

MARCH 2024



**FROM THEORY TO
PRACTICE: UNDERSTANDING
NUCLEAR DETERRENCE AND
SHARING AGREEMENTS IN
EUROPEAN SECURITY**

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Introduction

The European Union faces the imperative of increased defence autonomy. As geopolitical dynamics evolve and traditional alliances undergo scrutiny, the EU must assert its strategic independence by bolstering its defence capabilities.

Over the years, statements by European leaders, including but not limited to President Emmanuel Macron (President of the French Republic, 2022), Chancellor Angela Merkel (Chancellor of Germany, 2018), and President Ursula von der Leyen (President of the European Commission, 2023), often stress the need for the EU to reduce its reliance on external actors, particularly in defence and security matters.

This InfoFlash investigates the complex interplay between European defence autonomy ambitions and nuclear deterrence on the continent. The study addresses three key dimensions exploring the feasibility and implications of achieving autonomy of European defence, specifically considering nuclear deterrence calculations.

Firstly, the InfoFlash examines the historical role of nuclear deterrence and internationally agreed stockpile limits and postures, bearing in mind the international regimes and treaties governing the nuclear weapons sphere. Secondly, the current status of nuclear deterrence capabilities across European nations, delving into the intricacies of their arsenals, and assessing the degree to which extracontinental actors, namely the USA as a partner in NATO, contribute to ensuring nuclear deterrence in Europe. This analysis sheds light on the existing dependencies and collaborative efforts that characterise the European nuclear deterrence landscape.

This InfoFlash does not endorse the militarisation of Europe, nor does it support increased nuclear weapons proliferation on the continent. In essence, the primary argument focuses on improving the distribution of nuclear versus conventional deterrence and better-shared burden allocation between the EU and NATO. The article also discusses the potential decrease of the role of nuclear weapons in security policies.

By reducing its reliance on external actors and enhancing its own defence capabilities, the European Union can better address emerging security threats, assert its role as a global actor, and safeguard the interests of its citizens. Moreover, a more autonomous and conventional EU defence posture could contribute to greater stability and security in the broader European neighbourhood, fostering a more resilient and cohesive Union capable of responding effectively to the challenges of the 21st century.

The findings are intended to inform policy discussions and strategic considerations for European nations navigating the intricate landscape of nuclear deterrence and ambitions of defence autonomy.

Nuclear Deterrence

Deterrence is fundamentally a psychological process: it is about convincing an actor to refrain from making an aggressive move. Since it is based on fear, one of the most basic emotions, deterrence is as old as mankind (Tertrais, 2021). Deterrence within the realm of security endeavours aims to prevent an armed assault or any deliberate act of aggression. According to NATO, deterrence involves persuading a potential aggressor that the resulting consequences would outweigh the benefits of coercion or armed conflict. Achieving this necessitates maintaining a credible military capability and strategy, along with a clear political resolve to take action (NATO, 1996).

Nuclear deterrence theory, the cornerstone of strategic thought during the Cold War era, posits that the mere possession of nuclear weapons by rival powers is a potent deterrent against direct military confrontation (Waltz, 1981). This theory hinges on the principle of Mutually Assured Destruction (MAD), wherein the threat of devastating retaliation from a nuclear strike dissuades both adversaries from initiating such an attack (Blair, 1993). The prospect of catastrophic consequences, characterised by widespread destruction and loss of life on an unprecedented scale, instils a sense of caution and restraint in the decision-making war calculus of nuclear-armed states (Waltz, 1981). Consequently, nuclear-weapon states and defence alliances anchored and continue to anchor their security policies and strategic military thinking around the tenets of nuclear deterrence theory.

Throughout its history, NATO has consistently defined deterrence in a broader context, notably by the United States extending its nuclear umbrella to cover the territories of its non-nuclear allies. Article II of the Non-Proliferation Treaty (NPT) places the obligation on Non-Nuclear Weapon States (NNWSs) not to receive the transfer of nuclear weapons. However, NATO's nuclear sharing arrangement seems to contradict these obligations by facilitating the transfer of US nuclear weapons to non-nuclear allies for potential use during wartime. NATO argues that this practice remains consistent with the NPT, reinforcing US's interpretation that no transfer or control over nuclear weapons occurs unless a decision to go to war is made, at which point the treaty's constraints no longer apply (Penn Research Note 97.3, 1997).

