CIA Statute

the overall layout of the testing ground at Shikhany have existed since at least 1942 when they were photographed by the Germans. The facilities have been improved or expanded with considerable new construction of living quarters, warehouses, research buildings, and laboratories, and enlargement of the motor pool, test grid areas and special storage bunkers since 1980.

Training and testing activity at Shikhany has increased moderately over the past few years 25X1

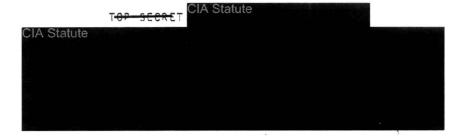
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UIA STATUTE (41)

The Soviets apparently have tested new chemically-capable weapons delivery systems at Shikhany in recent years. 25%1 new large caliber (possibly Perm-type--or 152 mm) gun/howitzers and a new circular test grid 25%1 in the field test area which had previously served as an artillery and bombing range. The Soviets' new 220 mm multiple rocket launcher (MRI) the RM-25%1

a special squadron of aircraft and helicopters located at an airfield near Shikhany, had the primary mission of test dropping chemical bombs provided by the Shikhany proving ground at a nearby bombing range. CIA Statute (42)

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Annex D

Pact Expectations of Losses to NATO Chemical Strikes

Sensitive writings from the late sixties through the late seventies reflect an expectation that average personnel losses to NATO employment of Sarin and VX, but in particular VX, under conditions of tactical surprise could reach as high as 50 to 60 percent. Such a high casualty rate would pertain even to units as large as divisions or corps (i.e., "large units"). On the other hand, average Pact personnel losses in the absence of tactical surprise--Pact personnel are warned, wearing protective gear and have overhead shelter--would be greatly reduced but still range from 10 to 15 percent:

Classified writings from the late sixties to early seventies, and instructional materials 25x1

25x1

at the Soviet General Staff Academy 25x1

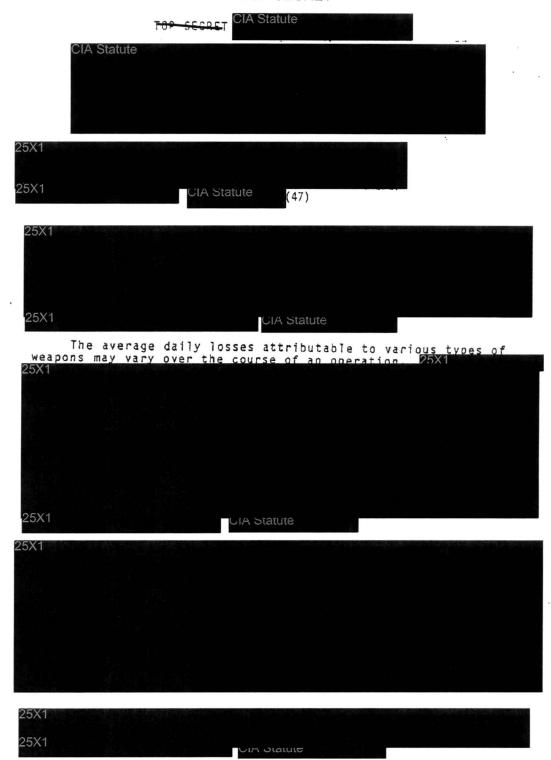
roughly similar estimates of total Pact medical casualties.

Where stated, these writings, which provide detailed breakdowns of casualties by category, assumed that total Pact losses during an entire frontal operation fought under conditions of nuclear war would consist of 30-40 percent of the original personnel strength of the front.



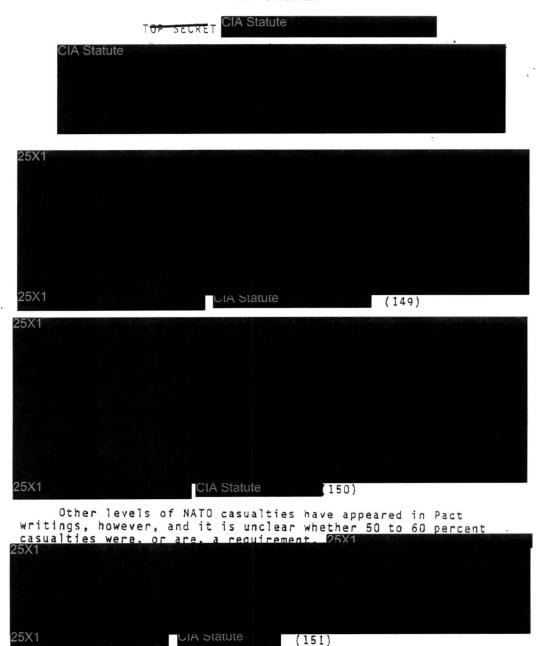
1 Evidence from the late seventies, however, seems to suggest that Pact planners may expect at least some fronts to incur casualties as high as 70 percent, but there no indication in these higher casualty figures of the total attributable to chemical (rather than (nuclear) strikes. CIA Statute

