

**April 1954**

**I. Petrov, 'On Safety [during the Totskoye Nuclear Exercise]'**

**Citation:**

"I. Petrov, 'On Safety [during the Totskoye Nuclear Exercise]'", April 1954, Wilson Center Digital Archive, Library of Congress, Manuscript Division, Dmitriï Antonovich Volkogonov papers, 1887-1995, mm97083838. Translated by Theresa Billow-Supple.  
<https://digitalarchive.wilsoncenter.org/document/220033>

**Summary:**

Petrov details efforts to limit contamination from the Totskoye nuclear exercise in 1954.

**Credits:**

This document was made possible with support from Carnegie Corporation of New York (CCNY)

**Original Language:**

Russian

**Contents:**

Translation - English

[handwritten] On Safety

TsAMO f. 28  
op. 33363 ss  
l. 128

We report:

With the aim of excluding the possibility of contamination of troops and the local population during the conduct of the corps exercise with the actual use of a medium-caliber atomic bomb in area of Totskoye in Chkalovskaya Oblast', measures were considered and are being implemented directed towards ensuring the safety of people, material valuables, arms and equipment.

#### 1. General Measures.

A restricted zone has been established with a radius of 8 km from the intended center of the target. Security for this zone has been organized (one infantry battalion with 39 posts of 5-7 men each).

Five days prior to the start of the exercise, work in the restricted zone is permitted only by a strictly limited number of persons.

The initial position of the troops of the advancing side will be 5 km from the epicenter and will be occupied by troops 2 days prior to the start of the exercise. Along the foremost front edge, a cordon will be set up per a directive of the commander of the corps.

Shelters have been prepared for formations and units participating in the exercise. The troops have been supplied with individual means of protection, decontamination materials and an exchangeable stock of uniforms. Warnings on atomic and chemical danger have been organized and signals established to warn troop personnel, should there be the need.

The local population of population centers located in the zone within a radius of 8 km from the center of the target will be evacuated 5 days prior to the start of the exercise. Belongings will be removed and livestock driven out. The population from centers in the zone of 8-12 km will be moved to natural shelters or prepared crevices 3 hours prior to the start of the atomic bomb explosion, while all the population in the zone 12-15 km from the center of the explosion will be removed from buildings to 15-20 m away from structures 1 hour prior to the explosion. The population living 15 to 50 km from the center of the explosion will be prohibited from leaving their homes and moving around in this zone on the day of the exercise, while the population living along the flight path of the carrier aircraft will be temporarily evacuated 3 hours prior to the explosion of the atomic bomb.

Dosimetric posts will be set up 3 days prior to the start of the exercise in regional centers and large populations centers near the area of the exercise.

Two decontamination-washing points have been prepared for sanitary treatment of the local population should there be the need and the rendering of medical assistance anticipated.

Besides the special automobile battalion allocated for urgent evacuation of the population from the dangerous strip along the track of movement of the radioactive

cloud, an autotransport reserve has been created consisting of 240 cargo vehicles having increased capability to travel cross-country.

On the day of the exercise, rail traffic will be prohibited on the Koltubanovskiy - Novo-Sergiyevka segment for 4-8 hours, and civil aviation flights will likewise be prohibited along the flight path of the carrier aircraft.

In order to combat possible fires, a plan has been worked out to combat forest fires and fires in population centers.

The advancing troops have been reinforced with fire teams, specially created fire detachments, and sapper-engineering battalions, intended to extinguish fires along the path of troop movement.

There are two independent fire detachments in the leadership's reserve, as well as one sapper-engineering battalion and three fire teams.

Four fire teams have been allocated to fight fires which might arise in population centers within a radius of 8 km from the epicenter of the explosion, in Totskoye camp and at other military facilities.

## 2. General measures during the atomic strike

The aircraft crews and materiel have been trained for completing the task to drop the atomic bomb on the day of the exercise.

Instructions for the safety of troops and the population have been developed, as well as a memo for soldiers and sergeants where the sequence of actions have been laid out for troops and the population during the drop of the atomic bomb.

Flights of aircraft of all types are banned at all altitudes closer than 5 km from the boundary of the Totskoye artillery test range before 20 minutes have elapsed after the explosion of the atomic bomb.

Radiation survey has been organized in the area of the explosion of the atomic bomb and along the track of the radioactive cloud while military radiation survey has been organized in the field of operations of the troops.

## 3. General measures during the period of artillery training.

Measures have been taken for the safety of artillery firing. All troop personnel will be located in trenches, foxholes and other refuges during artillery training.

The troops have been given instructions on the procedure to conduct point-blank range firing with artillery; on the procedure to fire through over the heads of their own troops and in the gaps between them, as well as the procedure to store and account for combat shells and mines.

The whole artillery test range has been checked and all explosion-hazardous objects remaining on its territory from previous firings have been destroyed.

During the course of the exercise, a chain of sappers will move ahead of the advancing troops who have the task of marking the location and safeguarding all unexploded shells, mines, and other explosion-hazardous objects remaining after the

artillery training.

