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Technical Note
SSC-TN-5658-2

February 1977
Final

Supplementary Volume

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Edited by: WILLIAM M. CARPENTER

Prepared for:

OFFICE, ASSISTANT SECRETARY OF DEFENSE
INTERNATIONAL SECURITY AFFAIRS
THE PENTAGON, WASHINGTON, D.C. 20301

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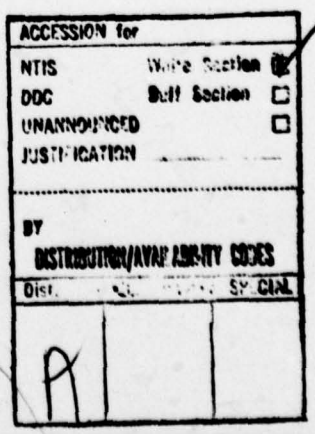

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This volume is a supplement to the study "Evaluation of Chemical Warfare Alternatives - 1980-1990" (SSC-TN-5658-1), which is an examination of alternative U.S. chemical warfare policies for the 1980-1990 period. This volume contains a brief historical summary of U.S. chemical warfare policy and three papers which examine U.S. chemical warfare policy from a European perspective.

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ABSTRACT

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DISCLAIMER

The findings of this report are not to be construed as an official Department of Defense position unless so designated by other authorized documents.

CONTRACTUAL TASK

This Technical Note is in partial fulfillment of Contract MDA903-76-C-0383.

FOREWORD

The basic study, "Evaluation of Chemical Warfare Policy Alternatives - 1980-1990" (SSC-TN-5658-1), to which this is a supplement, examined U.S. chemical warfare (CW) policy and the alternatives possible for the 1980-1990 period, as a contribution to the process of formulating a militarily and politically sound and acceptable chemical warfare policy for the United States. This volume is intended also to contribute to the policy making process, by providing selected background material.

The first part of this volume is a brief historical review of the evaluation of U.S. chemical warfare policy. The author of this summary is Mr. John L. Chamberlin, consultant to the Strategic Studies Center. It is not intended to be original research, but rather a compilation and condensation from other sources, to be of a length convenient for gaining an overview of past policy. In the period from World War I to World War II, there has been considerable reliance on Frederick Brown's excellent work, Chemical Warfare: A Study in Restraints, and on the three volumes on chemical warfare done in the series U.S. Army in World War II, under the auspices of the Office of the Chief of Military History, U.S. Army.

In addition to the historical review of policy, this volume contains three papers on U.S. chemical warfare policy from a European perspective. The authors are European political-military analysts: Mr. Richard Burt, a member of the staff of the International Institute for Strategic Studies, London; Dr. Uwe Nerlich, a member of the staff of the Institute for International Politics and National Security (Forschungsinstitut Für Internationale Politik Und Sicherheit), Munich; Dr. Hans Ruhle, a member of the staff of the Konrad Adenauer Institute, Bonn. These papers, prepared by consultants to the Strategic Studies Center, are reproduced here as written, and therefore reflect only the views of the authors; the perspectives which they present are considered to be of significant value and interest to those concerned with U.S. chemical warfare policy. This volume was edited by Mr. William M. Carpenter.

The basic study was undertaken by the SRI Strategic Studies Center, with assistance from the Engineering Systems Division of SRI, for the office of the Assistant Secretary of Defense (International Security Affairs). The Department of the Army, which jointly funded the project, is also considered to be a client. The project was under the general supervision of Mr. Richard B. Foster, Director, SSC, Mr. M. Mark Earle, Jr., Assistant Director, and Mr. Harold Silverstein, Special Assistant to the Director. The project leader was Mr. William M. Carpenter, assisted by the following members of the project team: Mr. John L. Chamberlin (Consultant to the SSC), Dr. James E. Dornan, Jr., Dr. Stephen P. Gibert and Mr. Arthur A. Zuehlke, all of the SSC, and Mr. Warren W. Berning and Mr. Edmund L. DuBois, of the Engineering Systems Division. Mrs. Anna Rhodes-Vivour of the SSC was a research assistant. Additional consultants included Mr. Richard Burt of the United Kingdom and Dr. Uwe Nerlich and Dr. Hans Ruhle of West Germany.

Richard B. Foster
Director, Strategic Studies Center

CONTENTS

THE ORIGINS AND EVOLUTION OF UNITED STATES CHEMICAL WARFARE POLICY

By

John L. Chamberlin

I WORLD WAR I: THE NECESSITY FOR A CHEMICAL WARFARE POLICY

The United States entered World War I with no chemical warfare (CW) experience or policy. None of the Allied Powers was prepared for the introduction of gas warfare when the Germans released a cloud of chlorine against the French sector at Ypres, France in April 1915. America's European allies of necessity began immediately to take both chemical defensive and offensive measures, but the United States, not yet in the war, reacted more slowly.[1] By late 1915 the U.S. War Department began to consider the problem of gas defense, but it was not until early 1917 that specific action was taken to provide the forces with gas masks. The first masks sent to the American forces in Europe turned out to be unsatisfactory, necessitating the purchase of masks from the British and French to protect American forces until the U.S. gas masks could be made adequate.[2]

On the offensive side of gas warfare preparations, it was the Interior Department (Bureau of Mines) rather than the War Department which took the initiative to start research and production of toxic agents.[3] This initiative resulted in the establishment of Edgwood Arsenal, which became the principal source of toxic agents. The overall effort in chemical agents and munitions and the means of delivery, however, did not begin to supply the forces in Europe until the war was nearly over in late 1918; for most of the time U.S. forces were in Europe it was necessary to depend on the

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[1] See Leo P. Brophy and George J.B. Fisher, U.S. Army in World War II, The Chemical Warfare Service: Organizing for War, Chapter I (Washington, D.C., USGPO 1959), see also F.J. Brown, Chemical Warfare, A Study in Restraints, Part I (Princeton, N.J., Princeton University Press, 1968).

[2] Brophy and Fisher, op. cit. p. 7.

[3] Ibid., pp. 3-5. The Bureau of Mines had also played a significant role in the development of gas masks.

European allies, mainly the British, for offensive chemical warfare capabilities.[1]

American slowness to respond to the CW threat as it developed in 1915 may at least in part be attributed to two factors: (1) it was still hoped then that the United States would be able to stay out of the war; and (2) after the initial shock following the first use of gas in 1915, defensive measures taken by both sides began to reduce the effectiveness of chemical munitions as competitors with conventional munitions.[2] It was not until the Germans introduced the much more dangerous (and persistent) mustard gas in another attack at Ypres on July 12, 1917, that gas warfare took on a new importance -- by this time U.S. forces had begun to deploy to Europe, making the CW problem immediate and real for the United States.

There appears to have been no significant debate on chemical warfare policy during the time that the United States was reacting to the new threat. In September 1917 the War Department stated, in connection with an announcement that "a gas and flame service"[3] would be set up in the American Expeditionary Force (AEF), that the United States would employ toxic agents in the war. Noting this decision had been approved by the President upon the recommendation of the General Staff, the stated justification for the use of gas was brief but consistent with the line taken in Allied propaganda: "The use of such methods by the enemy forces the United States to retaliate with similar measures."[4]

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[1] Ibid., p. 12.

[2] Ibid., p. 4; Brown, op. cit., pp. 10-11.

[3] Brown, op. cit., pp. 24-25.

[4] New York Times, 21 September 1917, p. 6, quoted in Ibid. p. 25.

In 1917 there was nothing like the policy debates on CW which took place after the war. The idea of gas warfare was basically abhorrent to Americans as they learned of it from 1915 onward, but the action taken by the governnent to prepare to strike back with CW raised no problems of public controversy at the time; the action was perceived as inevitable. Thus, although there was no policy debate, the elements of future CW policy were taking shape: first, a moral rejection of CW, requiring the government to explain that it was not initiating CW; and second, a determination to retaliate in kind to the enemy's first use, even though CW was seen as immoral and inhumane.

During World War I, United States forces suffered approximately 73,000 gas casualties, of which 1,500 were fatalities.[1] The growing realization of the importance of chemical warfare was reflected in the increasing role allocated to chemical munitions. By November 1917, General John J. Pershing, Commander of the AEF, had specified that 10% of all artillery shells would be filled with chemical agents. This figure was later raised to 20% (exclusive of shrapnel and anti-aircraft ammunition), and by late 1918 a ratio of 25% had been fixed for January 1919, had the war continued.[2]

In spite of extensive experience with chemical warfare in World War I, the Army leadership, as a whole, remained opposed to its use. That attitude had several bases: First, the feeling that CW was barbaric, unchivalrous, and not in keeping with the soldier's code of honor. Second, an institutional reluctance to put reliance on, or even accept, a radically new technique of warfare which significantly complicated logistics and management of the battlefield. Third, a reluctance to divert scarce manpower and monetary resources from the conventional arms. There was also a tendency to consider Chemical Warfare Service (CWS)

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[1] SIPRI, The Problem of Chemical and Biological Warfare, Vol. I, The Rise of CB Weapons (New York: Humanities Press, 1971) p. 129 (Based on figures given in: Prentiss, A.M., Chemicals in War (New York, 1937).

[2] Brown, op. cit., p. 31.

officers as more akin to civilian scientists than as part of the Army Officer Corps, a feeling that was no doubt intensified by the manner in which the CWS later lobbied with Congress and industry to push their views in opposition to those of the Army leadership.

Chemical warfare had proven technically well suited to the trench warfare of World War I, but the Army was determined to avoid positional warfare in the future. The debate over the military utility of chemical warfare was to continue for many years. Until the advent of the atomic era, chemical warfare appeared, as Frederic Brown has so aptly phrased it, "too technologically demanding and psychologically disquieting to be assimilated by the military profession."[1]

The Navy did not use chemical warfare in World War I, nor did it plan to do so. Naval CW policy was not established until July 1918. It was primarily a defensive policy calling for individual protection and the provision of gas proofing and decontamination devices aboard ship. There were plans, which were apparently never implemented, for the development of an armor piercing shell with a non-lethal gas filler.[2]

II CHEMICAL WARFARE POLICY BETWEEN THE WORLD WARS

The first indication of a post-war national policy on chemical warfare appeared immediately after the November 1918 Armistice, when the Chief of Staff of the Army, General Peyton March, who was vehemently opposed to chemical warfare, ordered the "complete demobilization of the Chemical Warfare Service, and that no poisonous gas should be used, manufactured or experimented with and no researches made; and that the defensive work, and such research as might go with it, should be turned

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[1] Ibid., p. 298.

[2] Report of Special Board on Gas Warfare, 20 June 1918, in Ibid., p. 159.

over to the (Corps of) Engineers".[1] The basic policy was set forth by the Secretary of War in a 29 December 1918 memorandum on the establishment of a chemical warfare research center at Fort Belvoir, Virginia, under the Chief of Engineers, "to prosecute continuously such inquiries as will enable us to defend ourselves against future use of gas by an enemy who may use it against us, and to reply in kind even if we do not ourselves initiate the use of gas in any subsequent war".[2] This was a clear indication of a policy of deterrence of CW by the threat of retaliation-in-kind, but the question of readiness was left open. The implication was that the U.S. should be ready to retaliate, but the means were not specified.

The War Department's lack of concern with preparedness to implement this chemical warfare policy is indicated by a 21 February 1919 memorandum from the Assistant Chief of Staff for Operations to the Chief of Engineers stating "it is not intended to proceed with this work. The research or experimental work....is to be merely such as may be necessary or desirable in connection with the Engineer School. No funds or special personnel for Chemical Warfare will be authorized".[3]

There were powerful forces at work, however, which would accept neither the War Department's passive attitude toward CW preparedness nor its implication that the use of CW should be avoided in future wars. The U.S. chemical industry was fighting to obtain treaty and tariff provisions which would weaken the German lead in industrial chemistry. They seized upon the issues of preparedness and the military possibilities of chemical

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[1] Amos Fries, History of Chemical Warfare in France, MS, 19 March 1919, p. 56 in Ibid., pp. 74-75. All troop allowances for chemical warfare equipment in the U.S. were canceled on 29 November 1918.

[2] Memo Sec War for C of S, 29 December 1918, Ibid., p. 75.

[3] Memo Asst C of S Opns to Chief of Engineers, 21 February 1919, in Ibid, pp. 75-76.

warfare as arguments favoring their position. In this they were assisted by supporters of the Army CWS which the War Department had scheduled to be disbanded. As a result of intensive lobbying, Congress attached a rider to the FY 1920 Appropriations Act continuing the CWS in being until 30 June 1920.

On 4 June 1920, the National Defense Act of 1920 established the CWS as a permanent branch of the Army. This was done over the almost unanimous objections of the Army leadership and the Secretary of War. "It was a remarkable example of pressure group activity conducted outside of the normal constraints of the military bureaucracy".[1]

The impact of this action on national chemical warfare policy has been profound. On the one hand it provided in the CWS a strong advocate to defend the case for chemical warfare and chemical warfare preparedness. On the other, the deep institutional resentment toward the activities of the Chemical Warfare Service exacerbated the general hostility to CW then existing in the Army, and may have contributed to the Army's long failure to fully assimilate chemical warfare techniques. However, the Congress, by its action in permanently establishing the CWS, had legislated a policy of national preparedness for chemical warfare, which the Army was obliged to follow.

Both the National Defense Act of 1920 and the interim peacetime mission statement which had been issued by the War Department on 28 November 1919[2] made it clear that the Army should maintain both a defensive and an offensive chemical warfare capability. However, general reductions in Army troop strength and appropriations provided the opponents

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[1] See Brown, op. cit. pp. 73-87 for a full discussion of this issue. See also Brophy and Fisher, op. cit. pp. 14-17.

[2] Report of the CWS, 1920, p. 5, in Brophy & Fisher, op. cit., p. 15.

of chemical warfare in the War Department with a basis for attempting to reduce the CWS mission to a primarily defensive role. This was rectified by wording in the FY 1922 Appropriations Act which made it clear that the CWS had both an offensive and a defensive mission,[1] and by a new War Department implementing policy published in General Orders, No. 42, on August 17, 1921.[2]

The Navy conducted a review of its chemical warfare policy during 1921 and 1922. The General Board accepted without qualification the assumption that CW would be used in future wars, and that Navy must be prepared both offensively and defensively. The final Board Report, which the Secretary of the Navy approved on 4 May 1922, assumed that the United States would not initiate first use of CW, but must be prepared for retaliation-in-kind.[3]

The Washington Arms Conference took up the subject of chemical warfare in January 1922. In the initial discussion Secretary of State Hughes took a position which corresponded exactly with the views of the CWS and chemical lobby: The use of gas could be limited (i.e. forbidden for use against population centers), but it could not be prohibited for tactical use. He then proceeded to expound exactly the opposite view which had been proposed by the Advisory Committee of the American Delegation, which consisted of 21 distinguished Americans appointed by President Harding, including Herbert Hoover, General Pershing, Rear Admiral Rodgers, and J. Mayhew Wainwright, Assistant Secretary of War. The Advisory Committee had recommended a complete ban on chemical warfare. Its position was supported by recommendations made separately by General

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[1] U.S. Treasury Dept, Digest of Appropriations....FY Ending 30 June 1922, (Washington: USGPO, 1921. p. 206. Reference in Brown, op.cit., p. 91.

[2] See Brown, op. cit., p. 92.

[3] Ltr, General Board No. 430 (serial 1106), 15 April 1922, Ibid., pp. 159-160.

Pershing, as Chief of Staff of the Army, and by the Navy General Board. The American resolution was accepted verbatim by the Conference and was signed on 6 February 1922, and became Article V of the "Washington Treaty", which read as follows:

> "The use in war of asphyxiating, poisonous or other gases and all analogous liquids, materials or devices, having been justly condemned by the general opinion of the civilized world and a prohibition of such use having been declared in treaties to which a majority of the civilized nations are parties:
>
> Now to the end that this prohibition shall be universally accepted as a part of international law binding alike the conscience and practice of nations, the Signatory Powers declare their assent to such prohibition, agree to be bound thereby between themselves and invite all other civilized nations to adhere thereto."[1]

It appears that it was well recognized by the participants that the threat of retaliation (probably in-kind) was the only effective means of enforcing a CW ban. Probably the only reason that the other signatories agreed to the treaty was that, although it banned use of CW in all forms, it did not specifically ban preparation for defense and retaliation-in-kind as a last resort. In fact the British ratified with a reservation to that effect.

The United States apparently chose to believe that public opinion would provide sufficient restraint on the use of CW to make the treaty effective without a specific provision for sanctions. The Advisory Committee had conducted a national opinion survey on the conference agenda, the result of which was "overwhelming sentiment" for the abolition of gas warfare.[2] Ironically, the U.S. position was partly a result of

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[1] Quoted in Brown, op. cit., p. 67.

[2] Ibid., p. 69.

over-sell on the part of the supporters of CW who had for three years been propagandizing the public on the overwhelming effectiveness of CW in order to encourage a policy of preparedness. The campaign had backfired , in that the press had reacted to the pro-CW campaign by writing about the horrors of gas warfare, rather than to portray the need for a CW offensive capability.

Congress consented to ratification of the treaty in deference to public opinion, and with the understanding that the treaty could not prevent preparedness. There also seemed to be a recognition that the strong public opinion in favor of outlawing chemical warfare required that the United States continue to follow a policy aimed at seeking an effective ban. The treaty was at least a demonstration of the existence of that policy and although emphasis has varied from time to time, the United States has followed a consistent policy since World War I of seeking an enforceable agreement banning the use of lethal and incapacitating chemical warfare.

There is no indication that the treaty had any significant effect on U.S. Navy chemical warfare policy. Perhaps one reason was that almost nothing had been done to implement Navy policy, consequently there were no pressures for change.

