

SPS Global Insights

Nuclear States



This report examines the complex landscape of global nuclear capabilities and the associated risks. It delves into the expansion and modernisation of nuclear arsenals among major powers, regional tensions, and the potential consequences of nuclear proliferation.

Introduction

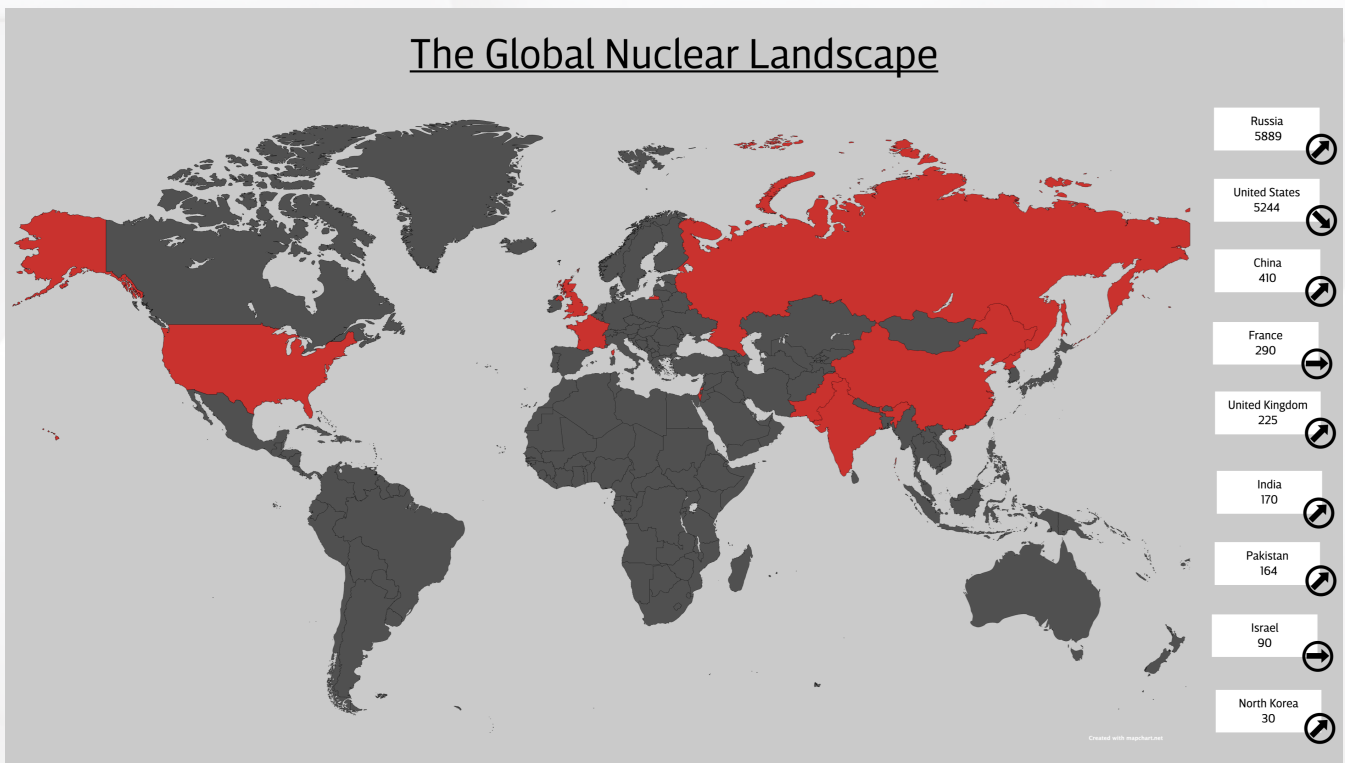


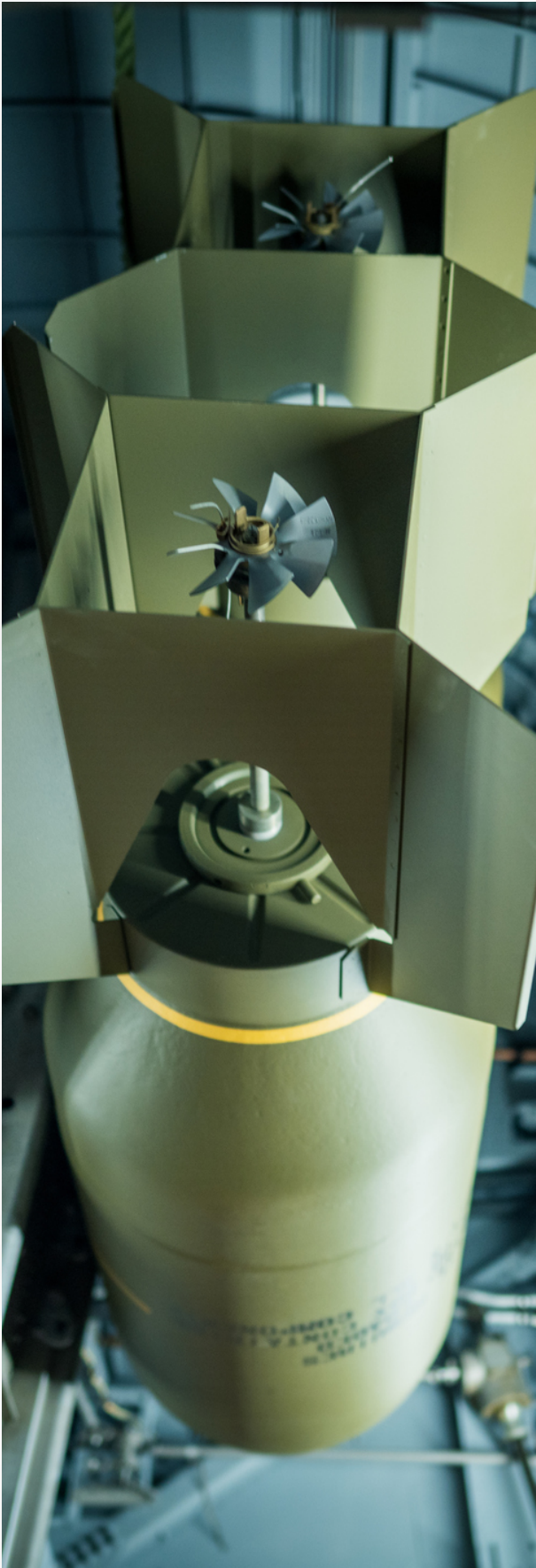
Figure 1: Data Sourced from: Federation of American Scientists (<https://fas.org/initiative/status-world-nuclear-forces/>)

In September 2023, United Nations (UN) Secretary-General António Guterres delivered a crucial address to the UN General Assembly, urging nations to take immediate action to reverse the emerging nuclear arms race. His call coincided with the release of the annual report by the Stockholm International Peace Research Institute (SIPRI), which provides insights into global security and military developments. The report contained alarming findings, suggesting that the world could witness a concerning increase in the number of nuclear weapons for the first time in decades. This concerning trend was driven by a notable growth in operational warheads and the need for both the United States and Russia to replace and modernise their nuclear arsenals, including warheads and their delivery systems. Simultaneously, China is undergoing a significant expansion and modernisation of its own nuclear capabilities, while North Korea has reportedly assembled up to 30 nuclear warheads with the potential for further production.

The prevailing global geopolitical landscape, marked by heightened tensions such as the ongoing conflict in Ukraine, which hampers prospects for meaningful dialogue in the short term, underscores the escalating concerns. Factors like China's growing influence, leading to increased distrust between Beijing and Washington, along with the instability surrounding North Korea's regime, have brought to the forefront the palpable tensions among nuclear-armed nations. These developments paint a stark picture of the challenges and risks confronting the world in the current international arena.

