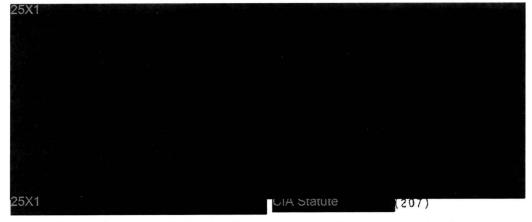
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that autonomy in the use of chemicals would occur only under specific conditions—such as NATO first use of nuclear weapons. or following an initial massed strike by the Pact. CIA Statute

Part of the controversy regarding the alleged autonomy of front and lower echelon commanders to employ chemicals appears to be caused by confusion concerning the Pact wartime planning cycle and associated terminology. Pact classified writings 25X1 often note that a commander "made a decision on the use of or "made a decision to use" chemical weapons (apparently in a nuclear context), or nuclear and chemical weapons, or weapons of mass destruction. Although this seems to imply that the force commander actually has the authority to employ such weapons on his own initiative, this does not appear to be the case. Rather, as part of the preliminary planning process for Pact wartime operations, commanders at each echelon make a planning decision for amployment of their forces including these This decision is based on a concept for the operation provided by higher authority—and in turn requires approval from higher authority. Thus, an army commander's "decision" generated in response to the front's concept or the operation -must have the approval of the front commander. Moreover, the front commander's decision--incorporating what the respective army commanders are expected to do--in turn requires the app<u>rova</u> of the VGK or the Theater of Military Operations commander. CIA



Once the use of chemical weapons has been authorized by higher authority the evidence indicates that the actual orders for the use of chemical weapons may occur as low as the army commander—and perhaps, at least in the 1960s, even lower. This

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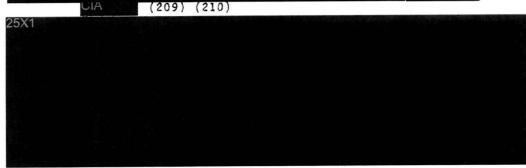
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evidence appears to assume a nuclear context, however, and to involve chemical weapons not included in an initial massed strike. For instance, a definitive Pact document from the midseventies, concerning the transition of the front to the offensive--after nuclear weapons have been used--notes that in sectors where the enemy has not been sufficiently neutralized with nuclear weapons, air and artillery strikes with the use of conventional and "special" munitions can be delivered on the orders of the commanders of first-echelon armies against targets on the enemy's forward defense line. CIA Statute (208)

Other authoritative references to this subject to the early 1960s, when the Soviets expected hostilities to begin with nuclear strikes. Nuclear weapons were in short supply in the Soviet inventory and, as a result, most non-Soviet Warsaw Pact countries might have expected to receive and use only chemical weapons. All of these references appear to refer to a nuclear context, where the use of weapons of mass destruction and an initial massed nuclear or nuclear/chemical strike already have



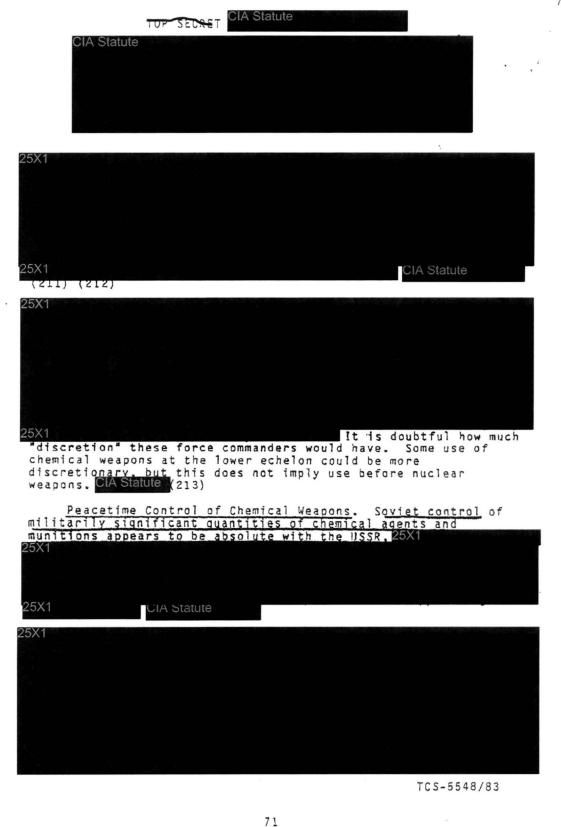


Which were integral to the divisions, whereas the operational-tactical Scud missiles belonged to armies or fronts. CIA Statute