Within the Army the effects were more significant. In June 1922 War Department General Order No. 42 (17 August 1921), which had authorized both an offensive and defensive CW program, was rescinded and replaced by new General Orders, Nos. 24 and 26, which limited chemical warfare activities to defense. No training, procurement, or R&D on CW offense was to be permitted.[1] It is not clear why the Army took this position. The treaty did not require it, nor is there any evidence that the President or any other government agency requested it. Congress

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[1] Ibid., p. 93.

continued its willingness to appropriate monies for both defense and offense. It is probable that continuing hostility to CW within the Army and the general scarcity of resources simply resulted in giving it a very low priority. A further indication of this attitude appears in a comment by General Pershing, then Army Chief of Staff, when on 4 December 1922 he denied the request of a Corps Commander that one of the war plans provide for the use of toxic and non-toxic gases

> "It is inconceivable that the United States will initiate the use of gases...and by no means certain that it will use them even in retaliation. Aside from this, it is quite unlikely that the prospective enemy...will invite retaliatory measures by using gases in any form. Should he do so, however, the action to be taken will be decided when the time comes."[1]

This was a firm statement of a policy of "no first use"; even the policy of "retaliation-in-kind" was placed in doubt.

The Army soon began to modify this extreme reaction to the Washington Treaty. In January 1924 the War Department issued a policy directive which implied that although the United States would not initiate first use, it would retaliate in kind if attacked with chemical agents. Emphasis was to be on defense, but "the practicability of offensive employment will be studied and tested".[2]

Regardless of the stated policy, implementation became the greatest problem. During the 1920's War Department priorities deprived the chemical warfare programs, both offensive and defensive, of adequate support. After 1930, military appropriations were reduced to the point that, regardless of desires, the War Department could not support an adequate CW program. The result was that after the early 1920's none of the military services

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[1] Quoted in Ibid. p. 94.

[2] Ltr, TAG for C/CWS, 7 January 1924, sub: CWS Functions (W.D. Policy 467) AG 321.94 (1/2/24), EHO Policy Book, in Ibid. p. 131.

were capable of providing either adequate CW defenses or a significant capability for retaliation-in-kind.

Although the Washington Treaty never came into force because the French government refused ratification over dissatisfaction with a provision relating to submarines, the U.S. State Department continued to hold the position that since the United States had proposed and ratified the treaty, it was morally bound to a policy of no-first-use.

Both Presidents Harding and Coolidge were opposed to CW in principle, and actively sought international agreements banning it. At the League of Nations Conference for the Control Of International Trade in Arms, Munitions and Implements of War, meeting at Geneva in 1925, Chairman of the United States delegation, Representative Burton, introduced a proposal for an article which would have prohibited international trade in poison gases for use in war. The War and Navy Departments were not consulted in the preparation of the proposed article. When the Conference decided that control of international trade in chemical warfare agents was not feasible, the United States proposed, and the conference adopted, after certain modifications, a Protocol banning the "use in war of asphyxiating, poisonous or other gases".[1] The Protocol was considered to be essentially a reaffirmation of the principles of the Treaty of Washington.

The War and Navy Department representatives at Geneva protested the draft within the delegation. Although the Acting Chief of Staff of the Army, General Nolan, had accepted Representative Burton's proposal, it did not agree with the War Department position which had come to be one of opposition to any limitations on the use of CW except against

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[1] SIPRI, The Problem of Chemical and Biological Warfare, Vol. IV, CB Disarmament Negotiations, 1920-1970, pp. 69-70 (New York, Humanities Press, 1971).

cities and noncombatants. This was apparently also the Navy Department position.

This protocol, now generally referred to as the 1925 Geneva Protocol, was accepted by the Conference and signed. However, when it was presented to the U.S. Senate, consent to ratification was refused, on the basis that the agreement was unenforceable and therefore the United States should reserve the right to both protect itself from CW attack and resort to the use of CW if necessary. The proponents of the Protocol had gone to the Senate poorly prepared and overconfident, on the assumption that the mood of 1922 still governed. However, in the intervening three years, the supporters of chemical warfare had carried out a very effective selling campaign and the national mood had changed.

A key issue underlying the policy debates of this period was whether the outlawing of CW by international agreement would also deprive the United States of the right to take measures to develop and maintain a passive defensive capability in peacetime, and prepare to use CW if the agreement should be broken by others. Initially, the President and the Department of State appeared to be working for a total ban of CW. The War Department and Army leadership, while opposed to CW in principle, believed that a total ban was unrealistic and unenforceable, and were opposed to any action that might deprive the military services of the right to take defensive measures, including retaliation.

The CWS and many of its supporters in the American Chemical Society, American Legion and the chemical industry were firmly against a ban on any basis. They not only believed that CW defense was necessary, but that by outlawing CW the United States would be depriving itself of the use of a weapon of high potential value.

Many of the signatory nations (e.g., Great Britian and France) ratified the Geneva Protocol with a reservation of the right to retaliation-in-kind to a CW attack, and the implicit right to maintain the necessary

CW defensive and offensive capabilities to implement that policy. Therefore, the Senate's objections on the basis that the Protocol would have prevented preparedness were not sound.

The record of events in that period suggests the conclusion that it had become the policy of the Senate to retain for the United States the flexibility to initiate first use of CW, if it proved to be in the interests of the United States to do so. Apparently, through the efforts of the supporters of CW, the Senate had become convinced of the potentially high military value of chemical warfare preparedness. At least in the absence of an effective and enforceable international ban (which the Geneva Protocol was not), the lawmakers seemed not ready to give up the potential military advantage which they believed the United State's large and highly developed chemical industry provided.

The refusal of consent to ratification of the Geneva Protocol indicated that U.S. national policy on chemical warfare had shifted. Although the goal of an effective international agreement banning CW was still to be actively pursued, the hope of achieving it was diminishing. Preparedness and the threat of retaliation-in-kind were accepted as the best means of deterrence. Furthermore, the possibility of U.S. first use of CW was left open, the clear implication being that if in a future war the use of CW could provide a significant military advantage, the United States might initiate such use.

Although the military services apparently wanted this flexibility, there is no indication that CW techniques had been assimilated to the point where the leadership placed much value on their military utility. This, combined with increasingly tight military budgets, caused changes in stated policy to be slow in coming. CW capabilities remained at a very low level, where they would be until World War II. The services simply wanted to keep their options open.

A point to be noted in retrospect is the continuing concern, particularly in the War Department, that any treaty banning CW would implicitly preclude peacetime preparation for CW. This view caused the War Department to be continually suspicious and hostile to treaty negotiations. The State Department did not hold that restrictive view, as evidenced in a 7 December 1926 letter from the Secretary of State to the Secretary of the American Chemical Society stating, in part: "All governments recognize that it is incumbent upon them to be fully prepared as regards chemical warfare, and especially as regards defense against it, irrespective of any partial or general international agreements looking to the prohibition of the actual use of such warfare".[1]

President Hoover and the State Department continued the quest for an international ban on chemical warfare. Efforts in 1932 at the World Disarmament Conference at Geneva were unsuccessful, but they did provide a vehicle for clarifying U.S. national policy on chemical warfare. Coordination between the War and State Departments appears to have been excellent. One reason was the fresh viewpoint of General Douglas MacArthur, the new Army Chief of Staff. MacArthur was not an advocate of chemical warfare, but he was a firm believer in preparedness.[2] He did not share the view that prevailed in the War Department which held that a ban on chemical warfare would preclude peacetime preparations for chemical defense and retaliation-in-kind. MacArthur and Mr. Henry Stimson, the Secretary of State, believed that a simple ban offered the best solution, and that anything more specific than a general prohibition would not be ratified by Congress.

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[1] Ltr Sec of State to Mr. C. L. Parsons, 7 December 1926, in Brown, op. cit., p. 108.

[2] "I am personally more or less indifferent to the retention or abolition of gas," Ltr, General Douglas MacArthur to Brig General G.S. Simonds, 26 February 1932, in Ibid., p. 113.

MacArthur's and Stimson's views are set out clearly in the following extract from a State Department message to the Chief of the American Delegation at Geneva:

> "The more such an agreement is hedged with further conditions (prohibition of peacetime preparations, etc.) the greater the temptation first to suspicion, then to evasion, and finally to a demand for international control. This being the case, an undertaking on the part of governments to refrain from peacetime preparation or manufacture of toxic gas would seem in essence to weaken and not to strengthen a ban upon its use in time of war."[1]

The War Department view of preparedness is described in the following extract from a 28 June 1932 letter from MacArthur to Stimson:

> "In the matter of chemical warfare, the War Department opposes any restrictions whereby the United States would refrain from all peacetime preparation or manufacture of gases, means of launching gases, or defensive gas material. No provision that would require the disposal or destruction of any existing installation of our Chemical Warfare Service or of any stocks of chemical warfare material should be incorporated in an agreement. Furthermore, the existence of a War Department agency engaged in experimentation and manufacture of chemical warfare materials, and in training for unforeseen contingencies is deemed essential to our national defense."[2]

The unified position (War, Navy and State) is documented in guidance furnished by the State Department to the American Delegation at the Disarmament Conference at Geneva in May 1932. It is in the form of answers (in italics) furnished to specific questions posed by the Delegation:

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[1] Cable 103, Sec State for AMDELGAT, 14 May 1932, in Ibid., p. 115.

[2] Lts, C of S for Sec State, 28 June 1932, in Ibid., p. 117.

"One. May we accept an understanding whereby our Government is bound to refrain from all peacetime preparation or manufacture of toxic gases--means of launching gases--and from training of personnel therefore? *No*

"Two. May we agree on behalf of our Government to dispose of or destroy all of its stocks on hand of weapons mentioned in point one? *No*

"Three. What is our Government's attitude towards question of refraining from peacetime preparation of means of defense against use of chemical warfare by others such as peacetime production and storage of gas masks, et cetera? *No*

"Four. We assume delegation should oppose any attempt to interfere with civilian industry. *Yes*

"Five. We assume that any obligation in regard to chemical warfare must be of reciprocal nature. *Yes.*

"Six. In light of your answers to foregoing what should be delegation attitude in regard to retention or abolition of chemical warfare service? *Some Service Department Must Be Retained until Experience Shows that Abolition of Gas Warfare is an Accomplishment."*[1]

This clearcut statement of U.S. policy was temporarily muddied in May 1933 when President Roosevelt accepted the MacDonald Plan which had been tabled at the Conference on 16 March. That plan prohibited the use of chemical, biological or incendiary weapons against any nation. All preparations for chemical or including warfare were prohibited in peace and war, but nations were to be free to prepare for individual or collective protection.[2]

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[1] Cable 182, Gibson for Sec State, 10 May 1932, and Cable 103 Sec State for AMDELGAT, 14 May 1932, in Ibid., pp. 114-115.

[2] Ibid., pp. 119-121.

However, the MacDonald Plan was never incorporated into an international agreement; and although President Roosevelt remained adamantly against chemical warfare throughout his lifetime, as the threat of war developed during the 1930's, he abandoned this extreme position.

The World Disarmament Conference at Geneva was unsuccessful in reaching international agreement prohibiting chemical warfare, but the intra-government coordination did firmly establish the position that although the United States would continue to seek an effective and enforceable international agreement banning chemical warfare, such an agreement would not act as a bar to the peacetime development of the CW defensive and offensive capabilities considered necessary in the event the ban might fail. The United States was committed to a policy of CW preparedness. Although the policy was clear, the means for implementing it were extremely weak. In the 1930s, neither the Army nor the Navy spent sufficient money or gave adequate command attention to CW preparedness (especially as to offensive capabilities) to enable even a base minimum level of implementation of declaratory CW policy.

Although actual CW capabilities were in the doldrums of neglect, CW policy continued to evolve. For example, on 17 October 1934 the Army-Navy Joint Board issued a new policy statement:

> "The United States will make all necessary preparations for the use of chemical warfare from the outbreak of war. The use of chemical warfare, including the use of toxic agents, from the inception of hostilities is authorized, subject to such restrictions or prohibitions as may be contained in any duly ratified international convention or conventions, which at that time may be binding upon the United States and the enemy's state or states."[1]

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[1] Lts Joint Plng Comm for JB, 17 October 1934, in Ibid., p. 122.

This statement, apparently not coordinated with State or White House, represented a radical change in policy for both the Army and Navy since it authorized first use of CW. However, it is doubtful that the policy could have been implemented. President Roosevelt was adamantly opposed to the use of CW. There was insufficient capability, either defensive or offensive, that would have made possible its implementation even if ordered by the President. It is highly unlikely that either the President or the Congress would have accepted the implied delegation to commanders in the field or in the fleet of the authority to decide if and when chemical warfare would be initiated by United States forces. Finally, the State Department would certainly not have concurred, if asked, in the new policy, since that Department held that the U.S. was morally prohibited from employing CW by the U.S. positions taken at the Washington Arms Conference and the two Geneva Conferences.

All his life President Franklin D. Roosevelt remained adamantly opposed to chemical warfare. The policy declared by the military services in 1934 did not reflect his views, and it is quite clear in retrospect that he believed that the national policy throughout his tenure in office (March 1932 to April 1945) was one of no first use of chemical warfare. Roosevelt would have preferred an effective international ban on CW, but in the meantime, he reluctantly accepted the necessity for chemical defenses. Later he became a firm believer in the threat of retaliation in kind as a necessary deterrent to CW.

In an August 1937 message to the Congress, President Roosevelt made known his strong distaste for chemical warfare. The occasion for the message was his veto of a bill which would have changed the name of the Chemical Warfare Service to the "Chemical Corps". The President stated:

> It has been and is the policy of this Government to do everything in its power to outlaw the use of chemicals in warfare. Such use is inhuman and contrary to what modern civilization should stand for.

> I am doing everything in my power to discourage the use of gases and other chemicals in any war between nations. While, unfortunately, the defensive necessities of the United States call for study of the use of chemicals in warfare, I do not want the Government of the United States to do anything to aggrandize or make permanent any special bureau of the Army or the Navy engaged in these studies. I hope the time will come when the Chemical Warfare Service can be entirely abolished.
>
> To dignify this Service by calling it the "Chemical Corps" is, in my judgment, contrary to the sound public policy.[1]

III WORLD WAR II

The President's acceptance of the principle of deterrence by retaliation-in-kind became evident after United States entry into World War II. At a 5 June 1942 press conference, in response to a request from China, President Roosevelt announced a policy of effective retaliation:

> *Authoritative reports are reaching this government of the* use by Japan's armed forces in various localities in China of poisonous or noxious agents. I desire to make it unmistakably clear that, if Japan persists in this inhumane form of warfare against China, or against any other of the United Nations, such action will be regarded by this Government as though taken against the United States, and retaliation in kind and in full measure will be meted out. We shall be prepared to enforce complete retribution. Upon Japan will rest the responsibility.[2]

This statement was prepared by State and apparently not coordinated with the War and Navy Departments; the War Department probably would have objected on the basis that the United States possessed no capability for retaliation in kind "in full measure." Secretary of War Stimson had rejected a January 1942 proposal by the Secretary of State that the United States offer to exchange pledges with Japan to observe the provisions of the Geneva Protocol subject to reciprocity. Similar pledges had already

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1 Quoted in Ibid., pp. 124-125. The CWS became the Chemical Corps after Roosevelt's death, during the defense reorganization of 1946.

2 Quoted in Ibid., pp. 200-201

been exchanged by Britain, France, Germany and Italy. The Secretary of the Navy had simply stated that the attitude of the Navy Department was against the use of chemical warfare, but the Secretary of War had made a longer reply which included the statement that the only effective deterrence was fear of retaliation based on the readiness of the United States to retaliate in kind. Because he knew that the United States was then unprepared, Stimson said, "I strongly believe that our most effective weapon on this subject is to keep our mouths shut tight."[1]

In April 1942, the authority to initiate retaliatory CW was raised to the level of the Chief of Staff, Army, and Commander-in-Chief, U.S. Fleet, and in November 1942 the power of decision was raised to the presidential level.[2]

On 8 June 1943, President Roosevelt issued what is probably his best-known policy statement on the use of chemical warfare:

> I have been loath to believe that any nation, even our present enemies, could or would be willing to loose upon mankind such terrible and inhumane weapons...Use of such weapons has been outlawed by the general opinion of civilized mankind. This country has not used them, and I hope that we never will be compelled to use them. I state categorically that we shall under no circumstances resort to use of such weapons unless they are first used by our enemies...Acts of this nature committed against any one of the United Nations will be regarded as having been committed against the United States itself and will be treated accordingly. We promise to any perpetrators of such crimes full and swift retaliation in kind...Any use of gas by any Axis power, therefore, will immediately be followed by the fullest possible retaliation upon munition centers, seaports, and other military objectives throughout the whole extent of the territory of such Axis country.[3]

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[1] Quoted in Ibid., pp. 200-201

[2] Ibid., p. 205

[3] Quoted in Ibid., pp. 264-265

This statement was prepared by the Department of State and transmitted to the President through Admiral Leahy, who apparently did not coordinate it with the War and Navy Departments.[1] It followed Prime Minister Churchill's note to Roosevelt in April 1942 that he had warned the Germans that use of gas against the Russians would provoke unlimited British retaliation.[2] Roosevelt's statement made quite clear two key elements of U.S. policy: No first use, and the threat of retaliation in kind.

This policy held throughout World War II. It was officially reiterated once to the Japanese. Japan made its first firm statement to refrain from use of toxic agents in early 1944. This was relayed through the Swiss Government and the Apostolic Delegate, and was apparently stimulated by a Hansen Baldwin article in the New York Times of 30 January 1944, which suggested that American public opinion against the use of CW might be changing. The Japanese apparently suspected that this was a "trial balloon" and in February issued a statement denying that they had used gas "during the present conflict", and declared that they had "decided not to make use of it in the future on [the] supposition that troops of the United Nations also abstain from using it".[3] In March 1944 the United States acknowledged through the Swiss Government receipt of the Japanese message and called their attention to the President's policy statement of June 1943.

Preparedness action by the Services was necessary to be able to implement the declared retaliation policy. The Navy in March 1943 authorized the procurement of chemical munitions to improve its CW posture, but with

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[1] Ibid., p. 264.

[2] Brophy & Fisher, op. cit., p. 63

[3] Brown, op. cit., p. 249

the proviso that "the Navy will not procure chemical munitions for use against civil populations".[1] In the same directive, the Navy's general low regard for the effectiveness of chemical weapons was revealed: "...hit for hit and pound for pound, no service chemical is considered to offer as great effectiveness as high explosive".[2]

The Army build-up was already well underway, but continued to lag the stated national policy on chemical warfare. During the entire period 1919-1940, the Congress, by failing to appropriate sufficient funds for CW activities, and the War Department through institutional hostility to CW, had imposed a de facto policy of limiting US chemical warfare capabilities essentially to passive defense.[3] Beginning in 1941, the United States offensive (retaliatory) capability began to grow. However, this capability was always limited, even after the war began, because of: (1) competition for munition production capacity, (2) competition for theater storage capacity, and (3) competition for shipping. By 1944, the European Theater probably possessed the capability for retaliation at a level consistent with announced Presidential policy. The Pacific Theater never possessed a comparable capability. By early 1945, the Central Pacific CW stocks were at 5% of theater authorized levels. Southwest Pacific stocks were at 50%, but were widely scattered and in doubtful condition due to adverse storage environment.[4] Plans were considered in 1945 to drastically increase Pacific Theater stocks, but were never fully implemented.