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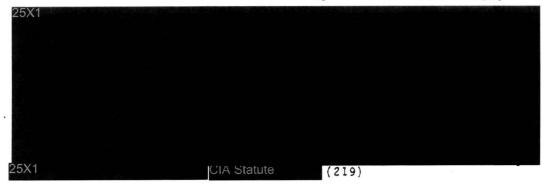
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Annex E

Centralization of Control and Storage of Chemical Munitions



Our evidence from Pact classified writings from the sixties through the early seventies is that chemical warheads, at least those for missiles, and evidently, aircraft, and nuclear warheads are stored, nandled, and transported separately from routine conventional ammunition. These writings routinely discuss procedures in the context of front and army operations for shipping, storing, and stockpiling "nuclear and chemical (warheads) munitions" for rocket troops and aviation, 25%1



Pact classified writings are quite specific about control of missiles with chemical warheads. Both chemical and nuclear warheads are provided the firing units by the front and army-level mobila rocket tachnical bases (PRTBs and APRTBs), and independent transport battalions, which are subordinate to the Missile and Artillery Armament Service. The technical bases' responsibilities, in part, include preparing and rueling the tactical or operational-tactical (FROG and Scud) missiles, mating their warheads of any type to the air frames, and delivering ready missiles to the launchers in the field. Perhaps more importantly, these writings indicate the functions of the PRTB/APRTB include actual storage (i.e., mobile depots) of chemical and nuclear warheads for the missiles, not only during wartime operations, but under peacetime conditions as well.

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25X1 in 1975-77 a base in the Belorussian Military District had a large underground munitings depot containing all types (including nuclear and chemical) tactical missile warheads and artillery shalls 25%1 The Pact writings, 25X1 strongly suggest that the supply of chemical ammunition, at least for the around forces is through missile and artillery channels nevertheless, and not through chemical defense channel, 25X1 Soviet chemical derense troops. Including those in Afghanistan--in particular. offensively trained specialists -- are involved in the transport and storage of toxic chemical agent and municions. Ine presence of extensive chemical defense equipment at military district level storage sites in the USSR suspected to s and munitions, 25X1 support an association the themical troops with at least higherechelon storage of such materials. a number of various other types of Soviet units--such as specialized security elements and navy escort battalions--are involved in escort duties during transportation of agents or munitions. CIA Statute transportation of agents or munitions. Where exactly chemical agents and munitions are stored with the forces, other than the technical bases, is unclear. Forces lever depots for "chemical armaments/munitions/equipment and protective means" may not necessarily contain "special munitions," because the two terms ("chemical" and "special") normally contrasted (see Annex A)

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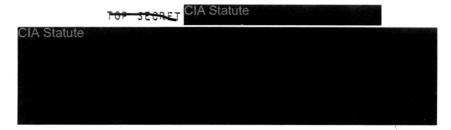
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Given the expansion in the size and equipment of a front between the sixties and seventies, as well as the greatly increased emphasis on "protection against weapons of mass destruction," it is conceivable that the chemical storage reported could have consisted entirely of chemical protective equipment, flamethrowing devices, and smoke and riot control agents. CIA Statute (224)

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Appendix F

Chemical Agents , Munitions, and Delivery Systems Currently in the Inventory

This annex summarizes the most current information available on the Pact's major agents and delivery sys The degree to which this

represents the true or complete current chemical weaponry is unclear. CIA Statute status of all Soviet chemical weaponry is unclear.

the simulated use during Soviet and Warsaw Pact-wide exercises of chemical munitions support the presence of Pact inventory. 25X1 such weapons in the missiles, FROG rockets, and, to a much lesser extent, involves Scud artillery. For example, in a 1977 exercise a Soviet Scud brigade in East Germany had a simulated allocation of at least one chemical warhead for use of its missile launchers. In a 1980 Leningrad Military District exercise, there were indications that the weapons holdings of an apparent Soviet division included various artillery pieces and an unknown number of "chemical weapons." These were presumably artillery shells, although it is not clear what is meant. That is, it might have been flamethrowers or other weapons of the chemical troops.