International Regime Governing Nuclear Weapons and Main Treaties

Following the end of the Cold War, the focus shifted towards arms control and disarmament initiatives to reduce nuclear stockpiles and mitigate the risks of proliferation. Various treaties and agreements aimed to limit the number of nuclear weapons possessed by the major nuclear powers and prevent the spread of nuclear technology to non-nuclear states.

The most comprehensive global non-proliferation regime is the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which came into force in 1970 and was originally in force for 25 years, but was extended indefinitely in 1995. The NPT seeks to prevent the spread of nuclear weapons while promoting disarmament and peaceful uses of nuclear energy.

It divides states into nuclear-weapon states (NWS), such as USA, Russia, China, France, and UK, and non-nuclear-weapon states (NNWS), as well as imposing obligations on both categories to work towards nuclear disarmament.

Other treaties, such as the Seabed Treaty of 1971, the Strategic Arms Limitation Treaty I of 1972, the Anti-Ballistic Missile Treaty of 1972, the Strategic Arms Reduction Treaty I of 1991 & II of 1993, and the Comprehensive Test Ban Treaty of 1996, aimed at regulating deployed strategic nuclear weapons and reducing their number.

Moreover, a series of treaties implemented Nuclear-Weapon-Free-Zones (NWFZs) crucial regional initiatives to bolster global nuclear non-proliferation and disarmament efforts while fostering peace and security. Currently, there are five NWFZs covering vast territories (United Nations Platform for Nuclear-Weapon-Free Zones, 2024), including the Southern Hemisphere and Central Asia, with special statuses accorded to Antarctica and Mongolia. These zones, established through treaties such as the Treaty of Tlatelolco (1967) and the Treaty of Pelindaba (1996), prohibit the acquisition, possession, testing, and use of nuclear weapons within their respective territories. Efforts by states within these zones seek legally binding agreements to prevent nuclear-weapon states from threatening or using such weapons against signatory countries. The significance of NWFZs lies in their role in averting nuclear conflicts in specific regions and providing assurance of peaceful nuclear intentions. Alongside, international treaties, such as the Antarctic Treaty (1959) and the Outer Space Treaty (1967), underscore efforts towards denuclearisation in other geographical domains, contributing to the collective pursuit of a more peaceful and stable world. These agreements have helped stabilise the nuclear landscape, reduce the risk of an accidental nuclear war, and increase transparency and confidence-building measures between nuclear-armed states.

Nuclear Sharing Arrangements

Nuclear sharing arrangements within NATO are closely intertwined with the negotiations between the United States and the Soviet Union regarding the Nuclear Non-Proliferation Treaty during the 1960s. In 1966, the United States made assurances that it would never relinquish its veto power over the launch of its nuclear weapons (Alberque, 2017). Articles I and II of the NPT were ultimately co-drafted by the United States and the Soviet Union to accommodate NATO's existing nuclear arrangements and address the Soviet Union's insistence that West Germany should not be granted nuclear control or authority (Alberque, 2017).

There is a common misunderstanding about nuclear sharing, often conflating it with the notion of one country simply transferring its nuclear weapons or launch authority to another. Nuclear sharing generally involves allowing non-nuclear states to operate specially configured launchers to employ a nuclear-armed state's nuclear weapons in case of war (Kristensen et al., 2023). NATO itself lacks ownership of nuclear weapons and, therefore, lacks the authority to launch them. This decision rests solely with the leaders of nuclear-armed member states, particularly the USA, which retains ownership and authority over the weapons assigned to NATO nuclear sharing arrangements in Europe.