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1 Ltr, COMINCH for Vice CNO, 8 Mar 43, in Ibid., p. 284.

2 Ibid.

3 This problem is discussed in detail in Brophy, Miles & Cochrane, US Army in World War II: The Chemical Warfare Service: From Laboratory to Field (Washington: USGPO 1959).

4 USCWC Report 1 Mar 45, in Brown, op. cit., p. 265. See also Klebert & Birdsell, U.S. Army in WW II: The CWS: Chemicals in Combat, pp. 651-652 (Washington; USGPO, 1966).

President Roosevelt's 1943 stated policy of massive retaliation in kind against "military objectives throughout the whole extent of the territory" of any initiator of chemical warfare caused some special concern in China. Chiang Kai-shek was very much aware of Chinese vulnerability to Japanese chemical attack. Consequently, in April 1945, Lt. General Wedemeyer, the US Theater Commander in China, and Chiang reached an agreement to the effect that if the Japanese attacked cities in China retaliation would be limited to tactical strikes. It was further agreed that even after the Japanese initiated the use of gas, retaliation would not be undertaken except "upon a joint declaration" by the United States and Chinese governments.[1] The Chiang-Wedemeyer Agreement appears to have been made without the prior knowledge or consent of the War Department General Staff.[2]

This agreement illustrates the complications of enforcing a policy of retaliation-in-kind when allies are involved. In a sense, Japan held China hostage against U.S. use of CW. It raised a serious issue which certainly would have had to have been considered in any U.S. decision to initiate CW against Japan, and is therefore pertinent to the discussion which follows.

Until his death in April 1945, President Roosevelt posed an apparently insurmountable obstacle to any serious consideration of US initiation of chemical warfare, except in retaliation to enemy use. However, by mid-1945, the question of possible US first use began to arise.

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1 Memo, No. 541, Lt. Gen. A. Wedemeyer for His Excellency, The Generalissimo, 28 Apr 45, In Brown, op. cit., p. 279.

2 Memo for Record, 5 Jun 45, in Ibid., p. 279.

The United States was tired of war. The war against Japan was particularly bitter, and U.S. forces were sustaining extraordinarily heavy casualties. Suggestions that the U.S. should use gas in the Pacific Theater were appearing in the press.[1] A September 1944 poll indicated that 23% of the U.S. public favored using gas against Japanese cities. A poll taken in June 1945 indicated that 40% favored (49% opposed) the use of gas against the Japanese if U.S. casualties could thereby be reduced.[2] This shift in public opinion took place without any government propaganda effort to elicit support for the use of CW against Japan; a majority of public approval might have been attained if there had been such an effort.

President Truman had stated his "intention to make his decisions on the campaign [invasion of Japan] with the purpose of economizing to the maximum extent possible in the loss of American lives".[3] Whether Truman would have approved the use of CW against Japan is not known, because he was not asked. Frederic Brown speculated that considering his decision on the use of the atomic bomb, if the JCS had asked for authority to use CW, "Truman probably would not have demurred".[4]

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1 For example: "We Should Have Used Gas at Tarawa", Washington Times Herald, 20 Dec 43; "We Should Gas Japan", New York Daily News, 20 Nov 43; "Thoughts on the Use of Gas in Warfare", Newsweek, 20 Nov 43; "You Can Cook'em Better With Gas", Washington Times Herald, 1 Feb 44; "We Should Gas the Japs", Popular Science Monthly, Aug 45, in Ibid., p. 287.

2 H. Cantril, ed., Public Opinion 1935-46, Princeton: Princeton University Press, 1951, p. 249, in Ibid.

3 Memo, Adm Leahy to JCS, 14 Jun 45, Ibid., p. 282.

4 Ibid., p. 281.

There were factors in 1945 which made it at least possible to think of first use. The termination of the war in Europe had removed the threat of retaliation against Allied population centers there. It also reduced the number of allies with whom the US would have had to consult prior to initiation of CW. However, as previously mentioned, China remained hostage to Japan (whose CW capability was over-rated),[1] and the probable Soviet reaction remains an enigma.

Increased availability of production capacity, shipping and storage space made it practical for the first time to build up chemical munition stocks in the Pacific Theater to a level necessary to support CW on a reasonable scale.

Although the JCS, in order to keep all options open, had initiated action in April and May 1945 to build up chemical munition stocks for possible shipment to the Pacific Theater, the U.S. would not have been in a position to sustain a high level of chemical warfare there before November 1945, at the earliest, even had the shipments been authorized, which they were not.[2]

The records do not indicate any discussion of chemical warfare policy at the Potsdam Conference, which would have been the logical place to begin coordination with the Allies if a decision to initiate the use of chemical warfare appeared likely.[3]

Frederic Brown believes that institutional reluctance was the primary factor which prevented a decision to initiate CW against Japan in 1945.[4] General Marshall was willing to consider use of CW but was not an

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1 See Ibid., pp. 246-261.

2 Ibid., pp. 271-281.

3 Ibid., p. 275n.

4 Ibid., p. 282.

advocate. The Navy leadership, and Admiral Leahy, Chief of Staff to the President, were generally opposed to CW. Navy policy was particularly opposed to use of chemical warfare against civilian targets. The use of CW is not usually attractive in amphibious operations, since it strongly favors the defense. A substantial portion of the Navy leadership (Admiral King for example)[1] were lukewarm to the idea of an invasion of Japan. They believed that surrender could be achieved by aerial attack and naval blockade. The Army Air Corps was having considerable success against Japanese targets using a mixture of HE and incendiary bombs. It does not appear that the chemical warfare agents available at that time would have greatly increased the effectiveness of strategic bombing. In any event, the dropping of the atomic bombs in August 1945 and the surrender of Japan rendered the question moot.

IV THE POST-WORLD WAR II ERA

During the years immediately following World War II, there was a general de-emphasis on defense. However, the rapid development of the cold war threat, coupled with technological advances in chemical warfare techniques, particularly the new nerve agents, caused the Department of Defense to give increasing attention to the possibilities of chemical warfare.

In June 1950 a committee of civilian advisers, headed by Dr. Earl Stevenson, President of Arthur D. Little Company, which had been appointed by the Secretary of Defense to study and make recommendations on the chemical warfare program, made its report. The Committee recommendations were to improve the U.S. posture for chemical warfare. As a result, the

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[1] Ibid., p. 285n.

Army began construction of facilities for the manufacture of nerve agent (GB). These facilities went into production in 1953.[1]

The years 1950 through 1960 were a period of intense modernization of U.S. chemical warfare offensive capabilities. Authorization for an additional nerve agent production facility was granted in 1958. That plant, which produced agent VX, completed operations during the period 1961-66. Munitions for the delivery of nerve agents were developed, and extensive field testing was done to develop data for target analysis and improved delivery techniques.

In 1955, the Miller Report[2], produced by a civilian advisory committee and approved by the Secretary of the Army, advised the Chemical Corps to seek "a more candid recognition and proper place of chemical....warfare". It also advised that the Corps "must have an opportunity to be heard and its recommendations weighed early and frequently at critical points within the military, in order that maximum consideration may be given in over-all Department of Defense thinking to meshing chemical ....warfare into plans of warfare and plans of defense as they are being developed".

In general, the recommendations of the Miller report were carried out. Chemical warfare possibilities were considered in the preparation of war plans and considerable improvement was made in U.S. capabilities to implement such plans. A very active campaign was carried out by the

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1 Studies on the Technical Arms Control Aspects of Chemical and Biological Warfare, The History of Chemical Warfare Plants and Facilities in the United States, ACDA/ST-197 Vol 1V, Prepared for US ACDA by Midwest Research Institute, Nov. 1972, p. 1.

2 Miller, O.N., et. al. Report of the Ad Hoc Advisory Committee on Chemical Corps Mission and Structure, Aug. 1955, In SIPRI Vol. 2, Op. cit., p. 195.

Chemical Corps to educate the Congress, the public, and the military on the utility of CW.[1] This publicity campaign was, however, severely handicapped by security restrictions. Although CW received consideration in planning at higher levels, there is little evidence that the Army's institutional reluctance to assimilate chemical warfare techniques was eliminated. There was no matching effort in training and the development and exercise of doctrine.

There is no evidence of a new official public statement on national chemical warfare policy until 1959. The Roosevelt statement of 1943 remained, and was neither confirmed nor denied. At Congressional hearings in 1958 and 1959, much of which was in executive session and classified, it became evident that U.S. increased emphasis on offensive CW capabilities might imply a departure from the Roosevelt policy of no first use. Congressman Robert Kastenmeier introduced a resolution (House Concurrent Resolution 433, 3 Sept. 59) calling for reaffirmation of "the long standing policy of the United States that in the event of war the United States shall under no circumstances resort to the use of biological weapons or the use of poisonous or [noxious] gases unless they are first used by our enemies".[2] No action was taken on the resolution, which was strongly opposed by both the Departments of Defense and State. The Department

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1 See SIPRI Vol. 2 Op. cit. pp. 195-196, which references numerous Congressional Hearings during the period. Also see foot note reference (in SIPRI) to article by Brig. Gen. Rothschild in Harper's Magazine, stating inter alia: "We must make it clear that we consider these weapons among the normal, usable means of war....We must reject once and for all the position stated by President Roosevelt...".

2 Chemical-Biological-Radiological (CBR) Warfare and Its Disarmament Aspects, A study Prepared by the Subcommittee on Disarmament of the Committee on Foreign Relations, United States Senate, August 29, 1960, 86th Congress, 2nd Session. p. 20 (Washington, GPO, 1960),

of Defense position is set forth in a letter to the Senate Foreign Relations Committee dated 29 March 1960, which reads in part as follows:

> Similar declarations might apply with equal pertinency across the entire weapons spectrum, and no reason is perceived why biological and chemical weapons should be singled out for this special declaration. Whether the use of any major type of weapon should be initiated is a matter tc be decided at the highest levels of Government in the light of the Nation's long-standing policies and principles, its international obligations, and the emergent situations it will confront. Effective controls on biological and chemical weapons, as in the case of other weapons, may have to await international agreements with necessary safeguards.
>
> It must be considered that biological and chemical weapons might be used with great effect against the United States in a future conflict. Available evidence indicates that other countries, including Communist regimes are actively pursuing programs in this field. Moreover, as research continues, there is increasing evidence that some forms of these weapons, differing from previous forms, could be effectively used for defensive purposes with minimum collateral consequences. These considerations argue strongly against the proposed resolution which appears to introduce uncertainty into the necessary planning of the Department of Defense in preparing to meet possible hostile actions of all kinds.
>
> The Department of Defense therefore does not recommend the adoption of House Concurrent Resolution 433.[1]

The State Department position was expressed in an 11 April 1960 letter to the Senate Foreign Affairs Committee, stating:

> As a member of the United Nations, the United States as are all other members, is committed to refrain from the use, not only of biological and chemical weapons, but the use of force of any kind in a manner contrary to that organization's charter. Moreover, the United States is continuing its efforts to control weapons through enforceable international disarmament agreements.
>
> Of course, we must recognize our responsibilities toward our own and the free world's security. These responsibilities involve, among other things, the maintenance

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[1] Ibid., pp. 21-22.

> of an adequate defensive posture across the entire weapons spectrum, which will allow us to defend against acts of aggression in such a manner as the President may direct. Accordingly, the Department believes that the resolution should not be adopted.[1]

These official statements, coupled with the failure of the Congress to act on the proposed Resolution reaffirming the 1943 Roosevelt policy of no first use, and considered in the light of the build-up of U.S. offensive CW capabilities during that period, could be read as evidence that the United States was moving away from the policy of no first use. However, there were still strong forces restraining an actual break with policy. When President Eisenhower was asked at a January 1960 press conference whether U.S. Chemical warfare policy had shifted from one of no first use, he replied: "I will say this: No such official suggestion has been made to me, and so far as my own instinct is concerned, [it] is not to start such a thing as that first."[2]

The authority for final decision on the use of CW remained at the Presidential level, and in view of President Eisenhower's career background, it is unlikely that he would have approved a request to initiate first use of CW.

The Vietnam war brought chemical warfare to the fore in a new context: the policy problems which arose over the use of riot control agents and herbicides by U.S. forces in Vietnam. A letter dated 31 March 1965 from Deputy Secretary of Defense Cyrus Vance to Congressman Robert Kastenmeier addresses the issue of riot control agents. Both this and the herbicide issue had to be faced in clarifying U.S. national policy on chemical warfare. These issues involve the distinction between lethal and non-lethal agents. Excerpts from Mr. Vance's letter are quoted below:

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1 Ibid., p. 22.

2 New York Times, 14 Jan 60, p. 14.

> As I believe Secretary Rusk and Secretary McNamara have made clear in their recent statements, the agents used in South Vietnam belong to the tear gas family and are the type of riot control agents used by police forces in this country and throughout the world to control civil disturbances. While national policy does proscribe the first use of lethal gas by American forces, there is not, and never has been, a national policy against the use of riot control agents.
>
> Riot control agents have been used repeatedly, in virtually every country of the world, to gain control of situations where lawless violence has threatened to overturn public order and endanger public safety. In no sense does the use of these agents constitute "gas warfare;" in no way can such use be compared with the employment of lethal gas in battle.
>
> . . . . . .
>
> The use of riot control agents in South Vietnam in no sense constitutes a change in policy from that previously enunciated by Presidents Roosevelt and Eisenhower. The quotations by these Presidents cited in your letter clearly related to the use of lethal gases in warfare--the "poison gas" made notorious in World War 1. Presidents Roosevelt and Eisenhower reaffirmed that the United States would not resort to use of poison gases, biological weapons, or other inhumane devices of warfare unless they were first used by our enemies. I do not think it reasonable or logical to assume that their statements were intended to encompass the use of riot control agents which were, and are, on hand and in use by the forces of law and order in this country and throughout the world.[1]

This letter is a re-affirmation of the 1943 Roosevelt policy of no first use and retaliation-in-kind to enemy use, insofar as it applies to lethal chemical agents. The issue of riot control agents had never arisen before (except in international conferences on proposed agreements banning chemical warfare). The national policy justifications for excepting them from policy controls pertaining to "poison gases" are made clear in the above letter. The principal argument for including them has been the assumption that their use would be an escalatory step eventually leading to more general use of chemical warfare. The issue became much more complicated as strongly polarized public opinion developed over the War

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[1] Quoted in Library of Congress, Legislative Reference Service, Chemicals and Biological Warfare - Some Questions and Answers, (revised) 2 January 1970, 69-270 SP, pp. 22-23.

in Vietnam. It soon expanded to include the question of herbicides as chemical warfare agents. This is turn raised issues involving ecology and environmental protection. As we shall see in the following discussion, a final resolution was not reached until debate on the issue of accession to the Geneva Protocol was concluded, and consent to ratification granted in December 1974.

The expansion of the war in Vietnam and the continued U.S. use of riot control agents and herbicides there apparently convinced the Johnson Administration of the need to reiterate the 1943 Roosevelt policy statement in order to assure the world that the use of lethal chemical warfare was not intended. On 5 December 1966, U.S. Ambassador to the United Nations Nabrit, voting in favor of a General Assembly resolution calling on all countries to observe the principles and objectives of the Geneva Protocol, stated, in part:

> "While the United States is not a party to the [Geneva] Protocol, we support the worthy objectives it seeks to achieve....We were not the first to engage in gas warfare in World War 1 and we have not engaged in it since that time. We played a crucial role in preventing the horrors of gas warfare during the Second World War. In 1943 President Roosevelt issued on behalf of the United States a most serious warning to the Axis Powers threatening them with severe retaliation if they resorted to gas warfare. The President stated that the use of poison gas "has been outlawed by the general opinion of civilized mankind" and added categorically that "we shall under no circumstances resort to the use of such weapons unless they are first used by our enemies."[1]

In 1968 an adverse wave of public opinion began to develop against chemical warfare. This was addressed mainly to the environmental threat alleged to result from peacetime activities connected with the development

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[1] Ibid., p. 26.

and maintenance of chemical weapon stock piles, although protest against the use of riot control agents and herbicides in Vietnam also played a part. As a result, Public Laws 91-121 and 91-441 were enacted.[1] These placed paralyzing restrictions on the movement of CW munitions and agents in peacetime and on the development of new weapons where open-air testing was required. This had an important influence on national policy in that it directly affected the implementation of policy; for example, flexibility of response in retaliation-in-kind could be seriously degraded by the restrictions on domestic movement of CW weapons used in their deployment to foreign countries.

In 1969 President Nixon directed the National Security Council to undertake a review of national policy on chemical warfare. As a result, the President issued the following national policy statement on 25 November 1969:

> "Soon after taking office I directed a comprehensive study of our chemical...policies and programs. There had been no such review in over fifteen years. As a result, objectives and policies in this field were unclear and programs lacked definition and direction.
>
> Under the auspices of the National Security Council, the Departments of State and Defense, the Arms Control and Disarmament Agency, the Office of Science and Technology, the Intelligence Community and other agencies worked closely together on this study for over six months. These government efforts were aided by contributions from the scientific community through the President's Scientific Advisor Committee.
>
> This study has now been completed and its findings carefully considered by the National Security Council. I am now reporting the decisions taken on the basis of this review.

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[1] See Sec. 409, PL91-121 (19 Nov. 69) and Sec. 506, PL91-441 (7 Oct. 70)

As to our chemical warfare program, the United States:

-- Reaffirms its oft-repeated renunciation of the first use of lethal chemical weapons.

-- Extends this renunciation to the first use of incapacitating chemicals....."[1]

Implicit in this policy is a requirement to maintain a deterrent/retaliatory capability.

