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Integrated Review 2021: Increasing the cap on the UK's nuclear stockpile

By Claire Mills

The UK has, in the past, been lauded as one of the most transparent nuclear weapon states and the country that has taken the greatest strides towards disarmament since the end of the Cold War.¹ Although figures vary between analysts,² at its height the UK's nuclear stockpile was approximately 520 warheads. The current stockpile is estimated at 195 warheads.³ This makes the UK the smallest of the NPT-recognised nuclear weapon states (also known as the P5).⁴ The UK is also the only nuclear weapon state to have reduced to a single system: the submarine-launched Trident missile system.

The [Government's Integrated Review on Security, Defence, Development and Foreign Policy](#), published on 16 March 2021, announced some significant changes to the UK's nuclear posture, however, including a 40 per cent increase on the size of the UK's nuclear warhead stockpile.

Box 1: The UK's track record on disarmament since the end of the Cold War

- At its Cold War peak the UK nuclear stockpile consisted of approximately 520 nuclear warheads.
- Following the end of the Cold War a review of the UK's nuclear posture resulted in the RAF's WE-177 free-fall bombs being phased out, and the capability of the Royal Navy's surface ships to carry or deploy nuclear weapons being dismantled. By 1998 the deterrent had been reduced to one single system: Trident. The total stockpile was reduced by approximately 20 per cent and the number of operationally available warheads fell from around 400 during the 1980s to an estimated 300.
- The 1998 Strategic Defence Review announced a one third reduction in the number of operationally available warheads, to fewer than 200. The total stockpile was estimated at 280. The number of warheads carried on board an SSBN on deterrent patrol was reduced to 48, from

¹ See, for example, [Political perceptions of nuclear disarmament in the United Kingdom and France: a comparative analysis](#), Nuclear Threat Initiative, December 2009

² Transparency is a major challenge. Even in the most open of democracies nuclear weapons programmes are largely classified; information is not widely available; while for those countries motivated either by threat perception or conventional military inferiority the tendency to exaggerate the extent, or operational nature, of their nuclear arsenals is commonplace. As a consequence, there is often significant disparity in the estimates of each state's active arsenal.

³ The [Federation of American Scientists](#) and the [SIPRI Yearbook 2020](#) both estimate a current stockpile of 195. Further information on the size and structure of the UK's nuclear forces is available in [Nuclear weapons at a glance: United Kingdom](#), House of Commons Library

⁴ The difference between the official NPT recognised nuclear weapon states and the de facto nuclear weapon states is set out in [Overview: where all the world's nuclear weapons?](#), House of Commons Library

a previous ceiling of 96.⁵ The deterrent patrol cycle was also reduced to one SSBN on patrol at any one time. The missiles on board were 'de-targeted', while the 'notice to fire' period was increased from just a few minutes, to a notice period measured in days.⁶

- The 2006 White Paper on the *Future of the Nuclear Deterrent* reduced the stockpile to fewer than 160 operationally available warheads. It also announced a corresponding 20 per cent reduction in the overall warhead stockpile. The total nuclear stockpile was therefore estimated to have been reduced from 280 to 225 warheads.
- In 2010 The Government published official information on the size of the UK's overall nuclear stockpile for the first time, confirming that the UK held 225 warheads.
- The 2010 Strategic Defence and Security Review announced that the number of operational launch tubes on the current Vanguard class would be reduced from 12 to 8 and the maximum number of warheads deployed on board would be reduced to 40.⁷ It also announced a reduction in the number of operationally available warheads, to 120; while the overall stockpile would be no more than 180 by the mid-2020s. Once that reduction had been achieved, the UK nuclear stockpile would have been reduced by 65 per cent since the end of the Cold War.
- All of the decisions set out in 2010 were reiterated in the 2015 SDSR.

A change of direction in the Integrated Review

The review confirms that the programmes to replace the UK's nuclear deterrent will continue.⁸ However, it also announced some other significant changes.

An increase in the nuclear stockpile

While the Government remains committed to a credible, minimum nuclear deterrent, the review implies that what constitutes "credible" and "minimum" in the current security environment has changed and necessitates an increase to the UK's nuclear stockpile, for the first time since the end of the Cold War.

