

Nuclear Balance of Force Today

M. Wehbi

Abstract: *The world was introduced to nuclear powers in 1945 when the US tested their first ever nuclear bomb; this led to numerous countries following suit – particularly Russia. In terms of managing the nuclear powers, there has been a slow yet steady increase in not only the weapons in storage but also the countries successfully testing the nuclear means. This has been the cause of unchecked nuclear arsenal deposits; now agencies have been monitoring the nuclear powers and gaining their agreement to curtail the arsenals already stored and to deter any new countries from joining into the nuclear race.*

Keywords: Nuclear Balance

1. Introduction

At the beginning of the world's nuclear age, it was the United States at the forefront. The United States had high hopes that they would be able to maintain the required monopoly on the newest weapon in its arsenal: the nuclear bomb. However, the secrets as well as the technology required for making of nuclear weapons was soon spread globally. The United States military conducted the first ever nuclear test explosion in the July of 1945 and then went on to drop two atomic bombs during its war against Japan: on the Japanese cities of Nagasaki and Hiroshima in the August of 1945. It was just four years later in 1949 that the Soviet Union (currently Russia) successfully conducted their first ever nuclear test explosions. They were followed by the United Kingdom in 1952, then by France in 1960, and then China in 1964. With more and more countries joining the nuclear ranks, in order to prevent these nuclear weapon holding ranks from expanding any further, the governments of the United States as well as other like minded states went on to negotiate the NPT: Nuclear Nonproliferation Treaty in the year 1968; which was followed by the CTBT: The Comprehensive Nuclear Test Ban Treaty in the year 1996 (Waltz, 1981).

Three countries: India, Pakistan and the Israeli enemy had never signed on to the NPT and went on to possess their own nuclear arsenals. Before the Persian Gulf war Iraq also initiated their secret nuclear program which was carried out under Saddam Hussein's regime in 1991. A previous party to the agreement: North Korea went on to announce it was withdrawing from the signed NPT in January of the year 2003 and has gone on to test various nuclear devices since then. Other countries such as Iran and Libya are known to have pursued their own secret nuclear activities which are in violation of NPT treaty's terms; Syria has also been suspected of carrying out illegal nuclear experiments. Even with these activities, nuclear nonproliferation has been a success: the successes have frequently outnumbered the failures and the expert's dire forecasts created decades ago claiming the world will be one big nuclear power has not occurred (Snow, 1979).

Back at the time of the NPT's conclusion, there were huge nuclear stockpiles of nuclear weapons by both: United States and Russia. These numbered in approximately thousands. It was in the beginning of the 1970s, that the United States and Russian leaders went on to negotiate a sequence of bilateral arms controlling agreements as well as initiatives which in turn limited, and then later on helped to significantly reduce,

the numbers of their nuclear arsenal. As of today, both of these countries: United States as well as Russia each hold approximately 1,400 strategic nuclear warheads placed on several hundred of their bombers as well as missiles, and both of them are now focusing on modernization of their nuclear delivering systems. On the other hand, the states of China, India, as well as Pakistan are all pursuant to newer ballistic missile along with cruise missiles, and even sea based nuclear delivering systems. This is in addition to Pakistan lowering their thresholds for their nuclear weapons uses by the development of tactically able nuclear weapons with capabilities to counteract against any perceived Indian military threats on its homeland. North Korea has continued its nuclear programs in deft violation of the earlier taken denuclearization pledges on the global stage (Younger, 2000).