The Nixon policy statement is essentially a restatement of the 1943 Roosevelt declaration. One important addition is the inclusion of "incapacitating chemicals" which were a new, post-World War II development. The only question still outstanding was the position of riot control agents and herbicides which were still under attack.

During 1973 and 1974, the Congress held extensive hearings during which U.S. chemical warfare policies were discussed. The following statements of policy are illustrative:

Robert C. Hill, Assistant Secretary of Defense (ISA):

....The main objective of our national chemical warfare policy and programs is to deter the use of chemical weapons. In order to do so, we maintain a responsive, employable retaliatory capability... (The Soviet threat) ...is the primary reason we maintain a CW retaliatory capability as a deterrent.[2]

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[1] President of the United States, Richard M. Nixon, Statement. The White House. 25 November 1969.

[2] U,S. Congress, House, Committee on Armed Services. Report on authorizing appropriations for military procurement, research and development. Report together with dissenting views to accompany H.R. 14592. 93rd Congress, 2d session, (Washington, USGPO, 1974), p. 100.

Lt. General John R. Deane, Jr., Chief of R&D, Department of the Army General Staff:

> The objective of our chemical warfare policy and programs is to deter the use of chemical weapons and to have the capability to retaliate in kind if they are used against us.
>
> In light of the threat and in support of national policy we must develop an adequate defensive system to ensure a capability to protect ourselves against the employment of CB agents and also develop chemical munitions to provide a retaliatory capability should deterrence fail.[1]

Amos Jordan, Acting Assistant Secretary of Defense (ISA):

> It is our policy to retain the capability for chemical warfare in order to deter chemical warfare by a potential enemy through the threat of retaliation in kind. We recognize the great effectiveness of these weapons, and the sensitivity of these weapons, and therefore their use requires express Presidential authorization. This policy has been conceived not in a vacuum, but in light of what we believe to be a serious threat posed by the Soviet Union's offensive and defensive capability in the chemical warfare area.[2]

These statements are reiterations of the policy of (1) no first use of lethal and incapacitating chemical agents, (2) retaliation-in-kind to enemy first use of such agents, (3) offensive and defensive preparedness, and (4) Presidential control of authority to engage in CW.

On 19 Aug. 1970 the President re-submitted the 1925 Geneva Protocol to the Senate for advice and consent to ratification. The President

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1 U.S. Congress, House, Committee on Armed Services. Hearings on Military Posture, and H.R. 12564. 93rd Congress, 2d session. Washington, USGPO, 1974. (H.A.S.C. No. 93-43), p. 3779.

2 U.S. Congress, House, Committee on Foreign Affairs. Subcommittee on National Security Policy and Scientific Developments. U.S. Chemical Warfare Policy, May 1974, p. 148.

recommended that the United States ratify the treaty subject to a reservation establishing the right to retaliate with chemical weapons should an enemy use either chemical or biological weapons against the United States. (Retaliation with biological weapons was not at issue because the President had declared in November 1969 that the United States renounced all use of biological warfare.) The President also established in his letter of transmittal the understanding that the Protocol does not prohibit the use in war of riot control agents and herbicides.[1]

After a series of Congressional hearings debates on the Protocol and the related issues of the use of riot control agents and herbicides, extending over a period of four years, on 16 December 1974 the Senate gave its advice and consent to ratification (with the recommended reservation) of the Protocol.

President Ford signed the ratification instrument on 22 Jan. 1975, with the following statement:

> I have signed today the instruments of ratification of the Geneva Protocol to which the Senate gave its advice and consent on December 16, 1974.
>
> With deep gratification, I announce the U.S. ratification of the Protocol, thus completing a process which began almost 50 years ago when the United States proposed at Geneva a ban on the use in war of "asphyxiating, poisonous or other gases".
>
> While the ratification of the Protocol has been delayed for many years, the United States has long supported the principles and objectives of the Geneva Protocol.

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[1] Letter of Transmittal on The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases, and of Bacteriological Methods of Warfare, printed in: Library of Congress, Congressional Research Service, Report No. 70-303SP, 9 Dec. 1970, p. 39.

> The Protocol was submitted to the Senate in 1926 and, again, in 1970. Following extensive Congressional hearings in 1971, during which differing views developed, the executive branch undertook a thorough and comprehensive review of the military, legal, and political issues relating to the Protocol. As a result, we have defined a new policy to govern any future use in war of riot control agents and chemical herbicides. While reaffirming the current U.S. understanding of the scope of the Protocol as not extending to riot control agents and chemical herbicides, I have decided that the United States shall renounce as a matter of national policy:
>
> (1) first use of herbicides in war except use, under regulations applicable to their domestic use, for control of vegetation within U.S. bases and installations or around their immediate defensive perimeters.
> (2) first use of riot control agents in war except in defensive military modes to save lives, such as, use of riot control agents in riot situations, to reduce civilian casualties, for rescue missions, and to protect rear area convoys.
>
> This policy is detailed in the Executive order which I will issue today. The order also reaffirms our policy established in 1971 that any use in war of chemical herbicides and riot control agents must be approved by me in advance.[1]

On the same day the President also signed the instrument of ratification of the Biological Weapons Convention. This treaty came out of the negotiations of the Conference of the Committee on Disarmament, which in the late 1960s had undertaken to negotiate a ban on both chemical and biological weapons. In 1971 the conferees agreed to separate the chemical issue from the biological, a step which made possible agreement on the Biological Convention.

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[1] Geneve Protocol of 1925 and the Biological Weapons Convention, January 22, 1975. Washington: USGPO, 1973. Weekly Compilation of Presidential Documents, v. 11, n.4, Jan. 27, 1975.

At continuing sessions of the CCD, the United States continues to pursue its policy of searching for an effective and enforceable international agreement banning chemical warfare. Agreement on satisfactory safeguards continues to be the major obstacle.

V SUMMARY

Table 1 is a brief chronological summary of the highlights of the evolution of United States national policy on chemical warfare as described in this paper. It will be noted that there is an essential consistency over the years since World War 1, in spite of periods when a lack of coordination within the Government, or failure to provide the means for proper implementation, have made the development of the policy appear erratic. The capabilities for implementing the policy have, however, undergone considerably more variation. In the paragraphs which follow, there is a brief summary discussion of each of the major elements of U.S. chemical warfare policy.

1. Preparedness

It has always been U.S. national policy that the Armed Forces should be prepared to defend themselves against enemy attack. Congress, by the permanent establishment of the Chemical Warfare Service in 1920, and by its continual willingness to appropriate funds, has, in effect, legislated a policy of CW preparedness. However, during the period 1919-1941, neither the Army nor the Navy gave sufficient priority to CW preparedness to provide adequate defenses; nor was the general level of funding appropriated for the Services large enough to permit a more liberal policy. This was partially rectified during World War II, but new technological advances in lethal agents and the growing Soviet CW threat have again placed the United States in the position of having an inadequate CW posture, in particular regarding CW defense. The question of chemical defenses has been particularly important since Congressional pressures developed in 1974-75 for improvement in CW defense preparedness.

Table 1

HIGHLIGHTS IN THE EVOLUTION OF U.S. NATIONAL POLICY ON CHEMICAL WARFARE

1917-18: CW used in WWI. Justified as retaliation-in-kind to German use.

1918-22: Services unenthusiastic about CW.
Policy: Defense--Yes
Offense--Retaliation-in-kind. A hint of possible first use.
Congress: Supports CW program to the extent of forcing CWS on Army from fund shortages.
Readiness, i.e., policy implementation unsatisfactory.

1922-26: Washington Treaty signed in 1922 causes Army to deemphasize CW even more.
Policy: Defense--Yes
Offense--Retaliation-in-kind, hint of doubt.

1926-31: Senate rejection of Geneva Protocol revives status of CW.
Policy: Defense--Yes
Offense--Retaliation-in-kind.

1932-41: Reconciliation of War/State/Navy views on effect of treaties on CW preparedness removes some constraints on Services. Services assume authority for initiation of CW.
Policy: Defense--Yes
Offense--Unrestricted
However, still no development of Service capability to implement offensive policy. State and White House policy definitely against first use, generally anti-CW.

1942: Services (mainly Army) begin to expand CW capabilities. JCS tightens controls; release only by presidential authorization.

1943: Roosevelt national policy statement: No first use, but "full and swift" retaliation-in-kind. By 1944, U.S. has capability to implement policy of retaliation-in-kind in Europe.

1945: Roosevelt dead. Public opinion begins to move in direction of use of CW against Japanese, if U.S. casualties can be substantially reduced. Still no capability to implement an offensive CW policy in Far East. Navy elements of JCS opposed to first use. Army seems willing to consider. No JCS action at Potsdam. War ends before issue decided.

1946-48: General deemphasis on defense.

1948-50: Increasing DOD attention to possibilities of CW. Stevenson Committee in 1950 report recommends improving CW capabilities. Construction of plant for manufacture of GB authorized.

1953-55: Production of GB at Rocky Mountain Arsenal.

1955: Miller Committee report to Sec Army recommends "a more candid recognition of the proper place of chemical warfare" and that "maximum consideration be given in overall DOD thinking to meshing chemical, biological and radiological warfare into plans of warfare and plans of defense as they are developed."

1958: Authorization of VX production facility. (Production from 1961-66.)

1959: Representative Kastenmeier introduces resolution in House calling for reaffirmation of policy of no first use. DOD and State strongly oppose, stating that CW should not be singled out for special declaration, and that there is "increasing evidence that some forms of these weapons could be effectively used for defense." Resolution dropped.

1960: President Eisenhower asked at press conference if U.S. policy had shifted away from no first use. He responds: "I will say this: No such official suggestion has been made to me, and so far as my own instinct is concerned, (it) is not to start such a thing as that first."

1965: Start of war in Vietnam; use of herbicides and riot control agents leads U.S. to reemphasize a no first use policy for lethal CW.

1966-69: U.S. votes in favor of UN General Assembly resolutions calling on members to observe the principals and objectives of the Geneva Protocol.

1969: President Nixon directs NSC review of CW policy, and issues his policy statement: No first use of lethals or incapacitants.

1975: U.S. ratification of Geneva Protocol.

2. Retaliation in Kind

Except for one hint of a lapse in 1922-25, following the ratification of the Washington Arms Treaty, the United States has consistently held to a policy of deterrence of chemical warfare by the threat of retaliation-in-kind. This apparent lapse was probably more a case of overreaction to the Treaty and internal Army problems with priorities, and institutional hostility to the newly formed CWS, than a real indication of a change in policy. During that period, Congress continued to authorize funds for offense preparedness, as well as for defense (although, as was the case with all military funding during that period, it was meager).

The capability to implement this element of national CW policy has frequently been lacking. It was lost immediately after World War I, and action to rebuild it did not begin until 1941. It was not until late 1943 or 1944 that the capability to implement the Roosevelt policy of "full and swift" retaliation-in-kind was obtained in the European Theater of Operations. It was never fully attained in the Pacific Theater. Stockpile modernization (mainly in nerve gases) took place during the 1950's and early 60's; but effective readiness of this stockpile has depreciated since then. Restrictions on peacetime deployment of lethal CW munitions have seriously impaired the U.S. capability to mount an effective retaliation-in-kind in the type of "short" war which might occur in Europe. Soviet capabilities, both offensive and defensive, are rated high. The principal policy question regarding CW is what to do about the capability for retaliation in kind.

3. First Use

Despite War and Navy Department published policy during the period 1934-42, which authorized first use at the discretion of field commanders, it is probably correct to say that U.S. CW policy has always been essentially one of no first use. All of the Presidents, with the

possible exception of Truman, have given clear indications of being opposed to first use of CW. However, only Roosevelt and Hoover appear to have had a deep personal bias against CW, and it is possible that the others would have modified their policies if developments had shown that use of CW was necessary to provide a vital advantage for the United States from a national security standpoint. There was a decided shift toward first use against Japan in 1945, although the unexpectedly early termination of the war left the probable outcome in doubt. Between 1925 and 1975 some members of Congress, on a number of occasions, indicated open-mindedness on this point.

However, since President Nixon's renunciation of first use in 1969, and the reiteration with the ratification of the Geneva Protocol in 1975, that element of U.S. national policy on chemical warfare appears firmly established. It would require a major crisis or change in perceived threat to bring about a policy change on that point.

4. The Search for an Effective Ban

Ever since the end of World War I, the United States has followed a policy aimed at the achievement of an effective and enforceable international agreement banning chemical warfare. Changes in the international situation have been reflected in changes in emphasis on this element of policy, but it has always been a fundamental. The 1925 rejection by Congress of the Geneva Protocol, and occasional indications by Congress and the Department of Defense of a willingness to accept CW as a normal means of warfare, should not be misinterpreted as a departure from policy. Chemical warfare continues to remain in a unique category, and there has been an unbroken thread of desire to see its banishment, if there is any feasible way to accomplish this end. The key to the quest for a ban of CW is in the phrase "effective and enforceable". Until these criteria are met, the U.S. cannot afford to relax its defenses against a CW attack. Even if a satisfactory ban were to be achieved, at least a moderate level of CW defenses should be retained.

DETERRENCE AND THE ALLIANCE:
WHAT ROLE FOR CHEMICAL WEAPONS?

by

Richard Burt

I INTRODUCTION

The role of chemical weapons in the NATO-Warsaw Pact military relationship has only recently captured the imagination of governments and private observers in the West. In part, this new interest has been generated by the persistent attempt by the international arms control community to severely limit the development, production and deployment of chemical warfare agents. While generally unsuccessful, recent efforts at the Geneva Conference on Disarmament and elsewhere to ban the deployment and use of chemical weapons have generated public interest over the issue and forced governments to come to grips with the implications of various proposals for existing concepts of chemical deterrence and defense.[1] However, the prospect of chemical arms control is not the only, nor probably the most important, reason that the problem of chemical weapons has now assumed a new dimension. Three other factors have made it necessary for the West to re-examine prevailing attitudes towards the place of chemical weapons in Alliance strategy. Two concern military characteristics of the Warsaw Pact forces and the other concerns developments underway in the West. Briefly stated, they are:

- The maintenance and steady improvement of a large stockpile of chemical weapons in the Soviet Union and Eastern Europe and growing evidence that Pact forces possess the equipment and

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[1] Recent efforts at prohibiting the development, production and use of chemical weapons have foundered on the problem of ensuring adequate verification for a comprehensive regime for chemical arms control. However, in August 1976, the British government tabled a draft resolution at the Geneva Disarmament Conference which linked the phased destruction of chemical weapons to the establishment of an international inspection body. For the text of the draft convention, see "Chemical Arms Control," Survival (London: IISS) November/December 1976, pp 274-277.

training to undertake a wide range of operations utilizing chemical weapons, alone or in conjunction with conventional or nuclear forces;

- The growth of Soviet military power generally, ranging from the improvement of conventional forces stationed in Eastern Europe, the augmentation and modernization of theatre nuclear capabilities and the expansion of strategic nuclear forces;

- The emergence of a new generation of chemical weapons in the West and a new class of precision-guided systems with which to deliver them that offers NATO authorities a new range of military options as well as a new set of troubling choices.

The thesis that will be advanced in this short analysis is that, taken together, these three developments have created new opportunities for both Soviet exploitation and intra-Alliance conflict. The growth of Soviet chemical and capabilities coupled with the improvement of conventional and nuclear forces has reinforced the relationship between chemical weapons and other military mechanisms for escalation in Central Europe. As a result, the credibility of NATO's existing "deterrent and retaliatory" approach to chemical warfare not only depends on the character of its chemical forces, but the size and quality of military forces above and below the chemical "threshold". In particular, decisions taken over the doctrine and deployment of NATO's theatre nuclear forces will have a crucial impact on the ability of the Alliance to cope with the threat posed by Warsaw Pact chemical capabilities. The basic argument developed here is that barring Eastern and Western accession to a negotiable and verifiable regime for chemical arms control, it will be important for US forces to maintain and modernize forces designed to wage and defend against chemical attacks in the centre region of Europe. Using new technologies, these forces can be limited in size and can retain a retaliatory function as long as the Alliance maintains (and in some cases, improves) existing conventional and nuclear capabilities. But to the extent that the Alliance fails to do this, the present asymmetry in East-West chemical capabilities will become an increasingly salient feature of the overall military balance. At best, this could open up a

distressing debate over Alliance strategy reminiscent of the early 1960s, with disturbing consequences for Alliance cohesion and US escalation control. At worst, it could provide the Soviet Union with new opportunities for exerting political influence and possibly overt military power in Europe.

Because of the paucity of analysis devoted to these issues in both governmental and private analyses, none of these arguments may appear particularly obvious. To demonstrate how the factors briefly described above are working to enmesh chemical weapons more tightly within the overall East-West military relationship, four questions will be specifically addressed:

- Where do chemical weapons fit into NATO's escalatory ladder and what is their relationship with the conventional, theatre nuclear and strategic nuclear balance?
- How do differences within the Alliance over conceptions of deterrence (risk apportionment) and defence (burden sharing) influence NATO doctrine for chemical weapons?
- What are the implications for NATO doctrine of Warsaw Pact chemical weapons doctrine and capabilities?
- How might new technologies resolve Alliance differences over chemical weapons, thus making Alliance doctrine more responsive to Warsaw Pact capabilities?

II THE PROBLEM OF ISOLATION

Perhaps the most revealing aspect about thinking about chemical weapons in Alliance strategy is its absence. The US Army possesses a Chemical Corps charged with the responsibility for developing and handling chemical warfare agents, but unlike the Soviet Union, no

separate arm of the ground forces exists for chemical warfare.[1] On the tactical level, field manuals for NATO forces, describing chemical weapons use and methods for coping with chemical attacks, are extensive, but no parallel body of literature exists on the doctrinal level. The issue of chemical weapons is normally dealt with briefly in US posture statements, normally by pointing out that capabilities for chemical warfare exist, but that the United States intends to meet the large and multi-faceted Soviet chemical threat through "the maintenance of a deterrent and retaliatory capability.[2] In what was probably the most extensive statement of US doctrine for the defense of Europe released in recent years--former Secretary of State James Schlesinger's report on theatre nuclear weapons--Soviet capabilities for chemical warfare are only mentioned twice.[3] In the standard formulation of the US deterrence triad of conventional, theatre nuclear and strategic nuclear weapons, chemical forces are conspicuous in their absence. The two Western European chemical weapons states, Britain and France, devote even less attention in doctrinal pronouncements to the role of these forces in Western defence. France is only willing to admit that it possesses a chemical warfare capability, while in recent statements, the British government seems primarily preoccupied with the employment impact of its chemical warfare establishment.

