# ‘Intellectual Rearmament’ in the Third Nuclear Age

## Refreshing the Conceptual Component of British Nuclear Deterrence

Daniel Skeffington, Edward Barlow, Harry Halem and Air Marshal Edward Stringer CB CBE

Foreword by Rt Hon Lord Case CVO PC

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Policy Exchange

# About the Authors

**Daniel Skeffington** is a Senior Fellow and Coordinator of the Policy Exchange Nuclear Enterprise Commission, and a Doctoral Fellow at the Centre for Statecraft and National Security in the Department of War Studies, King's College, London. He specialises in Anglo-American foreign policy, constitutional history, and the history of political thought, with a particular focus on British grand strategy since 1945. He was previously Parliamentary Researcher to The Lord Stirrup, former Chief of the Defence Staff (2006–2010), for the year 2024-25, in conjunction with the KCL Policy Institute. Mr Skeffington holds an undergraduate degree in Politics and International Relations from the University of Bath, and a postgraduate degree in Political Theory specialising in intellectual history from the London School of Economics.

**Edward Barlow** is a Research Fellow in the National Security Unit and a recent graduate of the University of Cambridge and the London School of Economics, where he specialised in Russian and Iranian foreign policy alongside German intellectual history

**Harry Halem** is a Senior Fellow in the National Security Unit and author of *Arsenal of Democracy* and *Breaking the New Axis*. He specialises in grand and maritime strategy, defence industrial issues, and strategic history, particularly of British strategy from 1890 to 1945. Mr Halem holds an undergraduate degree in Philosophy and International Relations from the University of St Andrews, and a postgraduate degree in Political Theory specialising in comparative intellectual history from the London School of Economics, where he has recently completed a PhD in International Relations

**Air Marshal Edward Stringer CB CBE** is a Senior Fellow at Policy Exchange. He is a retired senior Royal Air Force officer and Director-General of the Defence Academy. He also served as Director-General of Joint Force Development, Strategic Command from April 2018 to March 2021. He served as Assistant Chief of the Air Staff from April 2013 to January 2015, and as Assistant Chief of the Defence Staff (Operations) from March 2015 to 2018.

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As the UK enters a decisive decade for its energy and economic future, the Policy Exchange Nuclear Enterprise Commission will continue to set out the bold, practical reforms required to rebuild a world-class nuclear enterprise, cut through the inertia of the past two decades, and deliver the nuclear renaissance Britain urgently needs.

The Commission will produce a series of discussion papers and research notes over the coming six months addressing the most pressing questions facing the UK's nuclear enterprise. Drawing together expertise from across government, industry and academia, its research and events will span subjects from the nuclear deterrent and the nuclear threat landscape to regulation, the nuclear industrial base and dual-use technologies. This breadth will enable the Commission to propose in a final publication a wide array of answers to the considerable challenges at the heart of energy and national security policy.

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- Paul Taylor CBE, former Director General of Strategic Technologies at the Ministry of Defence
- Rt Hon Anne-Marie Trevelyan, former Minister of State for IndoPacific and Secretary of State for International Trade
- Dr Heather Williams, Director, Project on Nuclear Issues at the Centre for Strategic and International Studies
- Admiral Rt Hon Lord West of Spithead GCB DSC PC, former First Sea Lord

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# Foreword

*Rt Hon Lord Case CVO PC*

No-one can or should be gleeful that we are having to talk about nuclear weapons again. Yet, the facts of geopolitics are what they are, and we find ourselves as both a sovereign nation and NATO member having to think once more about what role nuclear weapons play in our individual and collective defence. This latest paper, part of the canon of work being produced by the Policy Exchange's nuclear commission, provides both analysis of the history of the United Kingdom's nuclear policies and programmes, as well as discussion of future options that we might consider.

The significance of nuclear weapons in our modern national arsenal has now been properly recognised politically, first by Rishi Sunak's administration and that renewed focus has continued under Keir Starmer's leadership. After decades of underinvestment and dither, money and talent are flowing back towards our nuclear programme. There is an awful lot of ground to make up.

The United Kingdom's nuclear programme has not been as busy as it is now for many decades. Under fresh and determined military, civilian and industry leadership, we are engaged in building three classes of nuclear-powered submarines, two warhead programmes are running, critical infrastructure is being renewed, and we are desperately trying to close the gap between the skills we need and skills we currently have.

There are uneasy consequences that flow from this activity. One is that the proportion of our defence budget that is being devoted to our nuclear programmes has been increasing, which currently means squeeze elsewhere. Let us hope that further increases in the overall defence budget will mean that, as a nation, we are able to see the necessary recapitalisation of both our nuclear and conventional forces. The two go together. The impact of conventional forces in a state-on-state conflict is increased by the presence of nuclear weapons as the ultimate guarantee of national protection. Likewise, a nuclear force is more credible when we possess the necessary conventional capabilities to respond effectively and proportionately before a nuclear threshold is reached.

Given the global context in which we now live and the state of affairs that we must anticipate in the decades ahead, we must also put effort into what this paper calls our "intellectual rearmament". Ignorance of the issues and choices we face ahead should not be accepted. Automatically

accepting inherited philosophies and methodologies without rigorous reassessment in our current and future context is dangerous. Assigning nuclear thinking to only a small group of people is naïve, given that the consequences of the decisions made about our nuclear weapons affect a whole nation and our allies.

Deterring our adversaries is not just the job of a select few. Effective and credible deterrence is the work of very many people, across government, the Armed Forces, industry, Parliament, public life and the whole of society. Whilst the ultimate guarantee of our nation's security might rest in the missile tubes of our submarine on patrol and, in future, also in the bomb bay of an RAF jet, creating the necessary doubt in our enemy's mind that stops them seeking to threaten our interests depends too on an educated and determined collective understanding of what it takes and what it means to be a nuclear-armed state. We hope that this paper is a contribution to that understanding.

# Executive Summary

- Nuclear weapons have returned to the forefront of the security agenda after a period of post-Cold War neglect.
- Renewed great-power competition, heightened nuclear coercion, proliferation and adversarial coordination coincide with the rise of China as a peer nuclear competitor to the U.S., its subsequent pivot to Asia and wider concerns regarding the durability of U.S. commitments to Europe have left Britain's deterrent posture misaligned with the present threat environment.
- Despite the change in strategic circumstances, Britain's nuclear posture and doctrine remains defined by key post-Cold War assumptions: unipolarity, assured U.S. commitment to European NATO, and the continued viability of arms control agreements. Simultaneously, the UK has allowed the steady erosion of institutional focus, expertise and strategic seriousness regarding nuclear deterrence.
- This report traces the basic history of the British state's engagement with the question of nuclear weapons as an aide to current policymakers grappling with similar questions and crises.
- It follows the evolution of British nuclear strategy through three distinct nuclear ages: 1945-1991, 1991-2014 and from 2014 to the present, setting out how Britain's deterrent posture was formed, narrowed and is now being tested – and the need for a fundamental rethink of how the UK approaches its deterrent.

- In the first nuclear age (1945–1991), Britain's pursuit of nuclear weapons was driven by the need to deter an aggressive Soviet Union, insure against potential U.S. isolationism, and preserve Britain's ability to shape the international order.
- During the early Cold War, Britain and Western Europe were exposed. They hosted U.S. nuclear forces which made them a primary Soviet target, but were dependent on U.S decision-making in potential crises.
- The UK initially assigned its nuclear arsenal to RAF bombers , the so-called 'V-force', yet submarine-borne alternatives were increasingly seen as the preferred option as bombers became more vulnerable to Soviet air defences. The 1962 Skybolt crisis underscored the dangers of overreliance on the U.S., yet ultimately accelerated the acquisition of a submarine-based system.
- The 1963 Nassau Agreement, and subsequent adoption of Polaris,

marked a decisive moment for the British deterrent by establishing the CASD, which has provided a survivable second-strike capability since 1969, and allowed Britain to retain operational independence despite significant technical assistance from the U.S.

- This strategic capability was paired with a deliberately limited arsenal, rejecting numerical competition in favour of minimum force requirements calibrated to ensure credible devastation of Soviet centres of power. This was encapsulated in doctrine, which established Britain's role as the 'second centre of decision' within NATO, and operationalised through the 'Moscow Criterion'.
- Cold War British deterrence also relied on distinct sub-strategic nuclear systems, such as the WE.177 free-fall bomb, designed to deny adversaries escalation dominance by preventing the exploitation of gaps between conventional conflict and full-scale strategic nuclear exchange.

- The end of the Cold War marked the transition to the second nuclear age (1991-2014), characterised by American primacy, growing momentum behind arms control and the belief that existential nuclear confrontation in Europe had receded indefinitely.
- During this period, Britain retired its separate sub-strategic capabilities, such as the WE.177's, and re-tooled CASD to provide both strategic and sub-strategic options. It also reduced its overall warhead numbers, de-targeted missiles and lengthened the notice-to-fire period.
- These changes reflected not only a benign strategic environment but also a broader cultural ambivalence about nuclear weapons, with Britain positioning itself as a reluctant nuclear power committed to promoting disarmament.
- These reductions hollowed out Britain's institutional capacity for nuclear thought and confined expertise to a small cadre of specialists. This allowed nuclear doctrine, education, and strategic literacy to atrophy across government and the armed forces.
- The declining importance of nuclear strategy, and concomitant reduction in capabilities, were the result of the unique geopolitical environment of the post-Cold War period.

- The third nuclear age (2014 onwards) has shattered these assumptions, demanding serious re-evaluation of British deterrence doctrine and posture.
- The return of great power competition and subsequent collapse of the arms control regime, the increasing use of nuclear coercion, and enhanced adversarial collusion intersect with declining U.S. engagement with Europe, as its priorities shift toward China.
- Russia's use of nuclear threats during the war in Ukraine, its significant advantage in – and expansion of – sub-strategic nuclear forces, and its doctrinal willingness to employ nuclear weapons

to offset conventional weakness directly challenge the gaps in Britain's deterrence spectrum.

- Simultaneously, China's rapid nuclear expansion has forced the United States to prepare to deter two nuclear peers at once, driving a structural pivot toward the Indo-Pacific and raising doubts about the durability of U.S. extended deterrence in Europe.

- Britain now faces a strategic environment reminiscent of the early Cold War: potential exposure to nuclear coercion at the sub-strategic level, uncertainty over U.S. priorities, and adversaries willing to probe gaps in NATO's deterrence architecture.
- These significant geopolitical and cultural shifts have left Britain vulnerable, lacking a coherent theoretical framework for thinking about nuclear deterrence in an increasingly complex and multipolar environment.
- Rebuilding credible deterrence, therefore, depends on intellectual rearmament as a pre-requisite, reversing decades of post-Cold War drift toward disarmament mindsets, reduced nuclear expertise and institutional neglect. Britain can no longer rely on a narrow cadre of specialists or under-trained officers; instead, it must rebuild a standing body of strategically educated nuclear policymakers and commanders, akin to the U.S. model, and explicitly revive Britain's historic role as NATO's second centre of nuclear decision-making.
- One pathway is to place greater emphasis on CASD by enhancing its flexibility, perhaps through a fifth Dreadnought-class SSBN or similar platform, which would enable simultaneous strategic deterrence and sub-strategic options. This could allow one boat to conduct signalling missions armed with lower-yield warheads, while another preserves CASD through a strategic second-strike capability.
- A second pathway lies in deeper European nuclear cooperation, particularly with France, addressing growing European unease about reliance on a continental nuclear power outside NATO's Nuclear Planning Group. Closer Anglo-French cooperation, as seen through the recent Northwood Declaration, could strengthen the European pillar of NATO deterrence and hedge against U.S. uncertainty.
- The most far-reaching option is the development of a separate sub-strategic nuclear system, sovereign or co-developed with allies. This would reopen foundational questions: purpose, targets, command arrangements, cost and NATO versus national role, but could reinforce Britain's autonomy, enhance its influence in alliance nuclear planning, and deny adversaries coercive space below the strategic threshold. The recent decision to procure F-35A aircraft and return to the NATO nuclear sharing mission underscores these dilemmas.
- Regardless of which options the government does or does not

explore, there is a need for a serious, 'first principles' level rethink of what British sub-strategic capabilities have historically been for, what role they played in British and allied security architecture, and the relative need for them today in a more complex and challenging geopolitical environment.

- The third nuclear age poses significant questions for Britain's deterrence doctrine and capability requirements: questions which, while not novel in isolation, present new challenges when taken together. In a world where the U.S. faces a two-peer nuclear threat, Britain must re-acquaint itself with nuclear strategic thinking, and consider how to deepen its own sub-strategic capabilities for a more uncertain world.

# Introduction

Nuclear weapons have returned to the forefront of British national security thinking. In recent years, several interlocking security challenges have posed acute questions for British, U.S., and allied NATO thinking in the nuclear realm. First among these is the rise of China, and the corresponding decision by the United States to draw down its extensive commitments to European defence and bolster its position in the Pacific. This necessary move for allied security nevertheless poses fundamental, long-term changes to the posture and policy of U.S. allies, chief amongst which is the United Kingdom. Britain now confronts a threat environment defined by nuclear multipolarity, renewed great-power competition, growing nuclear coercion, and a proliferating number of nuclear aspirants. Although the U.S. is shifting its attention away from Europe, Britain's nuclear posture remains configured for an era of unipolarity, arms-control optimism, and a major U.S. commitment to the Euro-Atlantic.

Are Britain's current nuclear forces, configured to deter adversaries in the post-Cold War era, capable of providing this deterrence in a more multipolar world? Since 1945, British nuclear strategy has evolved across three distinct nuclear ages, each defined by distinct strategic conditions rather than chronology alone. The first nuclear age, the Cold War (1945-1991) was shaped by bipolar confrontation and existential threat, which necessitated the UK to build a nuclear arsenal centred on assured retaliation, minimum force requirements, constructive ambiguity, and scalable options within NATO. The second nuclear age, following the contours of the post-Cold War period (1991-2014), enabled by unipolarity, arms control and sustained U.S. primacy. The second age reduced the salience of nuclear weapons, encouraging cuts to forces both conventional and nuclear alongside doctrinal narrowing. The third nuclear age (2014-present) has disrupted these strategic assumptions: nuclear multipolarity, coercion, adversarial collaboration and eroding confidence in the US nuclear umbrella have generated questions about the foundational assumptions underpinning British deterrence.

