

# **The Nuclear Bomb and How It Changed The World**

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“The human race cannot coexist with nuclear weapons” (Iccho Itoh Quotes). Iccho Itoh, former mayor of the city of Nagasaki, stated this as a part of the Nagasaki Peace Declaration in 1995. Merl Resler, a 91-year-old Pearl Harbor Survivor and a WWII Hero, said the world is a safer place because of the nuclear bomb, as it was the single event that ended the WWII (Merl Resler – An American Hero). The perspectives are many but very few would disagree that nuclear bombings of Hiroshima and Nagasaki were a major turning point of the 20th century. The goal of this paper is to demonstrate how the atomic bomb was a major turning point that affected military and political policies of all nations by introducing a novel weapon of unimaginable power, while also creating a completely new set of political tactics and establishing many new organizations and pieces of legislation in order to deal with all the new issues facing the world in the modern nuclear age.

In 1938, Germany was making progress in its scientific research towards building an atomic weapon. But Hitler’s persecution of Jewish scientists proved to be a mistake. Many of these scientists fled Germany and took political asylum in the USA. Albert Einstein was one such scientist (The Manhattan Project). US started working on developing an atomic weapon in 1940, after Einstein warned that Nazi Germany was already doing research on nuclear weapons. United States’ secret project to build the atomic bomb was codenamed the Manhattan Project. By the time US conducted the first test in New Mexico in 1945, Germany was already defeated. However, the war against Japan continued to rage. President Truman was advised that any attempt to invade Japan would result in heavy American casualties. He ordered that a new weapon be used to bring the war to a speedy end. Within one month of a successful nuclear test, US dropped the atomic bomb on Hiroshima (Atomic Bomb Dropped on Hiroshima). A blast equivalent to the power of 15,000 tons of TNT reduced four square miles of the city to ruins and immediately killed 80,000 people. Tens of thousands more died

in the following weeks from wounds and radiation poisoning. Three days later, another bomb was dropped on the city of Nagasaki, killing nearly 40,000 more people. A few days later, Japan announced its surrender (Atomic Bomb Dropped on Hiroshima).

More than 60 years after the bombings in Hiroshima and Nagasaki, the atomic bomb continues to be a controversial topic. The sufferings and the aftermath of these nuclear explosions were so far reaching, that no nation has ever used the atomic bomb since. As time went on, all major countries wanted a nuclear weapon, but no country would dare to use it. Never in the history of warfare, had a nation experienced such devastating power as the nuclear bomb. Never in the history of politics, had a nation experienced such a crucial weapon that changed the world of politics forever. The bomb was a major turning point as it brought the World War II to an end and changed the world in endless ways.

### **MILITARY ASPECTS**

The atomic bomb changed the global power equation significantly. US became a military superpower along with the USSR. The rivalry between the two superpowers led to the Cold War, which in turn led to the nuclear arms race.

The Cold War has its origins even before the WWII. Both US and Russia disliked each other and their political systems (Trueman). USA was democratic while Russia was communist. They were Allies during the World War II only because they had to fight a mutual enemy, which was the Nazi Germany. After the war, the USSR had a vast army in the field while the Americans had the most powerful weapon in the world, the atomic bomb, and the Soviets had no way on knowing how many America had. In this background, the relationship after the war ended returned to that of mutual distrust (Trueman). Both countries feared of an attack from the other. Soon after the Manhattan Project became a success, the Soviet Union developed its own atomic bomb. With these new weapons that could destroy

entire cities and civilizations, the atomic arms race and the Cold War began.

Merl Resler, the Pearl Harbor survivor, confirmed the worldview that the nuclear bombings were the biggest turning point in the history of warfare because it immediately ended the World War II. He also stated that the bomb established America as a superpower of the world and thus led Americans to feel more secure and safe now that countries would think hard before attacking the USA (Merl Resler – An American Hero).