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[1] For a brief description of the organization and tasks of the US Army's Chemical Corps: "Alive, Well and Visible," by Col. Stanley D. Fair, Army, April 1974, pp. 29-32.

[2] See Maj. Ray W. Bills, "What Should Be the United States' position on Chemical Warfare Disarmament," for a good summary of present US doctrine for chemical weapons. Military Review, May 1975, pp. 12-23.

[3] And one of these references appears in a footnote. "The Theatre Nuclear Force Posture in Europe." A Report to the United States Congress in compliance with Public Law 93-365. p. 10.

In an era of "flexible response," how is it possible to account for the absence of chemical weapons in Alliance thinking about the management and control of the escalation process? Part of the answer lies in differences within the Alliance over how NATO should respond in the event of a chemical attack. These are significant and are likely to become more important in the future. However, this is not the primary reason that chemical weapons are not a popular subject for Alliance discussion. Fundamental to an understanding of the chemical weapons issue in the West is that it has traditionally been seen in a vacuum, isolated from other military and political developments. There are a number of reasons why this is so. Chemical warfare is obviously an unpleasant subject and the fact that in some ways its lethality is more comprehensible than the seemingly incalculable destructiveness of high-yield nuclear warheads ironically makes chemical weapons seem more pernicious to the general public. Thus, public outrage against the use of chemical (and biological) weapons has a long history, which in itself helps explain the isolation of chemical weapons from contemporary Western military thought: In order to circumscribe the deployment and use of chemical weapons, proponents of arms control have consciously sought to sustain a concept of their "separateness." For instance, E.O. Salmela of the Stockholm International Peace Research Institute (SIPRI) has argued that "one of the most basic considerations in Chemical disarmament negotiations must be to sustain a character of unconventionality in order to perpetuate the isolation of Chemical Weapons from accepted military theory and practice."[1] Of course, the fact that chemical weapons are viewed in the West as generally isolated from other military considerations is not a testimony to the effectiveness of the chemical arms control advocates. The isolation of chemical weapons is far more the product of Western reliance on the

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[1] See The Pugwash Workshop on Chemical Warfare, Helsinki, Finland, 16-18 April 1974, Pugwash Newsletter, June 1974.

threat of nuclear escalation to deter their use. The ability of the United States and its alliance partners to adhere to the obligations of the 1925 Geneva Protocol on Chemical Weapons and to renounce the first use of chemical weapons in time of war is based on the fundamental assumption that conventional and nuclear components of Alliance defences are capable of deterring and defending against the different military threats posed by the Warsaw Pact and that it is thus possible to "decouple" the use of chemical weapons from the escalation process by deploying a minimum deterrent to the use of chemical weapons. There is an analogy, then, to contemporary Alliance thinking about chemical weapons and the approach to the conventional balance to forces in the 1950s: Just as the Massive Retaliation strategy was seen to relieve the West of the necessity of maintaining the conventional balance, present-day NATO doctrine allows the Alliance to maintain a deterrence-only chemical posture.

It is clear, however, that the credibility of this posture must be seen in terms of the adequacy of its conventional and nuclear components. In theory, if NATO possessed an unmistakable edge in conventional capabilities in Europe's center region, the problem of when and how to use chemical weapons would primarily concern the Warsaw Pact: Lacking the capability to successfully execute a conventional attack, the Soviet Union would have to take the difficult decision of whether to escalate to chemical use. The same would apply if the West possessed a clear measure of strategic superiority; as in an earlier period, inferiority in conventional and chemical capabilities might be balanced by the ability to prevail in a strategic nuclear exchange. Of course, neither of these conditions exist today nor are they likely to exist in the future. NATO has never possessed an edge over Pact conventional forces in the centre region and its ability to maintain the existing tenuous balance is uncertain. As Soviet capabilities for rapid "blitzkrieg" conventional offensives improve, it is NATO that must increasingly face

the decision of where and how to threaten escalation. On the strategic level, a situation of strategic parity (and some would argue inferiority) institutionalized by superpower arms control has ruled out any possibility that the United States could undo theatre imbalances with strategic forces. In essence, then, the ability of the Alliance to isolate chemical forces from the East-West military equation has eroded and depends, for the most part, on the threat of nuclear escalation within the theatre. Alliance theatre nuclear posture is thus inextricably tied to NATO doctrine for chemical weapons and the adequacy of a no-first-use chemical strategy is directly proportional to the credibility of an Alliance strategy that does not rule out the first use of nuclear weapons.

This is not the place to address the problems besetting Alliance theatre nuclear weapons doctrine. It should be noted, however, that the same developments that challenge current Alliance doctrine for chemical weapons are exacerbating tensions attached to the use of theatre nuclear weapons: Shifts in both the conventional and the strategic nuclear balance are highlighting the importance of these "rungs" in the escalation ladder which acts to accentuate differing attitudes within the Alliance over nuclear use. In order to maximize the deterrent quality of nuclear weapons, Western Europeans are anxious not to limit the situations in which nuclear weapons could be threatened. The United States, on the other hand, appears increasingly restive about threatening the use of nuclear weapons in the early stages of a local conflict. In the event of conventional attack (with or without chemical weapons), these differences persist: The Western Europeans would want to emphasize the escalatory value of theatre nuclear weapons by applying them early on (but sparingly) in a conflict, while the United States would probably want to linger over the nuclear decision. In the context of this discussion the important point is that how NATO resolves this dilemma will have a profound impact on the credibility of its existing chemical weapons strategy. There are strong constituencies within both Europe and the United States for

reducing the role of theatre nuclear weapons for NATO deterrence and defense: For many Americans, the threat of nuclear use is unsettling in an era of strategic parity; for many Europeans, it is the actual use, and not the threat, that is unsettling. The coincidence of these fears could thus lead to a reduction of NATO's existing nuclear stockpile and the adoption of a deterrence-only doctrine for the use of theatre nuclear weapons similar to that for chemical weapons.[1] In such a way, the escalation value of theatre nuclear weapons would be lost and the credibility of the chemical deterrent undermined. To maintain deterrence, NATO would have to both expand its conventional forces and investigate war-fighting options for chemical weapons. The former would be very expensive, the latter, politically difficult in the extreme. From this perspective, existing Alliance strategy for chemical weapons is probably best understood as a "luxury" that has been traditionally sustained by reliance on the threat of nuclear escalation. To the extent that both decisions by Western governments and developments in Warsaw Pact military capabilities make the nuclear threat less credible, the pressures to re-examine and perhaps restructure NATO capabilities below the nuclear threshold are growing. This has long been recognized in the sphere of conventional forces, but is only now becoming apparent with chemical weapons.

III ALLIANCE ATTITUDES

While real, the possibility that NATO will move dramatically to reduce emphasis on the threat of nuclear use to deter war is not likely. Instead, the effectiveness of the first use threat will probably be slowly eroded over time by the expansion of Soviet forces above and

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[1] See, for example, Alain Enthoven, "US Forces in Europe: How Many? Doing What?" Foreign Affairs, April 1975, pp. 513-32.

below the nuclear threshold. This doesn't suggest any specific changes in the character and size of NATO chemical weapons stockpile, but it does mean that for the first time, chemical forces will have to be integrated into Alliance concepts of threatening deterrence. This will be no easy task: as with nuclear weapons, the act of threatening escalation clashes with the task of managing it and NATO members possess different interests in sharing the risks of deterrence and bearing the burdens of defense if deterrence fails. However, the risks and burdens attached to chemical and nuclear weapons are not exactly the same and it is important to point out the differences and similarities of the two categories of weapons. The most obvious similarity between nuclear and chemical weapons within the context of Alliance politics is the fact that only the "privileged" NATO states--the United States, Britain and France--possess the capability to independently use these weapons. The most important non-chemical power within the Alliance is, of course, West Germany, which is prohibited to deploy these weapons under the same treaty that bans West German acquisition of nuclear weapons.[1] The general impact of this restriction is to limit West German escalation autonomy, which, as in the nuclear sphere, leads to dependence on a US commitment to deter the use of chemical weapons by the Warsaw Pact, a commitment which, owing to the limited chemical capabilities of France and Britain, more generally characterizes the US-European relationship.

However, the nuclear analogy for chemical weapons has only limited applicability. While both nuclear and chemical weapons are viewed to qualitatively differ from conventional weapons forces, NATO doctrine implicitly places chemical weapons in an "intermediate" zone between

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[1] For an excellent discussion of the constraints that were placed on West Germany in 1954 upon entering the Western European Union, see Catherine McArdle Kelleher, Germany and the Politics of Nuclear Weapons (New York: Columbia University Press, 1975), Chapter One.

conventional and nuclear forces. While in some cases, chemical weapons such as herbicides and short-term incapacitants can be understood to be militarily less destructive than some conventional weapons, a clear political threshold continues to exist between conventional and chemical use, with chemical weapons occupying a higher rung on the escalation ladder. Similarly, large-area, lethal chemical agents are more destructive than a new generation of low-yield, enhanced radiation nuclear weapons, but chemical weapons are assigned a distinctive place on the escalation scale below nuclear weapons. This means, in practice, that chemical weapons possess the political attributes of both conventional and nuclear weapons and that in debates over chemical weapons strategy, Alliance members will tend to emphasize whichever attribute suits their individual purposes.

In general, the United States can be expected to view chemical weapons primarily as extensions of conventional forces in order to minimize the possibility that their use would trigger off uncontrolled escalation to the nuclear level. For their part, the Europeans are apt to couple chemical weapons with the nuclear deterrent forces, in order to maximize the deterrent effect of US nuclear weapons below the nuclear threshold. These differences reflect built-in differences of geography which, in principle, cannot be resolved. The fact that strategic parity has inevitably restricted the spectrum of contingencies where US nuclear responses can be credibly threatened has created some painful dilemmas for the West Europeans, which are most apparent in the case of West Germany. On the one hand, the threat of nuclear use is seen as essential to deterrence; on the other, the prospects for local nuclear use if deterrence fails are most unattractive. The alternative to nuclear use--a protracted conventional war--is hardly more appealing. In theory, chemical weapons might be seen as an answer to this dilemma if they could be relied upon as an escalatory mechanism in the event of a failure of NATO's nuclear nerve. However, the maintenance of a "second strike only" chemical posture rules out this contingency as does the strength of Warsaw Pact chemical forces.

Thus, while West Germany and other NATO states in Central Europe would prefer to see Pact chemical use linked to a NATO nuclear response, they are forced to confront the unhappy possibility that while not contributing to deterrence, chemical weapons would be used without hesitation in Central Europe if deterrence failed. This concern to some extent explains the often unarticulated concerns expressed in Europe to US plans to modernize existing chemical weapons stockpiles.[1]

There is little in the area of chemical arms policies alone that the United States can do to alleviate these fears. A massive augmentation and modernization of US chemical forces stationed in Europe capable of deterring a Warsaw Pact conventional/chemical attack in the centre region is simply not a realistic alternative over the coming decade. Within the bounds of second-strike chemical posture, "dual-key" arrangements between the United States and non-chemical NATO states would be more practical, but would be of little value to Europeans as instruments for escalation. The most promising improvements for NATO chemical capabilities from the standpoint of those in Central Europe would concern the range of delivery systems. The fear that a conventional/chemical conflict would remain confined to the centre region can be partially alleviated by equipping aircraft and longer range missiles with chemical warheads so as to threaten targets in Eastern Europe and even the Soviet Union with chemical attack in the event of a Warsaw Pact first strike. In such a manner, the Europeans would at least be able to ensure that a chemical conflict would not be localized.

In the final analysis, however, "territorial escalation" with chemical weapons is not an acceptable substitute for the deterrent impact of the US nuclear guarantee. As with improvements to conventional forces, any US program to alter chemical forces in Europe will be inevitably

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[1] See for instance, "Nerve Gas Plans Worry Europe," Guardian, 16 May 1974

linked to changes in nuclear forces. If US chemical weapons policies are seen (rightly or wrongly) to diminish the willingness of the United States to respond to a Warsaw Pact non-nuclear attack with nuclear weapons, they will be resisted by many Europeans. This doesn't mean that US efforts to improve the deterrent capabilities of its chemical forces are unproductive or unnecessary, only that they should not be undertaken or even justified in any general strategy to raise the "nuclear threshold" in Europe. The results could be far worse than simply a new crisis over NATO doctrine. At one extreme, European members of the Alliance could be driven to greater autonomy in the nuclear field; Britain, for example, or even West Germany could follow the French nuclear example. Were West Germany to move in this direction, the results would be unpredictable to say the least. At the other extreme, a latent predisposition towards surrender could be reinforced by a US strategy that was perceived to replace the nuclear guarantee with upgraded chemical weapons: Quite simply, Europeans might prefer to lose a conventional war than lose a chemical one.

The relationship between chemical and nuclear deterrence is not the only factor that hampers considerations of chemical weapons policies within the Alliance. While the nature of chemical weapons within the escalation process assumes central importance in examining US and European attitudes, so does the question of who manages it. As in the nuclear sphere, the United States does not enjoy a chemical weapons monopoly and the possibilities that Britain and/or France might also participate in a NATO chemical response to a Warsaw Pact attack must also be taken into account in considering US options. As we have seen, Europeans generally would be suspicious of an emphasis placed on chemical forces at the expense of nuclear capabilities. Yet Europeans differ among themselves over the best means of chemical deterrence. Barring the remote possibility that a European member of NATO might adopt a first-use policy for chemical weapons, the problem is not that European use of chemical

weapons could "trigger" the use of US chemical forces--the contingency that is often referred to in discussions of the instabilities introduced by Western European nuclear forces. The problem instead concerns possible intra-European differences over the character and scale of a NATO response to a Warsaw Pact chemical attack.

In many respects, intra-European differences over chemical weapons use are a microcosm of the larger nuclear debate within the Alliance as a whole. As the primary target for Warsaw Pact attack, West Germany, as earlier noted, possesses a strong interest in a chemical deterrence retaliatory strategy based on widening the geographical character of the conflict; the would-be aggressor would be put on notice that a chemical war could not be limited to German soil and might even escalate to include the Soviet homeland. This is unlikely to meet with great enthusiasm in other quarters in the Alliance. France and Britain, in particular, possess equally strong interests in localizing the consequences of chemical war in Europe. Thus, efforts to extend the geographical confines of a limited Warsaw Pact chemical attack by retaliating against targets deep in Eastern Europe or the Soviet Union might be seen with some trepidation in London or Paris; the result of such escalatory responses would likely be follow-on Pact attacks against France and Britain.

A similar intra-European disagreement might also emerge over the scale of retaliation. While West Germany and Central European states would possess interests in extending the scope of chemical retaliatory attacks, they would likely hope to limit the severity of these attacks in hope of minimizing the consequences of chemical war in the centre region. From the standpoint of countries on the periphery of the initial phase of the conflict, a more severe, localized form of chemical retaliation would seem more appropriate.

The possibility that these real, but generally latent, intra-NATO and intra-European differences over the size and scope of a chemical retaliatory response will emerge as central problems for alliance management during the coming decade will depend on several factors. The growth of Soviet military capabilities--chemical and non-chemical--will force the Alliance to devote more attention to the relationship of chemical weapons to other components of NATO defense, regardless of what changes are made to the existing stockpile itself. A deterrence-only chemical doctrine for the Alliance is adequate only so long as NATO can credibly threaten other forms of unacceptable escalation. Well meaning efforts to de-emphasize the escalatory features of other components of NATO defense, especially theatre nuclear weapons, will accentuate problems within the Alliance over agreeing on the proper size and use of the chemical weapons stockpile. In general, the ability of the Alliance to dissociate the chemical weapons problem from the wider East-West military balance is likely to decline in the near future: as the weakest link in NATO's chain of escalatory responses, the Alliance's chemical weapons posture is becoming more sensitive to changes in the military relationship between NATO and the Warsaw Pact above and below the chemical "threshold." A further weakening of the conventional and the nuclear balance will act to place greater emphasis on chemical weapons which, in turn, will place greater stress on the Alliance. Any military deployment or arms control outcome that acts to highlight the role of chemical weapons in NATO strategy should be resisted, for it is in this area where the Alliance possesses the least legal, political and military freedom of action.

But the Alliance's problems over chemical weapons can not entirely be solved by the maintenance of strong conventional and nuclear forces alone. Sustaining the military balance above and below the chemical "threshold" allows the Alliance the luxury of assigning chemical weapons a deterrence-only mission, but it provides little guide to what is

necessary for deterrence; it becomes necessary to examine how NATO doctrine interacts with Warsaw Pact capabilities and preferences.

IV THE OTHER SIDE

Even a cursory examination of Warsaw Pact chemical weapons doctrine and capabilities reveals dramatic differences from NATO conceptions and programs. In fact, it is probably fair to argue that in no other area are these differences so apparent. The most visible asymmetry in NATO-Warsaw Pact chemical capabilities is size: Compared to NATO's small and decreasing stockpile of CW agents (below 100,000 tons), the Warsaw Pact is estimated to deploy over 350,000 tons of CW agents. One source estimates that 35 percent of the entire Soviet stockpile of non-nuclear warheads and shells are chemical.[1] This means, in practice, that a much larger variety of systems in the East are chemical-capable than in the West, which, as we shall see, has important implications for Soviet attitudes towards chemical weapons use. An equally important characteristic of Soviet CW capabilities are the defensive features built into Soviet forces, both in the design of equipment and the training of forces, and the ability to withstand and respond to chemical weapons use.[2] From the standpoint of this analysis, however, the most significant aspect of the Soviet chemical threat concerns how these impressive capabilities would be actually utilized in a conflict in Europe. Here, an analysis of

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[1] For an interesting comparison of Western and Warsaw Pact chemical weapon inventories, see R. Pentilla, "Modern Chemical Troops," in The Pugwash Workshop on Chemical Warfare, op.cit., pp 142-144.

[2] Gen. Creighton Abrams has said that chemical defenses are now standard on all Soviet weapons that were supplied to Egypt and Syria prior to the 1973 Middle East war. See "U.S. Impressed by Soviet Arms to Combat Chemical Warfare," International Herald Tribune, 16 February 1974.