Britain's nuclear capabilities are currently provided by a single system: four *Vanguard-class* Royal Navy nuclear-powered submarines (SSBNs), armed with Trident-II D5 missiles, fitted with Holbrook nuclear warheads.[1] This is known, collectively, as the Continuous at Sea Deterrent, or CASD. An extremely capable system, CASD remains in the first rank of nuclear capabilities possessed by states around the world. Designed as a 'strategic' system, it has also provided 'sub-strategic' capabilities since 1999, taking over from Britain's previous stockpile of low-yield, air-dropped warheads

1. To be replaced, in the 2030s, by the Astraea A21/Mk7, which is being developed alongside the U.S. W93/Mk7. Ministry of Defence (2024) 'Delivering the UK's Nuclear Deterrent as a National Endeavour' CP 1058 link

and nuclear artillery systems. However, given the significant shifts in the strategic environment, questions have been asked about the requirement for CASD to provide the full spectrum of Britain's nuclear deterrence capabilities. In the third nuclear age, might Britain at some stage need to consider replacing U.S. nuclear capabilities in the European theatre? If so, based on the history of its own nuclear weapons programs, how might it go about it? By examining the development of British nuclear theory and practice during the first and second nuclear ages, we can better grasp the dynamics of this emerging, uncertain era, and even consider whether the reintroduction of a separate system is necessary for British and European security. This paper revisits the three nuclear ages and the development of Britain's nuclear weapons programs, providing new pathways, options, and strategies for deterring adversaries in an era of multipolar competition.

# The 'Three Ages' of British Nuclear Strategy

## The First Nuclear Age, 1945-1991

Britain's path to becoming a nuclear power emerged from the complex geopolitics in the wake of the Second World War. As the conflict drew to a close, Britain decided it needed its own nuclear weapons program, and set up an independent atomic agency in October of 1945. When the U.S. abruptly cancelled nuclear cooperation the following year, the UK began developing a sovereign atomic weapon, which was test-fired for the first time in 1952. Ernest Bevin, the Atlanticist Foreign Secretary in Clement Attlee's Labour Government, was frank in his reasoning, stating baldly that 'We've got to have this thing [nuclear weapons] over here whatever it costs. We've got to have the bloody Union Jack on top of it'. Bevin cited many reasons for pursuing an independent nuclear capability, many of which still resonate today. Three stand out: first, the need to deter an aggressive Soviet Union with designs on Western Europe; second, a fear that isolationism would re-emerge in the United States, leaving Britain exposed and undefended; third, the belief that Britain still had a normative, global role to play, and that without its own deterrent it would be unable to shape international institutions for the better. These remain the core reasons that Britain retains its submarine-borne CASD, and the capabilities to support it, to this day.

The emergence of a British nuclear weapon was somewhat fraught from the outset. Following the Quebec Agreement of 1943 Britain was jointly involved in the American nuclear program, which merged the British MAUD Committee with the Manhattan Project.[2] However, they soon found themselves shut out of the U.S. nuclear program altogether, as just three years later Congress passed the 1946 McMahon Act, cutting off British nuclear cooperation with the U.S.[3] The loss of access to American nuclear research led British policymakers to pursue an autonomous nuclear weapons programme. Policymakers and military officials deemed it a strategic necessity against the backdrop of European and international politics, with the weakened states of Western Europe unable to stand up to the expansionism of the Soviet Union.

This was only heightened after the USSR's first nuclear test in 1949, which erased the brief monopoly the U.S. had enjoyed on these arms. Clement Attlee, who took a keen interest in nuclear affairs after becoming Prime Minister in 1945, was determined that Britain should have the bomb,

2. Office of the Historian, 'Memorandum by the Special Assistant to the Secretary of State for Atomic Energy Affairs (Arneson)', Foreign Relations of the United States 1952-1954, National Security Affairs, Volume 2, Part 2, On the political dynamics of Quebec, see Kevin Ruane, *Churchill and the Bomb in War and Cold War* (London, Bloomsbury, 2018) Ch.4, link
3. Gill Bennet, 'What's the Context? The decision to build a British atomic bomb, 8 January 1947', The National Archives, 7 January 2022, link

and even ran down other military capabilities to ensure the program bore fruit. Attlee viewed a 'British Bomb' as a necessity, and one that would secure Britain's political and military influence in the face of a worsening post-war economy, and permit Britian to draw down troops commitments in the Middle East and other far-flung theatres.[4] 'Deterrence' thus became the posture of post-war Britain, centred on a new conception of strategy in a nuclear-armed age.

However, this strategic and cultural pivot underwent difficult moments during the early Cold War, before sovereign systems were stood up amongst the Europeans. Britain and Western Europe's exposure to nuclear coercion was demonstrated repeatedly during early conflicts, such as the Korean War and the 1954 war in Indochina. At the time, nuclear-armed Soviet bombers could not reach the U.S. mainland, and its strategic missile capabilities were not yet fully developed or operational. If these conflicts had escalated, European cities would have faced the very real prospect of nuclear attack from Soviet bombers.[5] This constituted a major strategic concern for Britain, which had agreed to host U.S. nuclear weapons at British airbases as a deterrent threat to Soviet nuclear coercion or attack. However, this made Britain a major nuclear target if a war did break out, without sovereign control, or even influence, over the levers which might bring a war about: they relied solely on American retaliatory guarantees. Britain's vulnerability to bombing had been clearly demonstrated during the Second World War, and remained a powerful memory in the mind of the British public. The development of British nuclear weapons was therefore the only answer to this problem, however reluctantly this was acknowledged.

Early exposure to nuclear coercion without its own sovereign nuclear forces, in a situation of U.S. ambivalence to escalation, conditioned British nuclear theory and practice. From here on in, British nuclear theory during the 'first nuclear age' recognised that nuclear weapons now existed, and the technological developments which brought them into being could not be undone. They had become entrenched elements of the international system, and if a war broke out, they would likely be used. Coupled with developments in missile delivery, this ushered in a novel, qualitatively distinct era[6] of competition. Sir Michael Quinlan, Britain's foremost strategic thinker and practitioner throughout the latter stages of the Cold War, noted that nuclear arms "carried the potential of warfare past a boundary at which many previous concepts and categories of appraisal…ceased to apply, or even to have meaning."[7] To his mind, all forms of warfare were now unthinkable and unviable, as they were the surest means by which conflicts would escalate into nuclear confrontation between great powers. The destructive ability of nuclear arms had exposed the '*reductio ad absurdum* of all-out warfare'.[8] Deterring conflict, therefore, became the necessary condition for international stability and security.

4. John Bew, *Citizen Clem: A Biography of Clement Attlee* (London, riverrun, 2017) 367-36
5. Kevin Ruane and Matthew Jones, *Anthony Eden, Anglo-American relations, and the 1954 Indochina Crisis*, (London: Bloomsbury, 2021); also Matthew Jones, Great Britain, the United States, and Consultation over the Use of the Atomic Bomb, 1950-1954 *The Historical Journal*, 54, 3 (2011), pp. 797-828; Kevin Ruane, 'Anthony Eden, British diplomacy and the origins of the Geneva conference of 1954', Historical Journal, 37, 1994, pp. 153-72
6. Hans Morgenthau, 'The Four Paradoxes of Nuclear Strategy', *The American Political Science Review*, vol.58, no.1, (March 1964), link
7. Michael Quinlan, *Thinking About Nuclear Weapons: Principles, Problems, Prospects*, (Oxford, Oxford University Press, 2009), p.9
8. Ibid, p.5

Sir Michael Quinlan G.C.B. was one of the foremost British nuclear strategists of the Cold War. For several decades he served as the in-house authority on deterrence within the Ministry of Defence. He devoted a significant portion of his career and later life to theorising the strategic, political and moral implications of nuclear weapons at a time when their use appeared to be a real possibility. His central contribution lay in articulating a conception of deterrence that treated nuclear weapons not as instruments of warfighting, but as tools whose sole legitimate purpose was to prevent war by confronting adversaries with the prospect of intolerable costs. His emphasis on Britain's role as a 'second centre of decision-making' within NATO – and on the cognitive dimension of deterrence – helped frame the nuclear deterrent as a limited yet indispensable means of complicating an adversary's decision-making, reinforcing alliance stability under conditions of extreme uncertainty.

Long before Quinlan began his eloquent expositions on deterrence theory,[9] American thinkers such as Bernard Brodie were grappling with what these weapons meant for strategic practice. As many historiographical analyses note, the evolution of nuclear strategy remained as much a product of the pragmatic practitioners in the military and national security establishment, and their innate cultures and concerns, as it was driven by the abstract theorising of academic strategists.[10] Nuclear arms were therefore required to provide a credible deterrent vis-à-vis the Soviet empire,[11] imposing unacceptably high costs on an expansionist adversary considering first use. Though prohibition, disarmament and arms control would always remain a core pillar of British foreign policy, the imperative was to provide credible and robust nuclear response options to counter massive Soviet conventional superiority, especially in land forces.

Despite the U.S. having severed nuclear cooperation, Britain test-fired her own thermonuclear weapon in 1957, proving to the United States and the Soviet Union that it could independently join the nuclear club. This success came as the Soviet Union launched *Sputnik 1*, which demonstrated missile capabilities which could strike the U.S. homeland. This led to the U.S. immediately rescinding the McMahon Act and negotiating the 1958 Mutual Defence Agreement (MDA) between London and Washington. This bilateral agreement, renegotiated every five years, remains the bedrock of Britain's nuclear weapons capabilities, providing the legal basis for shared nuclear technology and capability. Initially, it permitted the U.S. to supply dual-key nuclear weapons for use on British *Canberra* bombers under Project E, and to restart the sharing of nuclear secrets, enabling the development of a larger British arsenal. The Royal Air Force was assigned the nuclear role, and throughout the 1950s outfitted its *Valiant*, *Vulcan*, and *Victor* bombers into the nuclear-capable 'V-bomber force', taking over from the *Canberra*.'V-force' was designed to ensure Britain retained a survivable rapid retaliation capability in the face of the looming Soviet threat, provided by squadron dispersal and quick reaction arrangements.[12]

Well before the Berlin and Cuban Missile Crises of the early 1960s,

9. On this, it is encouraging to see practitioners advocating a dose of 'Quinlanism' in the United States. See Gregory Giles (July 5 2023) 'Michael Quinlan Was Right: The Enduring Relevance of Nuclear Deterrence' *War on the Rocks*
10. Lawrence Freedman and Jeffrey H. Michaels 'Britain's 'Independent' Nuclear Deterrent', In: The Evolution of Nuclear Strategy (London, Palgrave MacMillan, 2019) pp.343-344
11. George Kennan, 'The Sources of Soviet Conduct', *Foreign Affairs*, (1947), link
12. The force was backed up by the first U.S. made, U.K. operated dual-key missile system, the *Thor* ICBM, in 1958. The strategic element of the force has been provided solely by the submarine-launched *Polaris* system since 1968, with one SSBN continuously at sea since 1969. See work on 'Project E' and the extent to which the MBF was 'operationally independent' in practice, from as early as 1957. Justin Bronk (2014) Britain's 'Independent' V-Bomber Force and US Nuclear Weapons, 1957–1962, Journal of Strategic Studies, 37:6-7, 974-997

H.M.G. had realised a more enduring platform than V-force was needed. The vulnerabilities of airborne nuclear capabilities became increasingly clear as Soviet air defences improved, straining the viability of the V-force towards the end of the 1950s. Indeed, given the effectiveness of Soviet SAM launchers, some estimate that by 1959, as few as five V-force delivered warheads could have been expected to reach their targets.[13] This presented serious strategic choices for H.M.G. One solution was the Blue Streak ground-launched, intermediate-range ballistic missile, originally ordered in 1955. However, the time taken to fuel these missiles made them unusable in a rapid crisis, leaving them vulnerable to a swift Soviet strike. The cancellation of Blue Streak, itself an expensive program, placed an emphasis on Britain's air-launched cruise missile, Blue Steel, operational from 1961-1969. The primary role of Blue Steel - initially designed as a stopgap measure until Blue Streak entered service - was to counter improved Soviet air defences. However, the system did not enter service until 1963, by which time advances in SAM launchers had eroded its standoff advantages.[14]

## Figure 1: An RAF 'V Force' Vulcan Nuclear Bomber

***(Sgt. David S. Nolan, US Air Force, Link)***

Given these improvements in Soviet air defences, Britain cancelled its replacement standoff nuclear missile, Blue Steel II, and – in an effort to keep V-force viable into the 1960s – procured an American alternative: the Skybolt air-launched cruise missile. Attempts were also made to counter the threat of pre-emptive strikes on V-force, such as scramble improvement for pilots,[15] and placing at least one V-bomber from each squadron on Quick Reaction Alert. The aim of these measures was to provide a more credible and survivable nuclear force, ensuring aircraft armed with Blue Steel were airborne within four to fifteen minutes.[16] However, these were not watertight solutions. Coupled with Soviet placement of low-trajectory medium-range ballistic missiles[17] in Eastern Europe, despite the Ballistic Missile Early Warning System and Missile Defence Alarm System Britain

13. Justin Bronk, 'Britain's 'Independent' V-Bomber Force and US Nuclear Weapons, 1957–1962', *Journal of Strategic Studies*, vol.37, issue.6, (2013), link

14. It is worth noting that the UK's position may have been too credulous of Soviet SAM capabilities, a concern that was to drive the entire operating policy of the RAF throughout the Cold War. When, in 1960 and 1962, RAF Vulcans provided the 'Red Force' for a strategic nuclear stack on the USA, which involved the full mobilisation of the USAF's defences, seven of the eight Vulcans got to their targets - critical US cities - and returned unscathed. The fact that the RAF had so comprehensively outperformed USAF was so concerning to American authorities that they classified the results for decades.

