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**Реферат**

« Russia's nuclear weapons development »

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With its immeasurable destructive power and its ability to create immense disasters, nuclear weapons have become a symbol of power and at the same time a common threat to the sustainability of World Peace. From the first days of World War Monday, when the atomic bomb was first used in Hiroshima and Nagasaki, to this day, nuclear weapons have been subject to possible disasters. The risk of nuclear weapons has become increasingly significant as some countries, including Russia, continue to invest and develop new technologies to enhance their capabilities. In a dense historical region with changes in its international dynamics and aspirations, Russia is ahead of a new era of nuclear arms competition. New breakthroughs such as the Avangard nuclear missile, with its ability to strike opponents at supersonic speeds, and the Burevestnik unmanned nuclear missile, designed to be able to perform missions at long distances and times, pose significant challenges to the international community. This constant care and improvement is not only a manifestation of determination to protect national interests, but also creates strategic moves that emphasize the diversity and flexibility of Russia's defense capabilities.

As early as 1910 how the Soviet scientist conducted independent studies with other countries with radioactive elements. Despite many social and historical upheavals such as the Soviet revolution in 1917, then the Soviet civil war in 1922, the Russian Academy of Sciences still had remarkable physical achievements in the 1930s. In 1939, German scientist Otto Hahn discovered a fission reaction that separates uranium from neutrons to produce a much lighter element, barium and krypton. This eventually led to the fact that Russian scientists and their American counterparts realized that such a reaction could have military significance. This discovery excited Soviet physicists, and they began to conduct independent investigations into nuclear fission primarily aimed at electricity production. Many were skeptical about the possibility of the early creation of the atomic bomb, but Stalin was then hardly interested in the achievements in the field of nuclear science that Soviet scientists at that time achieved. Stalin concentrated on moving them to work in metallurgy and mining, or to serve in Military Engineering branches of a more direct nature on the battlefield. In the 1940s German British and American scientists stopped publishing articles on nuclear science. This clearly shows that the nuclear program of the countries turned to secret operations and raised concerns for Soviet military specialists at that time. If people notice, this is the stage where the Manhattan Project - the first nuclear bomb development project of the US, UK and Canada is being implemented. With high vigilance, Stalin noticed and immediately allowed physicists to conduct the project for the development of the atomic bomb.

The situation changed dramatically when the Soviet Union saw the atomic bombing of Hiroshima and Nagasaki in 1945. Shortly after that more than a year on October 25, 1946 the USSR succeeded in developing their first nuclear bomb and published it in the media. The United States, when it saw its nuclear monopoly, was broken and the nation's most shocked was its longtime rival. Why could the Soviet Union take such a rapid step beyond the United States in the development of nuclear weapons after all these years? From 1950, three Agents, David Greenglass, Klaus Fuchs, and Theodore Hall, were found stealing secrets from the US nuclear weapons and sent to the Soviet Union between 1940 and 1948, but there was still a fourth agent, codenamed Godsend, Oscar Seborer. He was the one who secretly sent the design of the US nuclear bomb to Soviet spies. They were all on direct duty at the Los Alamos National Laboratory, whose business was so good that it was discovered almost 10 years later. But the US intelligence was not very effective at the time. However, the most respectable business is not them, but another spy. On November 2, 2007, Russian President Putin shocked Western scholars by announcing the country's highest medal to Dr. George Abramovich Koval, who successfully infiltrated the Manhattan Project. Before this point Dr. Koval offered not to publicize what he had done. The secret was kept secret for nearly 65 years. In him there was the blood of the Jews, so Koval was likened to a genius when he achieved remarkable academic achievement at the Mendeleev Institute of Chemical Technology in Moscow. In addition, Koval took the form of a perfect American like playing baseball, speaking English in the correct American accent, so he caught the eye of the Soviet intelligence agency and was quickly recruited by the agency with the codename Delmar to bring back to the United States in 1940. Back in the United States, Delmar was registered as a youth in the country. Delmar once again demonstrated outstanding achievement and was given a Special Military Training Course in Manhattan for secret research programs. In 1944, the country's nuclear weapons project lacked the manpower so Delmar became a good candidate, especially when he had the appearance of a perfect American. Taking advantage of this opportunity Mr. Koval has tried to prove his ability to be respected and become a leading expert in the Manhattan Project. As a result, the agent was able to reach all over the cave and alley of important US nuclear facilities. Monday's World War II ended, Koval requested a withdrawal from the military to repatriate in 1948 and a multitude of U.S. nuclear secrets that the administration had no doubt about. By the time the Soviet Union successfully tested the atomic bomb in 1949, American officials had jumped to find out why their opponents had made such a rapid breakthrough. It was then that the FBI discovered the true identity of Dr. Koval and began interrogating those who had worked with him. It was too late, however, when Koval was at home. His life passed peacefully, although Koval at one point had to turn to the Soviet intelligence service for help in order to get a stable job at the university to raise his wife and children. In 2006, he died peacefully and was 96 years old.