Moreover, conflicts involving non-nuclear states, notably the ongoing rivalry between Iran and Saudi Arabia, have amplified the prospects of a nuclear-armed Middle East. While tensions appeared to de-escalate with mediation efforts by China in March, the spectre of Iran amassing sufficient uranium for a limited nuclear arsenal remains a substantial concern. This report will analyse the nuclear armed states and their desire to increase their capabilities. Explaining how the fragile geopolitical landscape drives states to ensure their nuclear capabilities are modernised and enhanced as geopolitical tensions rise.

Russia and The United States



The SIPRI report provides a comprehensive analysis of the growing nuclear arsenals, particularly in the context of deteriorating relations among nuclear-armed states. This situation raises concerns about the potential for further expansion of nuclear weapons. A noteworthy example is the strained relationship between the United States and Russia, which collectively possess approximately 89% of the world's total nuclear weapons and 86% of stockpiled warheads available for military use.

While the US Department of Energy had previously committed to a gradual reduction of its nuclear stockpile, aiming to eliminate retired weapons by the end of 2022, this timeline appears to have been delayed. It is important to note the report's assessments are based on publicly available information regarding the American nuclear arsenal.

In 2021, the US reinstated a policy of declassifying its nuclear stockpile, but this practice was not continued in 2022. Reports from the Centre for Arms Control and Non-Proliferation indicate that the US is planning to allocate up to \$1.5 trillion over the next three decades to modernise its nuclear arsenal. This involves a comprehensive overhaul, including the rebuilding of each component of the nuclear triad - missiles, aircraft, and submarines - and the associated infrastructure.

This substantial investment has sparked a heated debate within American politics, dividing it into two distinct camps. On one side, there are those who argue for restraint in the development of the nuclear triad, citing concerns that its expansion could increase the risk of nuclear annihilation. Conversely, another faction contends that the US should enhance its nuclear capabilities, viewing it as a necessary response to growing geopolitical tensions and challenges, especially in the face of Russian assertiveness.

As geopolitical conflicts escalate and global dynamics evolve, the prospect of achieving a consensus on nuclear weapons policy becomes increasingly challenging. This division underscores the complex and multifaceted nature of nuclear arms discussions on the American political stage.

Russia and The United States



The most prominent illustration of these concerns is the ongoing Russian invasion of Ukraine. Russia currently possesses the largest stockpile of nuclear weapons, totalling a reported 5,889 warheads. As of January 2023, there is believed to have been a modest increase of approximately 12 warheads in the Russian Federation's arsenal. It's worth noting that Russian nuclear developments are characterised by a lack of transparency, introducing considerable uncertainty, particularly regarding the state's substantial inventory of non-strategic nuclear weapons.

President Vladimir Putin's decision to suspend the last remaining nuclear arms control treaty, the New START treaty between the US and Russia is a significant development. This move, combined with the US withdrawal from the Intermediate-Range Nuclear Forces Treaty in 2018, has indicated an immense distrust between the most nuclear armed states in decades. Consequently, NATO's ability to inspect Russian nuclear facilities is now restricted. Russia is currently in the advanced stages of a multi-decade modernisation effort aimed at replacing Soviet-era weapons with updated systems across both its strategic and non-strategic nuclear forces.

When delving deeper into Russia's motivations, it becomes apparent that the Kremlin's objectives include achieving parity with Washington in terms of modernisation and upholding national prestige. The

ongoing situation in Ukraine has exacerbated distrust and tension between Russia and the United States, contributing to the evolving landscape of global nuclear security.