Post-Cold War, NATO's nuclear sharing strategy predominantly revolved around the deployment of air-delivered nuclear bombs, specifically Type B-61, situated in Europe (Jervis, 1995). While some of these bombs were intended for use by USA aircraft, in other cases, the stationing countries provided the aircraft as a special form of sharing nuclear responsibilities (Jervis, 1995). The remaining B-61 bombs constituted only a portion of the diverse array of nuclear weapons, ranging from missiles and cruise missiles to artillery shells and mines, which were removed from across various NATO nations. The primary objectives of these weapons were political and aimed at deterring war and preventing conflict. Additionally, the presence of American weapons in Europe reassured NATO Allies of the United States' commitment to nuclear defence (Brodie, 2011).

Bombs carried by aircraft were viewed as versatile, allowing Allies to participate in NATO's nuclear missions by providing the means of delivery. Unlike missiles, they could be recalled to some extent in the event of a false alarm or significant changes in the situation (Brodie, 2011). If some weapons were to be retained to prevent complete denuclearisation, particularly concerning US weapons in Europe, bombs on aircraft emerged to be the most suitable option.

The status quo of nuclear strategy served political purposes, both as a tool for escalation during a crisis and as a placeholder for potential future replacements should nuclear modernisation become politically imperative.

Nuclear Weapons Posture within European Allied Countries

In recent years, nuclear sharing agreements have regained prominence globally. The US is in the process of modernising posture infrastructure to support its nuclear sharing mission in Europe and is gearing up to deploy its latest B61-12 & B61-13 gravity bombs (US Department of Defense, 2023) to European air bases for delivery by both American and allied aircraft. Concurrently, following the Ukraine invasion in 2022, Russia has announced the transfer of tactical nuclear delivery systems and stationed its nuclear weapons on Belarusian territory, along with the training of Belarusian military personnel on their use (Faulconbridge, 2023).

The administration of US nuclear weapons deployments in Europe relies on several distinct types of parallel agreements with the host or 'user nation':

- An Atomic Cooperation Agreement manages the bilateral exchange of atomic information. For example, the 1958 US-UK Mutual Defence Agreement facilitates the exchange of nuclear materials, technology, and information between the United States and the United Kingdom.
- An Atomic Stockpile Agreement is a pact between the United States and a user nation governing the introduction, storage, custody, security, safety, and release of US nuclear weapons. Such agreements include bilateral accords between the United States and its NATO Allies currently hosting US nuclear weapons.
- A Service-Level Agreement is a technical arrangement between US military services and the user nation, providing detailed instructions and procedures for implementing the Atomic Stockpile Agreements. While the specifics of these agreements are highly classified, some of their codenames, such as 'Pine Cone' for Belgium, 'Toolchest' for Germany, 'Stone Axe' for Italy, and 'Toy Chest' for the Netherlands, are known (Arkin, 2005).

In addition to the physical storage and maintenance of nuclear weapons, seven NATO member states (Belgium, Germany, Italy, the Netherlands, the United States, Turkey, and Greece) contribute Dual-Capable Aircraft (DCA) to NATO's nuclear operations (NATO, 2022), which are capable of carrying nuclear weapons in times of conflict.

Currently, five NATO states host a total of six bases equipped with underground storage vaults for US nuclear bombs. Several other bases have empty storage vaults that are inactive. One such base, RAF Lakenheath in England, is undergoing renovation to potentially accommodate nuclear bombs in the future, pending NATO's decision (Korda & Kristensen, 2023). Six additional NATO members (the Czech Republic, Denmark, Hungary, Poland, and two undisclosed countries) play a supporting role in NATO's nuclear strategy through the SNOWCAT (Support of Nuclear Operations with Conventional Air Tactics) mission alongside the countries contributing DCA.

All NATO countries, except France being an NWS itself, participate in NATO's Nuclear Planning Group (NPG), which oversees collective policy-making and decision-making regarding the alliance's nuclear operations. Presently, it is estimated that approximately 100 US nuclear weapons are spread across six bases in five allied countries (Korda & Kristensen, 2023). Annually, NATO conducts a two-week exercise called Steadfast Noon, rotating its hosting duties among member states. The latest was held in Belgium and engaged fourteen countries employing up to 60 aircraft to simulate the use of US nuclear weapons by NATO DCA (NATO, 2022).