clearly reflected the presence of chemical bombs in the Soviet inventory. In 1975, 400 such weapons were included in the armaments inventory of a Soviet fighter-bomber regiment at Grossenhain, East Germany. The other ordnance in the inventory included conventional bombs of various types--such as fragmentation, demolition, fragmentation-demolition, incendiary, propaganda, photo-flash, and practice--as well as cannon shells and air-to-ground rockets. There was no indication, however, as to the type of chemical agent used in the bombs nor, for that matter, whether the bombs were empty or filled. In addition, the inventory indicated that no chemical bombs were assigned to the air unit's two sister regiments, in its fighter-homber division. toxic agents" were stored at some Soviet aviation

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rear service facilities in East Germany. But the agents, which were to be placed in specially equipped storage areas at petroleum depots may have been either substances associated with rocket or aviation fuels or substances of the tear-gas variety rather than actual chemical filling for weapons. CIA Statute (52)

25X1

the Pact weapons inventory includes chemical warheads of the cluster--but apparently also the unitary--variety for FROG-3/7 and Scud-A/B missiles, chemical projectiles for 122 and 152 mm artillery, chemical rockets for BM-21 (and BM-14) MRLs, and chemical bombs (of various types and sizes) aircraft delivery. 25X1

25X1

the use of Sarin and Soman with FROGs, Soman with Scuds, Sarin and Mustard with 122/152 mm artillery, Sarin with the MRLs, and Sarin and Soman with air-delivered bombs. 25X

25X1

elements of the Czechoslovak Ministry of Defense were interested in information on the acceptable levels of residual chemical agent contamination of the surfaces of combat vehicles by "those three of our.
Pact toxic agents": Vx. Soman. and Mustard. CIA Statute (53)

Other types of agents--lewisite, mustard/lewisite mixtures, and hydrogen cyanide -- 25X1

have probably remained available for use by

artillery, MRL, and aircraft bombs.

Soviet operations in Afghanistan and the activities of Soviet allies in Southeast Asia, also indicate that mycotoxins and helicopter-delivered chemical rockets are the Soviet inventory, 25X1

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In regard to new types of delivery systems which might be under development, or even already developed, the most likely ground-launched systems could include chemical warheads for the SS-21 and SS-23 missiles, which are to replace the FROG and Scud, respectively, and for the new BM-27 MRL which has been observed at Shikhany. In addition, the Soviets are developing a long-range, ground-launched cruise missile which, considering past

(54)

precedent, conceivably might be equipped with a limited number of chemical warheads to supplement its primary role as a nuclear delivery system. CIA Statute

There is tenuous evidence of a re-emerging Soviet interest in aerial spraying--despite its obvious limitations in terms of aircraft vulnerability to ground fire. The successful use of spraying by the Soviets' allies in Southeast Asia probably encourages this interest. There is a possibility that the Soviets have experimented at Shikhany with jet engine-delivery of chemicals by Flogger aircraft. 25X1

25X1 Lastly, a HIP helicopter,25X1

It is possible that the modified helicopter could be intended for spraying chemical agents (including herbicides) and deployed for Soviet (or allied) use for agricultural soraying or firefighting is possible, however. CIA Statute (55)

In regard to the chemical agent and munition stockpile, it is the opinion of the Intelligence Community 25X1

research and analysis is continuing in this area. At the present time, there are about a dozen major installations in the USSR believed to be associated with the storage of chemical defense material and toxic agents or filled munitions. In addition, there is some evidence that chemical agents and munitions are stored at a lower echelon, essentially in field depots or facilities. It is the Community's estimate our the Soviets have adequate levels of operational stocks available, including some in Eastern Europe. CIA Statute

In terms of the related question of production, although no industrial facilities in the Warsaw Pact have been confirmed as

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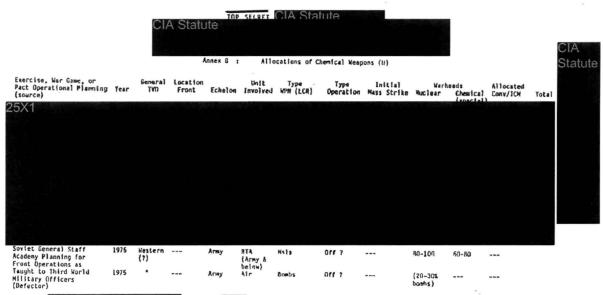
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currently producing toxic chemical agents, about a dozen are suspected. It is the view of the Community that the Soviets may be manufacturing sufficient bulk chemical agents to maintain reserves and replace any agents and munitions consumed by training or deterioration. The quantities involved in maintaining a sufficient stockpile are relatively small, and a continuous large-scale prduction program would not be necessary.

