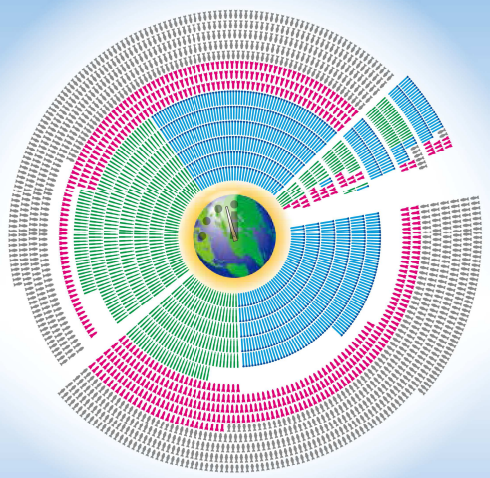
A Guide to the World's Nuclear Warheads Count July 2017



14,900

PCU Nagasaki Council for Nuclear Weapons Abolition (PCU-NC)

Research Center for Nuclear Weapons Abolition, Nagasaki University (RECNA)

Introduction

"The World's Nuclear Warheads Count" is an easily understood illustration of the current state of the world we live in, showing approximately 15,000 nuclear warheads in the world by country and by type.

The PCU Nagasaki Council for Nuclear Weapons Abolition (PCU-NC) and the Research Center for Nuclear Weapons Abolition, Nagasaki University (RECNA) began producing this poster in 2013 as an educational resource for all audiences, from elementary school students to adults.

As part of the peace education efforts carried out every August at Hiroshima's and Nagasaki's Atomic Bomb Memorials, we present annual updates on the latest information every June.

The detailed data of this poster, which was compiled by the "RECNA Nuclear Warhead Data Monitoring Team," including RECNA staff, has been published on our website. (http://www.recna.nagasaki-u.ac.jp/recna/en-nuclear) Please see the website for further details. This data is updated from time to time.

We hope this guide will aid those using the poster in understanding background information and terminology in simple, plain terms. It should be especially useful in the education field, particularly in schools.

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Frequently Asked Questions

Q1. What is the difference between a "nuclear warhead" and a "nuclear weapon"?

The fact that atomic bombs were dropped on Hiroshima and Nagasaki by U.S. B29 bombers is well known. Nowadays, there is a diverse range of nuclear weapons, including various kinds of missiles, artillery shells, and torpedoes, in addition to nuclear bombs similar to the ones dropped on Hiroshima and Nagasaki. A "warhead" is the part of a nuclear weapon that causes an explosion. A nuclear warhead is the heart of the weapon, but the warhead alone is not considered a weapon. Complete nuclear weapons consist of a number of parts, including components that can detonate the bomb at any specific altitude and guide it towards its target except for bombs that are dropped in a freefalling manner. nuclear bombs are often equipped with an engine. Since bombs are designed to be compact, it can be difficult to distinguish where the warhead is exactly located. If the nuclear warhead and the missile that carries it are separable, the missile is called a " delivery vehicle".

Q2. What is the difference between a "nuclear weapon" and an "atomic bomb"?

An atomic bomb is a type of nuclear weapon. Nuclear weapons are roughly divided into two types: atomic bomb and hydrogen bomb. An atomic bomb uses the energy released by the fission of a uranium or plutonium nucleus. On the other hand, a hydrogen bomb uses the more powerful energy from the fusion of hydrogen nuclei. The nuclear fusion process requires a high temperature and pressure, triggered by an atomic bomb explosion. Nearly all modern nuclear weapons produce a large amount of energy by using a combination of nuclear fission and fusion. The most powerful nuclear weapon ever created by mankind thus far was a hydrogen bomb called "Tsar Bomba" (meaning "the Emperor of Bombs"), which was detonated by the Soviet Union on the island of Novaya Zemlya in the Arctic Circle on October 30, 1961. Its explosive yield was 50 megatons, which is 3,800 times that of the atomic bomb detonated over Hiroshima.

Q3. North Korea's nuclear weapons: How advanced are they?

Rather than promoting a Cold War era-like increase in the power and numbers of nuclear weapons, current technological advances have focused on miniaturizing nuclear warheads, multiplying the number of warheads that can be loaded in a single missile, and increasing the accuracy of missiles. It is an unfortunate reality in the world today that the nuclear powers continue to possess long-term programs for the modernization and capacity-building of their nuclear arsenals.