#### 4. General measures during aviation training

Identification signals of ground troops by their aircraft have been developed and transmitted to the troops.

The procedure has been developed for the release of bombing and attack aircraft to conduct bombing.

Bombing will be done at the command of the leader.

Independent bombing by individual aircraft when lagging or leaving the group is prohibited.

Small arms on bombers and fighters will remain unloaded during flights in the exercise area.

During the conduct of assault actions on the field of combat, aircraft are not allowed to depart from diving lower than:

- 500 m while bombing;
- 200 m while firing at the target with gunfire.

Air combat by aircraft is prohibited in the exercise area, as well as entering the radioactive cloud or flying under it, nor are aircraft to approach the cloud closer than 5 km when at the same altitude, nor are flights of aircraft to be completed when crews do not have light-filtering glasses.

The bombing areas - Lysaya (northern) and Kalanchevaya - are declared restricted zones and are surrounded by barbed wire fences with red flags. Passage of troops through these areas after bombing is forbidden.

#### 5. Safety measures upon detection of areas with high radiation levels.

Contamination of areas of the locale with radiation levels up to 25 roentgens per hour in the course of troop advancement will be overcome [[Translator note: cut off]]

Contaminated areas with radiation levels higher than 25 roentgens per hour will be declared restricted zones and the boundaries will be indicated by yellow-red flags and square pointers with the inscription "Danger! It is prohibited to be in this zone."

Upon detection of zones of hazardous contamination in the direction of troop movement, they will be bypassed by the troops along routes indicated by the corps commander and confirmed by the exercise leader.

The total dose of irradiation by troop personnel is not to exceed 10 roentgens for the entire period they stay in contaminated areas.

Upon exit from a contaminated area, sanitary treatment of personnel will be organized if needed, as well as decontamination of military equipment, arms and property.

With the aim of ensuring the safety of troops and participants in the should there be a ground-level explosion of the atomic bomb or a sudden change in wind direction, several options have been developed for the removal of participants and troops from the danger zone.

In the case that west, north or east winds arise after a ground-level explosion, the possibility that the exercise will be halted is not excluded..... [Translator note: ellipses as provided]

[Translator note: many pages missing]

The main rear units (medical-sanitary battalions, fuel stores) have dosimetrists and dosimetric equipment on their staff in order to determine the degree of contamination of the wounded and materiel.

ATs-28 water trucks, which have been introduced for troop supply, will be used to deliver water to troops and maintain its quality. Means to deliver water will also be ensured to deliver it also for decontamination in those areas where there are no natural sources.

In order to support the operation of washing and decontamination points for regiments and divisions, the necessary reserves of materiel and decontamination materials have been created.

Medical support is being organized at battalion, regiment and division medical points. Washing and decontamination sections have been deployed in division medical points for sanitary treatment of those affected by atomic weapons.

For the first time, a special-purpose medical battalion will be used in the exercise as a trial for a means of rendering fast and mass assistance to troops in hotbeds of contamination.

### Special Safety Measures

The atomic bomb will be dropped from a Tu-4 aircraft at an altitude of 9000 meters and will explode 350 meters above the earth. [[Translator note: cut off]]

[[...]] in areas near population centers. The Council of Ministers and the CPSU Central Committee have obliged [[illegible]] to conduct special safety measures.

A restricted zone has been established with a radius of 8 km from the center of the target, and from the side of the advancing troops along the river Makhovka, [the restricted zone is] 5 km from the target.

The drop of the atomic bomb will be done only under conditions of visual observation of the target, the absence of thunderclouds in the area of the exercise and with winds at an altitude of 12 km in a northerly direction in the sector from 300 degrees to 110 degrees from the center of the target.

The flight path of the carrier aircraft is laid from the north to the south at a distance of no less than 5 km from the troops. Shelters have been equipped for the troops of the advancing side, placed at a distance of 5 to 8 km from the center of the target. The placement of troops, military equipment and property outside shelters is permitted no closer than 8 km from the center of the target.

All personnel are supplied with individual chemical protection equipment, per the norms of wartime, and also equipment for partial decontamination and sanitary treatment.

Radiation survey has been organized.

Areas with radiation levels higher than 25 r/hr in the path of troop advancement are to be bypassed.

Evacuation of the population and the driving away of livestock from centers within the 8-km zone has been done for the period of the exercise. For those points in a zone 8-12 km from the center of the target, the population will be removed to shelters for the time of the explosion, while in the 12-15 km zone, they will be removed from buildings.

2-3 hours prior to the explosion, the population will be temporarily removed from population centers along the flight path of the carrier aircraft in a strip 10 km wide and 20 km deep from the center of the target.

Movement of trains on the Sorochinsk-Buzuluk section will be banned for two hours.

Aerial radiation survey will be organized in order to ascertain the direction of the movement of the radioactive cloud and to determine the radiation level along its track to a depth of 300 km.

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You will be familiarized on site with more detail on the organization of the exercise.

With this, allow me to complete my short report on the organization of the upcoming exercise.

I. Petrov