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LETHAL CHEMICAL WARFARE: OPTION OR MYTH

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LETHAL CHEMICAL WARFARE: OPTION OR MYTH

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ABSTRACT

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The basic question is whether the US requires a lethal chemical option. The events which led to the US obtaining a lethal chemical offensive capability are examined, as are intelligence indicators of Soviet policy concerning lethal chemical warfare. US public opinion is assessed to the extent of determining the general trends and shaping factors. Arguments for and against the lethal chemical option are presented and analyzed. It is concluded that, barring a disarmament treaty, the US must retain a lethal chemical option for its deterrent value. Further conclusions are (a) that the US should pursue lethal chemical disarmament for a suitable period of time; (b) that failing in a disarmament treaty, the Congress should authorize development and stockpiling of binary lethal chemical munitions; and, (c) that the veil of secrecy surrounding lethal chemical activities should be lowered and a vigorous, forthright public information program initiated.

This paper examines the worth of lethal chemical warfare as an escalatory option and draws conclusions on what national action is required with respect to the US lethal chemical stockpile. History is examined cursorily to determine the genesis of the US lethal chemical stockpile, various arguments pro and con to lethal chemical warfare are examined, the lethal chemical policy of the Soviet Union is examined for implications on US actions, and, finally, this writer's conclusions are offered on the question of whether the US requires a lethal chemical option.

The proponents of lethal chemical warfare recall incidents from earliest history where chemicals turned the tide of battle. The mandrake root episode is often cited as perhaps the first large scale use of chemicals in warfare. Around 200 B.C. Maharbol, a Carthaginian general, caused his camp to be evacuated as though in retreat, leaving behind wine contaminated with mandragora root. The opponents occupied the campsite, drank the wine, fell into a narcotic sleep, and were dispatched by the returning Carthaginians.¹ Modern chemical warfare was first conducted by the Germans on the Russian front at the end of January 1915.² The acknowledged birth of modern lethal chemical warfare took place on the battlefield of Ypres, Belgium, in the late evening of 22 April 1915 when the Germans vented 6,000 cylinders of chlorine gas in a gas-cloud attack of French-African positions at the Ypres Salient.³ Foulkes⁴ quotes Sir John French's dispatch of 15 June 1915:

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What followed is practically indescribable. The effect of the gas was so overwhelming that the whole of the positions occupied by the French Divisions was rendered incapable of any resistance.... Hundreds of men were thrown into a stupor, and after an hour the whole position had to be abandoned together with fifty guns.

Nearly 5,000 casualties were sustained and it has been postulated that the Germans could have broken through to take the English Channel ports had they followed up on their advantage.⁵ They were also taken by surprise by the effectiveness of the attack and did not have forces in position to exploit the advantage.

The Germans made a significant error in initiating lethal chemical warfare when they failed to consult with the meteorologists. Prevailing winds in France and Belgium favored Allied use of chemicals 90 percent of the time.⁶ This ultimately became a decided disadvantage to the Germans as the Allies mounted a significantly greater number of gas-cloud attacks and, in fact, in a significant number of cases the German gas clouds drifted over their own positions leading to substantial numbers of casualties.⁷

After World War I Colonel Harry Gilchrist, the US Army Medical Corps expert on chemical warfare, recorded the following conclusions on the humaneness of these weapons:

After a close analysis of the casualties produced in the war, it is an incontestable fact that the ratio of deaths and permanent injuries as a result of this weapon (gas) to the total number of casualties produced by other weapons is an index of its humanenessIt is not only one of the most efficient agencies for effecting casualties, but is the most humane method of warfare ever applied to the battle field.⁸

Table 1: World War I Lethality Comparisons⁹

	<u>Casualties from Lethal Chemicals</u>			<u>Casualties from Other Weapons</u>		
	<u>Total</u>	<u>Died</u>	<u>% Lethality</u>	<u>Total</u>	<u>Died</u>	<u>% Lethality</u>
US	70,752	1,421	2.0	187,586	46,519	24.0
British	180,981	6,062	3.3	1,908,801	700,137	36.6
German	78,663	2,280	2.9	4,168,116	1,806,275	43.0

After World War I there have been only isolated instances of lethal chemicals having been used. The Italians used mustard against the Abyssinians in 1936 and the Japanese used lethal chemicals against the Chinese from 1937 to 1943.¹⁰ Small amounts of lethal chemicals were also used by the Egyptians in 1963 to 1967 in the Yemeni civil wars.¹¹

Lethal chemicals were not used during World War II by any of the major combatants, although the Germans had made a significant scientific breakthrough in developing and stockpiling the nerve agents. Various reasons for non-use are postulated but this author believes that the major factor was mutual deterrence. The Germans, through a misinterpretation by their intelligence people, never realized that the Allies were unaware of the nerve agents. Both sides feared the stigma of first use and were unwilling to accept the mass casualties certain to result from retaliation by the other side.