15. Andrew Brooks, *Force V: The History of Britain's Airborne Deterrent*, (Jane's Publishing Co Ltd, 1982)

16. Kristan Stoddart, 'British Nuclear Strategy During the Cold War', in (eds.) Matthew Grant, *The British Way in Cold Warfare: Intelligence, Diplomacy and the Bomb 1945-1975*, (Continuum, 2011), p.22

17. SS-4 and SS-5 MRBMs.

could receive as little as four minutes warning of an incoming nuclear strike.[18]

## Figure 2: Harold MacMillan and John F. Kennedy at the Nassau Conference

*(Cecil Stoughton. White House Photographs. John F. Kennedy Presidential Library and Museum, Boston, Link)*

It would take a major diplomatic crisis to force the vulnerability of bomber-borne nuclear weapons to the fore of alliance politics. Toward the end of the 1950s, Washington had recognised the problems just as London had. The steps it took in response would have serious repercussions for the British nuclear force. In 1962, the Kennedy administration controversially and abruptly cancelled the Skybolt program. The rationale was that, given the vulnerability of the bomber force, it was no longer worth investing in systems such as Skybolt – sea-borne SLBMs, such as the Polaris missile, could perform this task far better. This logic, whilst sensible, left London out on a limb. Britain's entire future nuclear force had been based around the idea that, following the failure of Blue Streak and the cancellation of Blue Steel, Skybolt would provide a new lease of nuclear life to the V-force. Its cancellation threatened to leave Britain without the means to sustain its nuclear forces, provoking a serious crisis between the two allies at the heart of the NATO alliance.

In response, Harold Macmillan made a high-profile trip to the Bahamas to discuss the future of Anglo-American nuclear cooperation, and the continued independence of the British nuclear force within allied strategic planning.[19] The resulting Nassau Agreement, signed with President

18. CJ Bartlett, *Long Retreat: A Short History of British Defence Policy*, 1945-70, (Basingstoke: Macmillan, 1972), p.151-3
19. D.R. Thorpe, *Supermac: The Life of Harold Macmillan* (London, Chatto and Windus, 2010), pp.534-536

Kennedy in 1962, was another significant diplomatic achievement for the United Kingdom in the realm of nuclear weapons. Building on the MDA, the terms of Nassau allowed Britain to acquire the U.S. Polaris missile system – which, as noted, was a far superior system to Skybolt – to be placed on U.S.-manufactured, UK-operated Resolution-class submarines (SSBNs). Polaris-armed submarines entered service in 1968, providing Britain with a credible second-strike capability: submarines hidden in the ocean's depths anywhere around the globe were highly survivable and capable of inflicting devastating retaliation. Since 1969, the UK has operated such a system as its CASD. Under CASD, at least one British SSBN has remained on patrol 24 hours a day, every day, since 1969.[20] Unlike bombers, SSBNs operating covertly at sea could not reliably be detected or destroyed. This would give Britain – and NATO, to which her nuclear capabilities and forces were assigned – a secure retaliatory second-strike capability that could not be pre-empted, enabling London to act as the 'second centre of decision' within the alliance.

London's policy around CASD strengthened this further, ensuring at least one SSBN was always on patrol, guaranteeing an uninterrupted second-strike capacity. By adopting a platform that was both continuously deployed and extremely difficult to locate and destroy, Britain translated its doctrinal requirements into an operational reality, one which it enjoys to this day. The Trident-II D5 missile and the *Vanguard-class* submarines that carry them have always been – and remain, despite scare stories emanating from atypical test firings – superbly capable weapons systems operated by first-class crews.

In parallel, British nuclear strategists developed the belief that this survivable second-strike capability did not require a large arsenal, and that numerical parity with superpowers was as costly as it was improbable. Instead, Britain developed a deterrent no larger than necessary to guarantee that it could impose. These minimum force requirements did not imply a static nor a minimal investment, but rather a constant calibration of capability to ensure that the threat of retaliation remained unquestionable. Britain aimed to pose intolerable damage to major Russian centres of power, even when the reliability of the U.S. was in doubt.[21]

Alongside Quinlan, major strategists included Bernard Brodie, William W. Kaufman, Andrew Marshall, Thomas Schelling, Albert Wohlstetter, Henry Kissinger, Glenn Snyder, and Herman Kahn.

For more detail, see Eric S. Edelman 'Chapter 27: Nuclear Strategy in Theory and Practice' In: Hal Brands (Eds.) The New Makers of Modern Strategy (Princeton NJ: Princeton University Press, 2023) especially pp.679-686

This theory was operationalised through Britain's targeting doctrine, particularly to the so-called 'Moscow Criterion', which held that Britain must be able to strike Moscow – and, implicitly, other population

20. Peter Hennessy and James Jinks, *The Silent Deep: The Royal Navy Submarine Service Since 1945*. (London, Penguin, 2015)

21. Michael Quinlan, 'Deterrence and Deterrability', *Contemporary Security Policy*, vol.25, issue.1, (2014), link

centres, given Russia's heavy population density around Moscow and St. Petersburg – with relative certainty.[22] This formed the benchmark for Britain's minimum credible deterrence posture.[23] While the precise scope of targeting fluctuated, by 1962 it had settled on targeting fifteen Soviet cities, and would only be replaced with the advent of the more advanced Trident system, whose precision made striking non-city targets possible without undermining credibility or lethality.[24]

As a result, Britain never attempted to match U.S. or Soviet stockpiles. It only developed a force capable of inflicting unacceptable costs on an adversary with sufficient resilience and precision. This approach was well demonstrated in the 1970s Chevaline upgrade programme. Rather than expand the Polaris arsenal, which was never considered a viable option by policymakers, Britain improved the missile's penetrative ability to counter the improved Soviet anti-ballistic missile defences around Moscow.

During the Cold War, British 'sub-strategic' capabilities[25] were developed to guarantee proportionate options for this challenge, foreclosing options for nuclear coercion in the space between a more 'strategic' level system and high-end 'conventional' systems, such as cruise missiles. Weapons such as the British-designed WE.177 free-fall bomb, which entered service in 1966, were intended to fill this gap. These capabilities denied adversaries the option to exploit gaps in the sub-strategic space, on the understanding that this space could be pursued without substantial risk of retaliation. This was particularly important because of the pronounced asymmetry between the arsenals of the Warsaw Pact and NATO, particularly in sub-strategic nuclear weapons. This created the credible threat that Moscow might attempt limited nuclear use, under the assumption that Western European allies lacked proportionate retaliatory options.

From a NATO perspective, sub-strategic weapons such as the U.S. B61 or the WE.177 were vital to deterrence. British weapons formed an important, though smaller, part of the NATO arsenal and its strategy of 'flexible response'. The rationale for these weapons, although clear, is not obvious with hindsight. Politicians seriously considered replacing the WE.177 class of weapons in the late 1980s and early 1990s, with military chiefs and policymakers developing arguments for retaining this separate, sovereign capability. However, the government ultimately compromised, dispensing with these weapons in favour of adjustments to Trident. Although designed as a strategic system, H.M.G. modified an unspecified number of Holbrook warheads, enabling them to be used with a lower-yield.[26] Britain therefore retained its sub-strategic and tactical capability, even after the retirement of the WE.177's and other low-yield systems in 1998.

These changes were made due to the significant change in the international threat profile and attendant defence spending cuts, but also because the rationale behind a separate lower-yield weapon, such as WE.177, was by then questionable. As such, although options were explored with the U.S. and the French, no replacement was procured. The last of the WE.177's were retired in 1998, making CASD responsible for

22. Geoffery Chapman, 'Britain's Deterrent and the "Moscow Criterion"', *RUSI*, 1 August 2018, link

23. John Baylis, 'British Nuclear Doctrine: The "Moscow Criterion" and the Polaris Improvement Programme', *Contemporary British History*, vol.19, no.1, (2005), link

24. Kristan Stoddart, 'British Nuclear Strategy During the Cold War', in (eds.) Matthew Grant, *The British Way in Cold Warfare: Intelligence, Diplomacy and the Bomb 1945-1975*, (Continuum, 2011), p.25

25. On the discussion of definitions, see 'The Deterrence Theory of Sir Michael Quinlan' *Policy Exchange*, p.

26. Professor Sir Lawrence Freedman (1 April 2025) 'Defence Committee, Oral evidence: The UK contribution to European security, HC 520' Q.97 link

delivering all levels of Britain's nuclear capability, from tactical to strategic.

Given this, it is important to recall Ernest Bevin's assessment in 1945 – and reiterated by Churchill in 1955 – that one's nuclear security should never become overly dependent on the United States. After 1989, when the threat of nuclear coercion appeared largely theoretical, it was reasonable to contract out this element of our deterrence. But the lesson remains. In each era, we must assess the strength of these basic calculations, ensuring Britain is not overly dependent on a single source or state.

## The Second Nuclear Age, 1991-2014

The collapse of the Soviet Union between 1989 and 1991 presaged the end of the first nuclear age, and the beginning of the second. During this period, British and NATO nuclear planning shifted markedly. With the removal of an existential threat to the alliance, the old arguments about nuclear disarmament, and the UK polity's somewhat uniquely ambivalent relationship to being a nuclear power, could resurface.

The second nuclear age was to be characterised by these two mutually reinforcing trends: unipolarity and disarmament. The collapse of the USSR left the U.S. as the preponderant power with a drastically reduced need for massive nuclear deterrence in Europe. While Russia remained the theoretical adversary for Britain and Western European states,[27] the dramatic shift in the global balance of power led to a 'golden age' of nuclear arms control, counter-proliferation efforts, and disarmament. Western nations now wished to signal something very different on the international stage, and Britain became an almost reluctant nuclear power — subliminally, it began rehearsing the Aldermaston anti-nuclear marches which took place between 1958 and 1965. Though nuclear weapons were still deployed as Trident replaced Polaris, Britain began reducing its nuclear posture to the minimal viable strategic deterrent, seeking to signal reluctant ownership on a path to multi-lateral disarmament.

While a shift toward greater arms control had begun after the SALT I talks in 1969, the most momentous shift occurred in 1982, when Ronald Reagan declared that "a nuclear war cannot be won and must never be fought."[28] Five years later, Reagan signed the 1987 Intermediate-Range Nuclear Forces (INF) Treaty with the USSR, which banned an entire class of nuclear weapon, kick-starting a series of strategic arms reduction agreements between the U.S. and USSR (and its successor, the Russian Federation). The Strategic Arms Reduction Treaties (START) I and II, signed in 1991 and 1993 respectively, capped the number of deployed warheads, intercontinental ballistic missiles and bombers, while the Comprehensive Test Ban Treaty (1996) banned nuclear weapons test explosions. By 1996, the American enduring stockpile contained approximately 9,250 warheads,[29] down from the Cold War peak of 31,255 in 1967.[30] By 2023, it had been further reduced to 3,748.[31]

Similarly, as has been noted, the UK implemented major reductions to its nuclear arsenal, embracing formal commitments to arms control. The 1998 Strategic Defence Review (SDR) reduced the stockpile of Trident

27. Ibid

28. President Ronald Reagan, 'Radio Address to the Nation on Nuclear Weapons', Ronald Reagan Presidential Library & Museum, 17 April 1982, link

29. 'U.S. Nuclear Weapons Stockpile, July 1996', *Bulletin of Atomic Scientists*, vol.52, issue.4, (1996), link

30. Robert Norris, 'The History of the U.S. Nuclear Stockpile 1945-2013', Federation of American Scientists, 15 August 2013, link

31. 'Transparency in the U.S. Nuclear Weapons Stockpile', National Nuclear Security Administration, (October 2024), link

missiles maintained to 200 from 300[32] while cancelling the procurement of 58 new missiles. It also committed to reducing the number of warheads aboard patrolling CASD boats and eliminated Britain's remaining tactical and air-delivered nuclear weapons.[33] The dual-key U.S. warheads mounted on British Lance missiles and nuclear artillery pieces were retired, and by March 1998, the last WE.177 free-fall bombs had also been withdrawn from service, and Britain's sub-strategic nuclear capabilities were transferred to Trident.[34] From this point onward, the UK's nuclear deterrent has rested entirely on its fleet of four Vanguard-class SSBNs.[35] Britain was signalling its shift to fit into a safer, more normatively girded world, maintaining a minimum credible nuclear force as a last resort.

The primary aim throughout the 1990s was therefore to reduce costs, whilst preserving an independent nuclear capability in extremis. This was not an abandonment of deterrence, but a recalibration to meet the post-Cold War strategic environment. The conditions of unipolarity, a maintained American commitment to NATO, and the diminished Russian threat reshaped British posture. Simultaneously, the UK presented itself as a responsible nuclear state by supporting global non-proliferation efforts. Central to this was its adherence to the Nuclear Non-Proliferation Treaty (NPT), committing it to non-proliferation, peaceful use of nuclear energy, and explicit pursuit of eventual disarmament.[36] In 1996, the UK became a signatory to the Comprehensive Nuclear-Test-Ban Treaty (CTBT), becoming one of the first nuclear states to do so. By ratifying the CTBT, the UK committed to never conducting nuclear-weapon test explosions, reinforcing the then-growing norm against nuclear testing.[37] The UK also incorporated the treaty's prohibitions into its domestic law via the Nuclear Explosions (Prohibition and Inspections) Act 1998. By affirming non-proliferation, banning testing and pledging to pursue arms control and disarmament under the NPT framework, Britain positioned itself as a state that accepted legal and normative constraints on nuclear weapons.