The cap on the nuclear stockpile will now be raised to no more than 260 warheads, a level last seen in 2005/06.⁹ This is an increase of just over 40 per cent (80 warheads) on the 2010 commitment of no more than 180 warheads by the mid-2020s. The review does not state how many of those 260 warheads will be operationally available (see below).¹⁰

A stockpile of no more than 260 warheads will keep the UK with the smallest inventory of the recognised nuclear weapon states.¹¹ However, the UK will join China in being the only members of the P5 that are seen to be quantitatively increasing their nuclear stockpiles.¹²

⁵ Figures from the *Strategic Defence Review: Supporting Essays*, July 1998

⁶ This reduction in alert status was essentially a political and operational matter rather than a technical issue: the system itself could still be brought rapidly to readiness at a time of crisis, if a political decision were taken to do so.

⁷ Those reductions were achieved by January 2015 (Nuclear Deterrent: Written Statement, HCWS210, 20 January 2015)

⁸ The programmes to replace the UK's strategic nuclear deterrent are examined in greater detail in House of Commons Library briefing papers: CBP8010, [Replacing the UK's nuclear deterrent: progress of the Dreadnought class](#) and CBP8941, [Replacing the UK's nuclear deterrent: the long-awaited warhead decision](#).

⁹ It was the 2006 White Paper on the future of the nuclear deterrent that reduced the stockpile level from 280 to 225.

¹⁰ Under the 2010 SDSR commitments 120 warheads would be operationally available.

¹¹ In comparison, France has 290, China – 320, Russia – 6,375 and the United States – 5,800

¹² As opposed to arguably qualitatively increasing their nuclear arsenals through the modernisation of ageing capabilities. All of the nuclear weapon states are pursuing modernisation agendas. See [CBP9069, Nuclear weapons at a glance](#), House of Commons Library, January 2021

In explaining the change, the review states:

Some states are now significantly increasing and diversifying their nuclear arsenals. They are investing in novel nuclear technologies and developing new ‘warfighting’ nuclear systems which they are integrating into their military strategies and doctrines and into their political rhetoric to seek to coerce others. The increase in global competition, challenges to the international order, and proliferation of potentially disruptive technologies all pose a threat to strategic stability. The UK must ensure potential adversaries can never use their capabilities to threaten us or our NATO Allies. Nor can we allow them to constrain our decision-making in a crisis or to sponsor nuclear terrorism.

in recognition of the evolving security environment, including the developing range of technological and doctrinal threats... the UK will move to an overall nuclear weapon stockpile of no more than 260 warheads [...]

We remain committed to maintaining the minimum destructive power needed to guarantee that the UK’s nuclear deterrent remains credible and effective against the full range of state nuclear threats from any direction.¹³

The review provides no information, however, on where those extra warheads will come from or how they will be funded. Decommissioning of the retired stockpile has been underway for several years. Yet, it is unclear how many of the warheads that the UK has retired since 2010 are still awaiting dismantlement and how much of the announced increase in the stockpile could be met from that reserve.

In response to a [Freedom of Information request](#) in 2013 the MOD suggested that the warheads that have been dismantled have been done so in an irreversible manner. It does not provide any figures:

Since 2002, the Atomic Weapons Establishment (AWE) has been running a Stockpile Reduction Programme to disassemble Trident warheads to reduce stockpile numbers as declared in the Strategic Defence Review 1998, the 2006 White Paper on the Future of the United Kingdom’s Nuclear Deterrent and the SDSR. The warheads that have been identified as no longer required for service but are yet to be disassembled are stored at the Royal Naval Armaments Depot Coulport or as work in progress at AWE Burghfield. All warhead disassembly work is undertaken at AWE Burghfield.

The main components from warheads disassembled as part of the stockpile reduction programme have been processed in various ways according to their composition and in such a way that prevents the warhead from being reassembled. A number of warheads identified in the programme for reduction have been modified to render them unusable whilst others identified as no longer being required for service are currently stored and have not yet been disabled or modified. This is in line with the overall target date to achieve the declared reduction by the mid-2020s.

In answer to a Parliamentary Question in January 2013 the MOD also confirmed that “once processed, the material from dismantled warheads is returned to the MOD nuclear material stockpile. It is not government policy to place this material under international safeguards”.¹⁴

Motives behind the Government’s decision?

The reasons behind the Government’s announcement are the subject of some debate. Indeed, some commentators, including [Robert Peston](#), speculate that there may in fact be no physical increase in the number of nuclear warheads at all and that the announcement is merely smoke and mirrors.

Others have argued that the increase in stockpile numbers could be intended to accommodate the transition from the current Mk4/A warhead to the new replacement

¹³ HM Government, *Global Britain in a Competitive Age*, CP403, p.76

¹⁴ HC Deb 21 January 2013, c70W

Mk7 warhead that was confirmed in February 2020.¹⁵ However, that replacement programme is only in its design phase and is not expected to enter service until the late 2030s. Any overlap between the decommissioning of the Mk4 and the entry into service of the replacement warhead is feasibly more than a decade away.