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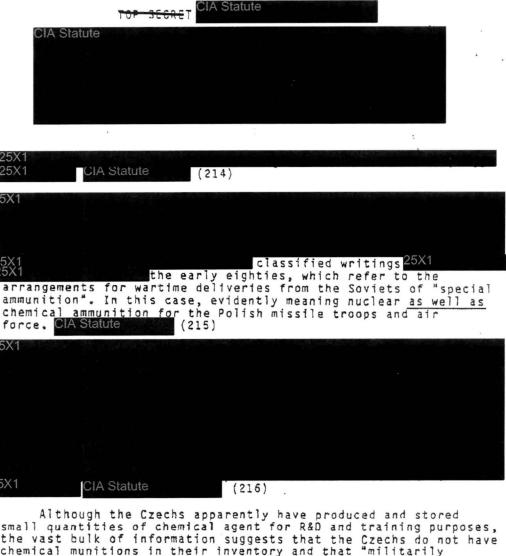
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Although the Czechs apparently have produced and stored small quantities of chemical agent for R&D and training purposes, the vast bulk of information suggests that the Czechs do not have chemical munitions in their inventory and that "militarily significant" quantities of agent and munitions were produced by the USSR and would be provided $\frac{25\times1}{1000}$ in wartime by the Soviets, if and when the latter saw fit to do information is dated. 25X1 information is CIA Statute

In addition, Romania may be at least as concerned about a possible Soviet invasion as by the threat from NATO. 25X1

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25X1 CIA Statute (218)

Importance of Deterrence

Implications of Chemical Use in Local Wars for a NATO /Pact Confrontation

We do not believe that Soviet use of chemical munitions in Afghanistan and—with their allies—in Southeast Asia against irregular forces lacking protective equipment or any significant deterrent capability is directly applicable to a NATO Warsaw Pact confrontation. In Europe, the Soviets believe NATO would respond with a wide range of nuclear and chemical weaponry. CIA Statute



For additional information on this subject, see SOVA-10005X CIA Statute

CIA January 1983, Soviet Motivations for the Use of Chemical Weapons in

Afghanistan and Southeast Asia (U) and SNIEs 11/50-37-82JX CIA Statute

CIA Statute respectively); 2 March 1983 and 2 February

respectively; Use of Toxins and Other Lethal Chemicals in Southeast Asia and

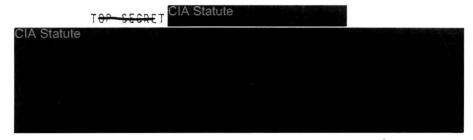
Afghanistan. CIA B2)

chemical warfare by the Soviets against irregular forces is not new—that they employed chemical shells on the defenders and population of mountain villages at the end of the twenties during the suppression of an uprising in the Caucasus, and that in the thirties Soviet aircraft sprayed mustard gas during operations against tribesmen in central Asia. (U) (46a)

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Potential NATO Response. We judge that Soviet expectations of a NATO response would likely discourage major use of chemical munitions on the conventional hattlefield. Warsaw Pact writings evidence serious concern about NATO, particularly US, chemical developments and the "enemy" chemical threat. Although US deployment of offensive chemical agents and munitions has come to a full halt since the late sixties, Pact classified writings indicate a continuing, perhaps even expanded, concern over the

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chemical threat posed by NATO.

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The Soviets have access to a broad range of information concerning virtually all facets of the US chemical program. Using the information available from the Congressional Record, unclassified military manuals, Government Printing Office materials, the mass media, leaks, and intelligence sources, the Soviets should have an accurate picture of the US stockpiles, current agent and wearer mix future agents, production, and delivery systems. According to a classified Soviet assessment of the US requirement for binary munitions in the mid-seventies, the Soviets concluded that Savin and VX were the basis of the US Army's chemical weapons arsenal. The Soviets estimated that 15,000-30,000 tons of these agents existed, part stored outside Soviet military specialists apparently believed, the US. that by 1985 practically all then existing chemical weapons stockpiles in the US would be unfit for use. The storage life of existing US chemical ammunition was believed to be 15 years due to ammunition corrosion and obsolesence of the delivery means. This is a fairly accurate assessment of US chemical capabilities at the time. CIA Statute (236)

Despite this assessment and accurate. readily available information. Soviet and non-Soviet Warsaw Pact classified writings 25X1 routinely ascribe an extensive, credible offensive chemical canability to NATO, That estimate appears to greatly exceed existing NATO weapons capabilities and agent/munitions stockpiles. Pact planning, as reflected in classified writings also seems to be predicated upon the assumption that NATO is prepared to use chemical weapons in any major war in Europe. 25X1 major war in Europe. 25X1 25X1