Airbase	Allied Country	Approximated Number of US Weapons	Aircraft Model for Delivery
<i>Kleine Brogel Air Base</i>	Belgium	10-15	Delivery by Belgian F-16MLU aircraft
<i>Volkel Air Base</i>	The Netherlands	10-15	Delivery by Dutch F-16MLU aircraft
<i>Büchel Air Base</i>	Germany	10-15	Delivery by German PA-200 Tornado aircraft
<i>Aviano Air Base</i>	Italy	20-30	Delivery by US F-16C/D aircraft
<i>Ghedi Air Base</i>	Italy	10-15	Delivery by Italian PA-200 Tornado aircraft
<i>Incirlik Air Base</i>	Turkey	20-30	Delivery by US aircraft
<i>Lakenheath Royal Air SoSForce Base</i>	United Kingdom	Undisclosed	Undisclosed

Source: Nuclear weapons sharing. *Bulletin of the Atomic Scientists*. (Kristensen et al., 2023).

Extended participation in nuclear-related sharing arrangements is still being determined in the coming years. Newly admitted NATO members Sweden and Finland are set to join the Alliance's Nuclear Planning Group and may opt to engage in NATO's annual nuclear strike exercise. Nevertheless, given that both nations, especially Sweden, have a history of neutrality and focus on non-proliferation, there is a high uncertainty regarding their future involvement in NATO's nuclear arrangements. Top-level officials from both nations indicated that they might participate in supporting NATO's nuclear operations beyond their borders, yet they are firm in their stance against hosting nuclear weapons on their soil during peacetime (Kauranen, 2023; Yle, 2022; Billström, 2023). Last but not least, Poland also expressed interest in playing a role in the United States' nuclear mission.

Conclusions

In light of the current strategic landscape and the European Union's aspirations for enhanced self-reliance in security and deterrence, the viability of nuclear sharing agreements with the United States stands subject to debate. Allied European states explore possibilities for restructuring and improvement, specifically of the EU's deterrence capabilities. The invasion of Ukraine reshaped the perception of threats on the continent, cementing the continued deployment of US Non-Strategic Nuclear-Weapons (NSNWs) in Europe, even if operationally obsolete in terms of preferred path of nuclear action from a military standpoint. However, the complete withdrawal of US nuclear assets from European soil is currently out of the question because it could be construed as an excessive stride toward NATO's denuclearisation policy, particularly amidst Russia's maintenance of substantial NSNW stockpiles in the region. Nevertheless, NATO's multiply reiterated commitment to reduce the significance of nuclear weapons in its security strategies paves the way for the exploration of alternative approaches. Drawing from the insights of John J. Mearsheimer's work, which underscores the importance of conventional deterrence in upholding stability, European allies have the incentive to optimise their conventional capabilities for credible deterrence without succumbing to the coercive dynamics of offensive realism, thereby averting a spiral of military dominance and over-militarisation of the continent (Mearsheimer, 1983).

If political momentum and the strategic environment allow, more flexible commitments of nuclear weapons posture can be made in Europe. These weapons could be designed to be forward deployable, but not forward deployed, meaning they would remain stationed outside the region until a crisis occurs. Thus, no country in the area would host US nuclear weapons on their soil, a situation which improves the denuclearisation efforts on the continent. This approach sets the ground for a nuclear-sharing arrangement emphasising on planning and information exchange fulfilling US nuclear protection commitments and promoting burden-sharing among allies. The effectiveness of nuclear sharing depends on understanding how the United States' plan to employ its nuclear options when necessary and on the support functions provided by other NATO member states.

In this scenario, despite the absence of US forward-based nuclear weapons, the "nuclear sharing" arrangements remain paramount to ensure the credibility of extended deterrence and the cohesion of the Alliance. Greater emphasis should be placed on adapting these mechanisms, such as nuclear information sharing, consultations, joint planning, and execution. Consequently, NATO's cohesion and the credibility of its nuclear deterrence concepts are significantly enhanced by a robust network of nuclear information and consultation mechanisms encapsulated under the label of nuclear sharing.

France and the United Kingdom, as NWS recognised by NPT, stand as formidable guarantors of nuclear deterrence within the European context. Their possession of nuclear stockpiles represents a robust and credible deterrent capability, contributing significantly to regional security and stability (NTI 2015, NTI 2016). Their nuclear capabilities include advanced delivery systems and a diverse range of nuclear warheads, ensuring a flexible and adaptable deterrent posture.