Soviet capabilities highlights some major differences between the two sides over questions of what constitutes "chemical deterrence" and how escalation to and beyond the chemical level is to be managed. Three significant aspects of Warsaw Pact chemical doctrine should be noted:

A. Escalation Domination

As in other areas of its operational military doctrine, the Soviet Union does not appear to subscribe to graduated conceptions of chemical use. In the event of the failure of chemical deterrence, Soviet military forces are prepared to respond with the widespread and massive use of chemical weapons. While it is unclear whether the Warsaw Pact expects to initiate a chemical war, it is an undoubted fact that it expects to win it. From the very start, the Pact would hope to dominate a chemical weapons exchange with the West, extracting far greater destruction with its forces than it expects to receive from the West. This war-fighting potential of Pact chemical forces in no way contradicts prevailing Soviet attitudes towards deterrence and the willingness of the Pact to endorse the 1925 Geneva Convention. From the Soviet point of view, the ability to prevail in a chemical conflict not only makes NATO use of chemical weapons unlikely, but, in the event of their use, forces NATO to consider even more destructive forms of response. In this way, the onus of escalation is forced upon the Alliance: NATO can either accept defeat or trigger an even more destructive conflict. As other components of the Warsaw Pact forces improve, it becomes much more difficult for NATO to authorize escalation. This acts to undermine the credibility of flexible response. Thus, underpinning the Soviet conception of escalation domination is a different notion of the escalation process itself: In time of war, escalation to the chemical and nuclear will almost be automatic and almost impossible to manage. Processes of "tacit bargaining" therefore have little place in Soviet thinking about chemical weapons use. The threshold to chemical use remains high because of the tremendous costs associated with the outbreak of war in Europe.

The emphasis placed by the Soviet Union on dominating different levels of the escalation process clearly has important implications for the Western dialogue over chemical weapons outlined above. First, it effectively rules out any substantial alteration of the NATO no-first-use policy for chemical weapons. Moreover, by sustaining a position of CW superiority the Soviet Union is able to make any strengthening of NATO's existing posture appear unworthwhile, especially for Europeans in the center region. As we have seen, the likelihood that even the very limited use of chemical weapons could escalate in a massive, theater chemical war will probably lead Europeans to insist that the chemical threat be dealt with by threatening extra-regional nuclear strikes. It is difficult for the United States to oblige these wishes, for fear of triggering a general strategic war.

B. Escalation Localization

While Soviet doctrine does not seem to recognize the possibilities of a chemical conflict limited in scale, limitations in geographical scope possess great importance. In fact, as Joseph D. Douglass, Jr., has argued, the boundary between theatre and intercontinental war is probably the only escalation boundary of any significance to Soviet military planners.[1] This is not only because Soviet forces are unprepared and unwilling to consider the more limited use of chemical weapons within the theater. More importantly, it stems from a natural desire to maintain the Soviet homeland as a sanctuary, free from NATO attacks, including chemical attacks. As a result, an important priority is placed by the Soviet Union on "decoupling" US strategic forces from a war in Central Europe. On the

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[1] See Douglass' superb presentation of Soviet doctrine for the European theater, "The Soviet Theater Nuclear Offensive Studies", in Communist Affairs, Vol 1, US GPO.

nuclear level, this has been accomplished in the Soviet view by the emergence of strategic nuclear parity. As far as chemical forces are concerned, this has never been a problem. Because the United States does not threaten the Soviet Union with an intercontinental-range chemical strike capability, Moscow can be confident of its abilities to limit the scope of chemical war to the European theater. NATO could threaten the Soviet homeland with chemical retaliation, by equipping aircraft and longer range missiles with chemical warheads, but the general tendency has been to exploit shorter range systems, such as artillery and tactical missiles, for the chemical role. This contrasts with the Soviet deployment of chemical weapons on both tactical and strategic-range delivery systems. On the one hand, this allows the Soviet Union to credibly threaten the massive use of chemical weapons in the event of war because it is able to control the spread of hostilities. On the other hand, this reinforces differences within the Alliance over the form that chemical retaliation should take. Any war limited to the European theater--conventional, chemical or nuclear--is politically unacceptable to the Western Europeans. Yet this is precisely the kind of conflict that the Soviet Union hopes to wage and the United States, in not moving to deploy a family of long-range chemical weapons, appears to countenance.

C. Escalation Concurrence

If the Soviet Union's escalation ladder seems "horizontal"--in terms of geographical distinctions--NATO's remains "vertical"--in terms of levels of damage associated with different weapons. This distinction underlines what is perhaps the single most important difference in Pact and Alliance views of chemical weapons. While NATO doctrine implicitly places chemical weapons in an intermediate zone between conventional and nuclear weapons, Warsaw Pact doctrine does not seem to accept the idea that there are discrete thresholds between conventional, chemical and nuclear escalation. All three forms of weapons have a place in the Soviet theater offensive

and would be utilized concurrently during war. Two important implications flow from this observation. First, chemical weapons do not exist apart from other components of the Soviet inventory, but are integrated into the overall command structure for the forces. This does not mean that in time of war that Soviet forces would inevitably couple chemical and nuclear strikes with a conventional attack, but that if this effect is desired, the Soviet Union faces few operational problems in quickly combining the different elements of a deep, massive theater attack designed to destroy and neutralize NATO forces at the onset of hostilities. An additional bonus attached to this approach is that Soviet forces are not only well prepared to use chemical weapons, but to defend against them. The second implication stemming from the principle of concurrency in Soviet doctrine is that chemical forces are not just viewed as an escalatory "link" but possess a relatively precise role in a conflict scenario. Put more crudely, the Pact's posture reflects an emphasis on war-fighting. The integrated use of conventional and nuclear weapons would not necessarily provide the Soviet Union with the full range of capabilities it would desire in undertaking an offensive in Central Europe: In some circumstances, the use of either of these forces might appear unattractive and recourse would then be taken to chemical use. Certain targets, for example, might be viewed as crucial for Pact use and, as a result, command authorities might want them captured or neutralized without destruction. In these cases, chemical weapons would be most useful. (Transportation facilities are obvious examples, but urban centers might also fall into this category, raising especially sensitive problems for NATO).

The combined effect of these three aspects of the Soviet approach to escalation in the European theater is to call into question several fundamental assumptions underlying NATO's chemical deterrent. For a start, it makes much of the debate concerning risk apportionment and burden sharing outlined in the previous section seem irrelevant. From the Soviet

viewpoint, the likelihood that NATO and Warsaw Pact threats of escalation might be used for purposes of intra-war deterrence appears incredible. When deterrence fails in Europe, it will fail altogether; the only assumption that can safely be made is that the Soviet Union would attempt to limit the effects of war to the Soviet homeland. Of course, this smacks of a "deal" with the United States and places a priority on the Soviet capacity to divide the Alliance by neutralizing the impact of US strategic forces. To the extent that the Soviet Union is perceived in Western Europe to have accomplished this task, Soviet theater capabilities, including chemical forces, will become a more dominant factor in European politics.

V SOME SOLUTIONS

The problem of NATO's chemical weapons strategy is really the problem of Alliance doctrine generally. As we have seen, the credibility of CW deterrence is ultimately dependent on the character of the East-West military balance. Gaps appearing in other areas of the deterrence spectrum only serve to accentuate the growing asymmetry in the chemical sphere. It is probably futile to attack this problem by attempting to massively alter existing doctrine; "flexible response" is the inevitable product of the diverse political pressures that define the character of the Alliance. While it is intriguing to consider the impact of radical changes to NATO doctrine, such as the adoption of a nuclear emphasis defense based on the deployment of a new range of low-yield nuclear weapons, these alternatives must be ruled out in the immediate future. Instead, improvements should aim at enhancing the effectiveness of the Alliance's graduated and balanced approach to deterrence in Europe. On the doctrinal level, this means that while the Alliance can maintain its "vertical" conception of escalation, the notion of thresholds or "firebreaks" will probably have to be abandoned. Instead, conventional, chemical and nuclear options will have to be more closely integrated within a continuous series of overlapping capabilities.

In more precise terms, this calls for a general improvement of NATO's deterrent posture: the exploitation of a new generation of more lethal area and point conventional munitions, the deployment of low-yield, special effects nuclear weapons, investment in new long and short-range delivery systems and the maintenance of a US limited strategic strike capability. The emphasis in all these changes should be to maximize Alliance flexibility in reacting to the Warsaw Pact threat. Increased flexibility would enable the Alliance to both threaten greater punishment as a means of deterrence and greater discretion in the event that an actual military response was called for. A flexible, integrated approach to conventional chemical and nuclear deployment and use would thus counter the Pact's "escalation dominance" with "escalation agility." A new generation of precision-guided delivery vehicles, improved target acquisition aides and command and control capabilities would present Soviet planners with a new problem of predicting NATO's response in any given contingency. At the same time, the ability of Alliance political authorities to exercize a wider degree of choice in responding to military threats would make the asymmetrical risks attached to escalation in Europe seem more bearable.

But flexibility cannot be merely announced, it must be built into Alliance capabilities. This seems especially true for chemical forces. The ability to merely respond chemically to a Soviet CW attack is not adequate for deterrence. First, a flexible chemical deterrent requires a series of destructive options, ranging from short-term incapacitants to lethal area agents. Second, this range of capabilities must be capable of surviving a Warsaw Pact preemptive strike and be able to be quickly transported and easily handled. This has traditionally been a major obstacle in using CW and the US Army's new generation of binary weapons is an important innovation. Third, CW must be capable of being delivered by a variety of systems: aircraft, artillery, missiles and man-portable launchers. Giving conventional or nuclear delivery systems a chemical

delivery capability is not technically difficult and complicates not only Warsaw Pact targeting requirements but defensive problems. Fourth, the Soviet Union should not be allowed to assume that it could escape CW use on its homeland in the event of CW use in European theater. The ability to deliver chemical agents against targets in the Soviet Union would not only enhance the cost of Soviet CW use, but it would relieve European anxieties over the improvement of the NATO chemical posture. Long-range CW options--aircraft, ballistic or cruise missiles--should therefore be investigated. Finally, NATO's capability to absorb Pact CW use must be substantially improved. Equipment should be "hardened" against the effects of CW and troops must be trained for CW contingencies.

The purposes of these improvements should not be seen to move Alliance chemical strategy away from deterrence towards a "war fighting" capability. Rather, these steps should be understood as the only means that chemical deterrence can be integrated into the overall spectrum of NATO responses. The existing NATO CW capability fails to deter because it represents a capability that the Alliance seems unwilling to threaten and unwilling to use. As Warsaw Pact overall capabilities, in general, and CW capabilities, in particular, continue to grow, this situation can only grow worse. While this in itself is unlikely to invite attack, it could certainly erode Alliance cohesion. Building flexibility into Alliance CW forces will not resolve intra-Alliance differences over the problem of when, how and where to respond to a Warsaw Pact chemical attack. But in both raising the potential costs of such aggression, while, at the same time, allowing authorities greater descretion in responding to it, the military costs of deterrence can at least be fairly distributed over the Alliance as a whole.

Still, the adoption by NATO of a more survivable, more varied, and more discrete CW capability must be perceived by governments and the public at large as part of larger effort to improve Alliance military

capabilities. The potential for Western and Eastern observers to read too much into an improved CW posture will be great: As with improvements to the conventional posture, both the Western Europeans and the Soviet Union are overly sensitive to any US decisions that seem to signal a US tendency towards nuclear disengagement. Improvements to the CW posture should not under any circumstances be coupled with a deemphasis of US strategic or theater nuclear weapons for the defense of Europe. If this occurs, either as a result of a policy decision or an arms control outcome, a more fundamental reassessment of CW policies will be necessary. More broadly, the process of integrating CW into Alliance doctrines for deterrence and defense should be undertaken slowly and methodically. Because the CW issue has remained outside of the field of Western defense concerns for so long, there is a natural tendency to suddenly "discover" the problem and try to rush through solutions. This impulse should be resisted, for in this sensitive area the penalties for Alliance disruption of overreacting might be as severe as not reacting at all.

U.S. CHEMICAL WARFARE POLICY:

A WEST GERMAN PERSPECTIVE

by

Uwe Nerlich

I THE PROBLEM

In West European capitals chemical warfare (CW) is a rather esoteric and encapsulated subject (confined essentially to negotiating policy issued at the Conference of the Committee on Disarmament[1]). Yet for NATO to review future CW policy alternatives is important because:

- There is a growing Soviet CW threat against Western Europe;
- There is no adequate retaliation-in-kind NATO capability nor are other retaliatory means certain to remain credible deterrents in the 1980-1990 period (except for profound postural changes of NATO capabilities);
- Present U.S. stockpiles are mostly within the United States, i.e., not readily available in any theater contingency, and as for the marginal stockpiles in Western Europe present prepositioning is considered risky;
- Binaries offer obvious advantages with regard to prepositioning and could possibly offer some operational advantages over presently available CW weapons; and
- Current negotiations in the CCD and the UN Disarmament Committee offer somewhat uncertain prospects with regard to a CW convention.

While the Soviet CW threat affects all NATO partners, binary production for the foreseeable future is a technological option which only the United States possesses. Given the budgetary estimates with regard to a full-fledged offensive/defensive capability, major programs would also be beyond the financial reach of West European NATO countries. But not only are anticipated West European reactions to U.S. binary procurement policies a major factor in bureaucratic infights in Washington, West

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[1] Hereafter referred to as CCD.

European interests are, indeed, genuinely affected in a number of ways:

- The binary option is to enter into new NATO assessments of how the Soviet Union could use CW weapons against Western Europe and how NATO could and should respond if Soviet employment of CW weapons in a major conflict is considered likely.

- The binary option will also have to be evaluated not simply in terms of its potential usefulness against a Soviet CW threat, but in terms of priorities: NATO's force posture in Europe for the late 1980s and beyond should result from broad modernization. Obviously improved conventional forces are the top priority. In addition, improved nuclear capabilities will be clearly more important than improved CW capabilities, because under current doctrine nuclear capabilities are considered a general deterrent whereas CW weapons are not: They are viewed as nothing but means for retaliation in kind. At present it is uncertain to what extent NATO will manage to modernize forces in the most important areas. Scarce budgetary resources, bureaucratic inertia and political constraints could combine so as to limit modernization policies in scope. Undoubtedly modernization will be selective. There will remain vital areas like civil defense, logistics, emergency support capabilities, etc., where the things that could be done won't be done for traditional reasons, i.e., NATO will continue to live with severe selective vulnerabilities. CW capabilities thus are likely to conflict with other and potentially more important modernization goals. Obviously it is a matter of considerable importance to try to influence American choices with regard to competing modernization policies.

- While present U.S. CW capabilities in Western Europe are essentially an American domain which does not pose serious problems of force integration, this would possibly change with binaries: The more useful that CW options become militarily, the greater the requirements for a more equal distribution of CW weapons among NATO forces will be, in order to be able to cope with CW threats wherever they emerge. Thus a meaningful CW capability would add another dimension to NATO force integration.

- West European governments are also likely to share concerns that if the U.S. goes for binaries this will not only trigger efforts to improve and strengthen Soviet CW capabilities, but that such a "race" would eventually make CW a much less ostracized option than is currently the case. By the same token, third countries could be encouraged to embark on less sophisticated CW weapons programs of their own. Given the fact that the "technology (of less sophisticated CW weapons) is simple and relatively easy to obtain,

even for industrially less developed countries"[1], prospects of proliferating CW capabilities would probably weigh heavily against CW modernization in West European capitals. In addition, in today's Western Europe, governments would be particularly vulnerable to political opposition pressures--both domestic and international. Heavy opposition, however, is a predictable outcome.

For a number of reasons, CW policies are exceptionally important for West Germany. West German reactions are thus likely to typify the range of West European political responses to CW modernization. As a caveat it should be noted though that this judgment is made in the absence of any noticeable public debate. These are some of the major reasons which single out West Germany as a country likely to be crucially affected by CW modernization policies:

- In spite of increased deployment flexibility of binaries, West Germany would remain the principal storage area in Western Europe.
- West Germany would be the most exposed ally and the principal victim of CW should it occur in a NATO/WP conflict.
- West Germany is particularly affected by force modernization generally and thus especially sensitive to issues of priorities.
- By the same token, West Germany is particularly sensitive to issues of force integration. Already concerns over long-term prospects of maintaining multinational forces on German soil with a certain minimum of force integration are serious. In a number of ways, improved CW capabilities would probably aggravate these concerns (uneven distribution, complicating further efforts towards better combined arms capacities, alienating domestic constituencies, triggering tensions among Allies--especially those who have deployed forces in West Germany--who differ sharply on CW modernization, etc.).

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[1] Fred Ikle in: U.S. Congress, House, Department of Defense Appropriations for 1976, Hearings before Subcommittee of the Committee on Appropriations, Part 9, p. 229 (Washington, D.C., USGPO, 1975)

- Given West Germany's strong chemical industry, more vigorous CW modernization efforts are likely to make West Germany a victim of suspicion, pressures of sorts and potentially unauthorized access. This weighs particularly heavily in view of the dominant-West German low profile posture which the Federal Republic of Germany (FRG) only recently has begun to overcome in some more vital areas. CW policies almost certainly will not be an area where the FRG is going to be more forthcoming.

- As is well known, West Germany is under special legal obligations. It is a party to the Geneva Protocol of 1925 which rules out the use of CW weapons. It has also unilaterally renounced the production of CW weapons in the Protocol No.III to the Western European Union (WEU) Treaty (Brussels Treaty). It has also voted for the resolutions relating to a comprehensive agreement on CW weapons which the General Assembly has adopted since the FRG became a UN member.

- While existing obligations have some important loopholes and may in fact be inapplicable to most issues related to CW modernization,[1] they continue with what currently looks like a rather firm commitment to pursue a comprehensive CW agreement. In the present policy framework there are the ingredients of a negotiating policy on CW, whereas there are hardly any overtures to what might become a modernization policy.