(237)

CIA Statute

Highly classified Warsaw Pact documents detailing NATO order of battle from the early seventies through the early eighties assess many NATO weapons systems as chemically capable. Although the lists vary, the Pershing I, Sergeant, Lance and Honest-John Missiles with chemical (i.e., Savin/VX) or chemical/biological, nuclear, or conventional warheads. conventional warheads 25X1

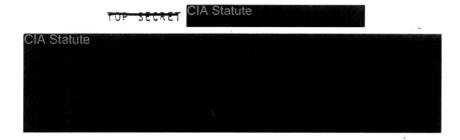
In the last two years, the Soviet press has

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begun to accuse the US of intending to provide the GLCM chemical canability. 25X1

chemical capability.

25X1 **CIA Statute** (238)West Germany, the United chemical warhead ontings. France is credited with an entirely independent chemical capability, 25X1 25X1 West Germany has an independent chemical capability. 25X1 25X1 25X1 UM Statute

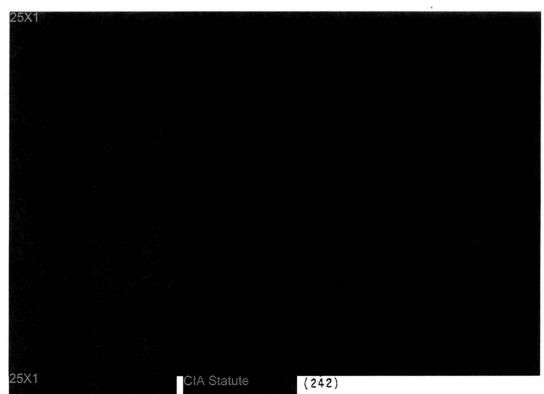
Warsaw Pact writings from the late seventies demonstrate a belief that the principal NATO armies possess nerve agents, extremely efficient delivery means, and large numbers of chemical warheads which enable NATO to quickly contaminate large areas. In addition, NATO was believed to have significant capabilities to use psychochemicals, including incapacitating agents such as 8Z and irritants. CIA Statute (241)

25X1 **CIA Statute** (242)

Soviet Assessment of Binary Munitions. Pact projected orders of battle for NATO forces for the early nineties assessed that NATO would introduce artillery shells and missile warheads with binary charges. 25X1

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Other writings, both earlier and from the late seventies, ascribe a darker motive to the US binary program. Their authors asserted that, with binary munitions, the US had developed methods of producing and storing toxic agents which could evade all international conventions. In wartime, therefore, the US would not be confined by any restrictions. These writings allege that the US development of binary munitions would facilitate preparation for chemical warfare despite an eventual international prohibition on chemical warfare which the US would eventually be forced by world opinion to sign. 25X1

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Pact Reflections of NATO Intentions

Based on such assessments of NATO capabilities, highly classified, authoritative Warsaw Pact writings throughout the seventies also alleged that the US and its NATO allies had significant offensive intentions. The writings noted that major NATO chemical strikes could create serious problems for the Pact, impeding successful fulfillment of front tasks. Representative samples from these writings include the following:

-- Based on Soviet calculations, NATO could attack 400 important hattalion-sized targets. including troops, airfields, rear service installations, and command posts not aiready hit with nuclear weapons. Strikes could be conducted by 10-20 percent of the NATO strategic bombers in a theater, 20-25 percent of the NATO carrier-based aviation, and up to 30 percent of the tactical aviation in the front's zone. Missiles and artillery were deemed capable of delivering 5-7 massed strikes. Pact divisions/corps attacked with Savin or VX could suffer 50-60 percent losses, and it might be necessary to conduct partial or complete decontamination of 400 battalion-equivalents of men and equipment. Chemical contamination would cause great difficulties for the Pact troops because of high toxicity and persistency of the agents and the complexity of protection.

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-- During an army's offensive operation, NATO can neutralize up to 70 battalion-sized installations;

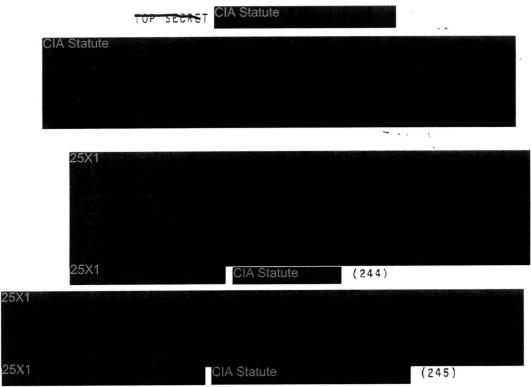
-- During a massed initial strike, NATO could use up to 120-130 aircraft with chemical weapons (in addition to some 350 nuclear warheads). As a result, 500 square kilometers would require chemical reconnaissance and up to five regiments could require decontamination.

