

**June 30, 1955**

**Letter from Iu. B. Khariton to N. I. Pavlov Regarding  
the Testing of a Nuclear Weapon at Object 700**

**Citation:**

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Translated for CWIHP by Ronen Plechnin.

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**Summary:**

The letter describes geographic, safety, and technical considerations taken into account when selecting a test site for the RDS-37 hydrogen bomb. Specifically, the letter highlights that a testing field should be chosen based on the existence of population centers, the terrain, and the main wind patterns.

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To Comrade N.I. Pavlov:

There are obvious difficulties associated with the testing of heavy atomic and hydrogen bombs in polygon No. 2. Certainly, testing weapons with a yield greater than 2 megatons is practically impossible in this site.

When considering the prospect of weapons testing in object 700 we should bear in mind not only the possibility of testing a marine bomb, but also of the testing of powerful nuclear weapons (particularly type 37 products) which cannot be tested in polygon No. 2.

The program of physical measurements (the measurements are conducted during the testing of nuclear weapons) has already been developed well enough by the existing measurement program in polygon No. 2. It consists of optical observations (fireball, cloud), ( . . . ) of the sampling for the purpose of conducting a radiochemical analysis.

After the explosion, we test combat equipment, various military and civil installations, and perform medical studies. We also study radioactive contamination in the territories situated near the explosion site, as well as the areas along the path of the radioactive cloud.

The nuclear weapons testing program in Object 700 should accomplish the same task as the program in Polygon No. 2: studying physical effects at the time of the explosion and measuring the magnitude of the explosion and the study of the explosion's impact on military equipment and various installations and facilities. The testing of device No. 37 would potentially necessitate additional measurements on the spread of light over the device's casing.

In light of the fact that that we will apparently use more powerful and more expensive devices in the tests in object 700, it would be desirable to preserve the physical measurements complex.

The studies on the effects of the explosion could be added to the very important studies done on the effects of atomic explosions on ships.

The detonation of the device at the pre-determined height in the air should be considered a more suitable testing method, since the most essential aspects of the observation (fireball, thermal measurement etc.) will be of much better quality, there will be significantly less radioactive contamination in the surrounding areas, and preparations for the explosion will not necessitate complex engineering efforts, unlike during surface explosions.

A testing field is appropriately located when its center is situated on land and close to the seaboard. The surface area part of the field [in object 700] should resemble the testing field in polygon No. 2; special equipment which will be carried by ships, some of which should be anchored at the time of the explosion, should be placed in the parts located in sea. Ship-targets should be placed in that area, as well hydro-technical installations. This design would allow us to conduct combined studies on the development and the effects of the explosion both over land and over water.

The question of choosing a testing field should be settled while taking into account the existence of population centers, the terrain, and the main wind patterns.

The question of testing marine weapon models was not examined by us as of yet.

Iu. Khariton

30 June 1955.