Furthermore, France and the United Kingdom are committed to maintaining a continuous-at-sea deterrent posture, which enhances the survivability and credibility of their nuclear forces. As a result, their nuclear deterrence posture extends beyond their national borders, providing reassurance to European allies and contributing to the collective defence posture of NATO.

According to Mearsheimer, nuclear deterrence is complementary to conventional deterrence, particularly in deterring existential level threats (Mearsheimer, 1983). Furthermore, Mearsheimer emphasises the importance of maintaining an appropriate balance between conventional and nuclear deterrence capabilities. While nuclear weapons can provide a powerful deterrent against certain types of aggression, they also pose the potential for escalation to catastrophic levels. Therefore, combining conventional and nuclear deterrence strategies is necessary to maintain peace.

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In summary, the nuclear sharing agreements involving the deployment of US NSNW in European host nations serve a dual purpose: ensuring US commitments to its allies and fostering cohesion within NATO. Presently, this posture holds more of a political value; Europe benefits from robust nuclear deterrence capabilities provided by the NWS of the region, yet the management of nuclear affairs remains enclosed within the NATO framework.

If the EU harbours aspirations for greater strategic autonomy in defence, it should channel its efforts towards bolstering its defence industry and enhancing conventional forces. Emphasising the development and modernisation of conventional military forces would not only improve EU's ability to conduct independent military operations, but also contribute to reinforcing the collective defence posture of its member states. Ultimately, prioritising these areas would be instrumental in advancing the EU's quest for greater strategic autonomy in defence.

Bibliography

Alberque, W. (2017, February). The NPT and the Origins of Nato's Nuclear Sharing Arrangements. Institut Français des Relations Internationales. https://www.ifri.org/sites/default/files/atoms/files/alberque_npt_origins_nato_nuclear_2017.pdf

Arkin, W. M. (2005). Code Names: Deciphering U.S. Military Plans, Programs, and Operations in the 9/11 World. Hanover, New Hampshire: Steerforth Press.

Atomic Archive. (n.d.). Anti-Ballistic Missile Treaty 1972. Atomic Archive. <https://www.atomicarchive.com/resources/treaties/abm.html>

Atomic Archive. (n.d.). Comprehensive Test Ban Treaty 1996. Atomic Archive. <https://www.atomicarchive.com/resources/treaties/ctbt.html>

Atomic Archive. (n.d.). Seabed Treaty 1971. Atomic Archive. <https://www.atomicarchive.com/resources/treaties/seabed.html>

Atomic Archive. (n.d.). Strategic Arms Limitation Treaty I 1972. Atomic Archive. <https://www.atomicarchive.com/resources/treaties/salt-I.html>

Atomic Archive. (n.d.). Strategic Arms Reduction Treaty I 1991. Atomic Archive. <https://www.atomicarchive.com/resources/treaties/start.html>

Atomic Archive. (n.d.). Strategic Arms Reduction Treaty II 1993. Atomic Archive. <https://www.atomicarchive.com/resources/treaties/start-II.html>

Billström, T. (2023, February 15). Statement of Foreign Policy 2023. Government Offices of Sweden. <https://www.government.se/speeches/2023/02/statement-of-foreign-policy-2023/>

Blair, Bruce G. (1993). The Logic of Accidental Nuclear War. Brookings Institution Press.

Brodie, Bernard (2011). The Absolute Weapon: Atomic Power and World Order. Transaction Publishers.

Emmanuel Macron. (2022, September 1). Speech by the President of the French Republic at the conference of ambassadors. <https://www.elysee.fr/en/emmanuel-macron/2022/09/01/speech-by-the-president-of-the-french-republic-at-the-conference-of-ambassadors-1>

Faulconbridge, G. (2023, May 26). Russia moves ahead with deployment of tactical nukes in Belarus. Reuters. <https://www.reuters.com/business/aerospace-defense/russia-belarus-sign-document-tactical-nuclear-weapon-deployment-belarus-2023-05-25/>

Jervis, Robert (1995). The Illogic of American Nuclear Strategy. *International Security* 19, no. 4.