Amidst the backdrop of the United States' robust support for Ukraine, providing weaponry to resist Russia's invasion, there is a growing concern that any misstep or miscalculation in this volatile situation could trigger a significant escalation. The war in Ukraine has witnessed a less-than-stellar performance by Russian conventional forces and a depletion of weapon stockpiles, factors that may lead to an increased reliance on tactical nuclear weapons for Russia's national defence. While Russia's official nuclear doctrine does not endorse preemptive strikes, the invasion of Ukraine has raised questions about potential revisions to this doctrine, casting uncertainty over the circumstances under which Moscow might deploy tactical nuclear weapons.

For instance, President Putin ordered Russia's nuclear arsenal to be placed on "high combat alert," citing "aggressive statements" from NATO as the reason behind this heightened nuclear readiness. In a noteworthy development, Russia, for the first time since the end of the Cold War, deployed its nuclear weapons beyond its borders to its ally, Belarus, marking a significant shift in regional dynamics.

Overall, nuclear escalation between the United States and Russia is arguably at its highest, certainly post-Cold War. With Russia claiming two of its Sarmat ICBMs could destroy the entire east-coast of the US, and America's Ohio-Class submarine has enough firepower to destroy over a dozen Russian cities in a single salvo, the weapons deployed today are the most deadliest in world history.

China's Nuclear Ambitions

While deteriorating relations between the two largest nuclear powers contribute significantly to global nuclear risks, the situation is not confined to this aspect alone. For decades, the People's Republic of China (PRC) has pursued an ambitious agenda to modernise its nuclear weapons program, a development that has garnered particular attention and concern from the United States.

China's efforts to modernise its nuclear capabilities are evident by the rapid growth of its nuclear arsenal. Remarkably, China has assembled a stockpile of over 400 warheads in a relatively short period, achieving this feat much faster than the United States did in building a comparable arsenal. Presently, Chinese lawmakers are contemplating tripling their nuclear forces in the coming years, a move that carries profound implications for global security.

By 2035, China could possess an arsenal comprising approximately 1,500 nuclear warheads, all of which are ready for launch. This trajectory underscores China's substantial strides in nuclear

armament and its intention to position itself as a major player in the realm of nuclear deterrence.

China's ambitions extend beyond merely modernising its nuclear arsenal; the nation is planning a significant expansion and diversification of its nuclear triad, which includes land-based, sea-based, and air-based delivery systems. Notably, China has been constructing hundreds of new intercontinental ballistic missile (ICBM) silos and has made advances in the development of novel nuclear-capable weapons, fuelling questions and concerns about its evolving nuclear doctrine.

China's overarching goal is to maintain nuclear capabilities at a level deemed essential for safeguarding national security, primarily to deter other nations from using or threatening to use nuclear weapons against China. Although China maintains a posture of "no first use" indicating a commitment not to initiate a nuclear conflict, its growing nuclear arsenal's size and sophistication raise uncertainties.



China's Nuclear Ambitions



Image Sourced From: <https://www.iiss.org/online-analysis/survival-online/2023/08/war-with-china/>

Despite these developments, China's official policy of "no first use" has not exhibited any noticeable changes. Nonetheless, the mounting criticism of China by the United States and its allies such as issues over human rights, democratic values, rule of law, international norms, the issue of militarisation of the South China Sea and the heightened possibility of a Taiwan invasion, have significantly intensified regional and global tensions in the Asia-Pacific and beyond.

China's expanding geopolitical influence in the Asia-Pacific region has become a source of concern for Washington and its allies, including South Korea and Japan. Conversely, China has been increasingly apprehensive about American nuclear capabilities, which could potentially undermine its ability to retaliate effectively in the event of a nuclear conflict. This mutual apprehension contributes to a growing power struggle between the two nations.

The United States' containment strategy, devised in response to China's rise, poses a challenge to American dominance in the international system. Consequently, Beijing believes that the only viable solution is to further consolidate its own power until the United States acknowledges the new reality: that China's success and strength are undeniable factors in the evolving global landscape.