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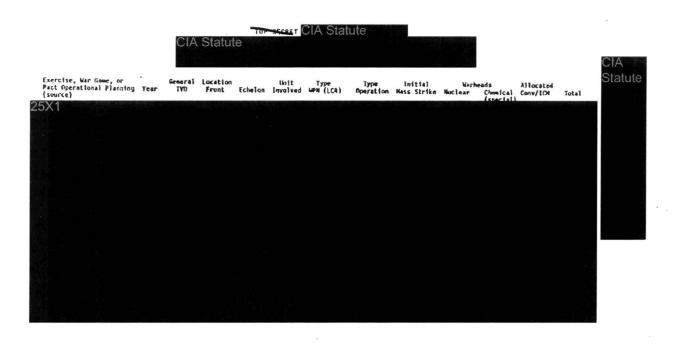
11 Mar 82, CIA This reportedly was the allocation of nuclear and chemical meapons for first echelon sain attack of a field army. Although it is not so stated, this allocation seems to be for the army's entire operation--not just for the initial massed strike.

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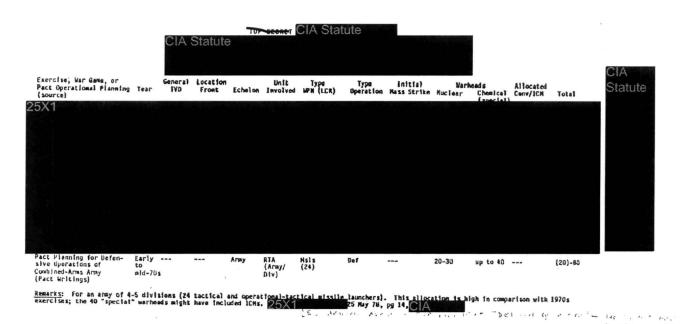
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^{*} RTA-Rocket Troops and Artillery



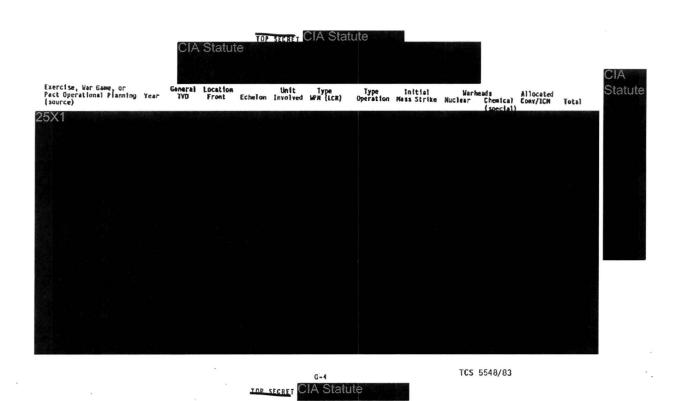
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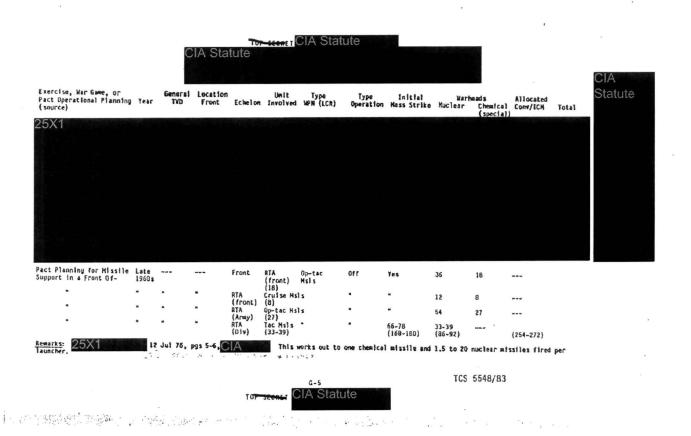
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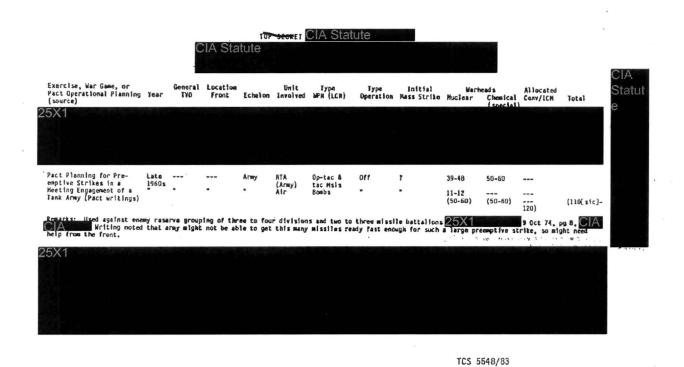
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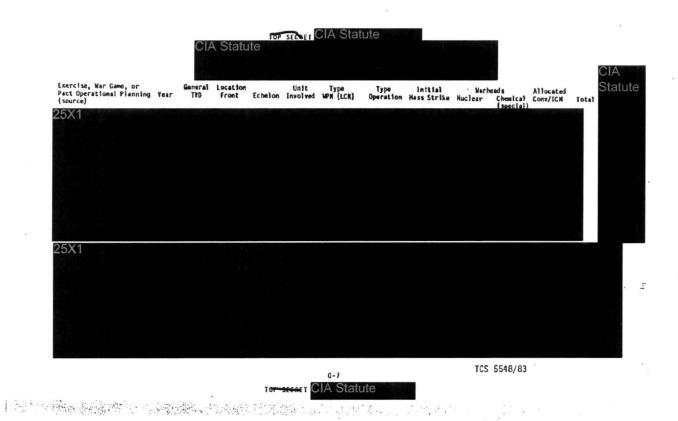