The Democratic People's Republic of Korea (DPRK, North Korea) has continued to develop its nuclear weapons program. In 2006, the DPRK conducted its first underground nuclear explosive test, following the declaration of its withdrawal from the Nuclear Non-Proliferation Treaty (NPT) in January 2003. In spite of repeated calls from the international community for it to terminate nuclear testing, the DPRK has conducted nuclear tests an additional four times—in 2009, 2013, and 2016 (January and September). Moreover, the DPRK is pouring effort into developing nuclear-capable missiles, and repeatedly conducts various missile test launches.

Actually, the overall picture of the DPRK's nuclear program is unclear. Although on our poster we estimate the number of nuclear warheads possessed by the DPRK to be less than 20, there is no agreed estimation among researchers and research institutes, and no one knows the exact figures. Nevertheless, it is almost certain that the nuclear technology of the DPRK has advanced steadily, and many experts are raising serious concerns that the DPRK has already succeeded in miniaturizing its nuclear warheads so that they can be fit onto their missiles.

The conflict between the DPRK and its neighboring countries has been aggravated. The United States is becoming more aggressive, warning that it would not exclude military options against the DPRK if necessary. Likewise, Japan and South Korea are increasing military pressure on the DPRK. Such attitudes have caused rising tension in the region while hardening the DPRK's attitude.

Q4. Will the adopted nuclear weapons ban treaty eliminate nuclear weapons?

On July 7, 2017, the Treaty on the Prohibition of Nuclear Weapons was adopted. This is the first international law to categorically outlaw all nuclear weapons. Based on international humanitarian law, this ground-breaking treaty prohibits signatories from developing, testing, possessing, using, or threatening to use nuclear weapons, as well as assisting or encouraging anyone to engage in any activity prohibited under the treaty. Recognizing the unacceptable suffering of victims, including the *hibakusha* of Hiroshima and Nagasaki and those affected by the testing of nuclear weapons, the treaty articulates the positive obligation of signatories to adequately provide assistance to these victims. The efforts of civil society—including the *hibakusha* of Hiroshima and Nagasaki, as well as many like-minded countries that have acted in concert with civil society movements— to raise awareness of the inhumanity of nuclear weapons have finally borne fruit.

Of course, the adoption of a ban treaty does not automatically means that we will soon achieve the goal of abolishing nuclear weapons. Countries with nuclear weapons and those under the "nuclear umbrella" have been taking a negative stance toward the treaty and are unlikely to join it, at least for the time being. However, the adoption of this treaty, which clearly brands nuclear weapons as illegal, will help to stigmatize such weapons. Nuclear weapons are now not only immoral, but also illegal—this fact can exert further pressure on those countries relying on nuclear deterrence to review their policies.

The United States and Russia Own 93% of the World's Nuclear Warheads

The nine countries that possess nuclear warheads are the United States, Russia, France, the United Kingdom, China, Pakistan, India, Israel, and North Korea.

Five of these countries— the United States, Russia, France, the United Kingdom, and China—are defined by the Nuclear Non-Proliferation Treaty (NPT) as Nuclear Weapon States, as they were conducting nuclear testing at the time of NPT negotiations. India, Pakistan, and Israel possess nuclear weapons outside of the NPT framework. North Korea withdrew from the NPT in 2003.

Comparing the sizes of the areas bordered by the brown dotted lines you will see that the numbers of nuclear weapons possessed by the United States and Russia are almost equal. In the current post-Cold War era, relations have improved between these two countries, but nuclear weapons remain in a state of "high alert" in which they can still be fired at any time within a matter of minutes. The risk of nuclear disaster—whether by design, human error, or accident—continues to exist.

In February 2011, the New START Treaty signed by the United States and Russia came into effect, mandating that the number of deployed strategic nuclear warheads held by each country be reduced to 1,550 or less by the year 2018. However, this mandate falls far short of a substantial reduction in their nuclear arsenals since even if these two countries fulfill this objective, the United States will only reduce their arsenal by a couple of hundred rounds, while Russia has already achieved the target goals under the treaty. With the deterioration of United States-Russia relations over the Ukraine and Syria situation, there does not appear to be any sign of progress towards discussions on a successor to the New START Treaty.