Utilizing the German nerve gas technology both the US and the Soviets developed and stockpiled nerve type agents after World War II. Miettinen¹² rationalized that the large numbers of Chinese in the

Korean War led to US renewed development work in lethal chemicals as well as the idea of another and less destructive option for Europe. The Soviets on the other hand were lagging the US in nuclear technology for the tactical battlefield in the 1950's and used the lethal chemical option as a stopgap measure to give a mass casualty option until their technology caught up.

During the late 1950's and early 1960's, the US Army Chemical Corps mounted a public relations campaign based on the idea that chemical and biological weapons are "tomorrow's weapons". The end result was a tripling of the budget for research and development in this area.

In 1968 a series of events began which led to a complete re-evaluation of chemical-biological policy and the ultimate decision to destroy the biological stockpile. On 13 March 1968 a faulty test of VX at Dugway Proving Ground resulted in the death of approximately 6,400 sheep some miles outside the test reservation.¹³ On 4 February 1969, NBC's "First Tuesday" devoted a segment to the sheep kill incident as well as biological experiments on animals conducted by the British. Shortly thereafter the US Army plans to sea dump 27,000 tons of obsolete chemical weapons came to public attention and investigation. And finally during the week of 7 July 1969 an accidental release of nerve gas on Okinawa hospitalized 24 local employees and precipitated an international incident.¹⁴

The subsequent policy review, ordered by the President, resulted in renunciation of biological weapons and the subsequent destruction

of the US biological stockpile, reaffirmation of the no-first-use policy for lethal chemicals, reductions in the lethal chemical research and development budget, and stringent public law control over production, movement, and testing of lethal chemicals.

Currently, the Department of Defense has requested permission of Congress to proceed with development of the binary lethal chemical system to replace the current lethal chemical stockpile.¹⁵ Binary systems consist of two chemicals, neither of which are lethal, but which react to form a lethal chemical when mixed. The weapon is safe to store since the chemicals are mixed only when on the way to the target. The House of Representatives has deleted the funds for this project but the Senate has yet to act.¹⁶

With the nation considering the development and stockpiling of a completely new family of lethal chemical weapons systems, it would appear that now is an opportune time for a reevaluation of the US requirement for the lethal chemical option.

Before this analysis, however, we need to examine two additional factors which bear on any decision that is to be made. The Soviet policy with respect to the use of lethal chemicals is of utmost importance as is the personal opinions of members of the US government and the public.

Turning first to an examination of Soviet policy, we find that all intelligence indicators point to the fact that the Soviets have equipped their forces well for both offensive and defensive lethal chemical operations.¹⁷ Oleg Penkovsky, a Soviet Intelligence Service

colonel, states in his papers that the Soviets pragmatically consider lethal chemicals to be one of the most powerful means of destroying the enemy under modern combat conditions and that the Soviet Army would use these weapons should hostilities erupt. He further states that lethal chemical research and development continues at research institutes, laboratories, and proving grounds.¹⁸

Representative Samuel S. Stratton, in testimony before the Defense Appropriations Subcommittee stated:

Last November (1973) I had the unique privilege of chairing a subcommittee that inspected both the Israeli and Egyptian fronts in the Yom Kippur war. In Israel we visited a vast display of the latest Soviet battlefield equipment captured from the Egyptians. One of the most startling revelations of that display, to our subcommittee as well as to the American defense experts who also saw it, was the fact that every Soviet equipped unit goes into battle today with a full set of defenses against chemical, biological, and radiological attack, CBR. We saw hundreds of gas masks, atmospheric testers, protective clothing, etc. etc. The information came as a shock to our subcommittee and I understand it came as a similar shock to the US Army.¹⁹

Representative Stratton interprets the significance of this discovery as follows:

...the basic requirement for any Army that mounts and considers using an offensive chemical capability of its own is to make sure that its own troops are fully protected in advance and fully equipped to continue to fight in a toxic environment. Thus, the amazing extent of anti-chemical defensive equipment in all Soviet ground forces is almost certain proof that the Soviet Army carries an offensive chemical capability and is prepared to use it if the appropriate opportunity were to arise.²⁰

All evidence points to the fact that the Soviets have full offensive and defensive capabilities to conduct tactical lethal chemical warfare. Precise definition of their national policy in this matter is lacking, but knowing their capability it is prudent to assume that lethal chemicals would be used if the situation offered sufficient advantage, i.e., the enemy were unable to retaliate.