The looming threat of a Chinese invasion of Taiwan has become a pivotal factor in the increasing risk of nuclear escalation. President Joe Biden has made it explicitly clear that in the event of such an invasion, the United States will come to Taiwan's defence. The potential consequences of such actions are deeply concerning, especially given China's unwavering stance on reunification with Taiwan. The widening gap in geopolitical perceptions between the two nations makes it increasingly unlikely that they can avoid a nuclear arms race unless they confront and collaboratively address their fundamental disagreements. As Washington and Beijing continue to talk past each other, there is a growing risk of both sides making incorrect assumptions about the use of nuclear weapons in a potential future conflict.

Currently, these risks are not receiving adequate examination, which is alarming, particularly in light of China's ambitions to modernise and expand its nuclear arsenal. The need for open dialogue and de-escalation measures is becoming increasingly urgent in order to prevent a catastrophic nuclear arms race.

Remaining Nuclear States

North Korea

North Korea stands out as arguably one of the most unpredictable and potentially volatile nuclear-armed states. Over the past year, North Korea has significantly increased both the frequency and intensity of its missile launches. According to the SIPRI report, while North Korea is believed to possess around 30 nuclear weapons, it likely has enough fissile material to potentially produce between 50 to 70 nuclear devices, depending on their design. This surge in North Korea's nuclear capabilities is accompanied by a growing diversification of its nuclear arsenal. The country has expanded its range of weapons, including liquid-fuelled ICBMs, long-range cruise missiles, and the introduction of underwater nuclear drones.

North Korea's nuclear ambitions have been fuelled by its perception of the United States as a sworn enemy. Pyongyang sees the enhancement of its nuclear capabilities as a means of survival in the face of what it views as U.S. aggression. Furthermore, recent years have witnessed increased volatility in inter-Korean relations, largely due to South Korea's alignment with the United States and ambitions to unify Korea under its leadership.

Tensions between the two Koreas are expected to rise further. In February 2023, South Korea's defence white paper marked a significant departure by labelling North Korea as an 'enemy' for the first time in six years. This shift signals that inter-Korean relations will likely remain strained as long as the regional dynamics remain unchanged.

India

India's acquisition of nuclear weapons has largely been based on its distrust and antagonism towards Pakistan. As of January 2023, India was estimated to have a growing stockpile of about 164 nuclear weapons, a small increase from the previous year. More concerningly, until the early 2010's, Pakistan was the main reason for India's nuclear arsenal. But, increasing emphasis has been focused on China.

Recent border clashes over territorial claims such as the violent skirmishes in 2020, have heightened concerns regarding the potential for swift military escalation. This escalation is primarily attributed to both sides deploying larger and more potent conventional military forces along the border.

Before 2020, there were occasional confrontations between Chinese and Indian forces, which, while dangerous, were less likely to rapidly escalate into larger conflicts. However, recent events have raised the spectre of increased reliance on military and potentially even nuclear measures in the future.

Pakistan

Pakistan's pursuit of nuclear weapons and their associated delivery systems has been driven by its "full spectrum deterrence posture" primarily in response to perceived threats from India. According to SIPRI, as of January 2023, Pakistan possessed approximately 170 nuclear warheads. This modest increase in its nuclear arsenal reflects Pakistan's evolving triad of delivery systems, which includes aircraft, ground-launched ballistic and cruise missiles, and sea-launched missiles.

While Pakistan's nuclear capabilities have historically been shaped by its rivalry with India, the country faces internal challenges that could also pose a significant threat. Recent developments in Pakistan have included economic difficulties, political polarisation, the rise of radicalism and extremism, and spillover of militancy from neighbouring Afghanistan, where the Taliban's resurgence has created security concerns that affect Pakistan's stability. In a scenario where Pakistan faces a political collapse or significant internal turmoil, there is a heightened risk that non-state actors, rogue agencies, or various factions within the country could gain access to Pakistan's nuclear assets. This would not only pose a regional concern but also a global one.