Nuclear-armed states became more powerful than non-nuclear states because there were fewer risks involved in attacking non-nuclear states than attacking nuclear ones (Marquardt). Once a state possessed nuclear weapons, the cost of invading that state increased, making it more difficult and expensive for the invader to gain a military edge (Marquardt). For example, Iraq, a country located in the Middle East, was developing a nuclear reactor in the early 1980s. But Israel, the only country in the Middle East that owned nuclear bombs, feared that the nuclear reactor would be used to build a nuclear weapon (Marquardt). This would cause Israel to lose their nuclear monopoly in the Middle East and therefore lose leverage with other countries in the region (Marquardt). Since Iraq did not yet have nuclear weapons, Israel was able to launch a successful military strike in 1981 on the Iraqi nuclear reactor without the fear of a powerful retaliation (Marquardt). In short, nations acquired nuclear arms in an effort to avoid war, not to start war.

America and Russia always had a much larger arsenal of nuclear weapons compared to other countries because of the Cold War. Even today, both the US and Russia have nuclear weapons pointed at each other although the numbers have been going down. Russia currently has about 10,000 total nuclear warheads and America has about 8,500 (Which Countries Have Nuclear Weapons?).

Nations who want to get nuclear weapons capability try to be secretive about their plans (Marquardt). This keeps their enemies guessing and helps protect them against other

nations taking aggressive actions (Marquardt). North Korea is one such example. Since the time when US publicly considered North Korea a threat, Pyongyang has sent out many conflicting statements so they can create a perception that North Korea could be a nuclear-armed state (Marquardt).

The competition to build more and more nuclear weapons was followed by building missile defense systems. The nations were trying to protect their citizens against enemy attacks. The missile defense program maybe traced back to the period right after the World War II. The program included treaties such as the Anti-Ballistic Missile or ABM treaty that supported its objective. Reagan proposed the Strategic Defense Initiative or SDI, popularly referred as Star Wars in 1983, to use ground and space-based systems to protect America from ballistic missile attacks (History of U.S. Missile Defense Efforts). The end of the Cold War led to criticism that the SDI was no longer necessary, and in 1993 the SDI was modified and renamed to the Ballistic Missile Defense Organization or BMDO (History of U.S. Missile Defense Efforts).

### **POLITICAL ASPECTS**

The political aspects to foreign policy resulting from the bombings are also a major turning point in the world. The nuclear powers and their allies have put pressure on non-nuclear states to prevent them from producing and developing nuclear weapons (Marquardt). Israel's nuclear monopoly in the Middle East with their fear over Iraq's nuclear reactor is an example of nuclear-armed states working to prevent the spread of nuclear weapons in order to preserve their power and increase their foreign policy leverage in the region (Marquardt). In the political arena, nations have used many different ways to deal with nuclear issues without going to war. Deterrence, Brinkmanship and Non Proliferation are the key instruments.

***Deterrence.*** The concept of deterrence can be defined as when one party tries to convince another party to refrain from initiating a course of nuclear action. Mutually Assured Destruction or MAD was a doctrine that evolved in 1960s. MAD promises that even after a surprise attack, each adversary will have enough weapons to inflict unacceptable damage to other party. Therefore the adversaries would be deterred from initiating a nuclear war. A threat serves as a deterrent to the extent that it convinces its target not to carry out the intended action because of the costs and losses that a target would incur. In short, whoever shoots first, dies second (Nuclear Files).

Nuclear testing was an example of deterrence employed by the US and the USSR in the 1950s. Nuclear testing gave a competitive edge in technology and military preparedness for each country. Halts in testing were used as deterrents to contain each of the adversaries.

***Brinkmanship.*** The Cuban Missile Crisis is a classic example of nuclear brinkmanship. When CIA detected military bases in Cuba, which was just 50 miles from Florida, USA felt threatened. To make matters worse 14 Russian ships were on their way to Cuba with more missiles. Kennedy decided to blockade Cuba and gave an ultimatum that USA would invade Cuba if the Russians did not remove the missiles (Trueman). The Russian leader, Khrushchev agreed to remove the missiles and within months they were all gone. The Cuban missile crisis was over but this was the closest the world came to the brink of nuclear war (Trueman).