Additional insight is gained into Soviet thinking by examining their civil defense manuals. Yemelyanov has recently published a manual on civil defense measures to be taken in event of strategic lethal chemical attack on the Soviet Union. He quotes Rothschild early in the manual²¹ to demonstrate the US intent to use lethal chemicals "in neutralizing the numerical superiority of the enemy." Apparently the Soviets believe that we are prepared to use lethal chemicals in any major war against numerically superior forces.

Let us now turn to a short assessment of public opinion concerning lethal chemical warfare. It is a fact that there is general apathy toward use of lethal chemicals throughout our society. Bobo examines public opinion within various US groups²² and concludes that there is little support for use of lethal chemicals. He also concludes that the main cause of the public apathy is misinformation and lack of information.²³

Another writer states that:

The error...is an error of communication, of the failure to lay bare and explain the nature of the chemical...weapons and why it was necessary to develop and stockpile them.²⁴

The origins of public feelings apparently lie in the US revulsion to use of lethal chemicals in World War I. To rally the war effort a concerted propaganda effort was mounted against the "inhumane Hun" who would resort to poisoning our soldiers. This propaganda campaign was most effective and the seeds of that work still exist in our society. A result of this anti-chemical feeling was that the newborn Chemical Corps withdrew from public view in conducting its work and little public notice was taken of work on lethal chemicals. As a result of nearly half a century of inadequate communication the nation and its leaders were unable to adequately support chemical programs when the day of reckoning came in 1969. The one overriding point made by Representative McCarthy in his book The Ultimate Folly²⁵ is that throughout his investigations the Department of Defense failed to provide adequate answers. This was a classic example of failure to communicate.

Rothschild lists three factors which contribute to the public's anti-chemical attitude.

- a. The relative newness of these weapons.
- b. The Allies anti-chemical propaganda campaign during World War I.
- c. The simple fear of the unknown.²⁶

These factors all point up the need for a forthright public information program about lethal chemical agents. Rothschild summarizes this requirement well:

The public will never be able to decide what it thinks about chemical and biological weapons unless it is given information about them. An uninformed public will not support urgently needed research and development on these weapons, nor will it be prepared psychologically for their use against us. So long as we neglect these aspects of war, we are giving a potential enemy a tremendous advantage. The free release of any information unclassified from a national security viewpoint concerning these weapons is essential. Only knowledge of these weapons will make them less terrifying.²⁷

With insights into how we came to have a lethal chemical option, what our fellow superpower's policy is with respect to lethal chemicals, and what the general public opinion is on the subject, let us now turn to an examination of the pros and cons concerning the worth of lethal chemicals as weapons of war. The arguments against lethal chemicals are presented first followed by the arguments used to justify the lethal chemical option. In each case the writer will point out the strengths and weaknesses of each argument as seen by the experts and by himself.

The most often heard argument against lethal chemicals is that they are "inhuman," "barbarous," and "horrible."²⁸ President Franklin D. Roosevelt was adamantly opposed to the use of chemical warfare as quoted by McCarthy:²⁹

It has been and is the policy of this Government to do everything in its power to outlaw the use of chemicals in warfare....I am doing everything in my power to discourage the use of gases and other chemicals in any war between nations.

President Richard M. Nixon, on 25 November 1970, continued this policy by announcing the disarmament of the US biological warfare

capability and restricting the employment of chemicals to a no-first-use doctrine.³⁰ The proponents of lethal chemical warfare cite the lethality statistics developed by Gilchrist (Table 1, p.3) showing that only 2 percent of the chemical casualties in World War I died. The counterargument to those statistics is that the World War I chemicals were many orders of magnitude less lethal than the modern nerve agents which comprise current stockpiles. The logic that chemical casualties either die or recover completely is persuasive. Conventional weapons--high explosives and flame--result in a number of permanently maimed casualties. The public and government leadership perceive chemical weapons as inhumane and until that perception is altered it must be considered a strong factor influencing our lethal chemical policy.

It is also pointed out that the lethal chemical option provided a mass casualty option up to the development of the nuclear capability. With the nuclear mass casualty option it is argued that the lethal chemical option is obsolete and no longer required. This argument would permit unilateral chemical disarmament. Representative Stratton replies to this argument:

If every isolated encroachment can be responded to only by dropping an atom bomb, then either we will not respond at all--as the French have been predicting--or else we will move into full scale nuclear warfare over the smallest provocation! That is emphatically one dilemma this country doesn't want to be in...³¹

The idea being that the lethal chemical option offers a response

in kind to a lethal chemical attack without resort to the ultimate nuclear response.