Remaining Nuclear States

Israel

Israel's nuclear policy has long been characterised by ambiguity, as the nation neither officially confirms nor denies its possession of nuclear weapons. This approach has contributed to a lack of transparency and persistent uncertainty regarding the size and scope of Israel's nuclear arsenal. According to estimates based on publicly available information, Israel is believed to possess approximately 90 nuclear weapons, a figure that has remained stable since January 2022.

Israel's primary concern in the realm of nuclear capabilities is its regional adversary, the Islamic Republic of Iran. Recent assessments suggest that Iran's nuclear program has advanced to the point where it could potentially enrich enough uranium for five fission weapons within a mere three-week timeframe. The Joint Comprehensive Plan of Action (JCPOA), negotiated in 2015 with Iran and the five permanent members of the UN Security Council, along with Germany, was intended to curb Iran's nuclear ambitions. However, Israel, under the leadership of Benjamin Netanyahu, consistently argued that the JCPOA was insufficient in addressing Iran's nuclear program. In 2018, then-President Donald Trump withdrew the United States from the JCPOA, subsequently leading to Iran's breaches of its obligations under the agreement.

With the increasing likelihood of Iran acquiring nuclear weapons, Israel has stated it will do whatever it takes to prevent this becoming a reality. Moreover, Saudi Arabia has also been concerned of a potential nuclear Iran in which it has stated that if Iran acquires a nuclear weapon, Saudi Arabia will do the same. Recent talks with Israel and Saudi Arabia in efforts to normalise relations, the possibility for Riyadh to start uranium enrichment which has underlined the increasing risks of further nuclear weapons in an already turbulent region

United Kingdom

On the other hand, the United Kingdom's nuclear stockpile consists of 225 warheads with the only country operating nuclear weapons solely by sea. It has been projected that the UK will increase its number of warheads in the coming years. Started in 2021, the British government announced its expansion of its stockpile due to the 'risky global environment'. Since the Ukraine war, the UK has arguably been the most firm supporter of Kyiv outside of the United States. Moreover, the UK has also been concerned by China's assertiveness in the recent years.

In 2021, AUKUS (Australia, UK, and the US) was announced as the creation of an enhanced trilateral partnership in order to provide Australia a nuclear powered submarine. This comes as the looming threat from China has been a concern for the three countries and has motivated the UK to enhance its nuclear capabilities.

France

Lastly, French nuclear capabilities have remained static in recent years with approximately 290 warheads altogether. Nonetheless, France will undergo modernisation of its ballistic missiles, cruise missiles, submarines, and aircraft which has also highlighted French concerns of the risks associated with the increasing global landscape.

Unlike most nuclear powers, France reserves the right to conduct a warning-shot nuclear strike to signal to an adversary that it has crossed a red line, and that it will use nuclear weapons to safeguard the country, if necessary.

The war in Ukraine has certainly been a factor as great power competition has reinforced many to modernise their nuclear capabilities in order to safeguard their national security.