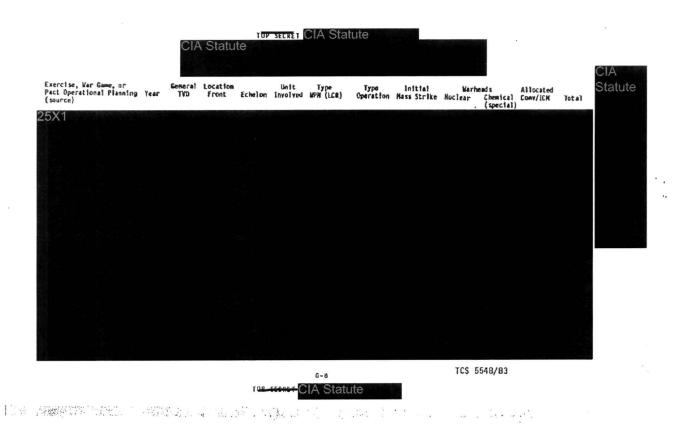
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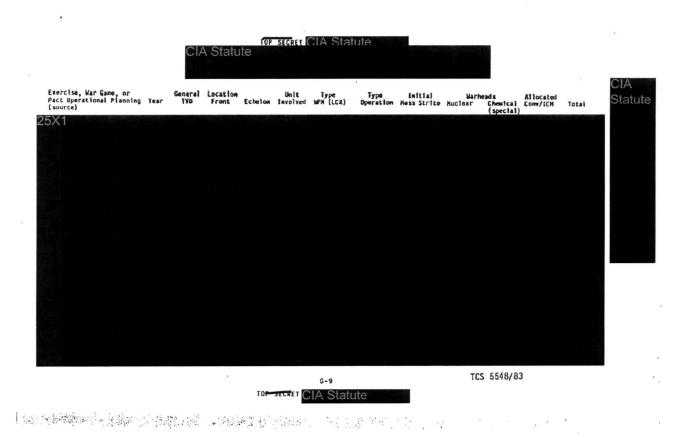
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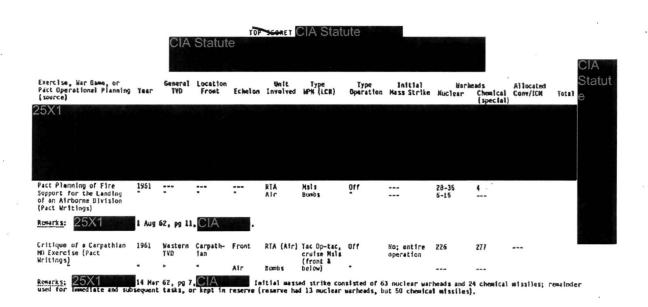
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Major Warsaw Pact Chemical Agents and Weapon Systems 1,2

Artillery Free-Fall Munition Bombs (weight in (size in Rocket Missile Warheads millimeters) kilograms) Warheads (entry indicates availability of delivery system for agent specified) Nerve Thickened Soman (CD) FROG BM-21, Sarin (GB) 122,152 BM-14 Vesicant (Blister) Mustard 122,152 Thickened Mustard 122,152 Thickened Lewisite 122,152 Mustard/Lewisite 100,250,500 Mixture 1000, 1500 Thickened Mustard/ Lewisite Mixture 250, 1500 Systemic 25X 250,500 Hydrogen Cyanide BM-21

Replacements for a number of these systems are now entering the inventory and probably also will have a chemical capability. 25X1

25X1

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Reports from Afghanistan show that the Soviets also have mycotoxins and helicopterdelivered chemical rockets in their inventory. (U) (50)

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