After the period from 1950 onwards was the nuclear arms race - one of the focal points of the Cold War US - Soviet competition. In the years that followed this arms race was extremely exciting as the Soviet Union constantly developed new and more modern weapons. The first Soviet atomic bomb called “First Lightning” RDS-1 was tested on August 29, 1949 at a test site in the town of Semipalatinsk, in the Republic of Kazakhstan. According to statistics from the Center for control and non-proliferation: from 1949 to 1990 the USSR conducted more than 715 Public nuclear tests of different sizes in the atmosphere and underground; of course, we cannot forget the endurance test of the Tsarist bomb that shook the world's media in the 1960s and made the Americans themselves sweat. By 1986 the Soviet Union had about 40,000 nuclear warheads. Through a number of bilateral arms control agreements with the United States at the end and after the Cold War, Russia's Arsenal was significantly relieved. During that period, the presence of a trilogy of nuclear weapons, including ICBM intercontinental ballistic missiles, SLBM nuclear submarine-launched ballistic missiles and Strategic Air Force (VKs), was notable. Only by converging those elements will it ensure irreparable losses to potential enemies and deal nuclear strikes even in the context of large-scale conflict. At the beginning of 2022, the Federation of American Scientists - FAS announced that Russia now has 5,977 nuclear warheads, including about 1,500 that are no longer in service and prepared to be removed, the remaining 4,477 that are used, most of which are considered strategic nuclear weapons; they are often associated with nuclear warfare. Of these, about 1,588 strategic warheads were deployed, 977 ready-to-use warheads, and 1912 non-tactical warheads were stored in central warehouses. They are mounted on vehicles capable of launching these warheads, including: ground ballistic missiles; submarine-launched missiles; bombs and missiles that can be launched from aircraft; or even from missile bases located in secret locations. However, according to Sky News, the statistics are only information that Russia wants to tell the world, but the actual number can cause many countries to face back. According to a public statistic from the Russian side: at 11 sites, 39 regiments of the strategic missile force with models of intercontinental ballistic missiles such as R-36M, UR-100N, RT-2pm Topol, PC-24 Yars, consisting of various variants, are capable of carrying a total of 1,138 nuclear warheads. The majority of these missiles carry detachable warheads with separate navigation mechanisms; some of these have been renovated or planned to be equipped with promising weapons, including Avangard and RS-28 Sarmat ultrasonic missiles. The Russian Navy has 10 active nuclear submarines, including 06 project 667BDRM Delphin submarines, 01 project 667bdr Kalmar cruisers and 3 Project 955 Borey submarines; each designed to carry up to 16 SLBMs with a separate navigation structure. The Russian nuclear submarine is currently capable of carrying only about 600 r-29R and R29-MU2 warheads. The VKS Air Force has between 60 and 70 Tu-160 and Tu-95ms strategic bombers carrying missiles, of which no more than 50 are in a combat-capable state. Each aircraft can carry Kh-55 or Kh-101 cruise missiles with nuclear warheads and Kh-102 with thermonuclear warheads. A total of all Russian Tu-160 and Tu-95ms aircraft in combat ready operation can carry more than 700 cruise missiles containing nuclear warheads.