Conclusion

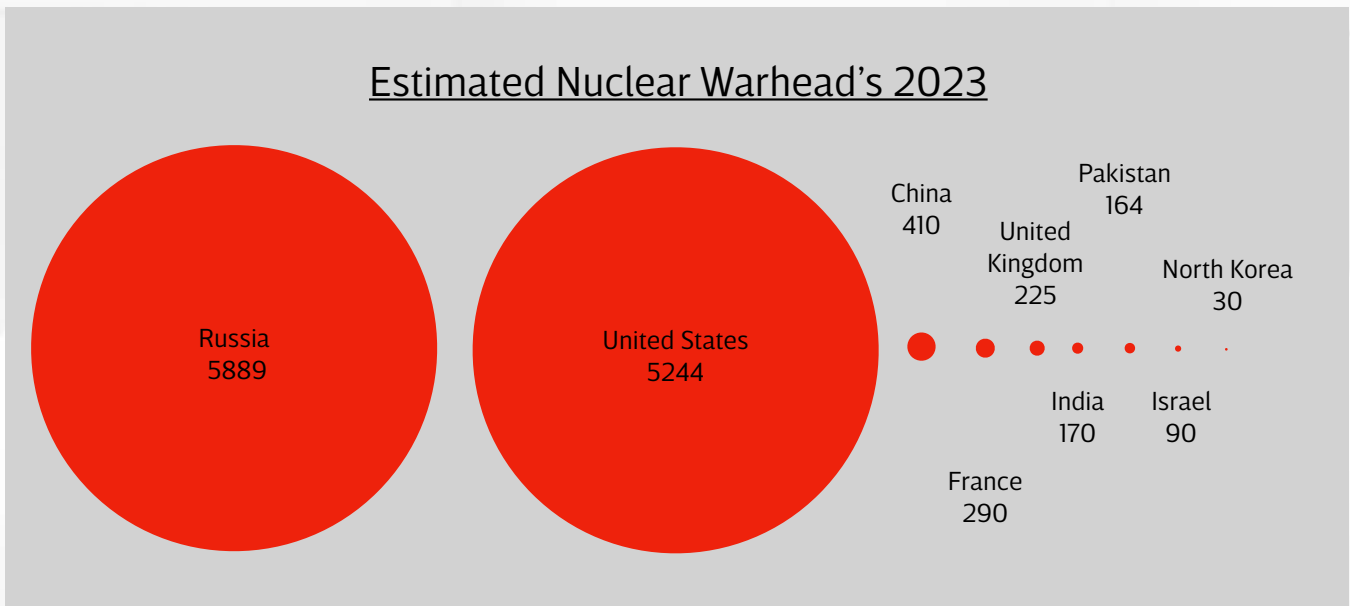


Figure 2: Data Sourced from: Federation of American Scientists (<https://fas.org/initiative/status-world-nuclear-forces/>)

In conclusion, the world finds itself at a critical juncture in managing nuclear risks. The return of great power competition, coupled with the emergence of potentially new nuclear actors and regional conflicts, underscores the urgency of strengthening nuclear arms control agreements, enhancing transparency, and promoting diplomacy. With one of the most prominent trends being the resurgence of great power competition, nations are embarking on substantial modernisation efforts of their nuclear arsenals.

In addition, China's rapid expansion and diversification of its nuclear capabilities also cast a shadow over the global nuclear order. Its pursuit of a substantial nuclear triad, coupled with simmering regional conflicts, poses a challenge to existing arms control norms. The evolving dynamics in the Asia-Pacific region, particularly concerning Taiwan, could have profound implications for nuclear stability.

While the likelihood of a catastrophic nuclear event remains low, the persistence of geopolitical tensions among nations presents a continuous source of concern. The deployment of depleted uranium in the conflict in Ukraine has been a concerning development, as it signifies states resorting to uranium assets without crossing the threshold into full-scale nuclear escalation. But such actions will entail an equal response, hindering dialogue and making peace a much less likely outcome. From ongoing conflicts like the one in Ukraine to the belligerent actions of the North Korean regime in the Asia-Pacific region, the world remains far from immune to the risks associated with nuclear weapons.

Amid this backdrop of geopolitical confrontation, the spectre of nuclear weapons use looms, whether through deliberate intent or the result of human error, system error, miscalculations, or misjudgments. A disconcerting trend is the expansion and modernisation of nuclear arsenals by numerous states. This trend underscores that governments are not willingly relinquishing their nuclear capabilities. The inherent characteristics of mistrust persist among states, especially in a global landscape marked by intense great power competition.



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Based in Birmingham, UK, Daniel is a geopolitical expert. Holding an exemplary academic record with a first class Bachelor's degree in International Relations, with a dissertation focusing on great power politics answering one of the foremost security questions of our world: "Why will the rise of China be a threat for the United States?"

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