2. Current Nuclear Weapon States

Currently in the world there are 5 nuclear weapon states (also known as the NWS). These include China, Russia, France, United States and the United Kingdom. These are the states that have been officially recognized as being possessors of nuclear weapons under the NPT treaty. This treaty legitimizes the states held nuclear arsenals, while also establishing rules that these countries are not presumed to continue building and maintaining such weapons in the long run. It was in 2000, that the NWS signees committed to an "unambiguous undertaking in order to accomplish total elimination in terms of their held nuclear arsenals (Ploughshares Fund, 2020). Due to the secretive nature due to which most of the governments treat the information pertaining to their nuclear arsenals, the below figures are best estimates. These include low yield devices as well as strategic warheads:

- 1) China currently holds around 290 total nuclear warheads.
- 2) France currently holds around 300 total nuclear warheads.
- 3) Russia has declared their arsenal in March of 2019 under the New START as having 1,461 strategic nuclear warheads which are deployed on 524 delivery systems including intercontinental-able ballistic missiles, submarine launched ballistic missiles, as well as strategic bombers. However, the FAS: Federation of American Scientists has estimated that there are approximately 4,490 nuclear warheads stockpiled as well as 2,000 retired nuclear warheads making the grand total of 6,490 warheads.

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- 4) United Kingdom currently holds around 120 strategic nuclear warheads. There is knowledge that around 40 are deployed in the seas on various nuclear ballistic missile activated submarines at any particular given time. In terms of delivery systems, the United Kingdom holds a total of only four ballistic-ally able missile submarines. The total stockpile of the UK is estimated to be 200 nuclear warheads.
- 5) United States also declared their warheads under the New START declaration of March 2019. The US possesses 1,365 strategic warheads which are deployed on 656 delivery systems. These systems include intercontinental ballistic missiles, submarine launched ballistic missiles, as well as strategic bombers. The FAS estimated that there are approximately 3,800 nuclear warheads stockpiled as well as 2,385 nuclear warheads retired for a grand total of 6,185 nuclear warheads (Ploughshares Fund, 2020).

Current Non-NPT Possessors

Three states: India, Pakistan and the Israeli enemy had never signed on to the NPT; these three states are now known to be in possession of nuclear warheads. India was the first one to test a nuclear explosion device in the year 1974. This test resulted in spurring Pakistan to speed up the work on their secret nuclear weaponry program. In May of 1998, India and Pakistan both went on to publicly demonstrate their nuclear weapons capability with rounds of tit for tat nuclear tests. On the other hand, the Israeli enemy has not gone to publicly conduct any nuclear tests, neither does it not admit or deny their possession of nuclear weapons. In addition, The Israeli enemy states that they will not be the first country to bring about the introduction of nuclear weapons to the Middle East region. Nonetheless, the Israeli enemy has been and is still universally believed to be in possession of nuclear arms: even though it is extremely unclear as to how many (Ma & Gal, 2019).

The below nuclear weapon arsenal estimates have been based on amounts of fissile materials: the highly enriched uranium deposits and plutonium deposits which each of the three states has been estimated to produce. These fissile materials are the key elements for the making of nuclear weapons; it is believed that India and the Israeli enemy use plutonium in their nuclear weapons, on the other hand Pakistan is believed to use the highly enriched uranium (Arms Control Association, 2019).

- 1) Pakistan is expected to have between 150 to 160 nuclear warheads.
- 2) India is expected to have between 130 to 140 nuclear warheads.
- 3) The Israeli enemy is expected to have an estimated 80 to 90 nuclear warheads; as well as fissile materials for producing up to 200 nuclear warheads.

States posing Immediate Proliferation Concerns

Before the implementation of CTBT, Iran had already pursued their uranium enrichment programs as well as other projects which provided Iran with the capabilities to produce bomb graded fissile materials and subsequently develop their nuclear weapons, if they wanted to. Iran is still continuing its uranium enrichment program: however it is severely restricted as well as monitored by various nuclear

deals. North Korea had announced withdrawal from the signed NPT in the year 2003 and has gone on to test nuclear devices as well as nuclear capable ballistic missiles. There is a lot of uncertainty around the number of nuclear devices which North Korea has been able to assemble. In the year 2007, the Israeli enemy went on to bomb a site located in Syria which was widely evaluated to be the nuclear reactor which was being constructed in Syria with North Korea's assistance. Since then Syria has been refusing all attempts to cooperate with International Atomic Energy Agency (Arms Control Association, 2019).

