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CIA Statute

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Most of the facilities and 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. CIA

CIA Statute

(40)

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

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CIA Statute

(41)

The Soviets apparently have tested new chemically-capable weapons delivery systems at Shikhany in recent years. 25X1 new large caliber (possibly Perm-type--or 152 mm) gun/howitzers and a new circular test grid 25X1 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 BM-27. 25X1

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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: CIA Statute (146)

Classified writings from the late sixties to early seventies, and instructional materials 25X1 25X1 at the Soviet General Staff Academy 25X1 have given 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. 25X1

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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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The average daily losses attributable to various types of weapons may vary over the course of an operation. 25X1

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Other levels of NATO casualties have appeared in Pact writings, however, and it is unclear whether 50 to 60 percent casualties were, or are, a requirement. 25X1

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Annex E

Centralization of Control and Storage of Chemical Munitions

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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, handled, 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. 25X1

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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 mobile rocket technical 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 fueling 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. 25X1

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in 1975-77 a base in the Belorussian Military District had a large underground munitions depot containing all types (including nuclear and chemical) of tactical missile warheads and artillery shells. 25X1

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The Pact writings, 25X1 strongly suggest that the supply of chemical ammunition, at least for the ground forces, is through missile and artillery channels nevertheless, and not through chemical defense channel. 25X1 25X1 Soviet chemical defense troops, including those in Afghanistan--in particular, offensively trained specialists--are involved in the transport and storage of toxic chemical agent and munitions. The presence of extensive chemical defense equipment at military district level storage sites in the USSR suspected to house agents and munitions, 25X1 support an association of the chemical troops with at least higher-echelon storage of such materials. 25X1 25X1 a number of various other types of Soviet units--such as specialized security elements and navy escort battalions--are involved in escort duties during the transportation of agents or munitions. CIA Statute (223)

Where exactly chemical agents and munitions are stored with the forces, other than the technical bases, is unclear. Forces level depots for chemical armaments/munitions/equipment and protective means may not necessarily contain "special munitions," because the two terms ("chemical" and "special") are normally contrasted (see Annex A). 25X1

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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 systems. 25X1

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The degree to which this represents the true or complete current status of all Soviet chemical weaponry is unclear. CIA Statute

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the simulated use during Soviet and Warsaw Pact-wide exercises of chemical munitions support the presence of such weapons in the Pact inventory. 25X1 involves Scud missiles, FROG rockets, and, to a much lesser extent, 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. CIA Statute

CIA Statute

(51)

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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-bomber division. 25X1

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"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

CIA Statute

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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) for aircraft delivery. 25X1

25X1

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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. 25X1

25X1

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, i.e., Pact, toxic agents": Vx, Soman, and Mustard. CIA Statute

(53)

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

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have probably remained available for use by artillery, MRL, and aircraft bombs. 25X1

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

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25X1 Lastly, a HIP helicopter. 25X1

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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 spraying 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

25X1
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 that 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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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 production program would not be necessary. CIA (56)

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Annex B : Allocations of Chemical Weapons (U)

Exercise, War Game, or Pact Operational Planning (source)	Year	General TMD	Location Front	Echelon	Unit Involved	Type WPN (LCM)	Type Operation	Initial Mass Strike	Warheads Nuclear	Chemical (Report)	Allocated Conv/ICM	Total
25X1												
Soviet General Staff Academy Planning for Front Operations as Taught to Third World Military Officers (Defector)	1975	Western	---	Army	RTA (Army & below)	Mils	Off ?	---	80-100	60-80	---	
	1975	*	---	Army	Air	Bombs	Off ?	---	(20-30% bombs)	---	---	

Remarks: 25X1 11 Mar 82, CIA This reportedly was the allocation of nuclear and chemical weapons for first echelon main 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.

* RTA-Rocket Troops and Artillery

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Exercise, War Game, or Pact Operational Planning (source)	Year	General TYD	Location Front	Echelon	Unit Involved	Type WPM (LCR)	Type Operation	Initial Mass Strike	Warheads Nuclear	Chemical (special)	Allocated Conv/ICM	Total
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Exercise; War Game, or Pact Operational Planning (source)	Year	General IVD	Location Front	Echelon	Unit Involved	Type MPN (LCR)	Type Operation	Initial Mass Strike	Warheads Nuclear	Chemical (Special)	Allocated Conv/ICM	Total
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Pact Planning for Defen- sive Operations of Combined-Arms Army (Pact Writings)	Early to mid-70s	---	---	Army	RTA (Army/ Div)	MsIs (24)	Def	---	20-30	up to 40	---	(20)-80
---	------------------------	-----	-----	------	-----------------------	--------------	-----	-----	-------	----------	-----	---------

Remarks: For an army of 4-5 divisions (24 tactical and operational-tactical missile launchers). This allocation is high in comparison with 1970s exercises; the 40 "special" warheads might have included ICMs. 25X1