US Secretary of State John Dulles in the Kennedy Administration defined his policy of brinkmanship, as "The ability to get to the verge without getting into the war is the necessary art." This is when two countries pressure each other to threats of war without going over and actually waging the war (Blanton). During the Cold War, this was used as a policy by the United States to coerce the Soviet Union into backing down militarily. During the Cuban Missile Crisis Secretary of State Dean Rusk said, "We're eyeball to eyeball, and I think the

other fellow just blinked," (Blanton). This quote is a testimony to just how close the US to a full-scale nuclear war. The belief was that if you stand tough you win, and that nuclear superiority makes the difference in moments of crisis (Blanton).

*Non- Proliferation.* The concept of nuclear nonproliferation is the prevention of spread of nuclear weapons, technology and materials. The original objective was to prevent non-nuclear nations from possessing nuclear weapons in order to reduce the risk of nuclear war and destabilize international relations. Recently there is a lot of concern about terrorists getting hold of these weapons and this has become a very important challenge to global security (Bureau of International Security and Nonproliferation). The goals of non-proliferation are focused on three main areas - detect use of nuclear technology to make weapons, secure nuclear weapons and technology and dispose the surplus radioactive material.

One of the challenges is the dual use of the nuclear technology. Since the nuclear technology can also be used to generate power for civilian use, it becomes very difficult to detect if any nation diverts the technology to make weapons.

A major international treaty was signed in 1970 called the Nuclear Non Proliferation Treaty or popularly known as the NPT. Many federal agencies like the IAEA, NNSA and NSG are all working towards the goals of non-proliferation. Some countries argue against the NPT because of its inherent unfairness that some countries are allowed to have nuclear weapons while most others are not. 190 countries have signed the NPT. Notable non-signatories are Israel, India and Pakistan.

## **LEGISLATIONS & TREATIES**

With the explosions in Hiroshima and Nagasaki, the nuclear era began. Nuclear technology resulted in many international treaties and legislations. This is because while

there were many dangers of nuclear technology, there were big benefits as well like power generation. Many countries wanted to use the technology to generate power without really wanting to develop weapons. Many institutions were created to stop the nuclear proliferation and to allow the use of nuclear technology for peaceful applications. The International Atomic Energy Agency or IAEA is a prominent institution created in 1957 to promote the safety, security and peaceful uses of nuclear energy. UNODA is another institution to strengthen the disarmament of weapons of mass destruction, including nuclear, chemical and biological weapons (UNODA - Non-Proliferation of Nuclear Weapons (NPT)).

Treaties like the Nuclear Non Proliferation Treaty or NPT were signed by approximately 190 countries to prevent the spread of nuclear weapons. This treaty promotes cooperation in the field of peaceful nuclear technology and provides equal access to this technology among all the nations who have signed on to the treaty. The NPT explicitly states in Article IV, "...All the Parties to the Treaty undertake to facilitate, and have the right to participate in the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy." It also enforces safeguards to prevent the diversion of radioactive raw material for weapons use. "Each State Party to the Treaty undertakes not to provide: ... (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material..." (Treaty on the Non-Proliferation of Nuclear Weapons). Another important treaty signed between USA and the Soviet Union was the ABM treaty focusing on limiting ABM systems. The ABM treaty clearly states in Article I, "Each Party undertakes to limit anti-ballistic missile systems and to adopt other measures in accordance with the provisions of this Treaty," (Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems). The ABM is a missile designed to destroy incoming missiles in mid-air such as ICBM or Intercontinental Ballistic

Missile, before they hit the ground and cause great destruction. The ABM treaty also states in Article II, “For the purpose of this Treaty an ABM system is a system to counter strategic ballistic missiles or their elements in flight trajectory...” (Treaty between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems).

With nuclear accidents like in Chernobyl, Russia in 1980s, and Three-Mile Crisis in US, many institutions were created under the UN to focus on safety and emergency assistance when nuclear accidents happen (Chernobyl Accident 1986). Nuclear laws like all laws must comply with national legal systems, but these laws are quite complex and technical since this technology poses great risk to human health and international security.

## **CONCLUSION**

The atomic bomb of Hiroshima and Nagasaki was a major turning point in history as it left a lasting imprint on the world. It completely changed the military and political aspects of foreign policy in the 21<sup>st</sup> century, by establishing a novel set of paradigms, legislations, and organizations. The implications of the bomb will continue to affect humans around the world for years to come.

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