The operational character of CASD was also reshaped. In 1994, the Government announced Trident missiles would be de-targeted, meaning submarines would no longer hold preset aimpoints in peacetime.[38] The 1998 SDR committed Britain to longer notice-to-fire periods of "several days",[39] and a reduced alert state for submarines on patrol.[40] These policy changes transformed CASD from a high-alert Cold War capability to a system which was deliberately de-emphasised, operating under a constrained posture for the more benign strategic environment. The de-prioritisation of nuclear issues in Britain, even CASD, was demonstrated in the decision to cancel the Nimrod MRA4 Maritime Patrol Aircraft in the 2010 Strategic Defence and Security Review. The decision, controversial at the time and vocally opposed by many former military figures, left Britain's nuclear SSBN fleet exposed, further reducing anti-submarine warfare and long-range aerial patrolling capabilities.[41] Indeed, this was perhaps the only decision from the review that the U.S. took major umbrage with, as it reduced an already shrunken nuclear capability while increasing Britain's reliance on U.S. assets to function effectively. In addition to the scaling back

32. Itself down from around 400 in the 1980s.
33. Ministry of Defence, 'Strategic Defence Review', July 1998, link
34. Arms Control Association, 'UK Withdraws Tactical Nukes From Service', March 1998, link
35. Claire Taylor, Tim Youngs, Ross Young and Gavin Berman, 'The Future of the British Nuclear Deterrent', House of Commons Library, 3 November 2006, link
36. The Foreign, Commonwealth & Development Office, 'Nuclear Non-Proliferation Treaty (NPT)', 22 August 2024, link
37. Stephanie Lichtenstein, 'Russia, US threatened to resume nuclear testing after decades. Here's why it matters', ABC News, 2 December 2025, link
38. Mike Kiely, 'From Minimum to a Minimal Nuclear Deterrent: Aligning Trident Re-placement with Article VI of the Non-Proliferation Treaty (NPT)', Written evidence to Parliament, NCP0001, 7 June 2018, link. This was in response to a symbolic paragraph in the 1994 Moscow Declaration *between Yeltsin and Clinton* committing to de-targeting, despite the independence of the British deterrent.
39. Tom Dodd and Mark Oakes, 'The Strategic Defence Review White Paper', Research Paper 98/91, House of Commons Library, 15 October 1998, link
40. Ministry of Defence, 'Strategic Defence Review', July 1998, link
41. Lee Willett, 'Mind the Gap: Strategic Risk in the UK's Anti-Submarine Warfare Capability' RUSI Commentary, link.

of Britain's tactical and sub-strategic capabilities in the 1990s, decisions such as the Nimrod cancellation further undermined U.S. confidence in Britain's high-end deterrent capabilities.

Britain was not alone in reducing its arsenal. Norms of non-proliferation were advanced by both non-NATO and post-Soviet nuclear states, with Ukraine, Kazakhstan and Belarus transferring their inherited Soviet arsenals to Russia under the 1991 Lisbon Protocol. France and China also undertook unilateral reductions in their arsenals. Both ended nuclear testing in 1996, with France dismantling its ground-launched capabilities entirely[42], and China supporting the Fissile Material Cut-Off Treaty.[43] Despite India and Pakistan conducting nuclear tests in 1998, both signed the Lahore Declaration in February of 1999, reaching an understanding on avoiding the expansion of nuclear stockpiles and preventing accidental or unauthorised deployment of such weapons.[44] Yet, while Britain's decision to cut back on nuclear capabilities must be seen within this context, there does appear to be something qualitatively different in the UK approach, especially when one compares it to other declared nuclear powers. The U.S. maintained its high-alert nuclear triad and a whole Combatant Command, Strategic Command, dedicated to the command of the nuclear triad and its use in escalation management and dominance globally. Russia, despite its significantly reduced circumstances, always managed to find the means to maintain a nuclear triad that could compete with that of the U.S.

However, this impetus behind this era of non-proliferation was not felt equally, or by all nations. Indeed, despite this trend, Britain's P5 peer nations – the U.S, Russia, China, and France – invested significantly in their own nuclear arsenals. China has continued to make massive investments in its nuclear forces since the end of the Cold War, investments which are continuing to accelerate – like the United States and Russia, China now operates a triad and shows no embarrassment in becoming a nuclear superpower. Similarly, France remains a sovereign nuclear power in its own right, advertising its know-how and large civil and nuclear programmes. French military officers are also educated with an understanding that French military power starts with, and flows from, its nuclear forces. Only Britain appears to have taken an equivocal position. Until recently, the most senior Professional Military Education course for aspiring British generals did not even mention nuclear weapons.

In Britain, those who did look after the nuclear-related capability formed a secretive sect of autodidact specialists, almost exclusively comprised of Royal Navy submariners and policy officials in the MOD. As a result, Britain has degraded its official-level nuclear thinking outside of this specialist group, overlooking key developments in the nuclear doctrine of both its adversaries and allies. No other major nuclear power sees their strategic nuclear forces as the sole guarantor of their security, nor have they removed the nuclear question from battlefield operations. Indeed some, such as Russia, have actively developed doctrines to expressly consider altering the conventional correlation of forces through their nuclear arms, either to coerce an adversary or maintain battlefield momentum. The reasons

42. Claire Mills, Nuclear weapons at a glance: France', House of Commons Library, 28 July 2022, link

43. Ministry of Foreign Affairs, '"China's Endeavors for Arms Control, Disarmament and Non-Proliferation" White Paper', 1 September 2005, link

44. Conflict broke out between these two nations just three months later, in May of 1999 - one of a number of wars and skirmishes which have erupted between India and Pakistan, the most recent of which occurred in May of 2025. However, the provisions of the Lahore Declaration still held.

behind this shift in British strategic culture are moot. However, a sense of national embarrassment regarding nuclear possession is palpable, even amongst those who support nuclear ownership. It is a continuation of an attitude that forced such a wedge between the civil and military nuclear efforts in the 1950s, and which was even enforced by statute.

Britain's nuclear policy was profoundly shaped by the political momentum of disarmament during the second nuclear age. Yet the erosion of physical capabilities forms only part of the problem. Nuclear policy fell far down the Ministry of Defence's institutional priorities, withering its institutional capacity to think coherently about deterrence: a small and overstretched cadre of officials were left to grapple with these problems, problems whose complexity was rapidly outpacing the resources available to address them. In this environment, Britain is not only facing a shortfall in its capabilities, but a deeper epistemic challenge: Britain must construct an entirely new theoretical framework to meet the transformative circumstances of the third age, much like Bernard Brodie in the wake of the first atomic bomb. This theoretical problem set has only grown as the U.S. distances itself from NATO, and the ties between Britain's nuclear adversaries have deepened. The reasons for this distancing, and broader geopolitical shifts, form the core problem set for theorists and practitioners of British deterrence theory in the third nuclear age.

## The Third Nuclear Age, 2014 – Present Day

### I. The Collapse of the Post-Cold War Order

The relative geopolitical stability of the second nuclear age was not to last. Even towards the mid-2000s, the momentum of disarmament was already waning, as the global balance of power began to shift. U.S. withdrawal from the Anti-Ballistic Missile Treaty in 2002 was among the earliest signals that this order would not last. Withdrawal prompted harsh criticism from Moscow, and Russia began building nuclear systems designed to balance against improvements in American defensive capabilities.[45] Simultaneously, concerns emerged over Russian non-compliance with the INF Treaty. Development of a prohibited ground-launched cruise missile, the SSC-8,[46] was documented in successive U.S. compliance reports, contributing significantly – alongside multilateral process failures – to the treaty's collapse in 2018.[47] Discussions within the Conference on Disarmament regarding a Fissile Material Cut-Off Treaty reached an impasse as its 65 member states were unable to reach an agreement – highlighting the growing paralysis of global arms-control diplomacy. As a result, only one treaty has been signed in the last twenty years which limits nuclear arsenals. The 'New START' Treaty, ratified by the U.S. and Russia in 2011, was intended to continue the work of its two predecessor treaties. It will expire 5th February 2026. Recent Russian attempts to rekindle START negotiations as its nuclear modernisation suffers a series of setbacks and it seeks a more favourable Ukrainian settlement[48] have not received a formal response from Washington.[49] The collapse of START,

45. Dave Majumdar, 'Russia's Nuclear Weapons Buildup Is Aimed at Beating U.S. Missile Defenses', The National Interest, 2 March 2018, link
46. Michael Gordon, 'Russia Deploys Missile, Violating Treaty and Challenging Trump', The New York Times, 14 February 2017, link
47. BBC News, 'President Trump to pull US from Russia missile treaty', 21 October 2018, link
48. Pranay Vaddi, 'Beware Russia Bearing Arms Control Gifts', RUSI, 3 October 2025, link
49. Reuters, 'Russia still waiting for US response to nuclear arms control proposal, says Russia's UN envoy', 1 October 2025, link

INF and the Anti-Ballistic Missile Treaty marked the end of the reciprocal restraint which defined the second nuclear age, and formed a path into the foothills of the third. As of February 2026, the NPT Review Conference (RevCon) has still not reached consensus on the NPT's future and faces a major review in the spring.

The fragmentation of the arms-control regime and the subsequent institutional collapse is the result of the steady erosion of political will among key actors to engage seriously with these challenges. Agreements and international legal accords did not fail on their own terms. They have merely proved as durable as the political conditions which made them possible. As great-power relations have deteriorated and strategic pressures have mounted, the commitment to reciprocal restraint has given way to expediency, neglect, and, at times, deliberate abandonment. The breakdown of the START and INF treaties[50] reflect not only the disappearance of formal mechanisms, but a deeper unwillingness to confront the underlying issues.

This unravelling of the nuclear disarmament apparatus must be viewed within the re-emergence of great power competition. The unique optimism and stark power disparity of the 1990s buoyed disarmament. However, just as existential competition engendered nuclear invention in the 1940s, growing hostility between nuclear states has reinvigorated appetites for nuclear weapons across the board, even among states that had long eschewed them, and greatly deflated non-proliferation. From the British perspective, this era has been characterised by the return of a highly aggressive Russian threat and a novel Chinese challenge. The competition is not just military; it spans technology, trade, energy, critical minerals, infrastructure, information and norms.

A potent example of the return to great power competition can be found in comparing Britain's national security priorities in its 2010 National Security Strategy (NSS) with later iterations. The tier one threats listed in the 2010 NSS of terrorism, cyber-attacks, major natural hazards and international military crises[51] stand in stark comparison to the 2015 NSS's commitment to "respond robustly to the re-emergence of state-based threats", particularly increasingly aggressive "Russian behaviour."[52] The 2021 Integrated Review asserted that "Russia remains the most acute threat to our security" while designating China as a "systemic competitor."[53] The 2023 IR Refresh characterised China as an "epoch-defining challenge",[54] while Russia is described in the 2025 NSS as menacing the European continent, leading to intensifying strategic competition.[55] Britain is now firmly in competition with these states, and without appropriate adjustments to its deterrence posture, it will carry a considerable nuclear and non-nuclear vulnerability. Just as nuclear issues were deprioritised after 1991, the dialling up of great power competition since 2014 has necessitated a similar shift in nuclear policy.

50. These followed from the breakdown of the ABM treaty in 2002, which marked the first step in this deterioration of diplomatic arms control, and growing Russian paranoia around advanced U.S. missile defence systems.

51. HM Government, 'A Strong Britain in an Age of Uncertainty: The National Security Strategy', Cm 7953, October 2010, link

52. HM Government, 'National Security Strategy and Strategic Defence and Security Review 2015', Cm 9161, November 2015, link

53. HM Government, 'Global Britain in a competitive age', CP 403, March 2021, link

54. HM Government, 'Integrated Review Refresh 2023', CP 811, March 2023, link

55. HM Government, 'National Security Strategy 2025', CP 1338, June 2025, link

## II. Shifting Geopolitical Trends: The Challenge from Russia, China, and Third States

The most significant challenge in the third nuclear age, in a geopolitical sense, is the primary and second-order effects of China's rise as a major military and economic power. Historically, China's nuclear capabilities were limited. Following its first successful nuclear test in 1964, Beijing procured a small nuclear arsenal, whose purpose was rooted in a strategy of retaliation, for use only in extreme circumstances. This "handful of unfueled intercontinental ballistic missiles" and separately stored warheads, coupled with an "arrangement that required hours, perhaps days, to prepare…for launch", negated any real prospect of Chinese nuclear coercion.[56]

This has now changed. Over the last decade, President Xi has embarked on a rapid programme of Chinese nuclear expansion, diversification and modernisation. As of mid-2024, the U.S. Department of Defense estimated that China possesses an operational stockpile of over 600 warheads, projected to reach over 1,000 by 2030.[57] China is estimated to be producing somewhere in the region of one hundred nuclear warheads per year[58] while diversifying and modernising its delivery systems: expanding and hardening its ICBM silo fields,[59] diversifying into a more survivable and flexible arsenal,[60] investing in strengthening its aerial delivery options[61] and developing its submarine-launched ballistic missile capabilities.[62] This is underwritten by an increasingly complex command and control architecture. As a result, Washington must ensure that it can minimise or substantially limit the scale of damage China is able to inflict on the United States. This challenges previous assumptions and is forcing the U.S. to recalibrate its longstanding focus on Russia and develop a more resilient, regionally distributed force. As a result, the U.S. is preparing plans to deter two nuclear peers simultaneously by 2030.