The German experience in World War I previously cited where meteorological conditions resulted in casualties to their own forces is a further disadvantage to lethal chemical weapons. Meteorological prediction and control has not progressed to the point where chemical cloud control is entirely guaranteed. In rebuttal it is stated that this is a known limitation and tactics of employment will recognize this factor.

A further major disadvantage is the logistical burden both in maintaining a stockpile and in transporting and storing chemicals in a war zone. This materiel requires much increased security and surety over that required for conventional ammunition.

A last disadvantage to be considered here is the limited storage potential of lethal chemical weapons. It is reported³² that the US Army is responsible for a stockpile of 40 to 45 million pounds of nerve agents, the greater part of which is in munitions between five and 20 years old. With a shelf-life of 15 years, by 1965 the entire U.S. stockpile of filled munitions will require destruction and replacement. Cost of replacement has been estimated at \$100 to \$200 million and destruction of existing obsolete stockpiles estimated at \$1 billion.³³ These are sizeable expenditures but are relatively small when compared with other weapons systems.

Turning now to arguments for retaining the lethal chemical option, we find the most persuasive to be that of deterrent value.

During World War II, all major combatants had a lethal chemical capability yet lethal chemicals were never employed between major powers. Brown concludes that "even if any nation had developed a material capability adequate to make initiation feasible, fear of the costs of enemy retaliation would have remained as a restraint sufficient to deter it."³⁴ The counter argument that nuclear response is a suitable deterrent has previously been presented. Lethal chemicals are within the technology and budget of nearly every nation. As such they become an attractive alternative for a small nation in lieu of the very expensive nuclear weapon development program. By retaining a lethal chemical option the US can maintain a credible deterrent without being placed in the ludicrous position of threatening nuclear retaliation on small nations.

Lethal chemicals offer the advantage of mass casualties without the corresponding disadvantage of mass destruction of property. Clarke³⁵ postulates that chemical and nuclear weapons complement each other. The nuclear capability could be utilized to destroy the enemy's offensive capability and lethal chemicals used to subdue the population, without collateral property damage. The fact that nuclear weapons are mass destroyers of property is one of the main deterrents to their use. Mass casualties without significant property damage is a strong inducement for their use in certain situations.

The humaneness factor has been used as an argument supporting

use of lethal chemicals. There is little permanent maiming--the victim either dies or makes a virtually complete recovery.

The economy factor has also been alluded to previously. Lethal chemicals are an economically attractive option, since costs are significantly less than for many other weapons systems with less casualty producing potential.

The lethal chemical option gives the national policymakers a full spectrum of responses to attack without leaving the large gap between the full conventional response and a tactical nuclear response. The rebuttal to use of the nuclear response as a deterrent has previously been discussed.

The last advantage to be discussed here is the advantage of having the lethal chemical stockpile as a bargaining element in the strategic arms limitations talks between the Soviets and US which are currently considering mutual chemical disarmament. Unilateral disarmament would negate this bargaining element. An interesting difference of opinion exists over the effect the decision to pursue binary development would have on disarmament talks. Miettinen³⁶ believes that any positive decision would severely affect the credibility of the US at the disarmament negotiations. Stratton, on the other hand, states:

The Soviets will never give up anything on their side when we have nothing to match it on ours. I hope along with the next fellow that we can get sound, enforceable, and workable disarmament agreements...not only in nuclear weapons but...including chemical warfare (sic). But the fastest way to get them is to make it clear to the rest of the world that we mean business in this field

and that until such an agreement is reached
we don't intend to be second best in any
department.³⁷

In objectively analyzing the various arguments the two which are significant are the deterrent value of lethal chemical weapons and the public's perception of these weapons as inhumane. This presents a moral dilemma to our national leadership. The question emerges--does leadership's responsibility for national security override the democratic obligation to abide by the public's opinion and wishes? We can look at the public's aversion to chemical weapons from two viewpoints. The main concern, the one held by a vast majority, is that the national policy never evolves to the point where first use by the US becomes a national policy. Retaliatory use, however, would have widespread support since it is reasoned that a nation despicable enough to use these inhumane weapons should be punished in kind. The answer to this dilemma appears to be the precise action which President Nixon took in 1970 by issuing a strong policy of no-first-use but with the proviso that the stockpile is to be retained for its retaliatory capability pending the outcome of chemical disarmament negotiations which are ongoing.