-- During a massed initial strike against a Warsaw Pact front, NATO was portrayed using 400 nuclear warheads and delivering chemical airstrikes (with VX) against 35-40 front installations, including the Rear Command Post of the front, and contaminating sizable portions of the troops' disposition areas and movement routes.

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The Soviets seem concerned not only that the US is seriously considering the use of chemical munitions on the modern battlefield, but also that it is increasingly likely to use chemicals before, rather than simply in addition to, nuclear weapons. These concerns may be increased by the US Army's new doctrine as reflected in FM 100-5 for operations on an "integrated battlefield." Warsaw Pact writings, particularly since the early-to-mid-seventies, have discussed the possible enemy use of chemicals (usually nerve agents, but sometimes irritants and psychogenic/incapacitating agents) before nuclear weapons.

Since the mid-seventies, there have been more frequent examples in Warsaw Pact writings 25X1

CIA Statute (249)

We know from classified writings that the Warsaw Pact is aware of the scenarios of major NATU exercises simulating Pact first-use of chemical weapons on the conventional battlefield. Some of these writings seem to imply that the Warsaw Pact sees mirror-imaging on NATO's part, that is, that simulated Pact actions portray NATO intentions. CIA Statute (247)

The Deterrant Role of NATO's Chemical Capability. Although there is little direct evidence, Soviet concern over the "enemy" or "NATO" chemical threat suggest the Pact expects NATO to be able and willing to retaliate with chemicals to some levels of

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Pact first use during conventional warfare. Their classified writings show little doubt that the US is capable of responding to <u>limited</u>, selective use by the Pact with US assets in theater or deployed from CONUS. Their perception of US capabilities to respond to massive, decisive use of chemical munitions by the Pact is less clear. CIA Statute

However, whatever the Soviet estimate of US chemical capabilities might be, as prudent planners they certainly must take into account the possibility of a NATU nuclear response to any massive use by the Warsaw Pact. The Soviets undoubtedly are aware of statements by then-Chairman of the Joint Chiefs of Staff, General Brown, and by Secretary of Defense Weinberger, that, given present inadequacies in the US chemical retaliatory capability, a significant Soviet chemical attack, force NATO into early use of theater nuclear weapons as the only response adequate to prevent total defeat. (U) (248)

Moreover, the most sensitive and authoritative Pact writings, 25X1 predfet NATO would init the use of nuclear weapons to forestall a major defeat on the predfet NAIO would initiate conventional battlerield. These writings note that NAIO is most likely to use nuclear weapons when its forces are forced by attack to withdraw, abandoning important lines territory, or when NATO's troops are on the verge of defeat. The Soviets would probably, then, expect a nuclear response to any massive, decisive use of chemicals. CIA Statute (249)

Pact writings 25X1 clearly indicate Pact awareness that NATO exercise scenarios, from FALLEX-68 to WINTEX/CIMEX 83, have portrayed NATO initiation of the selective use of tactical or theater nuclear weapons in response to Warsaw Pact use of toxic chemical weapons. CIA Statute (250) Pact use of toxic chemical weapons.

Conclusions

The role of chemicals has diminished substantially since the sixties, but not disappeared altogether, while that of nuclear weaponry and ICMs has increased on a grand scale. If the Soviets are to conduct a massive attack with weapons of mass destruction, clearly indicate

that they would prefer and are far better prepared to use nuclear weapons. This is particularly evident with respect to the employment of tactical and operational-tactical missiles. In addition, Pact staffs no longer appear to regularly plan and practice--or to be fully prepared to conduct--a massive,

coordinated strike with chemical weapons, as part of the initial massed, nuclear strike. The more likely Soviet use of chemicals

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would seem to be in single or grouped strikes peripheral to, or following, the initial nuclear strike. Such strikes could occur as the need arose and would not demand as extensive high-level planning and coordination as massive strikes with chemical munitions. CIA Statute

The extensive hulk of Pact classified writings 25X1

weapons squarely in the context of nuclear warfare.
Theoretically speaking, if the use of such weapons had been authorized by the Politboro--and there was even a remote chance that NATO might respond with nuclear weapons to a major chemical attack--Pact planners almost certainly would prefer to use nuclear weapons which provide a more reliable, predictable level of destruction.

