint today. Relatively cheap yet potent chemical agents, coupled with modern delivery systems, provide a significant combat power multiplier which has essentially eliminated both political and military aversion to the use of chemical weaponry. Moral restraint is subject to public opinion shifts and has proven ineffective in the crucible of war. Similarly, such legal restraints as protocols, treaties, and bans are impotent, as currently structured, in preventing the use of toxic weapons in warfare. Because these legal instruments are the basis for regulating international affairs, however, it is essential that a realistic mechanism be found to put teeth into legal restraints by coupling them to stiff sanctions and punishment for offenders. Without such sanctions, protocols and treaties will never play an effective role in preventing chemical warfare.

NOTES

1. Charles E. Heller, "Leavenworth Papers No. 10: Chemical Warfare in World War I: The American Experience, 1917-1918," Fort Leavenworth, Kans., Combat Studies Institute, 1984, pp. 7-9.
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