- As the West German chief delegate at the CCD pointed out, the FRG "attaches great importance to progress being achieved in the deliberations concerning a convention on the prohibition of chemical weapons. We support the renewed request addressed to the CCD by the thirtieth session of the United Nations General Assembly to accord high priority to this question."[2] While there is a kind of negotiating commitment to achieve a comprehensive agreement, the FRG tends to favor the step-by-step approach which Japan introduced. In 1976 the FRG proposed to "review the existing material and study the feasibility of a

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[1] While the binding chracter of the Geneva Protocol may be somewhat uncertain, the WEU protocol is a treaty obligation. Yet it exists only vis-a-vis the six WEU partners, and France as the most important partner has flatly ignored some equally important provisions of the same protocol. The WEU obligation does not govern production outside West German territory, acquisition or transfer of CW weapons or deployment of foreign CW weapons on German soil. In addition, there would arise serious definitional problems with regard to efforts to apply the WEU obligation to binaries.

[2] CCD/PV. 696, 23 March 1976, p. 7.

generally acceptable first step".[1] This was based on a more general premise that "in view of the complexity of the issues, in particular the still unresolved question of verification, it is becoming increasingly clear that in negotiations ahead an all-or-nothing approach is unlikely to be helpful. Given the realities of the situation, the only alternative is to adopt a step-by-step policy, without at the same time losing sight of the ultimate goal of a ban on chemical weapons."[2]

- Given the present definitional problems, a step-by-step approach might favor a policy of excluding binaries from the agenda, but this does not seem to reflect the attitude of the West German government: (1) There is considerable emphasis on definitional efforts which are pointed towards inclusiveness rather than selectivity.[3] (2) Given the West German negotiating commitment and the likely repercussions of an exclusion policy or, indeed, of visibly proceeding with work on the Pine Bluff Arsenal in Arkansas on CCD deliberations, the FRG is not likely to favor any CW policy which would tend to jeopardize the chances of a comprehensive agreement. (3) The FRG is not hostile towards the recent British treaty proposal which puts emphasis on early termination of all construction efforts.[4] (4) An exclusion policy that would try to exempt binaries from a comprehensive agreement would meet with little sympathy in a country like the FRG which is rather sensitive to all constructions which seem to fit the perception of great power chauvinism.

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[1] Loc.cit., p.8. Similarly the FRG suggested in 1975 that the CCD "should examine whether at least meaningful partial solutions on a step-by-step basis would not be possible while we continue to aim for a comprehensive ban". (CCD/PV.664, 8 April 1975, p. 10)

[2] Ibid.

[3] Cf. the West German "Working Paper on the Definition and Classification of Chemical Warfare Agents" (CCD/458, 22 July 1975).

[4] CCD/512, 6 August 1976. Reprinted in Survival, November/December 1976, p. 274-277. Under art. III "each signatory or acceding State undertakes on signature or accession to this Convention, whether or not it has entered into force..(c) not to construct any new factories for the production of agents", etc. This appears to be targeted at the proposed binary production facility at Pine Bluff Arsenal, Arkansas.

To sum up: In the German situation there are a number of severe military risks and political vulnerabilities together with some obvious advantages of second-order importance. There is a perceived problem of priorities for NATO's modernization policies which is likely to attribute low priority to CW modernization. The FRG is actively engaged in CCD negotiations on a CW agreement and like other medium powers with strong chemical industries (Japan and Great Britain) the FRG seems to attribute particular importance to these issues. To be sure, the West German negotiating policy has emerged from the usual bureaucratic patterns rather than from a broad assessment of options and constraints, but whatever policy changes may look attractive in the future, reversing current negotiating policies would undoubtedly become a highly unpopular issue with the West German public.

However, there is every reason for the West German government not to exclude a study of the likely impact of Soviet CW modernization and of the implications of Western CW weapons options from ongoing policy formation on NATO's military posture in the late 1980s and beyond. While such assessments of the military aspects of CW are likely not to enter into high level agendas and are equally likely not to be treated adequately in multilateral specialized bodies, it may seem useful to set up parallel study groups (US, FRG and possibly Great Britian) with low visibility but qualified participation in order to secure some policy impact.

The preceding assessment is essentially confined to implications of an American decision to enter into a significant program of binary production. While a strong negotiating commitment and a vigorous effort to achieve a CW offensive capability (based primarily on binaries) are mutually exclusive policies, there are a number of intermediate choices which may allow for more mixed-motive considerations. The SRI scheme singles out five major categories: (1) diplomatic solution, (2) conventional response, (3) nuclear response, (4) CW defense emphasis, and (5) major offensive/defensive capability. While the two extremes

are within the current political universe of discourse,[1] policymaking may have to focus on the three intermediate categories. Obviously these are not mutually exclusive: Choosing is a matter of degree and of a reasonable combination of policies.

The remainder of this paper thus will be addressed to the question of what flexibility there may exist with regard to those imtermediate categories from a West German perspective.

II THE SOVIET THREAT

The Western doctrinal framework for policy choices on CW seems to be simple: (1) The Western posture is based on a no-first-use concept; (2) any employment of CW weapons in Europe will begin with Soviet first-use; (3) the Western posture has to provide for a deterrent that matches the Soviet CW threat (either by retaliation-in-kind capabilities or else by nuclear or conventional responses); and (4) any Western offensive CW capability will have but one purpose, deterring Soviet use of CW weapons. Assumptions about the Soviet CW posture are thus central to any Western approach.

Soviet policies on CW are twofold: On the one hand, the Soviet government was the first to push hard for a CCD agreement on chemical weapons: It tabled an elaborate draft convention as early as spring 1972.[2] But while Moscow became the champion of a comprehensive one-step approach and only reluctantly came around to accepting a phased approach,

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[1] In Geneva the U.S. seems to favor a step-by-step approach while showing considerable scepticism with regard to a comprehensive agreement. On binaries there is continued Army interest in and Congressional support for RDT&E programs for the 155-mm and 8-inch binary munition, but reluctance with regard to a broad binary procurement effort seems to be considerable (and likely to grow in the next Administration).

[2] CCD/361

it also was most reluctant with regard to meaningful verification arrangements which naturally were an essential precondition for all Western countries in Geneva. On the other hand, "the USSR is better prepared to operate offensively and defensively in a chemical warfare environment than any other nation in the world."[1] They have made massive investments in both offensive and defensive capabilities. Given Soviet training and protective systems, as well as offensive capabilities, the Soviet Union does in fact have a first-use capability. While these two Soviet policies are not necessarily inconsistent, they provide every reason for Western governments to assess the rationale behind this posture.

To the extent that European theater force relationships are characterized by what is labeled nuclear parity and Soviet conventional superiority, it is difficult to see why Moscow should want to have an offensive CW capability. This is particularly so since NATO no longer poses an offensive threat to the Soviet Union: It was the combination of an unstable political status quo (notably the German issue) with superior American strategic power which must have been the nightmare of Soviet planners in the 1950s, but over the last 15 years these two elements of what presumably was the dominant Soviet threat perception not only were dissociated, but they both disappeared.

Some conceivable reasons behind the Soviet CW effort may have been (1) false assessments of earlier Western CW programs, (2) the American reluctance to become a party to the Geneva Protocol of 1925 (which could have signaled strong U.S. interest in CW so as to reinforce what may have been exaggerated Soviet estimates of Western programs), (3) the tremendous Western chemical industrial capacity, (4) a deliberate Soviet policy of foreclosing Western resort to CW in case the Soviet Union

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[1] U.S. Congress, Senate, Committee on Appropriations, Department of Defense Appropriations for 1976, Hearings, Part 2-Army, 12 March 1975, p. 491.

should have gained unmatchable superiority in the conventional field and/or has become too invulnerable to nuclear threats (as a result both of increased Soviet strategic power and increased constraints operating in Western crisis decision making).

But there is much less need for Soviet retaliation-in-kind to potential Western CW employment than there might possibly exist for NATO (even though that too is a controversial assumption). Second, there is no rationale for a Soviet threat perception which could possibly call for massive CW capabilities for deterrent purposes. Third, even if there were a potential threat of Western aggressive initiatives, the implications for Soviet CW policies are unclear: While such threat perceptions could provide a somewhat artificial pretext for Soviet defensive capabilities or even for retaliation-in-kind capabilities, they do not provide any explanation for why Moscow went for a first-use capability in the absence of a Western CW threat. Moreover, if Moscow were concerned over potential NATO CW capabilities, going for a massive Soviet first-use capability was bound to make negotiating efforts more difficult and was likely to justify or, indeed, trigger Western CW efforts.

In this perspective the massive nature of Soviet CW efforts thus was counterproductive with regard to both the negotiating objective and CW force matching. While Soviet motives and commitments at CCD negotiations remain doubtful, the fact of Soviet offensive/defensive CW capabilities does exist and apparently cannot be explained in terms of any action-reaction pattern.

These then seem to be some characteristics of the Soviet CW posture: It is not a retaliation-in-kind capability; it is a first-use capability. It allows for highly mobile operations in a toxic environment. Unlike nuclear weapons, many CW munitions are value-protecting weapons. Incapacitants would seem to offer attractive options.

Thus the Soviet first-use CW capability is one way of achieving and maintaining offensive options vis-a-vis Western Europe. Given Soviet practice, these capabilities would have to fit into the Soviet combined arms doctrine: CW capabilities are hardly looked at in isolation. There are conceivably first-use options under conditions of surprise attack. There are also likely to exist rules for engagement and technical arrangements for switching to CW during a conflict. CW capabilities are likely not to be designed as desperate last resort weapons. In addition to possible offensive uses (surprise or intra-war), heavy CW capabilities could conceivably offer also intermediate Soviet options for suppressing Western desperate nuclear counterthreats in worsening conventional battle conditions.

It would seen to follow that given the nature of the Soviet CW threat Western retaliation-in-kind capabilities may not provide the most appropriate responses. On the other hand, if both sides should prepare for chemical warfare engagements, retaliation-in-kind hardly is a sufficient rationale for a Western CW posture: A doctrine for using such capabilities would have to be based on the most promising exploitive options for employing CW; it would have to be specific about the most suitable munition and the nature and location of the targets and it would have to reckon with both the impact on home territory and Soviet escalatory potentials.

III SOME NATO OPTIONS

Given the Soviet offensive/defensive CW capability, it would seem important to improve NATO's defensive capabilities. This applies to both protective and decontamination measures. With regard to protective measures individual protection should be improved. (In the FRG promising developments may lead to highly efficient and cheap new protective clothing). But collective protection systems too seem to attract more interest. Such defensive capabilities should be introduced on the basis of an improved understanding of possible Soviet offensive uses of CW in combined arms efforts.

One should add though that in the absence of other protection programs like civil defense, hardening of military facilities, dispersal of air fields, etc., major defensive CW efforts would pose issues of priority and they would become piecemeal.

Retaliation in kind does not seem to provide viable options. If release problems were easier than for nuclear weapons and if deep retaliatory strikes were conceivable (in order to spare one's own territory) and if a less opaque multilateral consensus in NATO existed on rules of employment and if escalatory risks were not overwhelming, then retaliation in kind could indeed offer some coercive options against Soviet CW threats. But it is hard to see any of these conditions fulfilled.

It may be worthwhile to consider whether CW options can be generated for other operational purposes, e.g., in terms of denying Soviet offensive options of sorts by using incapacitants. If any such militarily useful options are conceivable, it could also become attractive to introduce binaries on a relatively small scale so as to replace existing stockpiles. Operational advantages with regard to storage, surveillance, safety of transportation, and ultimate disposal of binaries over existing chemical munition are obvious. But such a modest offensive CW posture is associated with great uncertainties: There have to be other than purely retaliatory operational missions for offensive capabilities. More importantly, many of the costs and penalties of a major offensive CW posture would be unavoidable also in the case of this more modest posture.

From a deterrence/retaliation point of view it would seem most appropriate to improve NATO's theater nuclear capabilities. If a retaliatory threat against Soviet CW weapons employment is considered as a deterrent, nuclear responses are more adequate than CW responses for a variety of reasons: There is much less protection possible against nuclear threats. Nuclear weapons are more organic to NATO forces than CW weapons. Unless retaliatory strikes with CW munitions are directed against East European and Soviet homelands, the coercive impact is likely to be rather small.

But if deep strikes are considered, the sanctuary threshold may be more important than the nuclear threshold. In order to have long-range intermediate options it may be more important to pursue new cruise missile technology than concentrate on retaliation-in-kind. More generally, however, the principal Soviet decision will be whether or not to risk a major war. Once the Soviet Union has not been constrained by the Western deterrence posture, it will use whatever means seem most appropriate in order to achieve war objectives. This applies to CW options and it applies to Soviet counterthreats to possible Western retaliatory threats against Soviet CW efforts. Thus the notion of retaliation-in-kind simply obscures the issue. Once a determined Soviet effort has begun, only the threat of a massive nuclear exchange between the two superpowers is likely to constrain Soviet activity. The more this escalatory threat projects itself on Soviet decisionmakers before the decision to go to war has been taken, the more likely deterrence will prove to be a sufficient constraint.

Thus the notion of a selectively symmetrized intrawar deterrent does not seem to provide the justification for Western offensive CW capabilities:

- There would have to be more general operational requirements.
- Maintaining enough of an escalatory threat and achieving a better nonnuclear capability in order to deny early Soviet operational objectives is a general deterrent.
- There may be Soviet self-restraint with regard to chemical weapons, but given the Soviet CW posture this is far from certain.
- A specific deterrent against CW would hardly affect the Soviet decision to go to war, but once the Soviet Union has crossed the Rubicon it is a matter of denying operational success, not of retaliation.
- If CW munitions should turn out to be particularly useful in order to deny specific Soviet offensive options, then their use should be considered on these grounds, and against the range of political constraints. If the outcome favors such defensive options, it would also seem appropriate to consider replacement of currently deployed CW munitions by binaries. This would be on a modest scale. The more likely outcome seems to be that there are no such options.

- While the escalatory nuclear threat will remain the principal constraint on Soviet decisionmaking, it is a matter of prudence as to what kind of declaratory policy would best serve the purpose. Specific commitments to retaliate to CW with nuclear weapons do not seem to be necessary. Efforts to this effect might even prove increasingly counterproductive. However, a negative declaratory policy--some kind of no-first-use-of-nuclear-weapons commitment--would certainly hurt NATO also in this particular dimension.

- Rather then making declaratory policy on the use of nuclear weapons more specific in retaliatory terms, it would seem important to gradually change the whole theater nuclear posture so as to provide for specific defensive nuclear options in order to back up nonnuclear defense in militarily meaningful ways. Such a policy thus could be extended to CW threats if the need arises. It would be fundamentally different from a declaratory policy in terms of retaliatory counterthreats.

- By far the most important change needed in NATO's military setup is in the conventional field. Unless the range of conventional options for the denial of Soviet offensive options is dramatically improved, as indeed it could, even an improved nuclear theater posture would buy little security.

To sum up: A coherent effort to modernize both NATO's nuclear and conventional forces is the principal answer to the whole spectrum of Soviet threats. A specific declaratory nuclear commitment would not seem advisable, but a nuclear no-first-use pledge would potentially deblock Soviet CW options. Defensive CW capabilities would seem very important in order to deny Soviet tactical successes of CWA employments. A modest offensive CW capability could conceivably be militarily useful for purposes other than selectively symmetrized intrawar deterrence. If so, replacement by binaries would look advantageous from a military point of view.

The CW posture recommended here thus would combine elements from the three intermediate categories of the SRI scheme.

IV SOME NEGOTIATING OPTIONS

Negotiating policies have to reckon with three factors:

- The Soviet Union has an overall CW superiority.
- The U.S. still wants to keep some specific procurement options open.
- There is a considerable asymmetry of forward deployments.

A phased approach would seem to meet the American interest. If certain CW agents were outlawed early in a step-by-step process (like lethal agents which the United States seems to single out for early agreement) this could prove to be useful provided such agreements could be effectively implemented. But a phased approach would do little with regard to asymmetric forward deployments in Europe.

Special consideration might be given to this particular feature. For example, gradual or total withdrawal of forward deployed chemical agents could become an early step in a phased approach at the CCD negotiations. An alternative which would have to be carefully weighed would be to introduce such a regional proposal into one of the two European negotiations.

With regard to both MBFR and the CSCE it may not seem advisable to fuel the process. But if MBFR cannot be discontinued for a while (by cessation or by making it sufficiently ambitious) CW could be one of the elements which could be included in the policy framework of MBFR (together with improved Soviet reinforcement capabilities, enormous qualitative improvements, additional external nuclear threats, etc.). Similarly the CSCE does not seem to call for up-staging. In fact prior to the last Bucharest summit Soviet signals were understood to mean that the 1977 Belgrade meeting should have low visibility. But since the Soviet Union

has tabled a draft proposal for a no-first-use agreement on nuclear weapons, one might consider adding some nasty Western proposals to the agenda. A regional CW agreement could fit into that category.

Whatever the most appropriate negotiating level, a regional agreement would be essentially a Soviet-American undertaking. Unlike a comprehensive agreement, it would have to govern only the deployment of CW capabilities. While this may still pose considerable verification problems, verification requirements have clearly fewer dimensions than is the case with a comprehensive agreement. One other potential advantage may be that one could conceivably identify associated equipment which could serve the same purpose that launchers have in SALT agreements. There is probably no way to replace the purpose criterion in a comprehensive CW agreement. In a regional redeployment agreement, there may be.

Military modernization efforts and diplomatic negotiating efforts thus could conceivably be related in a number of ways. In order to have viable outcomes, the CW issue probably needs a larger intrabureaucratic constituency. Otherwise parochialism may once more foreclose what could well turn out to be a promising avenue.