On the other hand, we may see limited tactical use of chemical weapons on the nonnuclear battlefield, after the decision is made to use nuclear weapons but nerore they actually have been fired. Reliable evidence for such use is not sparse and generally ambiguous, which in part may reflect some uncertainty even in the minds of the Soviets, but there seems to be enough data to warrant serious concern. How "limited" such use might be, or whether it would occur at all, would evidently depend on a high-level Soviet evaluation of the relative risks—both political and military—versus benefits involved. CIA Statute

it is possible, at least to envision scattered chemical strikes against a handful of high priority NATO targets, including some nuclear weapons depots and delivery systems, command and control facilities, air defense installations, major ports and airfields, and rear area facilities. In addition, some strikes with highly persistent agents might well be made upon relatively uninhabited terrain-perhaps with less fear of US retallation—in order to establish key defensive barriers and to channelize NATO forces. There also seems to be some evidence to suggest that Pact "special forces" might conduct some form of chemical operations not only during the early stages of a conventional war, but even before the inception of hostilities.

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Annex A

Methodology and Terminology

Interpretation of the evidence concerning Pact offensive chemical warfare is complicated because the data are often ambiguous and the context frequently unclear. This problem 25X1 applies to sensitive military writings. 25X1

warfare terminology is prone to translation difficulties. For instance, in some cases, a phrase translated as chemical "weapon" or "armament" could just as accurately have been translated as chemical "equipment." Even "chemical weapon," itself, can various meaning. Without adequate context, it is virtually impossible to determine which was meant.

There are indications that even the Soviets themselves occasionally have been confused by such terminology. 25X1
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(12)

The Terminology Problem. An analysis of Pact offensive chemical warfare requires an understanding of three basic terms and changes in their usage during the past two decades:

-- Weapons of Mass Destruction. This term, as used in classified military writings, has encompassed chemical, nuclear, and biological weapons, whether NATO or Pact since at least the early sixties. (2) 25X1

25X1

most writings have consistently distinguished weapons of mass destruction from incendiary munitions (4). CIA Statute CIA Statute

-- Special. "Special" has been used in 25X1 Pact writings 25X1 to refer to weapons which evidently are strictly nuclear; strictly chemical; chemical and biological; nuclear and chemical; and nuclear, chemical, and biological. (5) "Special" also

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has been contrasted with nuclear, chemical, and biological, referring exclusively or inclusively to illuminating and smoke incendiary compound rounds as well as propaganda leaflet shells. (6) Since at least the late sixties, however, "incendiary" normally been contrasted with "special," suggesting that it is no longer routinely considered in this category. 25X1

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Reliable information on the USSR's World War II chemical program indicates that at that time "chemical agent" referred not only to "chemical warfare agents" but also to chemical products, such as gun powder, explosives, incendiaries, decontamination agent, and sometimes even motor fuel. "Chemical warfare agents" included not only combat toxic agents, such as mustard and lewisite, but also incendiary agents and materials for creating fog and smoke screens. CIA Statute (9)

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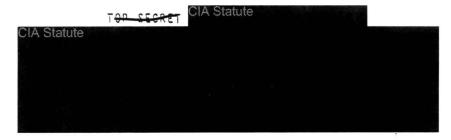
smoke and incendiary weapons were considered "chemical" munitions through the fifties. (10) By the sixties, however, classified Pact military writings suggest that incendiary munitions no longer were normally categorized as "chemical weapons". Although smoke devices may continue to be in this category. Information from uncalssified Pact writings in the mid-seventies suggest that toxins may now be considered as "chemical" agents or weapons. (11)

Warsaw Pact classified writings through the late seventies and early eighties have continued to characterize chemical, nuclear, and biological weapons as "weapons of mass destruction." This term, used in the broadest sense, may still

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The possible categorization of some types of chemical weapons as "conventional weapons"--or at least their use prior to the transition to



include incendiary weapons, but not routinely, and for this reason, when the Soviets refer to "nuclear weapons and other means of mass destruction," it is not entirely clear what is meant. CIA Statute (13)

The current usage of "special" and "chemical" is even more confusing. In many cases, "special" is used to refer to nuclear weapons. For example 25x1

Soviets used "special" to refer to nuclear artillery rounds for their forces in East Germany in 1982. (15) "Special," in the context of the control and handling, security and arming, and possibly servicing and repair of warheads, has a peculiar nuclear connotation. There are "special services" and "special units" involved in these activities, and the Soviet nuclear energy detection system may be referred to as the "Special Monitoring Service". (16) Warsaw Pact intelligence service reports, through at least the late seventies, have continued to refer to NATO's "special weapons (ammunition) depots," apparently meaning those containing nuclear weapons. Some of these facilities, however, may have been believed to contain chemical warheads.