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Exercise, War Game, or Pact Operational Planning Year (source)	General	Location	Unit	Type	Type	Initial	Warheads	Allocated	Total
	TVD	Front	Echelon	Involved	WPW (LCR)	Operation	Mass Strike	Nuclear	

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Exercise, War Game, or Pact Operational Planning (source)	Year	General TVD	Location Front	Echelon	Unit Involved	Type WPN (LCR)	Type Operation	Initial Mass Strike	Nuclear	Warheads Chemical (special)	Allocated Com/ICM	Total
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25X1

Pact Planning for Missile Support in a Front Of-	Late 1960s	---	---	Front	RTA (front) (18)	Op-tac Msls	Off	Yes	35	18	---	
"	"	"	"	RTA (front) (8)	Cruise Msls	"	"		12	8	---	
"	"	"	"	RTA (Army) (27)	Op-tac Msls	"	"		54	27	---	
"	"	"	"	RTA (Div) (33-39)	Tac Msls	"	"	66-78 (168-180)	33-39 (86-92)	---		(254-272)

Remarks: 25X1 12 Jul 76, pgs 5-6, CIA This works out to one chemical missile and 1.5 to 20 nuclear missiles fired per
launcher.

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Exercise, War Game, or Pact Operational Planning (source)	Year	General TVO	Location Front	Echelon	Unit Involved	Type WPH (LCR)	Type Operation	Initial Mass Strike	Warheads Nuclear	Chemical (Special)	Allocated Conv/ICM	Total
Pact Planning for Pre- emptive Strikes in a Meeting Engagement of a Tank Army (Pact writings)	Late 1960s	---	---	Army	RTA (Army) Air	Op-tac & tac Miss Bombs	Off	?	39-48 11-12 (50-60)	50-60 ---	---	---
											120)	(110[sic]-

Remarks: Used against enemy reserve grouping of three to four divisions and two to three missile battalions. **25X1** 9 Oct 74, pg 8, **CIA**
CIA Writing noted that army might not be able to get this many missiles ready fast enough for such a large preemptive strike, so might need
 help from the front.

25X1

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Exercise, War Game, or Pact Operational Planning (source)	Year	General	Location	Echelon	Unit	Type	Type	Initial	Warheads	Chemical	Allocated	Total
		TYD	Front		Involved	WPN (LCR)						
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Exercise, War Game, or Pact Operational Planning (source)	Year	General Location		Unit Involved	Type MPW (LCR)	Type Operation	Initial Mass Strike	Warheads			Allocated Conv/ICM	Total
		TYD	Front					Echelon	Nuclear	Chemical (special)		

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Exercise, War Game, or Pact Operational Planning Year (source)	General TYD	Location Front	Echelon	Unit Involved	Type WPM (LCR)	Type Operation	Initial Mass Strike	Warheads Nuclear	Chemical (special)	Allocated Com/ICM	Total

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Exercise, War Game, or Pact Operational Planning (source)	Year	General TV	Location Front	Echelon	Unit Involved	Type WPN (LCR)	Type Operation	Initial Mass Strike	Warheads Nuclear	Chemical (special)	Allocated Conv/ICM	Total	CIA Statut e
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Pact Planning of Fire
Support for the Landing
of an Airborne Division
(Pact Writings)

1961

RTA

Air

Msls

Bombs

Off

28-36

4

Remarks:

25X1

1 Aug 62, pg 11,

CIA

Critique of a Carpathian
MO Exercise (Pact
Writings)

1961

Western

Carpath-

ian

Front

RTA (Air)

Tac Op-tac, Off

cruise Msls

(front &

below)

No; entire

226

277

Remarks:

25X1

14 Mar 62, pg 7,

CIA

Initial massed strike consisted of 63 nuclear warheads and 24 chemical missiles; remainder
used for immediate and subsequent tasks, or kept in reserve (reserve had 13 nuclear warheads, but 50 chemical missiles).

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Annex H

Major Warsaw Pact Chemical Agents and Weapon Systems^{1,2}

Agent	Artillery Munition (size in millimeters)	Free-Fall Bombs (weight in kilograms)	Rocket Warheads	Missile Warheads
(entry indicates availability of delivery system for agent specified)				
Nerve				
Thickened Soman (CD)	--	100,25X1	FROG	Scud
Sarin (GB)	122,152	100,250,25X1	BM-21, 25X1 BM-14	

25X1

Vesicant (Blister)				
Mustard	122,152	25X1	--	--
Thickened Mustard	122,152	--	--	--
Thickened Lewisite	122,152	--	--	--
Mustard/Lewisite Mixture	--	100,250,500 1000, 1500 25X1	--	--
Thickened Mustard/ Lewisite Mixture	--	250, 1500	--	--
Systemic				
Hydrogen Cyanide	--	25X1 250,500	BM-21	--

¹ Replacements for a number of these systems are now entering the inventory and probably also will have a chemical capability. 25X1

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CIA Statute

² Reports fromn Afghanistan show that the Soviets also have mycotoxins and helicopter-delivered chemical rockets in their inventory. (U) (50)

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