Let's look at three types of terrorist weapons stuffed, devastating in mega tons in Russia's nuclear arsenal. It can also be said that these are the three most destructive weapons in the world today. First nicknamed The Demon Satan sows horror with the ICBM R-36 intercontinental missile model. In the late 1960s the Soviet Union surpassed the United States in its ability to conduct the first strike with the concept of intercontinental missiles. Many reports say that the R-36 M2 ICBM could destroy U.S. LGM-30 Minuteman III ballistic missiles even before they leave the bunker. In the maximum upgraded version it is said to have greater power than any weapon in the U.S. arsenal. Since the existence of the missile was known, NATO has nicknamed it The Satanic missile. The R-36 M2 can strike anywhere in the United States. Its first version was equipped with a warhead with a destructive power of up to 20 mega tons. Its exact radius is in the range of 500m and its range reaches 16,000 km. From mid-2022 Russia still possesses 46 R36 missiles with each of which can carry 10 warheads. Although Russia plans to remove the Satanic missile arsenal under the terms of the 2010 New START Treaty, Russia is continuing to quietly develop new ICBM technology. The ICBM RS-28 SARMAT, developed in 2014 and described by Russian media as capable of wiping out parts of the Earth the size of a Texas or French state. The missile has a maximum range of 18,000 km and, more terribly, it achieves accuracy in the range of only 10 m and carries a multi-head warhead with an independent approach, the MIRV with a combined power of 50 mega tons. To make it easier to imagine its power, it can be seen that the most powerful American nuclear bomb in use is the B83, which is only 1.2 megatons or even the most powerful nuclear weapon in the history of the United States B-53 when it was only 90 tons, less than 1/5 of the powerful Russian RS-28 SARMAT. In terms of real warfare, it is 3,333 times more powerful than the atomic bomb thrown at Hiroshima in Japan, so if it explodes, it can wipe out a whole country. Not only is the amount of storage, but Russia is also dismantling and destroying other old models of missiles from the Soviet era. They will be replaced by successfully tested RS-28 SARMAT missiles. But if the propaganda of a missile dubbed the sa tank II capable of wiping Texas off the world map is not big enough, Russia boasts another nuclear - destructive weapon-a missile that is said to match or even double Sarmat's nuclear productivity, while reinforcing its destructive capabilities by creating a natural and man-made catastrophe, the STATUS-6 transatlantic Super torpedo. Although developed in Soviet times, All information related to STATUS-6 is kept confidential. Although the Russian side denies the STATUS-6 information, the design revealed on television confirmed that the STATUS - 6 is shaped like a torpedo zoomed in, capable of acting independently as a diving robot, and especially the speed of movement up to 185 km/h. Once deployed by the Russian Navy submarine, the unmanned device can automatically move to a more extensive target of about 10,000 km at a depth of about 1 km after finding the target. In many respects STATUS-6 is even more devastating than ICBM. Russian military expert Andrey Sakharov believes that the STATUS-6 can carry a warhead of up to 100 mega tons, twice that of the RS-28. When detonated this terrible weapon will create a radioactive tsunami up to 500m high engulfing the enemy's coastal infrastructure. Without a thermonuclear warhead, it will cause serious radioactive contamination of the enemy's waters and turn that area into Dead Ground. Clear STATUS-6 is designed for use as an apocalyptic weapon. It is a weapon that he created not to win wars, but to end life on Earth.

In the new decade, the development of Russian nuclear weapons is a race that does not stop, presenting challenges and worries about international security. Nuclear technological breakthroughs put Russia in an increasingly important position in this race in this context, with the international community facing the challenge of building effective nuclear arms control agreements and mechanisms. The course of Russian development is not only a story of power, but also a reminder of the general responsibility of the world to the global threat.Some argue that it is advisable to maintain the mindset of the Cold War to prevent war, just as in that time both Russia and the United States were aware that launching a single nuclear weapon is all that is needed to start a series of retaliatory attacks. Nuclear war will lead to an apocalypse for most citizens of each country. When the result is the end of the world, the first explosion is of whom, no matter how big the power is, really does not matter. In general, Western intelligence agencies have been keeping the most close eye on the movement of these weapons of destruction from Russia in order to avoid facing a war that will come on Tuesday and not face the suitcases containing the nuclear red button restarted.

**Список используемых источников**

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