The Trump Administration, which was inaugurated in January 2017, is currently in the process of drawing up the Nuclear Posture Review (NPR), which establishes guidelines for United States nuclear policy. Although the details are yet to be worked out, government officials, including President Trump himself, have openly expressed their willingness to strengthen the United States' nuclear deterrence in order to confront the threats posed by North Korea and Russia. There is high concern that the Trump Administration will dramatically change United States nuclear policy to retrogress from pursuing a world free from nuclear weapons as envisioned by the former Obama Administration.

"Operationally Deployed Nuclear Warheads"
Nuclear warheads which are deployed at a military unit and are capable of use.

"Strategic Nuclear Weapons"
Nuclear warheads to be mounted on nuclear weapons for the purpose of attacking enemy cities and major military installations. Non-strategic nuclear weapons, by contrast, have a more limited usage in battlefield situations. Non-strategic nuclear weapons include "tactical nuclear weapons" and "theater nuclear weapons."

Types of Delivery Vehicles and Nuclear Warheads

The types of delivery vehicles for nuclear warheads are divided into the following three categories. Each icon represents five nuclear warheads.

Nuclear warheads deployed at sea; e.g., Submarine-Launched Ballistic Missiles (SLBMs)

SLBM
"Submarine-Launched Ballistic Missiles (SLBM)"
Ballistic missiles capable of being launched from submarines.

Nuclear warheads deployed on land; e.g., Intercontinental Ballistic Missiles (ICBMs)

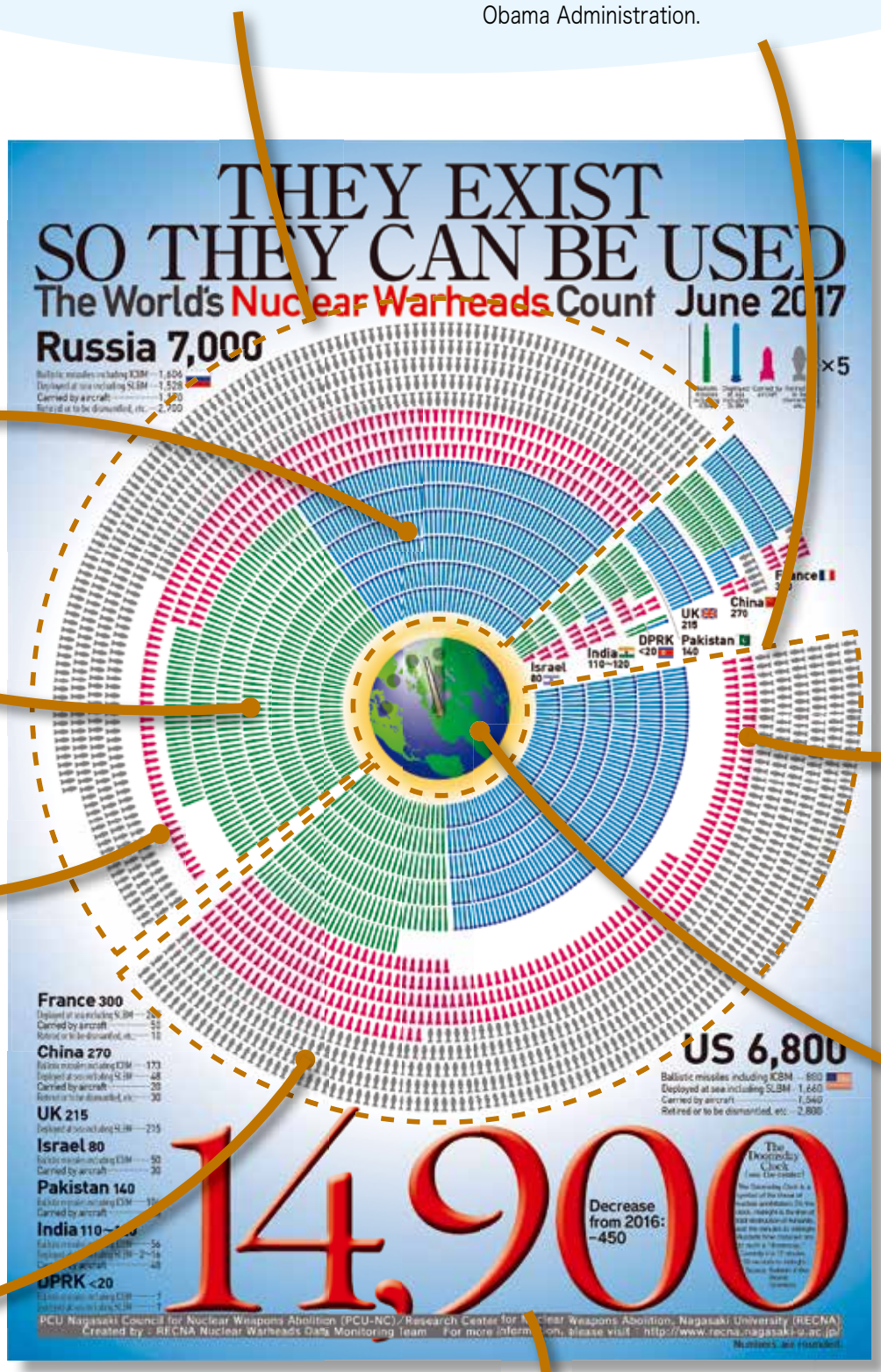
ICBM
"Intercontinental Ballistic Missiles (ICBM)"
Land-based ballistic missiles with a range of 5,500 km or more.