Iran

There are no known nuclear weapons or reports of sufficient fissile materials stockpiled in order to build nuclear weapons. It was the IAEA: The International Atomic Energy Agency, which was the institution charged with the verification of states which are not engaged in illicit building of nuclear weapons which went on to conclude in the year 2003 that Iran has undertaken underground nuclear activities in order to establish capacities to produce home grown fissile materials. It was in the July of 2015 that Iran along with six other world powers went on to negotiate a longer term agreement for the verification of as well as significant reduction in Iran's capacities to produce materials for nuclear weapons (Nuclear Threat Initiative, 2020).

North Korea

Estimates as recent as June 2019 have claimed that North Korea has approximately 20 to 30 nuclear warheads as well as the fissile materials ready for another 30 to 60 nuclear weapons. There has always been a high degree in terms of the uncertainties surrounding the North Korea's fissile materials stockpiles and production, chiefly on uranium enrichment sides, North Korea is generally estimated to hold approximately 20 to 40 kilograms of enriched plutonium and 250 to 500 kilograms of enriched uranium. This estimated yearly production of fissile materials is enough to produce 6 to 7 weapons. By 2020, various experts estimated that North Korea would be in the possession of between 20 to 100 nuclear warheads: an estimate based on rates of stockpile growth as well as technological improvements being done (Nuclear Threat Initiative, 2019).

Syria

Syria has not been at the forefront of the nuclear race in a long time. However, in the September of 2007, neighboring The Israeli enemy went on to conduct an airstrike in Syrian soil. This strike was what was assumed by United States as well as other officials as the construction site for the ongoing construction of a nuclear research reactor - very similar to the one which is located in North Korea's Yongbyon city. The complete extent of the Syrian and North Korean nuclear alliance is still unclear; however it has been believed to have begun in the year 1997. Investigations carried out in light of the United States statements led to the uncovering of traces of various undeclared man made uranium particles: both at the bombed facility as well as the site of the declared Syrian research reactor. However, Syria has not been cooperative with the IAEA in order to clarify the full nature of the bombed facility as well as clarify any of the procurement efforts which could be in relation to nuclear programs (Nuclear Threat Initiative, 2018).

Previous holders of nuclear weapons

- 1) Break off states from Soviet Union including Belarus, Ukraine and Kazakhstan inherited nuclear weapons in the wake of the 1991 collapse; but all three states ended up returning these warheads to Russia and even joined the NPT treaty as non nuclear weapon states (Hahn, 2015).
- 2) South Africa was successful in secretly developing but then subsequently dismantling its smaller number of nuclear weapons and also went on to join the NPT in the year 1991 (Arms Control Association, 2019).
- 3) Iraq was owner of an active nuclear program before the Persian Gulf War of 1991, but was subsequently forced to dismantle the entire program under the management of United Nation inspectors (Arms Control Association, 2019).
- 4) Libya went on to voluntarily renounce its underground nuclear weapons programs and efforts in the December of 2003 (Hahn, 2015).
- 5) Argentina, South Korea Brazil, as well as Taiwan have also shelved their nuclear weapons development programs (Hahn, 2015).

The World View

Amid crumbling foundations of the internationally agreed disarmament as well as non proliferation architectures there needs to be efforts focused on the return of the global nuclear powers towards a multilateral path which aims towards a common goal of a world which is without any nuclear weapons. This aim has been established at the United Nations Disarmament and International Security Council's first session in October 2019. Delegates from all over the world agreed that in the middle of the nuclear crises, the best way to move forward is through the advancements of the principles initially set out in the NPT Treaty; which turned 50 in the current year 2020. These principles were based on three core pillars: the disarmament, the non proliferation as well as the peaceful usage of nuclear energy amongst the countries (United Nations, 2019).