Military writings
Soviets, since the early seventles, have shown a marked preference for using "special" rather than "chemical" to refer to their own toxic combat chemical agents. NATO's chemical weapons, in contrast, are normally termed "chemical" weapons. (18)
Nevertheless, there have been occasional Soviet references to their own "chemical weapons (munitions and armament)," even into the early eighties. CIA Statute (19)

These "chemical weapons" may, however, refer to the flamethrowing and smoke dissemination equipment of the chemical troops. There were frequent references in Soviet sensitive writings in the seventies to the chemical troops' task of providing the front troops with "chemical (troop) weapons (armament or equipment) and protection means." These references appeared simultaneously with the reemergence of the use of smoke and flame by the chemical troops and have been in contrasted, sometimes in the same document, to the Pact's use of "special weapons"—here clearly meaning those containing toxic agents. CIA Statute (20) (10)

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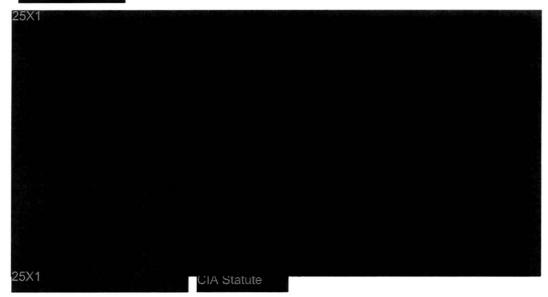
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Thus, the only way to distinguish between "special" or "chemical" is to analyze the context of the reference. Without additional information, it is virtually impossible to know what is meant. Although incendiary weapons, improved conventional munitions (ICM), and fuel-air explosive ordnance usually appear to be excluded from references to "special" weapons in military writings 25X1 we cannot always be sure.

(21) New types of munitions--lasers and "smart" weapons or other special-purpose ordnance (for example, propaganda leaflet ammunition)--appear to be considered from time to time to be in CIA Statute



According to reliable information gathered during and after WW II, the Soviets--even before the war--assigned extreme secrecy to all matters concerning their preparations for gas warfare. Testing of chemical and biological weapons at Shikhany in the late thirties was conducted in secrecy, under the direct supervision of the NKVD.

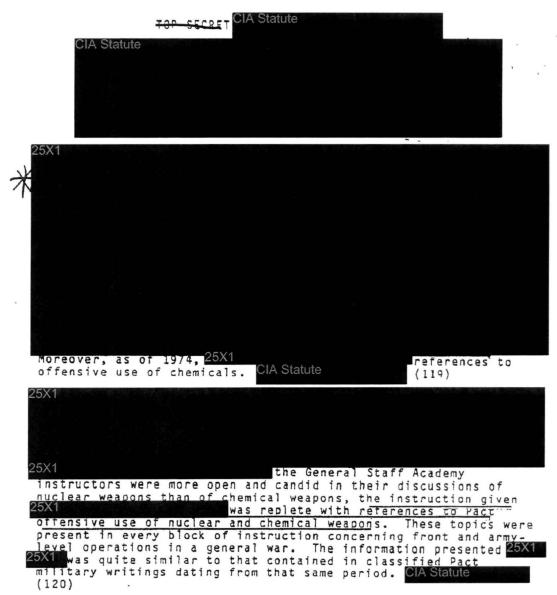
 $^{\rm Z}$ The Peoples' Commissariate of Internal Security (NKVD) was the predecessor of the modern Committee for State Security (KGB) and the Ministry of Internal Affairs (MVD). (U)

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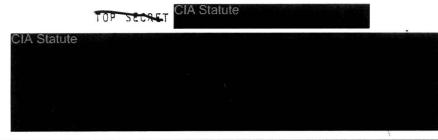


3 25X1
25X1 The 1972 Biological and Toxin Weapons Convention banned all Soviet biological and toxic weapons across the board. The 1925 Geneva Protocol, on the other hand, only partially banned the use in war of chemical weapons (or biological weapons) by the Soviets; the USSR has reserved the right to retaliate in kind against any use of chemical weapons upon it (or its allies) and the Soviets, by specific reservation, are not bound by the protocol with respect to non-signatory countries. (U) (116)

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We cannot accept the thesis that Soviet offensive use of chemical weapons is "super secret." Through the sixties and into the early seventies, a broad spectrum of Warsaw Pact classified military writings 25X1 addressed the offensive use of chemical weapons with Surrice frequency to debunk the "super secrecy" thesis.