U.S. CHEMICAL WARFARE POLICY: NATO PERSPECTIVE

By

Hans Ruhle

I. Introduction

Almost thirty years ago Trygve Lie, the first Secretary General of the United Nations, wrote in his introduction to the first report on the UN for the year 1947-48: "The extensive debate over the control of atomic energy and over the incredible destructive power of atomic weapons which the United States have given to the world have diminished the attention directed towards developments in the realm of bacteriological and deadly chemical weapons. Some of these weapons are potentially as destructive to human life as atomic weapons, and yet no member state has come up with a proposal to control or prevent their manufacture nor has there been any study or discussion of this problem within the United Nations. In the meantime it is not far-fetched to assume that, as was the case with atomic bombs, stockpiles of these weapons are being accumulated and that continually new discoveries are being made which render them even deadlier." (Translated from German)

While it is true that since the end of World War II some initial success has been made in the struggle for a world-wide contractual management of this problem--particularly in the realm of biological weapons--for the most part, these weapons capable of annihilating millions of people have simply been ignored. There are basically two reasons for this state of affairs. For one thing, because of the experienced reality (which film and television continue to reinforce) of Hiroshima, nuclear weapons have completely and exclusively captured man's power of imagination relative to mass destructive weapons. Attempts to inform about the threat posed by chemical and bacteriological weapons, and to make it a subject of public debate have failed repeatedly. It would appear as if there is a threshold to the horror that can be imagined, beyond which no amount of negative information will have an effect. This then may explain why at the turn of the decade, around 1969-70, the debate about biological and chemical threats was revived again: it was at a time when nuclear parity of the superpower made the use of nuclear weapons appear increasingly unlikely. Should this hypothesis be correct it would follow that the alleged stability

of the strategic nuclear deterrence between the superpowers might result in increasing attention being paid to chemical threats. This would be true for as long as an immediate nuclear threat would not be posed by third parties, be they states recently gone nuclear or individual nuclear terrorists. One more point ought to be made in this connection. The effect of subjective nuclear threat reduction within a system of stable nuclear deterrence is accentuated by the fact that nuclear weapons may have pin-point accuracy so that they may no longer necessarily have their mass destructive quality. This allows for an even less limited discussion of other means of mass destruction.

For another thing, there is nothing "new" about this chemical threat. It was the great uncalculable threat against our fathers and grandfathers. Its history in the course of two world wars also explains why it is so difficult to make this threat evident: one has got used to the threat and it has worn off--in addition, experience has shown that for all practical purposes chemical weapons are not used, instead capitulation appears preferable. To be sure, there have been cases where these weapons were used indeed (Flanders, Ethiopia), but by and large there were only threats. As far as chemical weapons are concerned mutual deterrence has been effective.

While the diminishing preoccupation of the western world with nuclear weapons indicates a growing willingness of the population to confront the problems caused by chemical threats, the long and non-dramatic history of this threat potential gives credence to the belief that little will change. Change does not appear likely because the classical factors restricting the use of chemical weapons are still valid today, leaving little room for a renewed discussion of this problem area. These factors are:

- public opinion
- international law
- the extent to which the military leadership has "assimilated" chemical weapons
- the risk of escalation
- the fear of retaliation
- the effect of the use of chemical weapons on the civilian population

Keeping these general reflections in mind, and in view of the growing but still sporadic discussion concerning the nature of chemical threats, it becomes apparent that the public discussion will hardly provide impulses for a realistic assessment of chemical threats and any appropriate responses. For a foreseeable future the reaction against chemical threats will remain a task for political leadership. At the same time this very situation limits the possibility for future planning in the realm of defensive measures against chemical threats: defensive measures are limited to the armed forces. But an all-encompassing defense concept would necessarily have to be shared and internalized by the population. Only then would the threat perception within the population create the necessary conditions to perceive the threat conditions, which do not yet exist and which, on the basis of past experience, appear unlikely to be achieved. In this context it would be most useful to analyze the debates about the protection of the civilian population in Sweden and in Switzerland. Not only that, more recent information about Soviet measures to protect its civilian population have been discussed primarily as unilateral damage-limiting attempts in the context of the nuclear positions of the superpowers. And indeed increasing efforts by the Soviet Union to strengthen its civil defense measures constitute a destabilization of the up to now existing system of stable nuclear deterrence between the Soviet Union and the USR. The significance of these ongoing civil defense measures in the Soviet Union, however, is not limited to the nuclear field. The effect of chemical weapons is also checked by these measures. However, whereas in the nuclear field a hitherto stable deterrence system faces a destabilizing factor, an already unequal relationship becomes even more pronounced as far as chemical weapons are concerned. This ought to be reason enough to call for a new formulation of American and transatlantic policies with regard to chemical weapons.

II. The Threat

To an observer the history of the perception of the Soviet chemical threat since the late 1950's has been a story of error and confusion. There is no point in recapitulating this history nor should another chapter be added which would once again illustrate quantitatively the Soviet potential in chemical arms. Precise numbers regarding the Soviet arsenal of chemical weapons are

speculative and irrelevant. What matters is an evaluation of:

- the approximate size of the existing potential
- the approximate industrial capacity
- the capacity to effectively use existing means
- the will manifest in the military-strategic concept to really use these weapons

On account of this it can be stated that the Soviet Union:

- has available a potential of 200,000 to 700,000 tons of theater chemical weapons. This is enough to make possible any imaginable use of chemical weapons during a conflict in or for Central Europe;
- has a chemical industry capable of producing 30,000 tons of chemical munitions per year;
- has at her disposal efficient means of delivery and weapons systems within her land, air, and naval forces that are capable, and numerous enough to start and sustain a chemical warfare against NATO forces along an extended front (in particular rocket throwers 122 mm BM 21; surface-to-surface missiles FROG and SCUD). Of the stockpiles maintained for individual weapons systems, 5 to 30 percent consist of chemical munitions;
- has at her disposal armoured and completely mechanized divisions that are ABC-protected and are capable, in the framework of offensive chemical warfare, of conducting large scale operations in enemy territory;
- does not perceive chemical warfare as a special form of military conflict. As far as can be gathered from reviewing pertinent Soviet literature, Soviet military doctrine views the use of chemical weapons as an integral part of modern operations principles.

Accordingly, there can be no doubt that the Soviet Union not only has the capacity to fight a nuclear--and most likely a biological--war, she also possesses the option of a comprehensive offensive use of chemical arms. In contrast, NATO neither has an offensive option nor would it succeed in neutralizing the enemy's chemical offensive through the use of appropriate counter-measures. This state of affairs should not be tolerated, for such imbalance serves neither the interests of the USA nor those of Western Europe. Developments of the past few years have shown that the superpowers' nuclear parity has led to a stable

system of mutual deterrence in the relationship of the two powers to each other. The danger of destabilization of this system at present and in the future results, to be sure, from the introduction of new weapons systems or unilateral damage-limiting attempts however there is a greater likelihood that conflicts within the sphere of interest of one superpower will escalate into a conflict between the superpowers--conflicts that may have their origin in regional imbalances, in imbalances which may give the impression that they can be taken advantage of with little or no risk. A properly understood security policy of the USA should not be limited to keeping the central balance stable, rather its purpose must be to create and maintain regional balances, or at least to create and maintain calculated and tolerable imbalances. This applies to the chemical as well as to the conventional and tactical nuclear area. This does not mean, however, that a regional balance will have to be created by means of parity of weapons and/or options, nor that it must be financed and implemented by the major ally. A regional balance can be achieved through which at present Western Europe's conventional deficit is compensated by means of the threat of the first use of nuclear weapons. Furthermore, a regional balance can also be achieved by exerting pressure on one's allies.

The creation of a regional balance is also in the interest of Western Europe. Not only because this would decrease the risk of war, the military superiority of the Soviet Union already causes such political effects in times of peace that it is not necessary to provide reasons for potential conflicts in order to illustrate the danger. In addition, in a potential land war in Central Europe, any deficit in any field could not be made up. Western Europe needs to be equipped along the whole range of weapons systems in such a way that--in conjunction with U.S. strategic weapons--Western Europe's available potential attacks to any military option of the enemy a high, though incalculable risk that such a conflict would become unlikely.

III. Options of Chemical Warfare Policy

Basic assumptions underlying the following description of different options available to American chemical warfare policy are:

- the USA will not be the first power to use chemical weapons;
- defensive measures will only be available to the armed forces;

- the "chemical threshold" lies somewhere below the nuclear threshold; however, once nuclear weapons were used the employment of chemical weapons would be permitted.

A. A Treaty Banning Chemical Warfare

It should remain a professed goal of American international security policy to achieve an effective, verifiable, international prohibition of chemical weapons. However, to accomplish this will take a long time. The crucial obstacle which has caused the failure of all such attempts is to find acceptable ways to verify the prohibition of the production and stockpiling of C-weapons. For one thing, the ambivalence of many toxic agents makes an unequivocal listing of all substances to be prohibited very difficult. For another thing (and even more important), it appears technically impossible and politically unacceptable to achieve a painstaking control of possible diversions for military purposes. Yet even a total prohibition with unlimited controls could not possibly guarantee the discovery of small-scale secret production, so that any treaty on the prohibition of the manufacture and stockpiling of chemical weapons could produce at best relative security. A treaty which would not allow national defensive and preventative measures would thus be dangerous.

To this general background discussion regarding the problems encountered by treaties on chemical weapons one would have to add remarks on the way the Soviets would approach negotiations. In the past the Soviet Union has signed equal treaties only:

- when these treaties were kept so general as not to result in tangible indisputable obligations (Treaty in the Prevention of Nuclear War),
- when there was a clear balance of potentials (SALT-I),
- when she had reason to fear that she would not only be unable to close a technological gap but would fall even further behind (ABM-Treaty).

On the other hand, the Soviet Union has always blocked treaties--witness the MBFR negotiations--when she knows or assumes that she has an advantage over the other side.

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This leads to the conclusion that anything but a general, non-binding, unverifiable treaty on the prohibition of the production and stockpiling of chemical weapons cannot be negotiated with the Soviet Union. Should the problem of verification be solved at a later time, a completely different situation would result. Then the Soviet Union would bring into the negotiations her already existing potential of chemical weapons and would use it to extract substantial concessions in other areas. Should the USA have no bargaining chip of similar weight at that time, she would first have to increase her potential to that of the enemy (something the Soviets did in the case of SALT); only then would the USA be able to negotiate about a mutual, balanced, limited or unlimited chemical disarmament. This aspect of arms control and arms limitations problems has ironically been called "arms control through rearmament". It becomes evident, then, that creating necessary conditions for future treaties on the control or disarmament of chemical weapons may be perfectly compatible with a US policy of chemical rearmament.

B. Conventional Response to Chemical Warfare

The option of confining defensive measures exclusively to conventional means against an enemy's chemical warfare has undoubtedly these advantages:

- not to stimulate a public discussion with possible counter-productive effects,
- to be relatively inexpensive,
- not to raise legal problems,
- of excluding any possibility that the USA might use chemical weapons first.

However, at present and in the situation of Western Europe, the negative effects of such an option would seem to prevail:

- If such a policy were known by the enemy and the US allies, the Soviet Union could base her actions on the assumption that the

use of chemical weapons would not result in an escalation. In the case of an attack against Western Europe, the Soviet Union would not pay attention to world opinion and its manifest abhorrence of the use of means of massive destruction; hence there is no reason why the Soviet Union should not use her existing potential of chemical weapons. A NATO well-equipped with defense measures against C-weapons could limit the damage but it could not completely prevent it. The latter would be particularly true if the Soviet Union started a surprise attack, the most likely to occur. But even if there were no surprise attack, the initiative and surprise resulting from a tactical use of chemical weapons would benefit the enemy. For weapons that are invisible and become effective within seconds cannot be totally neutralized;

- As NATO at present is conventionally inferior and will remain so in the foreseeable future, it is forced to rely from the beginning on all conventional means available. Additional conventional capacities that might compensate for the use of chemical weapons do not exist. This would mean that the Soviet Union would increase her already obvious superiority in the amount of the estimated effectiveness of her chemical weapons;

- It remains doubtful that the American public would tolerate such restrictions on conventional responses if US troops in Europe would suffer heavily under the impact of Soviet chemical weapons, especially when viewed on the television screen. The mobilization of public opinion to "help our boys" could in the absence of US chemical weapons culminate in the call for tactical nuclear reaction. Events in the US in 1944 provide telling examples. A poll in September 1944 had revealed that only 23 percent of the respondents favored the use of chemical weapons against Japan. But in June 1945 after heavy losses at Okinawa and Iwo Jima this percentage had increased to 40. At the same time newspaper articles and other publications provided civilians with an outlet to call for the use of C-weapons against Japan;

- Even in times of peace the knowledge among Western Europeans that only the Soviet Union possesses chemical weapons would invariably weaken Western Europe's still-existing will to defend itself; to the conventional deficit and the lack of an independent nuclear capacity yet another military area would be added in which NATO would be inferior. This could well lead to a psychological process of destabilization, a process resulting from the fact that Western Europe would find it even more difficult to believe that the US could and would fill all the gaps when things became serious;

- Even in times of peace, should the West confine itself to defensive measures against Soviet chemical weapons, the Soviet Union would be enabled to increasingly use her superior overall

potential to exert political pressure and to engage in political-military blackmail.

A final word regarding the importance of this option in the context of current NATO strategy: It could only be realized in the case of limited actions in Central Europe, or in the case of a hard-to-imagine exclusively chemical warfare. In the case of a major soviet offensive against Western Europe, be it conventional or conventional-chemical, the implementation of the flexible response strategy would follow, and a nuclear escalation would become possible.

In this context, the option of a merely conventional reaction makes sense in only two cases:

- a transitional strategy
- a strategy against local incidents in Central Europe

C. Nuclear Retaliation

The option to react to Soviet chemical warfare with the threat of nuclear escalation at first sight has the same advantages as the previous option. In addition, the escalation threat signals the enemy such a high risk that he may be deterred from the use of chemical weapons. Against these obvious advantages one must be aware of significant problems. These are problems that are all too familiar to those concerned with NATO strategy:

- The problem of credibility with NATO: Increasingly nuclear parity of the superpowers has raised doubts among the allies whether the USA would be willing to be the first to use nuclear weapons in order to protect her allies while risking her own existence because of a possible escalation;
- The problem of credibility outside NATO: The potential enemy, too, is aware of the nuclear parity situation and has analyzed its consequences. He could arrive at the opinion that in the current situation the threatened first-use of nuclear weapons is a bluff. As a consequence he could change the method by which he calculates his own risk;

- In the age of nuclear parity the United States is aware of the danger inherent in the first-use threat with nuclear weapons: as a consequence she has pressed Western Europe for years to build up a conventional option. The United States would increase her difficulties if she tried to use nuclear threats to compensate for her chemical deficit. To uphold an old obligation of this kind is one thing, to justify a new one in present circumstances is another thing.

The option to threaten with the use of nuclear weapons in the case of Soviet use of chemical weapons in Central Europe therefore does not appear to present a viable strategy designed to meet the long-range security needs of the United States on the one hand, and those of Western Europe on the other hand. Yet it would, in conjunction with option 2 for localized conflicts, constitute the only realistic transitional strategy for the next few years.

D. Defense-Emphasis Policy

The option to simultaneously pursue extensive defensive measures against chemical weapons and to build a limited potential of offensive chemical weaponary, has these disadvantages:

- to certainly start, and continue a public debate about the political and military reasoning as well as the legal and moral consequences of the offensive part of this option,
- of making more difficult an agreement on the total prohibition of the manufacture and stockpiling of chemical weapons,
- of being more expensive than the purely defensive option because of the need to produce, stockpile, and continually improve the chemical potential.

These must be compared with the following obvious advantages:

- The threat of retaliation with chemical weapons would result in a qualitatively high deterrence effect because it would be credible;

- The risk of nuclear escalation would be much reduced though not eliminated. But at least the US would not be under the obligation to escalate, nor would the USSR feel tempted to test this hardly credible escalation threat of the West;

- The morale of political and military actors would be improved, especially in times of crises, with the knowledge that they could retaliate in kind;

- The potential political consequences of Soviet military superiority could be limited though not completely negated.

Of all the options discussed thus far this one clearly deserves special consideration. The crucial test for its implementation would be the different reactions of the public. It would therefore be advantageous if serious objections could be anticipated, and reacted to in advance. Those who would attack chemical weapons for their mass destructive qualities may be pacified if the offensive potential would be limited to non-lethal weapons. Those who are more concerned about accidents and less about the possibility of war might withdraw their objections if one were to equip the armed forces primarily with binary systems. Those, however, who are likely to initiate the debate and conduct it most heatedly, simply have to be accepted and tolerated. In this country they were the ones who fought Germany's rearmament, and who opposed, among other things, Germany's limited sharing of nuclear responsibility within NATO's framework. One condition of successfully isolating this vocal group would be a realistic explanation about the nature of the chemical threat, an explanation which would avoid panic but at the same time refrain from belittling the danger. This approach, as well as the whole debate, should not begin before the USA has taken up a position regarding chemical weapons, i.e., not before a suitable conceptual reaction to the chemical threat can be provided.

In order to avoid any misunderstanding: Should it be possible to realize the last option without causing a great public stir, this would be preferable. Discussions about mass destructive weapons happen to have the tendency to quickly become emotional and irrational. There is reason for concern that the public would object to equipping NATO forces with

offensive chemical weapons, at least there is a strong possibility that this might occur. Therefore the weapons potential should be planned accordingly, i.e., it should be binary and non-lethal. At the same time one should prepare and have ready an appropriate strategy to inform the public.

E. Chemical Warfare Parity

Finally there remains the task to evaluate the option of chemical weapons parity between the Soviet Union and the United States. There is no question but that this alternative, which differs from the previous one only in quantitative but not in qualitative terms, is the only strategy suitable for a superpower which is aiming at a long-term and general parity. Only a security policy which does not present the potential enemy with an option that one does not even posses oneself, is capable of maintaining and stabilizing that psychological balance which corresponds to the traditional and presumably future self-image of American strength--to be second to none. Western Europe, in reliance on America's support, can live with calculated inferiority; the United States cannot, at least not if America wishes to remain what she is and has been.

Against this background it appears imperative to strive for parity between the Soviet Union and the United States in the field of chemical weapons. This is particularly true because parity in this field can be accomplished with comparatively little financial means. At any rate, the financial expenditures for parity in chemical weapons would be lower than the psychological damage which would be caused by conceding to the Soviets superiority in chemical weapons.

A declaratory chemical weapons policy of parity would thus, in the long run, be the only realistic reaction to the Soviet challenge. This would be true even if complete parity in chemical weapons is unlikely to be achieved. For the United States should well be in a position to accomplish parity in offensive and defensive options in chemical warfare

as far as equipment and training of the armed forces are concerned. But the United States is unlikely to ever engage in the kind of massive civil defense measures that are taking place in the Soviet Union. In this case, parity is limited by the differences between the two social and political systems.

Only if at least the armed forces achieve parity in chemical warfare would the preconditions (as described in option 1) for real and significant agreements on arms control or disarmament be provided. To this extent attempts to achieve a stable balance between the superpowers are quite compatible with the creation of realistic prerequisites for a mutually balanced and controlled disarmament of chemical weapons.

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