This 'two peer' concern must be seen alongside the increasing alignment of Beijing, Moscow, Pyongyang and Tehran – termed the 'Two-Peer Plus' problem[63] - whereby U.S. deterrence doctrine is further complicated by deepening collaboration between Washington's adversaries.[64] The rapid expansion of China's nuclear arsenal underpins this 'two peer problem', yet a range of complicating factors arise from Moscow and Beijing's deepening relationship, and their bilateral engagement with North Korea and Iran. The core of this adversarial axis centres on the Sino-Russian "no limits" partnership, announced by Putin and Xi in 2022, which has deepened nuclear material transfers. This has now been developing for some decades. In 1992, Russia and China signed a technical cooperation agreement for fast-breeder reactor cooperation, and in 1999, Russia started to supply highly enriched uranium (HEU) to China for this purpose.[65] While this programme of nuclear material transfers is long-standing, there are signs that it is increasing and being used toward military ends. In 2019, Russia sharply increased nuclear material transfers for China's two CFR-600 fast reactors, which can produce weapons-grade material,[66] and are thought to be "capable of producing enough plutonium for dozens of

56. Vipin Narang and Pranay Vaddi, 'How to Survive the New Nuclear Age', *Foreign Affairs*, vol.104, no.4, (2025), link
57. US Department of Defense, 'Military and Security Developments Involving the People's Republic of China 2024', December 2024, link
58. 'Nuclear risks grow as new arms race looms—new SIPRI Yearbook out now', Stockholm International Peace Research Institute, 16 June 2025, link
59. Hans Kristensen, Matt Korda, Eliana Johns, Mackenzie Knight-Boyle, 'Chinese nuclear weapons, 2024', 15 January 2024, link
60. David Logan and Philip Saunders, 'Discerning the Drivers of China's Nuclear Force Development: Models, Indicators, and Data', Institute for National Strategic Studies, 3 September 2015, link
61. US Department of Defense, 'Military and Security Developments Involving the People's Republic of China 2024', December 2024, link
62. Ibid
63. Eric S. Edelman (2 June 2025) 'America's Latest Problem: A Three-Way Nuclear Race' *Foreign Policy* link; Theresa Hitchens, 'The nuclear 3 body problem: STRATCOM "furiously" rewriting deterrence theory in tripolar world', *Breaking Defense*, 11 August 2022, link; US Department of Defense, '2022 National Defense Strategy of The United States of America, Including the 2022 Nuclear Posture Review and the 2022 Missile Defense Review', 27 October 2022, link
64. Vipin Narang and Pranay Vaddi (24 June, 2025) 'How to Survive the New Nuclear Age: National Security in a World of Proliferating Risks and Eroding Constraints' *Foreign Affairs*. link
65. Daniel Shatts, China-Russia Nuclear Industry Cooperation, China Aerospace Studies Institute, January 2024, link
66. David Albright, Sarah Burkhard, Victoria Cheng and William Goodhind, 'China's Plutonium Production for Nuclear Weapons', Institute for Science and International Security, 9 October 2025, link

nuclear warheads annually."[67] A further report from the U.S. Department of Defence estimated that "the quantity of HEU transferred from Russia to the PRC for its CFR-600 reactors is more than the entire amount of HEU removed worldwide under U.S. and IAEA auspices in the last three decades."[68] In March 2023, both states signed an agreement for extended cooperation over the coming decades, encompassing not just materials transfer but also fast reactor and reprocessing technology development.

Russia and China have deepened collaboration in weapons research and advanced military technology, particularly in the missile and air defence systems. Moscow and Beijing have signed multiple space and missile defence technology transfer agreements since 2017[69], with Russia helping build China's missile defence system.[70] China's new Type 096 nuclear ballistic missile submarine was developed with Russian support,[71] and Putin is seeking closer cooperation across nuclear enabling technologies, describing cooperation on "high-orbit assets, and new prospective types of weapons" as a "serious factor in stabilising the international situation."[72] Moscow and Beijing have conducted over ninety joint military exercises since 2003, aimed at boosting interoperability. Nearly a third of these have occurred since the invasion of Ukraine, including joint nuclear bomber exercises over the Sea of Japan in November of 2024 – a clear signal of growing strategic alignment.[73] Furthermore, programmes of nuclear modernisation are not just a matter of enlargement and technical upgrades, but also diversification. Russia has invested in their sub-strategic nuclear capabilities, most notably the Iskander-M[74], a dual-capable, road-mobile short-range ballistic missile, whose tactical role was underscored during Russia's joint tactical nuclear drills with Belarus in 2024.[75] A concern that has been further demonstrated by the inclusion of the nuclear-capable hypersonic Oreshnik IRBM in a recent round of Russian strikes on Ukraine.[76] China has also expanded its theatre-range forces via the DF-21 dual-capable missile and the H6-N bomber, capable of carrying air-launched ballistic missiles which can be outfitted with nuclear warheads.[77]

Russia and China are not the only nuclear states modernising their forces or seeking to break their 'nuclear aspirant' status. North Korea has also significantly accelerated its nuclear weapons programme to build as many as 70-90 warheads, though actual assembled warheads may number around 40-50.[78] Pyongyang has improved its delivery systems, adding solid-fuel long-range missiles,[79] sea-based options[80] and a new uranium enrichment facility.[81] This expansion reflects a shift from a rudimentary deterrent toward a more credible and diversified nuclear force, capable of regional and intercontinental strikes. There is an additional problem here of technological 'leakage' from Russia to states such as North Korea, with whom it has deepened military and technological ties since 2022: Pyongyang has supplied Russia with between $9.6 and $12.3 billion worth of arms[82] and 12,000 soldiers[83] for the war in Ukraine, and in exchange, Moscow has transferred advanced military and dual-use technologies.[84] Russian military support, particularly on missile technology, has the potential to bolster North Korean development of nuclear-related

67. US Department of Defense, Military and Security Developments Involving the People's Republic of China 2022, link
68. US Department of Defense, 'Military and Security Developments Involving the People's Republic of China 2024', December 2024, link
69. Clayton Swope, Kari Bingen, Makena Young, Madeleine Chang, Stephanie Songer and Jeremy Tammello, 'Space Threat Assessment 2024', link
70. Reuters, 'Russia helping China to build missile-attack warning system: Putin', 3 October 2019, link
71. Henry Foy, Polina Ivanova, Katherin Hille and Demetri Sevastopulo, 'US accuses China of directly supporting Russia's "war machine"', Financial Times 10 September 2024, link; Congressional Research Service, 'China Naval Modernization: Implications for U.S. Navy Capabilities—Background and Issues for Congress', 24 April 2025, link
72. Associated Press, 'Putin calls for closer Russia-China cooperation on military satellites and prospective weapons', 8 November 2023, link
73. Hugo von Essen, 'Joint military exercises signal deepening Russia-China strategic alignment', Mercator Institute for China Studies, 7 May 2025, link; Dzirhan Mahadzir, 'Joint Russian, Chinese Pacific Bomber Flight Prompts Japan and South Korea to Scramble Fighters', US Naval Institute News, 1 December 2024, link; Heather Williams, Kari Bingen and Lachlan MacKenzie, 'Why Did China and Russia Stage a Joint Bomber Exercise near Alaska?', Center for Strategic and International Studies, 30 July 2024, link
74. Also the Layner SLBM, which can carry low-yield warheads on Russian submarines.
75. Bureau of Arms Control and Nonproliferation, '2023 – Report to the Senate on the Status of Tactical (Nonstrategic) Nuclear Weapons Negotiations Pursuant to Subparagraph (a)(12)(B) of the Senate Resolution of Advice and Consent to Ratification of the New START Treaty', US Department of State, 16 April 2024, link; Guy Faulconbridge and Lidia Kelly, 'Russia broadens tactical nuclear weapons drills', Reuters, 12 June 2024, link
76. Victoria Taylor, 'Russia's use of hypersonic missile brings fresh threat to Europe and NATO', Sky News, 10 January 2026, link
77. Chris Andrews and Justin Anderson, 'China's Theatre-Range, Dual-Capable Delivery Systems: Integrated Deterrence and Risk Reduction Approaches To Counter a Growing Threat, Defense Threat Reduction Agency, August 2024, link
78. Arms Control Association, 'Arms Control and Proliferation Profile: North Korea', June 2024, link
79. Zuzanna Gwadera, 'North Korea's Hwasong-18 test', International Institute of Strategic Studies, 19 July 2023, link
80. Joseph Bermudez Jr., Ellen Kim and Victor Cha, 'North Korea's Sea-Based WMD Capability: The Second Leg of the Nuclear Triad', Beyond Parallel, 20 June 2025, link
81. Linus Höller, 'Images show new North Korea uranium enrichment plant, analysts say', Defense News, 13 June 2025, link

capabilities, such as ICBMs, SLBMs, nuclear-powered submarines and low-yield nuclear weapons.[85] [86] These technology transfers do not stop at the DPRK. Through its deepening ties to both Russia and North Korea, China may indirectly benefit from or facilitate the spillover of sensitive capabilities.

Similarly, Iran remains an additional complicating factor in the third nuclear age. Prior to the U.S. strikes on Iranian nuclear facilities, the Islamic Republic had markedly accelerated its nuclear modernisation, expanding both the scale and sophistication of the programme. According to the International Atomic Energy Agency (IAEA), as of May 2025, Iran had accumulated over 400 kg of uranium enriched to 60 per cent purity, a near-weapons-grade level and a 50 per cent increase since early 2025.[87] In the years preceding this, Iran installed advanced centrifuge cascades at Natanz and Fordow, enabling faster enrichment and therefore reduced breakout time.[88] This occurred alongside the hardening of nuclear facilities, in an attempt to enhance resilience against airstrikes.[89] Iran appears to still maintain some nuclear facilities,[90] which are being actively reconstituted and hardened against potential future strikes.[91] These developments suggest Iran's nuclear enterprise has matured beyond being a bargaining chip; it now constitutes a concrete ambition to become a nuclear-armed state. Finally, proliferation by other nuclear states and nuclear aspirants generates additional concerns. Long-standing competition between India and Pakistan is driving nuclear expansion in both states, with both modernising their arsenals, the latter with China's support.[92] Turkey, Egypt, the UAE and Saudi Arabia have taken steps that, while nominally civilian, carry clear implications for potential nuclear weapons development: the Saudis have stated clear intent to develop nuclear weapons if Iran were to achieve its own bomb.[93]

All of this is conditioning strategic thought in Washington, with knock-on effects in London and other European capitals. Strategic alignment amongst adversaries is not limited to technology transfers. Several states are now reintegrating nuclear threats into the dynamics of regional conflicts, lowering the threshold for use and testing the credibility of Western deterrence. Foremost among the practitioners of this posture is Russian Federation, which has aggressively leveraged its nuclear arsenal in recent years. This is driven by factors both perceived and real, as well as broader ideological concerns.[94] The overriding aim of Russian grand strategy since the end of the Cold War has been regaining great-power status, despite its relative weakness compared to the Soviet Union. Russian political and military elites understand this weakness as an existential struggle in both material and ontological terms[95] for the survival of the Russian state and the "Russkiy Mir" (the Russian sphere of political, cultural and security influence) against the West and 'collaborationist' states.[96] This has frequently led Moscow to employ asymmetrical means, including repeated threats of nuclear escalation. This can be traced back to the 2000 Military Doctrine of the Russian Federation, which permitted nuclear weapons to be used "in response to large-scale aggression utilising

82. Illia Novikov and Efrem Lukatsky, 'Ukraine's Zelenskyy says North Korean troops are poised to join the war, cancels UN chief's visit', Associated Press, 26 October 2024, link
83. Bonny Lin, Brian Hart, Leon Li, Hugh Grant-Chapman, Truly Tinsley and Feifei Hung, 'CRINK Security Ties: Growing Cooperation, Anchored by China and Russia', Centre for International and Strategic Studies, 30 September 2025, link
84. Congressional Research Service, 'Russia-North Korea Relations', 30 October 2024, link
85. Lachlan MacKenzie and Catherine Murphy, 'What Russia's Support Means for North Korea's Nuclear Modernization', The Diplomat, 21 April 2025, link
86. See the sunken Russian ship Ursa Major and its speculated cargo of two VM-4SG nuclear reactors supplied by Russia for North Korea, Gregorio Mármol, 'The Russian ship sunk off Cartagena was concealing two nuclear reactors destined for North Korea', La Verdad, 28 December 2025, link
87. Najmeh Bozorgmehr and Andrew England, 'Iran has increased enriched uranium by 50%, says UN watchdog', The Financial Times, 31 May 2025, link
88. Francois Murphy, 'IAEA report: Iran installs more centrifuges at Fordow enrichment plant', 13 June 2024, link
89. Jon Gambrell, 'An Iranian nuclear facility is so deep underground that US airstrikes likely couldn't reach it', Associated Press, 22 May 2023, link
90. Joseph Rodgers, Heather Williams and Joseph Bermudez Jr, 'Damage to Iran's Nuclear Program—Can It Rebuilt?', Center for Strategic & International Studies, 6 August 2025, link
91. Yonah Bob, 'How Iran is rebuilding its nuclear program, learning from past Israeli strikes – analysis', The Jerusalem Post, 23 October 2025, link; Jayanth Jacob, 'Pakistan modernising nuclear arsenal; views India as 'existential threat', says US intelligence', The New Indian Express, 25 May 2025, link
92. 'Nuclear risks grow as new arms race looms—new SIPRI Yearbook out now', Stockholm International Peace Research Institute, 16 June 2025, link
93. Julian Borger, 'Crown prince confirms Saudi Arabia will seek nuclear arsenal if Iran develops one', The Guardian, 21 September 2023, link
94. Anne Clunan, 'Russia's Pursuit of Great-Power Status and Security', in Roger Kanet (eds), *Routledge Handbook of Russian Security*, (Abingdon: Routledge, 2021), p.5; Office of the President of the Russian Federation, Decree of the President of the Russian Federation of no.24, (2000), Article 2; Office of the President of the Russian Federation, 'National Security Strategy of the Russian Federation until 2020', (2009), Article 30; and Office of the President of the Russian Federation, Decree of the President of the Russian Federation, No. 400, (2021), Article 20
95. Tanya Narozhna, 'Misrecognition, ontological security and state foreign policy: the case of post-Soviet Russia', *Australian Journal of International Affairs*, vol.76, issue.1, (2022), link
96. Katri Pynnöniemi and Kati Parppei 'Understanding Russia's war against Ukraine: Political, eschatological and cataclysmic dimensions', *Journal of Strategic Studies*, vol.47, issue.6, (2024), link

conventional weapons in situations critical to the national security of the Russian Federation."[97] This belief that nuclear arms could be used to deter Western intervention was also demonstrated in the Zapad exercises a year prior, which simulated using nuclear weapons against NATO targets.[98]

However, toward the end of the 2010s, the limits of Russia's conventional modernisation and growing disparity with new NATO systems re-exposed Moscow's vulnerabilities. This promoted a renewed emphasis on nuclear deterrence, resulting in the formal codification of its conditions of use in the 2020 Basic Principles of State Policy on Nuclear Deterrence. The Basic Principles did not remove or narrow Russia's flexible nuclear options; rather, it codified them through a list of explicit conditions under which nuclear use might be justified. For the first time, Moscow articulated specific indicators that could precipitate nuclear use. This shift from ambiguity to enumerated triggers did not signal doctrinal restraint. Instead, it reflected Russia's deepening anxiety over its vulnerability to American counterforce, precision-strike and missile-defence capabilities. This doctrinal reassessment formalised a relatively permissive posture driven by Moscow's conventional vulnerabilities.