Nuclear warheads carried by aircraft; e.g., bombers

All three of these categories contain nuclear warheads that are either "operationally deployed strategic nuclear warheads", "operationally deployed non-strategic nuclear warheads", or "reserve/non-deployed nuclear warheads".

"Reserve/non-deployed nuclear warheads"
Reserved warheads which are not operationally deployed, but are stored for possible future use.

In addition the above, we have established a category for "retired and to-be-dismantled" warheads. Although these nuclear warheads have been retired from military stockpiles and stored for dismantlement, this does not necessarily eliminate the possibility of their reuse.



Nuclear Bombs in Germany and Italy

The United States deploys about 180 non-strategic nuclear warheads in five NATO countries (Belgium, Germany, Italy, the Netherlands, and Turkey). This deployment is a relic of the Cold War. Calls for removing these weapons have been growing within Europe, but they have yet to be realized.

Two-and-a-Half Minutes until Nuclear Annihilation?

Drawn on the image of the Earth in the center is the "Doomsday Clock." Continuously published since its first publication in the Bulletin of the Atomic Scientists in 1947, this countdown to midnight represents the countdown to annihilation of humankind by nuclear war, symbolizing how close we are to a global crisis. The closest the world has ever been to doomsday was in 1953, when the countdown was two minutes to midnight, due to the success of hydrogen bomb experiments by the Soviet Union. In January 2017, the countdown became two-and-a-half minutes to midnight, which is the closest the clock has come to doomsday since 1953. The reasons for this include the growing possibility of nuclear weapons use; the danger of nuclear proliferation risks, including to non-state actors; and the inauguration of the Trump Administration, which is unmotivated in promoting nuclear disarmament.

The Total Number of Nuclear Warheads in the World: Approx. 14,900

As of June 2017, the total number of nuclear warheads in the world is approximately 14,900. Information about nuclear weapons is generally kept as a state secret, so countries do not usually publish detailed data about them. As such, researchers and experts all of the world who are tackling this issue must estimate the number, types, and operational status of the nuclear weapons possessed by each country. This poster was created following careful examination of information from various sources.

What is your impression of the number of nuclear warheads of "14,900"? At the peak of the Cold War in 1987, the world had nearly 70,000 nuclear warheads. The number of nuclear warheads has been significantly reduced, but at a very slow rate. Our capability for " overkill" -- to kill all life on Earth multiple times over -- has not changed.

As of last year (June 2016), the total number of nuclear warheads was 15,350; that is, the world managed to dismantle 450 nuclear warheads over the previous year. However, this is not a simple situation. All nine of the world's nuclear powers have plans for modernizing their nuclear arsenals. As their nuclear weapons systems gradually become obsolete, so countries have been planning to renew them. It should be noted that such plans involve enormous budgets.