3. An Analysis

The world is now much different from when the first nuclear weapons were launched. In the later years of the 1950s and the early 1960s, the world's nuclear balance was repeatedly rocked by huge qualitative changes occurring to the nuclear delivery systems. The nuclear deterrence theories were still massively unsettled, with numerous strategists struggling in order to understand the consequence of the ongoing missile revolution on national sovereignties and global peace. Even when matters got heated such as when the United States was preparing for a full scale competition against the Soviet Union, they could not efficiently or reliably estimate the prices, the capabilities, or even reliability of the nuclear systems. This kind of fallible uncertainty is nearly impossible to imagine in today's times. Today the nuclear situation has changed very little in the last quarter of the century since the ending of Cold War. Now the nuclear world is made up of highly reliable systems which each serve a specific purpose. This thoroughly suggests that the world's nuclear balance is much less delicate than what has been believed so far. There are very few uncertainties in regards to any country's nuclear weapons systems and their interaction amongst one another: each of the nuclear powers

holds valid expectations that it can also deliver nuclear strikes against any adversary which may attempt to strike first (Stefanovich & Kalugin, 2018).

There is supplementary evidence now available that the global nuclear balance is not as delicate as before. All nuclear capable countries go on to tolerate significantly higher risks in relation to their nuclear weapons operations. Amongst the current nine nuclear capable weapon states, only U.S. and Russia hold the belief that they require more than a couple of hundred warheads in order to deter the adversaries. All of the rest of the countries are okay with maintaining lower stocks: a little over a 100 at maximum. Recently even Russia has begun to seem comfortable with accepting significant risks. The Russian developed and operational early warning capability: a series of complex satellites as well as radars aimed at the provision of advance warnings of any and all incoming nuclear missile strikes. In an unprecedented move, Russia has allowed the entire system to deteriorate completely. Even though Russia is actively upgrading the early warning ground based radar networks, it has had no functioning early warning satellites. Most of the other nuclear countries are also relaxing and accepting more risk (Narang, Thrall, & Gomez, 2019).

However, due to their ongoing rife tensions and relationship, both Pakistan and India maintain active surveillance which would adequately warn them of incoming nuclear missiles: this is due to strained political relations between the two nations as well as the geographic nearness of both countries: they share their largest borders with one another. The United States also has an active early warning system, which is the Defense Support Program. This system provides continual coverage for the past 30 years. This system has now been replaced by two upgraded systems. The increasing propensity to take on risk is also reflected in the fact that most of the nuclear capable countries are maintaining their stock: some are even retiring older weapons in a safe and non hazardous way. In terms of an increasingly volatile world and increasing terror activities, it has become increasingly important to focus on the work of the nuclear capable nations. There needs to be a proper measure enforced to cater to changing relationships, economic factors as well as armed offenses and responses (The Diplomat, 2019).

4. Conclusion

Theorist Albert Wohlstetter went on to call the nuclear arms race "the delicate balance of terror." The phrase serves as the title of 1958 article by Wohlstetter in which he argues that the US public as well as the defense planners has been dangerously over confident about the world's nuclear balance. Mr. Wohlstetter reasons that any country's mere possession of said nuclear weapons is not a sufficient measure to establish the needed deterrence: if the opponent has any reasonable expectations of limiting the damages caused due to these weapons. As nuclear technology further evolved and other countries significantly improved their own nuclear arsenals, this delicately maintained balance of terror has been tilted constantly over the years (Wohlstetter, 1958).

Today, most observers continue to consider the nuclear balance of the world as very delicate. If it is so, it would be highly essential for the United Nations to be precisely aware of all arsenals which are stagnant, decreasing or growing every year. Modernization of delivery systems is going to be a severely perilous period and lead to the creation of gaps in the capabilities which would then need to be fulfilled by other nuclear weapon holders. Major strategic considerations would go on to override the political, the diplomatic, and the country's fiscal concerns. The core fact is that even though the nuclear balances are not as hugely delicate as before, the world no exists in a time made of acute fiscal austerities as well as manifold and fluid military priorities. The definition of risk, moreover, is also an integral and inherent part of any country's nuclear strategies. If the nuclear capable nations cannot learn to live with the risks, then the cost of closing of all small as well as hypothetical gaps in the held nuclear arsenals will be paid for by harsh currency: this will be done by the sacrifice of conventional military priorities as well as the welfare of the citizens, and even the country's long term abilities to compete with the changing world (Mount, 2016).

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