Since its invasion of Ukraine in February 2022, Moscow has put this into practice on the battlefield, attempting to use nuclear coercion to intimidate its neighbours and deter Western intervention. Within hours of the invasion, President Putin warned that "any potential aggressor will face defeat and ominous consequences" and that "No matter who tries to stand in our way…the consequences will be such as you have never seen in your entire history" – a broadly applied and thinly veiled nuclear threat against Western intervention.[99] Three days later, he moved Russian nuclear forces onto a heightened status of alert.[100] This pattern of coercive nuclear signalling has continued throughout the war, with Russian state media amplifying discussions of potential nuclear strikes against European capitals. The Russian Defence Minister, Sergei Shoigu, also oversaw strategic missile exercises in October 2022 simulating a retaliatory nuclear strike, and in 2023, Russia deployed tactical nuclear weapons to Belarus for the first time since the Budapest Memorandum.[101] Nor is Moscow alone in its increasing use of nuclear coercion. North Korea has also continued to issue a series of nuclear ultimatums, while Iran had hoped its race for the bomb would insulate it against Israel's response to October 7th, and is reluctant to reverse its nuclear ambitions. Though less overt than some, China is becoming increasingly comfortable with nuclear coercion – particularly regarding Taiwan.[102]

All these factors point to an erosion of norms around nuclear coercion, which is compounded by intensified cooperation between Britain's nuclear adversaries. While the extent of cooperation between these states should not be overstated, nor their considerable divergences overlooked, the active strategic coordination from these four states compounds the difficulties thrown up by the Two Peer challenge. In recent years, Russia and China have pursued an increasingly close relationship, evolving from a transactional marriage of convenience to an ambitious alignment across

97. Nikolai Sokov, 'Russia's 2000 Military Doctrine', Nuclear Threat Initiative, 30 September 1999, link

98. Mark Schneider, 'The Nuclear Weapons Policy of the Russian Federation', Presentation to the Defence **Science Board**, link

99. President Vladimir Putin, 'Address by the President of the Russian Federation', 24 February 2022, link

100. TASS, 'Putin orders "special service regime" in Russia's deterrence force', 27 February 2022, link

101. Peter Dickinson, 'Moscow escalates nuclear threats as Ukraine erases Russia's red lines', The Atlantic Council, 3 September 2024, link

102. Lt. Col. David Beaudoin, 'China's Nuclear Expansion: Why Does It Matter and What the U.S. Should Do About It', *Countering WMD Journal*, issue.29, September 2024, link

domains – including nuclear development. This alignment is likely to condition British and NATO nuclear thinking throughout the third age.

## III. The U.S. Strategic Pivot: Causes and Implications for Britain

This shifting geopolitical landscape has forced NATO allies to reassess their deterrence postures and strategic priorities, foremost amongst which is the United States. Washington now faces a profound threat from China, leading U.S. strategists, policymakers, and military personnel to consider how to reduce commitments in Europe and the Middle East and pivot their attention toward the Indo-Pacific. While this shift has been both highlighted and exacerbated by current U.S. policies, it is predicated on long-term strategic pressures that predate, and will outlast, the second Trump Administration. As a result, British and European policymakers now face the possibility that the U.S. may not provide a comprehensive nuclear and conventional umbrella to Europe. This raises fundamental questions for NATO regarding deterrence posture, declaratory policy, force structure, planning, and strategy. Absent active policy planning, British adversaries – most obviously Russia, but also Iran, North Korea, and even China – may use the gap between U.S. and European NATO posture to exploit and undermine deterrence. The changing character of U.S. nuclear posture in response to these challenges is therefore essential for understanding how British and NATO deterrence doctrine must adapt to shifting geopolitical concerns.

The challenge posed by Sino-Russian nuclear expansion has been met by oscillating responses from several U.S. Administrations. The Obama Administration's nuclear policy emphasised arms controls in the pursuit of "a world without nuclear weapons"[103], embodied in the 2010 Nuclear Posture Review, which held that strategic stability[104] could be maintained even with reduced quantities of nuclear weapons.[105] The 2018 Nuclear Posture Review (NPR), published during Trump I, highlighted the Obama-negotiated START's omission of non-strategic nuclear weapons (NSNWs) and Russia's ten-to-one lead in NSNWs. It concluded that the U.S. required a "robust triad, greater force diversity, and an expanded role of nuclear weapons" in U.S. defence strategy.[106] The Biden Administration swung the pendulum back, emphasising through the concept of "integrated deterrence" – a coordinated strategy that drew together "capabilities across all tools of national power."[107] This resulted in President Biden's attempted[108] cancellation of the SLCM-N program and the W76-2 low-yield SLBM, and subsequent criticism from the Strategic Posture Commission that the U.S. needed a large, diversified nuclear force to address two nuclear peers.[109]

The present administration appears, from the perspective of some defence analysts, focused on rectifying its perceived financial and geopolitical fragility: an almost Nixonian concern about America's relative weakness compared to its main strategic rivals, and a need to drastically scale down many of its current commitments to focus on a long-term confrontation with the People's Republic of China. Unlike the Obama or

103. President Barack Obama, 'Obama: How we can make our vision of a world without nuclear weapons a reality', *The Washington Post*, 30 March 2016, link

104. It is worth noting as a relevant aside that 'strategic stability' is often used by policymakers and politicians to mean the general absence of great power competition. This is not what it means for nuclear strategists. For nuclear thinkers, the term specifically means the 'absence of first-strike fear incentives' due to both sides possessing secure second-strike capabilities, otherwise known as Mutually Assured Destruction. 'Strategic stability' does not imply general stability at all levels, and may counterintuitively open up avenues for instability at the conventional or limited nuclear level, depending on the forces possessed by either side. As ever, this will be contextual, depending on the scenario and actors involved. For greater depth on this, see Vipan Narang ' Four Shibboleths of Nuclear Strategy' Strategic Simplicity, 7 December 2025, link

105. Robert Peters 'The U.S. Nuclear Arsenal of 2050: A Proposal for American Survival' The Heritage Foundation, 3 October 2025, p.6 link

106. Mariam Kvaratskhelia, 'How a Second Trump Term Could Shape U.S. Nuclear Posture in Europe and the Indo-Pacific', Centre for Strategic and International Studies, 10 April 2025, link

107. US Department of Defense, '2022 National Defense Strategy of The United States of America, Including the 2022 Nuclear Posture Review and the 2022 Missile Defense Review', 27 October 2022, link

108. United States Congress, 'National Defense Authorization Act for Fiscal Year 2024', (P.L. 118–31), 22 December 2023, link

109. The Congressional Commission on the Strategic Posture of the United States, 'America's Strategic Posture', October 2023, link

Biden administrations, President Trump is pursuing a dual-track approach, modernising foundational offensive nuclear capabilities, developing additional nuclear options, and restarting nuclear testing on par with those of U.S. adversaries, while investing heavily in a 'Golden Dome' space-based missile defence system. Inspired by Israel's Iron Dome system, the Golden Dome more closely resembles the Strategic Defence Initiative of the Reagan Administration, becoming a focus in the White House from early 2025. If the system goes ahead, the American pivot to Asia may not be as acute as some European leaders have feared. The Dome is intended to protect the U.S. from long-range and hypersonic missile threats. It would use space-based sensors to detect launches and track missiles connected to the ground-based layer, which would intercept incoming missiles. By combining space-based sensors, interceptors and ground-based layers into a single integrated architecture, the Golden Dome attempts to provide comprehensive protection against ballistic, cruise and hypersonic threats. It is estimated to cost in excess of $175 billion[110] to develop and may be ready for demonstration in 2028.[111]

Despite the significant cost and development timeline, such a system could significantly alter deterrence calculations and the American shift to the Indo-Pacific. If the Golden Dome provides the U.S. with enhanced homeland protection against nuclear and conventional missile attacks, it could partially offset the structural strains of tripolar nuclear competition. This would shift deterrence from retaliation to denial, potentially reducing the extent of reorientation away from Europe. At the same time, however, it is worth noting that there are differing architectural alternatives to the Dome under consideration that would affect how the U.S. approaches Europe.[112] At one end, an "Accelerated Homeland Defense", which roughly corresponds to the present ballistic missile defence (BMD), relying mainly on systems already in production or development and is focused on defending against a small number of strategic threats.[113] This would be better suited to defending against limited strategic-level attacks from Iran and North Korea, rather than large salvos from Russia or China. At the other end, "Robust All-Threat Defense", aspires to be something akin to comprehensive protection against ballistic, hypersonic, and advanced cruise missiles. Between these lies a series of intermediate options, designed for different scenarios. Together, these illustrate that the Golden Dome could range from a modest enhancement of existing limited BMD to an ambitious, all-threat shield.

The Golden Dome is not yet at a point where one can trace definitive outcomes. As such, any attempt to assess its operational utility at this early stage would be highly speculative and likely to bear little fruit. As with the Strategic Defence Initiative during the 1980s, the realities of development and deployment are likely to cause problems. Golden Dome will likely take several decades to develop, present unforeseen technical and operational challenges, and costs much more than first assumed.[114] Even Israel's Iron Dome, a highly effective system, does not provide full coverage for a state but a fraction of the size of the United States. Iron Dome is selective and

110. Mike Stone and Jeff Mason, 'Trump selects $175 billion Golden Dome defense shield design, appoints leader', 21 May 2025, link

111. Hugo Lowell, 'Golden Dome missile defense program won't be operational by end of Trump's term', The Guardian, 30 May 2025, link

112. Xiaodon Liang, 'Golden Dome Czar Studying Architecture Options', Arms Control Association, September 2025, link

113. Todd Harrison, 'Golden Dome is a Trillion Dollar Gambit', War on the Rocks, 19 September 2025, link

114. The design of this system, and the trade-offs the U.S. makes regarding capability vs feasibility, will have long-term repercussions for U.S. policy. Depending on choices made, this could have radical implications for U.S. behaviour and deterrence doctrine. On potential choices and options, see Todd Harrison (September 2025) 'Build Your Own Golden Dome: A Framework for Understanding Costs, Choices, and Tradeoffs' *American Enterprise Institute* link; Heather Williams, Tom Karako, and Kari A. Bingen (4 June 2025) 'America's 'Golden Dome' Explained' *CSIS* link

discriminatory in its targeting, and while its success rates are high, they are highest against relatively simple short-range ballistic rockets of Hamas, not hypersonic glide weapons. Yet given the level of political and financial capital the White House is expending on its development, the system must be taken seriously, particularly as it affects the deterrence posture of the United Kingdom and core European allies. For the purposes of this paper, however, we consider any putative 'Golden Dome' to provide an arbitrary level of damage limitation, and do not expect it to fundamentally alter the requirement for a proper deterrence posture.

Golden Dome to one side, the most significant short-term shift in U.S. deterrence posture comes not from new systems, nor even doctrinal developments, but the overarching context of U.S. foreign policy priorities. The recent U.S. 2025 National Security Strategy indicates a significantly deeper unwillingness to support European security than almost any prior Administration. President Trump, in his first and second terms, repeatedly called on European states to increase defence spending and has previously proposed reducing the number of conventional American forces in Europe. This approach, while uncomfortable for many Europeans, was taken to be a readjustment of the status quo toward burden-sharing. Indeed, since the summer of 2025, 'burden-sharing' has become the explicit policy of the United States.

The 2025 NSS introduced further caveats to this, shifting Washington's rhetorical and political emphasis toward 'cultivating resistance to Europe's current trajectory', characterised by the current administration as self-imposed 'civilisational erasure' through the institutions of liberal multilateralism.[115] Specific policy issues, such as immigration and freedom of speech, are couched within broader concerns, such as the perceived 'loss of self-confidence' amongst European states. [116] These stand in stark contrast to the primacy afforded to Euro-Atlantic security in previous National Security Strategies. The overriding emphasis on altering Europe's domestic political landscape works in tandem with the aim of negotiating an "expeditious cessation of hostilities in Ukraine" and the need for Europe to "stand on its own feet."[117]

The approach in the 2025 NSS, supplemented by the 2026 National Defense Strategy (NDS), is tangibly different from encouraging greater European defence spending as outlined under the Hague Commitment; it is a desire for European defence self-sufficiency, which provides room to accommodate Russian interests. Moscow has described the NSS as 'largely consistent' with its vision of world order.[118] While it is possible to read the NSS as imposing stronger expectations on U.S. allies, rather than complete European self-sufficiency in defence matters, it poses clear and significant challenges for European security. Rhetoric concerning European cultural "erasure" and demographic decline aside, the transactional tone of the NSS makes one question whether Washington would truly 'swap Baltimore for Berlin', let alone 'Norfolk for Narva'. That the U.S. is openly being discussed as an unreliable ally by many European capitals is itself detrimental to deterrence. In the context of emergent nuclear multipolarity, the 2025 NSS

115. The President of the United States, 'National Security Strategy of the United States of America', November 2025, link
116. Ibid
117. Ibid
118. Rachel Muller-Heyndyk, 'New US security strategy aligns with Russia's vision, Moscow says', BBC News, 7 December 2025, link

raises the prospect of precisely the scenario that British planners outlined during the first nuclear age: the possibility of a disengaged U.S. and the necessity of Britain deterring adversaries alone. The fact that German Chancellor Merz and other major European politicians are debating such issues indicates that, in the minds of the 'deterees' – the circle around Putin – are likely to sense that the previous compact has shattered. And if that is what they think, then in practice, it already has.