On initially reading into this problem, the author was prepared to conclude that the lethal chemical option was unnecessary and that the Department of Defense could avoid adverse publicity, logistic problems, and expense by unilaterally disarming the US lethal chemical stockpile. Careful analysis of all the factors, however, show that a nuclear response is the only deterrent in a

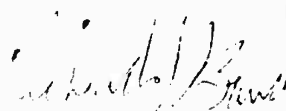
disarmed situation and yet a nuclear response is not entirely credible. Would we really be willing to escalate to tactical nuclear warfare if lethal chemicals were used tactically against us? Without a lethal chemical response as a deterrent our retaliatory spectrum is weakened and the national policy is constrained. Maintenance of a lethal chemical retaliatory capability seems a reasonable price to pay to buy the deterrence inherent in a mutual standoff. It worked during World War II with chemicals and it has worked well with nuclear weapons. It is logical to believe that it will continue to work with lethal chemicals.

This writer believes that the US should continue to pursue a mutual chemical disarmament treaty in good faith. As a token of that good faith, Congress should put off action on approving the binary system for a suitable period of time, perhaps two years. Our current stockpile, though deteriorating, is estimated to be in shape to continue in storage until 1965. If after the allotted time the Soviets have not bargained in corresponding good faith, Congress should approve the binary program and the US proceed to reconstitute its lethal chemical deterrent stockpile in this more convenient form. In the interim, this writer believes that President Ford should reaffirm the no-first-use national policy in the strongest terms.

If by necessity we must retain a lethal chemical stockpile, it behooves the Department of Defense to remove the aura of secrecy which surrounds these activities and mount a forthright public

information campaign aimed at dispelling the misinformation and half-truths which have arisen. With other nations known to have lethal chemical capabilities it is a moral responsibility to inform the public of the potential hazard and the protective measures that can be taken.

Barring a disarmament treaty with effective controls, lethal chemicals appear to be here to stay as a weapons system. They are an effective mass casualty weapon within the budget and technological capability of almost every nation. The only credible deterrent is the threat of retaliation, which means that the US must maintain a lethal chemical retaliatory capability for as long as the threat exists.


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FOOTNOTES

1. Curt Wachtel, Chemical Warfare, p. 14.
2. C. H. Foulkes, MG, "Gas!" The Story of the Special Brigade, p. 305.
3. Augustin M. Prentiss, Chemicals in War, p. 20.
4. Foulkes, p. 19.
5. J. H. Rothschild, BG, Tomorrow's Weapons, p. 14.
6. Foulkes, p. 315.
7. ibid, pp. 315-317.
8. Harry L. Gilchrist, COL, A Comparative Study of World War Casualties from Gas and Other Weapons, p. 47.
9. ibid, Charts XIV, XV, XVI.
10. Rothschild, p. 16.
11. J. K. Miettinen, "The Chemical Arsenal," Bulletin of the Atomic Scientists, September 1974, p. 37.
12. ibid, p. 18.
13. Richard L. McCarthy, The Ultimate Folly, p. 109.
14. ibid, p. 129.
15. "Army Nerve Gas Plan Facing House Scrutiny," Science and Government Report, 1 April 1974, p. 4.
16. "House Stirs Up Chemical Warfare Issue," Chemical and Engineering News, 19 August 1975, p. 32.
17. Rudolph C. Malooley, "Gas is Not a Dirty Word in Soviet Army," Army, September 1974, p. 21.
18. ibid, p. 23.
19. Samuel S. Stratton, Testimony Before Defense Appropriations Subcommittee, 4 June 1974, p. 3.
20. ibid, p. 3.

21. V. I. Yemelyanov, Chemical Weapons and Defense Against Them, p. 2.
22. Robert K. Bobo, COL, Chemical/Biological Weapons are Inhumane: Fact or Fiction?, pp. 23-35.
23. ibid, p. 35.
24. "The C-B Warfare Decision: A Failure to Communicate," Army, January 1970, p. 10.
25. McCarthy, all.
26. Rothschild, pp. 8-9.
27. ibid, p. xii.
28. ibid, p. 1.
29. McCarthy, p. 8.
30. Phillip A. Karber, "The Nixon Policy on CBW," Bulletin of the Atomic Scientists, January 1972, p. 22.
31. Stratton, p. 4.
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33. Miettinen, p. 42.
34. Frederic J. Brown, Chemical Warfare A Study in Restraints, p. 295.
35. Robin Clarke, We All Fall Down, p. 126.
36. Miettinen, p. 43.
37. Stratton, p. 5.

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