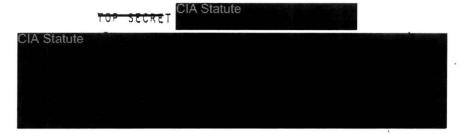
The Soviets clearly are aware that Penkovskiy provided us with overall knowledge of their chemical program from Ww 11 to the early sixties. In addition, a variety of sources including NAIU exercises and the vast array of unclassified, official, or non-official Western literature concerning the "Soviet chemical threat" should indicate to the Soviets that the West is broadly aware of the general outline of their current chemical warfare program.



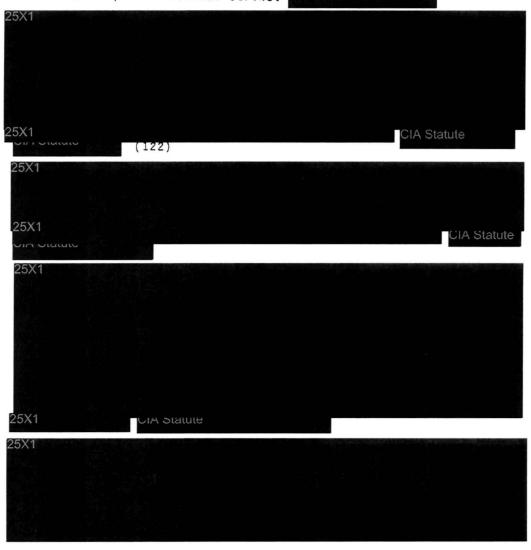
and great preacts of extremely sensing 25X1 military writings 25X1 which untradity are known only to a very limited number of highly-placed individuals in the USSR. It is unlikely, from a practical standpoint, that

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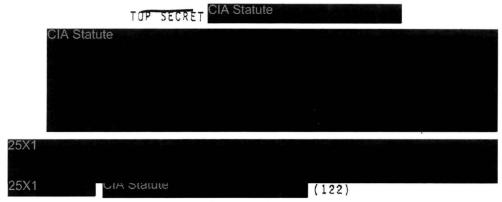


chemical warfare could be accorded more secrecy than other matters discussed in this literature. Inordinate secrecy would make the training of even high-level staffs extremely difficult and would defeat attempts to ensure adequate preparation, planning, and coordination for the successful execution of a massive, surprise chemical strike. CIA Statute



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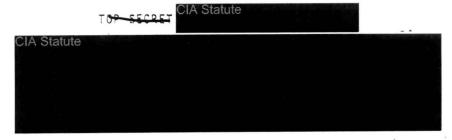


Finally, the uses of chemical agents and munitions in Afghanistan and Southeast Asia are inconsistent with super sensitivity, although such use has been confined to remote areas controlled by the USSR or its allies thereby lessening the likelihood of discovery, or at least acquisition of proof. The Soviets must have accepted some risk of discovery.

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Annex B:

Soviet Involvement with Chemicals Prior to World War II

During World War I, the Russians were able to develop only a limited offensive chemical warfare capability. By some accounts, the Russians lost about 55,000 dead and 420,000 casualties to German gas attacks and their own lack of training. Because of these enormous losses, chemical warfare enjoyed a prominent role in the emerging Red Army. During the 1920s the Soviets (with German assistance and participation) began research and development on chemical weapons, built a test facility at Shikhany, and initiated a program for developing offensive and defensive chemical warfare equipment. CIA (22)

During the early thirties, Red Army soldiers started to receive practical training in chemical warfare and were equipped with up-to-date individual gas protection, while production of chemical agents began in more than two dozen plants. By 1937, the Red Army was essentially prepared for offensive and defensive chemical warfare, both ideologically and materially. In addition, responding to German development of nerve agents, the Soviets began an R&D effort in this field. (22)

Captured Soviet materials and documents, German intelligence, and various other sources have yielded a relatively comprehensive picture of the status of Soviet chemical offensive capabilities during WW II. The Germans captured stocks of chemical agents and munitions substantiating the existence of at least 16 different Soviet toxic combat agents. These substances could be delivered by various means:

- ground-launched: artillery and mortar, rocket launchers, mines, hand grenades, spraying devices, and vehicles; and air-launched: aerial bombs and spraying apparatus on
- dive bombers.