Britain has responded to this new era through a range of policy tweaks, some more subtle than others. The 2021 Integrated Review, for example, increased the cap on the UK's nuclear stockpile from 225 warheads to 260 warheads.[119] Although it can seem more marginal with hindsight, at the time this marked a significant reversal of Britain's post-Cold War antipathy toward its nuclear arsenal.[120] Similarly, the 2023 Defence Command Paper committed to bolstering the UK's conventional and nuclear capabilities, explicitly in response to the growing number of nuclear threats, primarily from Russia.[121] The same document stresses the importance of economic security, control over vital infrastructure, technological leadership and supply-chain security. These changes appear insufficient to meet the current threat environment. Successive defence reviews and strategies have not engaged with Britain's nuclear strategy in depth. At one level, this is understandable - these areas are highly classified, and the government is often reluctant to speak about them openly. However, it may also reflect a lack of detailed political engagement with the government's nuclear deterrence doctrine, indicative of the kind of psychological disarmament that has left Britain slow to recognise the decline of bipolar stability, or the U.S. pivot to the Pacific.

Regardless, the government must significantly improve its intellectual capacity for thinking about nuclear weapons in a multipolar nuclear world. For while the 1958 Mutual Defence Agreement and 1962 Nassau Agreement did not affect operational independence, they did facilitate Britain's technical dependence on the U.S. Britain relies on America for its Trident-II D5 missile bodies, shared design data, and aspects of servicing.[122] As the U.S. pivots to the Pacific and focuses more sharply on concerns within the Western Hemisphere, Britain may be required to reconceptualise the role of its nuclear forces within its broader deterrence posture, and the depth of its sovereign nuclear arsenal. The most pressing question concerns the development of a stronger European pillar within NATO, and how to tailor British posture and capabilities to that end.[123]

In 1911, the English naval historian Sir Julian Corbett wrote that '… whatever advantages lie in defence they depend on the preservation of the offensive spirit'. This dictum is worth recalling today. In the first nuclear age, Britain's nuclear arsenal and deterrence doctrine were clearly underpinned by an 'offensive spirit'. In the second, it shed its intellectual seriousness, refusing to engage in an offensive doctrine of nuclear thought. This absence of a coherent strategy stems from degraded institutional expertise and a lack of political will at senior levels of government.[124] While the early stages of the third age appear to mirror those of the first,

119. Claire Mills, 'Integrated Review 2021: Increasing the cap on the UK's nuclear stockpile', House of Commons Library, 19 March 2021, link

120. Although this did not gather significant coverage in the headlines, this signalled a shift in British posture.

121. Ministry of Defence, 'Defence's response to a more contested and volatile world', CP 901, July 2023, link

122. Marion Messmer and Olivia O'Sullivan, 'The UK's nuclear deterrent relies on US support – but there are no other easy alternatives', Chatham House, 16 April 2025, link

123. This naturally concerns wider engagement between the British and European defence industry and their respective legal and political frameworks, which are beyond the scope of this paper to address. Early signs indicate a thaw in UK-EU relations, but more is needed to encourage stronger cooperation and enable UK-led projects on key strategic enablers, notably ISR, with European allies. A consistent barrier to Anglo-French co-development of nuclear weapons systems has been the 1958 UK-U.S. MDA. It is worth considering the degree to which the U.S. may accept Anglo-French cooperation as a means to strengthen, rather than unsettle, the purpose of the MDA, providing extended deterrence to allies and partners in Europe.

124. Toby Fenwick, '(Dis)Continuous Deterrence', September 2018, link

there are some important caveats. Aggressive, expansionist powers are challenging the nuclear primacy of the United States and the NATO alliance, with Russia and China lowering the acceptable threshold for nuclear use, engaging in nuclear coercion, and cultivating a group of states to challenge Western primacy in the international system. The rise of China is forcing the U.S. to retrench and pivot to the Indo-Pacific, drawing resources away from the European continent. At the same time, the continental powers, Britain included, have let capabilities atrophy, as well as their capacity for independent action. At root, this is a psychological and cultural issue. We have lost the 'offensive spirit' which was once central to preserving deterrence, peace, and security.

# Sub-Strategic Options in a Changing Security Environment

How, then, might Britain go about re-acquiring its 'offensive spirit' in cognitive terms? This rests on one prerequisite and three options. The prerequisite is intellectual and doctrinal in nature, rooted in processes and practices.[125] Having become locked in a mindset of disarmament, rather than deterrence; posturing, rather than peace-making, intellectual rearmament is a prerequisite for reestablishing credible deterrence. Britain can no longer depend on the small number of policy experts who remain in the Ministry of Defence, nor on officers without sufficient training on the relevant issues. Here, the United States provides a model. The U.S. has long maintained a "cadre of strategically educated and trained nuclear force commanders and staff", with deep expertise on the specifics of nuclear policy well after the end of the Cold War.[126] Re-establishing an equivalent intellectual foundation – supported and sustained by an academic ecosystem – within the British government is an essential first step in constructing a credible response to the transformed nuclear environment, ensuring deterrence rests on a coherent intellectual framework. Recalling Britain's role as the 'second centre of decision' within NATO goes hand in hand with this, and the government should consciously aim to revive this concept in its deterrence doctrine. However, there are broader questions at play here: why, for instance, did Britain maintain its own sovereign sub-strategic capabilities during the Cold War, given the preponderance of U.S. sub-strategic options in Europe? There were serious reasons for this during the 1960s, such as non-NATO out of area operations in southeast Asia. These sorts of 'first principles' questions are at the core of the rationale behind adopting a second separate system, and must be asked and answered by HMG if the UK seeks to reacquire a second sub-strategic system.

Beyond intellectual rearmament, how can Britain recapture this 'offensive spirit' and deepen its capability to resist nuclear coercion? The first and most obvious option would be to place greater emphasis and reliance on its *Trident*-armed SSBN fleet. This could take the form of a fifth *Dreadnought-class* submarine.[127] However, with careful signalling, a fifth boat would provide optionality for Britain's nuclear force.[128] For those who support the use of CASD in a sub-strategic role, a fifth *Dreadnought* would permit the SSBN force to put two boats to sea at once, a posture which would currently stretch the Royal Navy beyond most reasonable limits.[129] A second boat at sea would permit one to be used in a sub-

125. One of us has alluded to this elsewhere already. See Daniel Skeffington and Lord Stirrup KG GCB AFC (7 January 2026), 'The Deterrence Theory of Sir Michael Quinlan', *Policy Exchange*. link

126. Air Marshal Edward Stringer (Ret'd) CB CBE, 'The United Kingdom – A Strangely Reluctant Nuclear Power', Policy Exchange, 4 March 2022, link

127. Peter Watkins. *Insuring against Uncertainty: A European Nuclear Deterrent?* International Centre for Defence and Security (ICDS), 2024. *JSTOR*, link; William Freer and Emma Salisbury also put forward this idea, albeit for use with conventional non-nuclear cruise missiles, as a stopgap to increase deployable submarine numbers prior to the adoption of SSN-AUKUS. See 'A More Lethal Royal Navy: Sharpening Britain's Naval Power' *Council of Geostrategy* link

128. William Freer and Emma Salisbury (May 2024) 'A More Lethal Royal Navy: Sharpening Britain's Naval Power' *Council of Geostrategy* link

129. Alternatively, given the difficulties around procuring a fifth *Dreadnought*, one option to consider is a second submarine-launched nuclear cruise missile, likely with a lower yield than the Trident-II Holbook warhead, as was considered during the replacement process of WE.177. Further work for the Commission will consider this option.

strategic 'signalling' role, perhaps declared, at an appropriate moment, to be armed with lower-yield warheads, whilst another remains submerged to maintain the strategic, second-strike capability of CASD. This would follow current U.S. signalling doctrine, which was used to respond to Russian threats of nuclear escalation in October 2022.[130]

Enhancing the strategic system would not provide an answer to all of Britain's present nuclear concerns. Without a sub-strategic option separate from Trident, Britain lacks a meaningful ability to signal with its nuclear forces. Critics argue that this is a major risk for allied security in the third nuclear age, as sub-strategic nuclear weapons provide an additional means by which Britain can communicate strategic priorities to adversaries and allies.[131] Many argue that signalling with a *Vanguard* or future *Dreadnought-class* boat would remove the primary effect of CASD, whose role is to provide the risk of an overwhelming nuclear strike from a sea-based asset.[132] However, advocates of Trident's sub-strategic role suggest it could perform this function ably itself, so long as the necessary steps were taken to tailor the CASD boats and nuclear arsenal for this role.[133] Assessing the viability for assigning Trident a more pronounced sub-strategic role in British nuclear doctrine is therefore one avenue for research when considering potential systems, as are sea-borne sub-strategic capabilities.

A second option would be for the UK to deepen cooperation with European allies on nuclear issues, foremost amongst which is France. This merits close examination. In recent years, some have begun to argue that the lack of a separate British sub-strategic option has reduced the operational independence of a British deterrent guarantee to allies in Europe. Given its reliance on CASD and the inability to signal with this system, Britain has inadvertently ceded *de facto* nuclear primacy to France. This has made European states increasingly reliant on the French President's guarantee to extend France's sovereign nuclear shield.[134] There is some truth to this, as noted above. However, beneath this lie broader political concerns. Many states in Europe are uncomfortable with leaving France as the sole nuclear power on the continent, given its historical ambivalence – even hostility – toward NATO nuclear cooperation. France is not a member of either the Nuclear Planning Group (NPG), NATO's principal decision-making body for nuclear matters, nor the High-Level Group (HLG), which supports the NPG and acts as the senior advisory group on planning and posture issues.[135] French absence from the NPG and HLG, coupled with a long-standing, post-Suez culture of self-sufficiency on defence matters, has left many uneasy about France's current and future reliability as the main nuclear power in Europe, despite recent French overtures to the contrary.

Britain, meanwhile, has been a long-standing nuclear guarantor for European security, even when the U.S. has wavered in its commitments, and many welcome Britain retaining and strengthening its arsenal. Cooperation between Britain and France on nuclear issues, including the coordination of their nuclear arsenals, would be a positive political and strategic step for enhancing European security and hedging against U.S. uncertainty. Here there have been positive developments, which may

130. Sean M. Maloney, The Cool War: Nuclear Forces, Crisis Signalling, and The Russo-Ukranian War, 2014-2022 (Annapolis MD, Naval Institute Press, 2025) 1-3, Ch.8

131. It is worth noting that there is a debate on this issue, and others argue that reducing sole reliance on CASD opens up unnecessary avenues of escalation. As CASD is a clear, unambiguous, enduring signal - it remains at sea 24/7, and guarantees a second-strike capability - the proliferation of lower-yield options is seen by some as an escalation risk.

132. Again, see Colville ((22nd October 2024) 'Future Deterrence: Threats and Challenges'

133. Frank Miller (28th February, 2018), 'Addressing Fears About the Nuclear Posture Review and Limited Nuclear Use' *War on the Rocks* link

134. James Rogers and Marc De Vore (7 April, 2025). 'The Case for a British Sub-Strategic Nuclear Deterrent' *Council on Geostrategy*. Accessible at: link

135. NATO, 'Nuclear Planning Group (NPG)', 9 May 2022, link

signal closer alignment between the British and French nuclear arsenals. The recent Northwood Declaration on nuclear cooperation may well prove a forum where post-Suez rivalries can begin abating, and could even provide a forum in which to explore new language for European nuclear communication. Although more meaningful Anglo-French nuclear cooperation will likely suffer from the same drawbacks as it has in the past, Northwood represents a positive step for creating a more coherent, European option for nuclear deterrence.

Here, there is some overlap with option three: the development of a separate, second nuclear system, either sovereign in nature or co-developed. The lack of a non-U.S. tactical or sub-strategic option in Europe, coupled with broader European anxieties about U.S. retrenchment or even, in some cases, hostility, may open the door to reviving an Anglo-French nuclear weapons program.[136] Some proposals for this have already been advanced, such as co-financing with Germany and other European states, either to support CASD or a future sub-strategic system.[137] If developed, these weapons could be shared with allied nations involved in co-financing these systems, as the U.S. currently does via dual-capable F-35As. While this pathway is fraught with difficulties and would take years to bear fruit, it certainly merits further consideration given London's return to the sub-strategic club. Such a system would likely take the form of an air-launched standoff missile, armed with a lower-yield warhead than CASD, and primarily be designed for 'sub-strategic' use, although a 'strategic' option akin to the yield of the U.S. B61 may be worth debating.[138] This would provide a more visible system, which is more capable of signalling to prevent coercive measures short of invoking CASD.