Kristensen, H., & Korda, M. (2021). United States nuclear weapons, 2021. *Bulletin of the Atomic Scientists*. 77(1), 43-63. DOI: [10.1080/00963402.2020.1859865](https://doi.org/10.1080/00963402.2020.1859865)

Kristensen, H. M., Korda, M., Johns, E., & Knight, M. (2023, November 8). Nuclear weapons sharing, 2023. *Bulletin of the Atomic Scientists*. <https://thebulletin.org/premium/2023-11/nuclear-weapons-sharing-2023/>

Korda, M., H. Kristensen. (2023, August 8). Increasing Evidence That the US Air Force's Nuclear Mission May Be Returning to UK Soil. *Federation of American Scientists*. <https://fas.org/publication/increasing-evidence-that-the-us-air-forces-nuclear-mission-may-be-returning-to-uk-soil/>

Mearsheimer, J. J. (1983). *Conventional Deterrence*. Cornell University Press. <http://www.jstor.org/stable/10.7591/j.ctt1rv61v2>

NATO. (2019). Allied Administrative Paper AAP-06, (definition adopted in 1996).

NATO (2022, February). *Nato's Nuclear Sharing Arrangements. Public Diplomacy Division (PDD) – Press & Media Section*. https://www.nato.int/nato_static_fl2014/assets/pdf/2022/2/pdf/220204-factsheet-nuclear-sharing-arrange.pdf

NATO. (2022, October 14). *NATO'S Annual Nuclear Exercise Gets Underway* https://www.nato.int/cps/en/natohq/news_208399.htm

Nuclear Threat Initiative. (n.d.). *Treaty on the Non-Proliferation of Nuclear-Weapons (NPT)*. <https://www.nti.org/education-center/treaties-and-regimes/treaty-on-the-non-proliferation-of-nuclear-weapons/>

Penn Research Note 97.3. (1997, June). *NATO Nuclear Sharing and the NPT - Questions to be Answered*. The Berlin Information-center for Transatlantic Security (BITS) and the British American Security Information Council (BASIC). <https://www.bits.de/public/researchnote/rn97-3.htm>

Reuters. (2018, November 14). *Germany's Merkel calls for a European Union military*. <https://www.reuters.com/article/idUSKCN1N1UI/#:~:text=%22The%20times%20when%20we%20could,establishing%20a%20real%20European%20army.%22>

Tertrais, B. (2021). *Principles of nuclear deterrence and strategy (NDC Research Paper No. 19)*. Research Division, NATO Defense College — Rome.

The Nuclear Threat Initiative. (2015). UK Nuclear Overview. <https://www.nti.org/analysis/articles/united-kingdom-nuclear/>

The Nuclear Threat Initiative. (2016). France Nuclear Overview. <https://www.nti.org/analysis/articles/france-nuclear/>

United Nations. (n.d.). Antarctic Treaty (1959). <https://treaties.unoda.org/t/antarctic>

United Nations. (n.d.). Outer Space Treaty (1967). https://treaties.unoda.org/t/outer_space

United Nations. (n.d.). Treaty of Tlatelolco (1967). <https://www.un.org/nwzf/content/treaty-tlatelolco>

United Nations. (n.d.). Treaty of Pelindaba (1996). <https://www.un.org/nwzf/content/treaty-pelindaba>

United Nations. (n.d.). United Nations Platform for Nuclear-Weapon-Free Zones. <https://www.un.org/nwzf/content/overview-nuclear-weapon-free-zones>

US Department of Defense. (2023, October 27). Department of Defense Announces Pursuit of B61 Gravity Bomb Variant. <https://www.defense.gov/News/Releases/Release/Article/3571660/department-of-defense-announces-pursuit-of-b61-gravity-bomb-variant/>

Waltz, K. N. (1981). The spread of nuclear weapons. *Adelphi Papers*, 171(1), 1-86.

Yle. (2022, November 7). President Niinistö: Finland Has No Intention of Siting Nuclear Weapons Arms on Its Territory. <https://yle.fi/a/3-12673743>