These chemical agents and weapons were to be been used only upon explicit order of the Soviet High Command. The tactics for their employment had been promulgated in at least two documents, a 1939

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program, and particutypes of agents and	larly on the d	levelopment a	nd categori	zation of var	rious
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Development. CIA (13)				

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service regulation, "The Chemical Army of the Red Army Air Force," and a 1941 General Staff directive, "The Chemical Army in Combat and Operation." CIA (23)

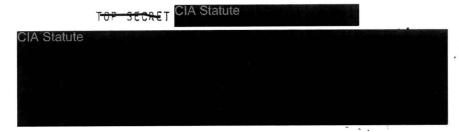
It is likely that the Germans, even at their lowest ebb in WW II. were at least partly deterred from using chemical weapons by the depth and breadth of Soviet preparations. The West's retaliatory capabilities almost certainly also played a part in German calculations. In 1943 the Soviet High Command, having concluded that the Germans would resort to chemical in order to halt the Soviet advance, shifted chemical munitions depots to the front lines and equipped forward operational airfields with chemical agents. These preparations evidently were observed and evaluated by the Germans. There was no use of lethal chemicals, however, by either side. CIA (24)



We believe it is important, in this regard, to note that not even during critical battles in 1941 and 1942 when the survival of the Soviet state was threatened, did the Soviets resort to the use of chemical weapons.

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Annex C

R&D and Field Testing of Chemical Agents and Munitions

We believe the Warsaw Pact chemical warfare research and development program is well-planned, comprehensive, and of high scientific quality. The effort is led and coordinated by the Soviet Chief of Chemical Troops. Soviet research on chemical agents is guided by the criterion of developing stable chemicals with a variable degree of persistence, and includes efforts to synthesize various new classes of extremely toxic compounds and naturally-occurring toxins. The Soviets clearly are interested in binary munitions, and there is evidence that they have tested such weapons.

The Soviet chemical warfare program, as a whole, has been characterized by modest, evolutionary improvements occuring over at least the past three decades. Overall, the Warsaw Pact chemical defensive warfare program has also been marked by steady improvements. These improvements, however, have been made well within the constraints of a modest budget and there is no indication of a sudden, large increase in research and development over the past decade.

For many years, the Soviets have had active R&D programs to support the development of new NBC equipment needed for a chemical environment and have increased the number and types of equipment in the field. For example, collective protection devices have been installed on most newer combat and service vehicles, as well as in command control centers. In addition to developing and fielding a new gas mask and an improved protective suit, the Soviets have issued upgraded agent detection tubes, antidote auto-injectors, and a new antidote to their troops. The Soviets have increased their inventory of the jet engine-equipped decontamination vehicle used for rapid decontamination of large items of equipment, and Czechoslovakia is upgrading its version of these vehicles. In addition, the Soviets have recently introduced a tracked amphibious NBC reconnaissance vehicle have continued to field new automatic detection-alarms. (37a)

According to information received in the late sixties $\frac{25 \times 1}{25 \times 1}$ the Soviets had monopolized Pact development of

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m 1}$ See source in footnote #6 for additional information on Pact CW R&D. (U)

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new toxic substances and methods for using them. Warsaw Pact countries were relegated to research in essentially the defensive aspects of chemical warfare and were discouraged by the Soviets from work in the offensive arena. There is little

the growth in Soviet R&D during the last decade may represent attempts to correct perceived deficiencies during the an extent catch up with the West. in the mid-sixties, 25X1 25X1 believed the Soviet army, mainly for economic reasons, lagged behind the West in critical areas of R&D, particularly in the development of Vx (nerve) agents and psychochemicals (incapacitants). While the Soviet army's resources are large, they are not unlimited and some weapons are given priority. The preferred weapons were, and apparently still are, nuclear. Thus in the mid-sixties, relatively little money was spent to the USSR for the development of chemical weapons compared to that spent on nuclear weapons. This is indicated by the relatively low level of financial support and poor equipment of the chemical research institutes as well as the Shikhany testing complex which deals with toxic substances. 25X1 the USSR's established the USSR's established chemical warfare experts would work out the high-level, theoretical questions concerning chemical weapons, but generally lacked funds for further development, weaponization, and serial production.

in 1969, the KGB did a study of US R&D in chemical and biological warfare, concluded that the US was "definitely ahead" in this field, and launched a crash R&D project to catch up. CIA (38a)

(38)

The test program at the Shikhany central chemical warfare proving ground indicates continuing Soviet involvement in offensive as well as defensive chemical warfare. This facility is used by the Military Academy of Chemical Defense in Moscow, the focal point of the Soviet R&D effort, to test new chemical

agent testing at other cocations in the USSR, Shikhany is the only major test facility known to exist. (39)

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