However, when considering this option, some foundational questions must be answered. First, what would be the purpose of this system? During the Cold War, the original rationale for Britain's WE.177 class of weapons was built around a nexus of concerns, of which the overwhelming factor was Britain's contribution to the NATO dual-capable airborne nuclear forces. This existed alongside London's innate, low-level distrust of U.S. security guarantees in a crisis scenario: a perceived necessity for Britain to retain a sovereign sub-strategic system regardless of America's vast arsenal. This was despite the relatively close alignment of Anglo-American interests throughout the Cold War, and the resumption of nuclear cooperation in 1958.[139] Furthermore, Britain maintained sizable imperial commitments during the 1960s, such as in Southeast Asia and the Persian Gulf, which were beyond NATO's sphere of interest. These were thought to require a limited nuclear toolset. This, coupled with the sunk costs of developing the weapon itself, meant WE.177 was retained throughout the Cold War and developed into three variants, which survived until 1998.[140]

This historical foray opens up a broader debate on the conceptual purpose of a second separate system. What is it trying to achieve, and for whom? Is it primarily a NATO-based weapon, assigned under NATO command and control architecture, or is it an independent system designed to support wider British foreign policy interests? Is it intended for war-

136. 'Europe Thinks the Unthinkable on a Nuclear Bomb' *The Economist*; James Cameron (31 March 2025), 'Eurodeterrent: A Vision for an Anglo-French Nuclear Force', *War on the Rocks*

137. James Cameron (31 March 2025), 'Eurodeterrent: A Vision for an Anglo-French Nuclear Force', War on the Rocks; Ben Coxon et al. 'How do Britain's allies want the UK to enhance European nuclear deterrence?' *Council on Geostrategy*

138. As noted, it was typical to assign 'Strategic', 'Sub-Strategic', or 'Tactical' designations based on the weapon's yield during the Cold War. However, some weapons were used in a strategic role despite not being classed as 'Big-S Strategic weapons' *per se*. This has much to do with how these weapons were employed as part of Britain's nuclear strike options. Systems such as *Yellow Sun* were designed specifically as 'Strategic' weapons, while *Redbeard* was a low-yield 'Tactical' weapon for more limited use. The B61-12 is also classified as a strategic and a tactical system, given its potential yield.

139. One might reasonably argue that, in major instances, these themselves diverged considerably, or were at best ambivalent. Consider the Suez Crisis of 1956, the Indonesian Confrontation 1963-66, or the Vietnam and Falklands Wars.

140. Three variants existed of the WE.177 – A, B, and C – with varying roles, including as a nuclear depth charge, and varying yields, from the 'tactical' to the 'strategic'. J.R. Walker, (2021). British Nuclear Weapons Stockpiles by Year: 1953–77. *The RUSI Journal*, *166*(4), 10–20. link. The WE.177 was preceded by a range of weapons, notably the *Red Beard*.

fighting purposes, or for signalling purposes? If the former, is it for use 'in theatre' on a European battlefield, in an out-of-area context, or on targets inside Russia? Perhaps even all three? The answer will determine the system procured: a free-fall bomb, or a cruise or hypersonic missile capable of penetrating defences. The answer to this question will also play a significant role in determining how much the system costs. Indeed, cost requirements and financial feasibility have often been the major hurdle for British nuclear development, far more than technical concerns, and played a strong role in scrapping a proposed air-launched replacement in the 1990s.

A lower-yield sovereign system, most likely carried by the Royal Air Force[141]would provide the ability to signal and communicate through the deployment – and exercising – of dual-capable aircraft.[142] This could potentially foreclose another gap in the deterrence architecture.[143] When supplemented by other strategic non-nuclear systems designed specifically to deter in a range of scenarios, including precision-guided cruise and hypersonic missiles, drones, and cyberattacks, this would provide far greater flexibility to Anglo-European defence priorities independent of U.S. strategic interests.

Not only would this strengthen and complement the excellent 'last resort' option currently provided by CASD, but it would also provide additional complicating factors through Britain's philosophical role as NATO's 'second centre of decision'. Through dual-key arrangements, this could potentially create further 'centres' of decision, be that through French or European means, which align with British interests. This may create the further potential benefit of enhancing Britain's influence in NATO nuclear policymaking and European security. Such a system could, subject to the specific technical details, reinforce Britain's status as Europe's preeminent nuclear guarantor and ensure that British strategic priorities are more deeply embedded in Alliance nuclear planning.

These three options must be seen alongside the recent procurement of the F-35A dual-capable strike fighter aircraft, and what this means for British deterrence. The 2025 Strategic Defence Review expressed the need for a more serious public conversation on the possible acquisition of tactical nuclear weapons, and on the 25th of June 2025, the British government announced its decision to procure at least twelve F-35A aircraft by 2030, for explicit participation in the NATO nuclear mission.[144] It can therefore be expected that U.S.-made B61-12 gravity bombs will also return to nuclear-capable RAF bases, such as Marham and Lakenheath. This acquisition, if it goes ahead, heavily implies the government is conceptualising a separate airborne system as a pure NATO commitment, rather than as an independent system with uses outside of a NATO role. This would make sense: the logistical and political constraints on air-dropped B61's alone renders their use in support of British interests non-credible. The aircraft, its software, and weapons systems all remain controlled by the U.S., making Britain operationally and politically dependent on America for this capability in practice. As such, this intended F-35A purchase is not

141. Although they may also be placed aboard submarine systems, such as the future SSN AUKUS. This approach has never been signalled by any government within the AUKUS agreement, there are historical parallels here, all of which were floated during the replacement process of WE.177.

142. This could involve the retooling Trident warheads into an air-dropped gravity bomb role, or the development of a nuclear warhead for future British precision strike and cruise missiles. See: Wyn Bowen and Geoffrey Chapman 'The UK, Nuclear Deterrence and a Changing World', *King's College London*, December 2022 p.12.

143. Or 'add another rung to the ladder', if using this more imprecise analogy. The merits and demerits of this are worth exploring, and are by no means a settled question, as noted earlier in this paper. This depends on what one wants to do with their sub-strategic capabilities, and how these fit, consciously, into one's broader deterrence doctrine and theory of nuclear communication.

144. The lead reviewer, Lord Robertson, expressed private ambivalence to tactical nuclear weapons before the House of Commons Defence Committee on the 11th of June, 2025, noting he had elected to remove them in 1998 for many practical reasons. However, he said the public conversation was necessary and must be conducted with an eye to the UK's role within NATO as an alliance, the internal debates ongoing in the United States, and their value compared to non-nuclear heavy precision strike and other strategic capabilities. On the procurement of F-35As, he implied that the fact that they were dual-use and nuclear capable was not a major factor in their being considered for purchase by the U.K. at present. This was contradicted by statements from the government two weeks later when they announced the purchase of these jets explicitly to counter rising nuclear threats.

in itself a sufficient guarantee of this strategic autonomy.[145]

This leaves one questioning the precise purpose of this purchase. By extending British reliance on U.S. equipment and weapons, it does not improve Britain's ability to act independently or to shape European deterrence in a manner qualitatively distinct from the United States. Nor will it operate under the same level of independence as CASD. If anything, the purchase of the F-35A increases British exposure to U.S. foreign policy decisions, in exchange for at best marginal improvements in NATO nuclear posture. On the other hand, the political and rhetorical signalling behind this purchase is itself significant, and perhaps sufficient to warrant the purchase alone, given the vocal backing of the White House and other NATO allies. Furthermore, acquiring a nuclear-capable aircraft and tactical or sub-strategic weapons system would allow the RAF to relearn the processes required to maintain an airborne sub-strategic nuclear capability. Such processes would be crucial if Britain were to revive a credible sovereign system in the future.

An additional benefit is that Britain would re-acquire capabilities which allow it to practice nuclear signalling against adversaries in the sub-strategic space.[146] The merits and drawbacks of 'signalling', beyond the existence of a secure second-strike capability such as CASD, are much debated, and will be the subject of future research notes by the Commission. However, it is worth noting that this is one potential capability that a second system would provide, the value of which must be carefully discussed if London were to proceed with this procurement. After all, the political dimension of deterrence operates by demonstrating resolve through competence and combined exercises and signalling manoeuvres, up to and including nuclear weapons.[147]

This was true of the WINTEX-CIMEX exercises conducted throughout the 1980s at the height of the Cold War. However, NATO's European forces presently 'do not conduct the necessary national and multinational formation training at the higher tactical and operational levels, particularly in the land domain'.[148] Through its purchase of the F-35A, Britain will soon be able to engage in European training exercises amongst allied nations with its own lower-yield nuclear component, along the lines of WINTEX. This, in turn, would engage serving political leaders in the realities of conducting large-scale combat operations with the possibility of nuclear escalation. The training of politicians and officers is central to ensuring the use of force (up to and including nuclear force) is credible, ensuring conflicts are deterred, or at least kept below the nuclear threshold. Exercises reduce the risk of nuclear escalation by making the idea of nuclear use credible and visible to an adversary. In turn, the practice of nuclear use in advance of a crisis by political actors helps preserve Corbett's 'offensive spirit' for deterrent ends.[149] The purchase of the F-35A will provide London with the ability to signal openly with sub-strategic weapons, even if it is not a sovereign warhead or aircraft.[150]

All of this is unclear from the government's pronouncements, leaving us somewhat in limbo. What, precisely, are we to make of this? On the one

145. The Prime Minister's Office, 'UK to purchase F-35As and join NATO nuclear mission as Government steps up national security and delivers defence dividend', 24 June 2025, link

146. See Daniel Skeffington and Lord Stirrup KG GCB AFC (7 January 2026), 'The Deterrence Theory of Sir Michael Quinlan', *Policy Exchange*. link

147. A recent piece made the case for this in the U.S. context, noting that new systems will take years and billions of dollars to procure, whilst restoring nuclear signalling through exercises and deployments could be resumed immediately, develop practices, and contribute to deterrence. This requires the generation of force at scale immediately, predicated on aircraft availability and preparedness, a regular tempo of exercises, effective nuclear training, and the very optimisation of these platforms for deterrence. In many ways, this is a prerequisite to restoring effective deterrence regardless of which systems are procured for future crises. Philip Sheers (27 May 2025), 'The U.S. Military Needs to Relearn Nuclear Signaling', *Foreign Policy Magazine*.

148. Ben Barry, Jonty Kennon, Douglas Barrie, Nick Childs, James Hackett, Henry Boyd, Jonathan Bentham, Dzaky Naradichiantama, Michael Tong (March 31, 2025) 'A European Reassurance Force for Ukraine: Options and Challenges' *IISS*.

149. One's language is important here. Consider the important recent remarks by the former CDS the Air Chief Marshal the Lord Peach, who intimated this point rather forcefully at an event for Policy Exchange, noting that any European 'coalition of the willing' in Ukraine would not be a 'peacekeeping force', but a *deterrent warfighting force*. These remarks were echoed by General David Petraeus and General Jarmo Lindberg MP, former chief of the Finnish Defence Forces. See 'The Law of Armed Conflict Conference' (29th May 2025), *Policy Exchange*.

150. The survivability of dual-capable aircraft - An issue that Michael Quinlan grappled with during the 1970s - should likewise be considered a priority issue to re-establish credible deterrence in Europe. These are currently housed in a small number of vulnerable air bases. This finds common ground with current RAF basing concerns on the Home Islands, and solving this could fix two issues concurrently. See Gregory Giles (July 5 2023) 'Michael Quinlan Was Right: The Enduring Relevance of Nuclear Deterrence'.

hand, London has strongly indicated it wishes to reacquire the ability to signal in the sub-strategic space. On the other, its reasons for doing so are mixed at best, and lack strong theoretical foundations. Does this decision indicate the long-term desire to stand up a sovereign second system in the British arsenal? If so, what is the government's specific reasoning behind acquiring the F-35A? London was unable to settle on a jointly procured sub-strategic system in the 1990s, either with Washington or Paris: without a clear rationale, it may be found wanting again. Is the intention perhaps more long-term, perhaps, designed to shift the burden away from the U.S. in Europe by standing up our own dual-capable force with lower-yield warheads, either alone or in concert with other European powers, such as France? An option of this kind has been floated numerous times throughout prior nuclear ages. The truth is presently unclear, as are the full implications of the F-35A decision for British deterrence doctrine. Some clarity from the government would be welcome on this front.

Given the scale of the challenges NATO faces in the third nuclear age, all four of these options - doctrinal re-evaluation, enhancing CASD to fulfil a more explicit sub-strategic role, the potential for an Anglo-French partnership to co-develop a separate sub-strategic system, and the development of a sovereign second system - are worth considering. Future papers under the Nuclear Enterprise Commission will examine these issues in greater depth, alongside more fine-grained analyses of specific issues, such as signalling and communication, British strategic theory in a multipolar world, force posture or arms control.

# Conclusion

Britain developed its nuclear arsenal in an age of bipolar stability, before reducing it to a credible minimum in the wake of the Cold War. In an age defined by multipolarity, coercion, adversarial collaboration and U.S. uncertainty, Britain requires a far deeper intellectual reassessment of its strategic priorities and partners. This requires, at a minimum, re-engaging with deterrence theory and increasing the resources dedicated to nuclear strategy with the Ministry of Defence. Second, it requires a thorough reassessment of Britain's sub-strategic capabilities and the means by which Britain might enhance them. This may involve reinforcing its existing strategic system and its sub-strategic role, or even reconsidering the development of a second system, separate from Trident, to provide a more visible sub-strategic nuclear option. Given the acquisition of F-35A, the government has indicated there is scope for discussing the long-term reintroduction of a separate sub-strategic system to the British arsenal, either air-launched or air-dropped, or perhaps even through a second submarine-based system, as was floated in the 1990s. If this were deemed necessary in addition to CASD, such a system could be procured as a sovereign capability, jointly procured with the French, or even co-financed and shared with European allies through a common strategic nuclear shield fund. If this were pursued, articulating a clear rationale for this system as it relates to existing NATO structures would be vital to its success.

The evolution of the British arsenal through the three nuclear ages presents one clear lesson for the government today. Britain must take its deterrence commitments seriously, or it will cease to be a meaningful actor in the nuclear space. The government is clearly committed to strengthening Britain's position as a nuclear power. Putting this into practice will involve a healthy dose of *realpolitik* from Britain and her allies, be they in Europe, the Commonwealth, or beyond. In an age defined by uncertainty, allied security rests not on inherited architectures or assumed guarantees. It rests on London's willingness to think seriously, decide independently, and deter credibly: to be capable of acting alongside its allies, and, if it must, act alone.

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Policy Exchange
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