Others have suggested that the intention is to help persuade the US to move forward with its W93 warhead programme,¹⁶ which is inextricably linked to the UK's own programme. The two programmes are being conducted in parallel and although the W93 received Congressional approval in December 2020, its future is uncertain as the new US administration reviews its entire nuclear programme.¹⁷ Yet, it has also been noted that the UK's decisions may well complicate US efforts to pursue further arms reductions with Russia, which has long insisted that any further nuclear cuts take into consideration the arsenals of the other nuclear weapon states.¹⁸ This move may not, therefore, be so welcome to the new Biden administration.¹⁹

A sub-strategic role?

Some have questioned whether the purpose of raising the stockpile cap is to allow for a more limited use of the deterrent. Trident does possess a sub-strategic role, as acknowledged in the 1998 Strategic Defence Review.²⁰ An increased stockpile cap could arguably, therefore, provide greater flexibility and options in addressing what the Integrated Review terms "the developing range of technological and doctrinal threats".

In an evidence session of the Defence Select Committee in December 2020, outgoing Permanent Secretary to the MOD, Stephen Lovegrove, was questioned about lower yield nuclear weapons, and their relevance to the Integrated Review:

Chair: Stepping back from the purpose of why we have this continual at sea deterrence; this stems back, as we know, from the Cold War and our determination to have an independent nuclear deterrent to deter others from even considering using such weapons against us. However, we have talked before about the changing character of conflict; we are likely to see, sadly, the use of low-yield tactical nuclear weapons on the battlefield in the next decade. My question is: has this been considered in the integrated review, as to what stance we should take in response to that?

Sir Stephen Lovegrove: I sincerely hope that your prognostication is wrong, but you are quite right to raise its possibility. This is really for the Prime Minister, rather than for Defence, obviously, but we are actively considering exactly the question that you raise. I do not want to pre-empt exactly what will be said on this matter in the integrated review, but something certainly will be.

The Integrated Review was not explicit, but it has led some to question whether providing more limited nuclear strike options is the purpose behind raising the stockpile cap. In

What does sub-strategic mean?

One level down from a strategic strike is the "sub-strategic" option, whereby missiles are configured with either fewer, or lower yield, warheads to provide the option of a limited strike against individual targets on enemy territory.

¹⁵ See for example [Vipin Narang](#) at the Carnegie Endowment for International Peace

¹⁶ See for example Dan Sabbagh, "Trident nuclear warhead numbers set to increase for the first time since Cold War", *The Guardian*, 12 March 2021

¹⁷ See CBP9082, [Nuclear weapons at a glance: United States](#), House of Commons Library

¹⁸ This is discussed in [Prospects for US-Russian nuclear arms control](#), House of Commons Library, July 2020

¹⁹ See [New United Kingdom Defence Strategy a troubling step back on nuclear policy](#), Arms Control Association, 15 March 2021

²⁰ The Strategic Defence Review, Cm 3999, July 1998, p.18, para 63. The sub-strategic role of Trident is examined in greater detail in section II G of Library Research Paper RP06/53, [The Future of the British Nuclear Deterrent](#), November 2006. It should be noted that a sub-strategic role is not the same as a tactical role whereby weapons could be used against enemy units on a battlefield.

commentary on the review, nuclear historian Professor Lawrence Freedman [referenced](#) the sub-strategic role of Trident:

The implication is larger stockpile is to have capacity so that Trident can be counter to both Russian short-range systems for use on European battlefield as well as longer-range missiles that threaten homelands.

Tom Plant and Matthew Harries of RUSI also raise this issue:

Although the UK has ceased to publicly discuss a 'sub-strategic' role for its nuclear arsenal, this increased stockpile and greater flexibility could provide greater room for the use of low-yield variants of its nuclear warhead to be threatened in a conflict. Given the emphasis that the review places on adversary states' aggressive doctrines, it is certainly possible – and equally troubling – that this consideration has come into play for the UK.²¹

Declaratory policy

The Integrated Review largely maintains the UK's existing declaratory policies on its use of nuclear weapons. The review reaffirms the UK's longstanding position that nuclear weapons would only be used in "extreme circumstances of self-defence" and that it "will not use, or threaten to use, nuclear weapons against any non-nuclear weapon state party to the NPT".²² This assurance does not apply, however, to any state in material breach of the NPT.

The review also maintains the position of ambiguity on the precise details of when, how and at what scale the UK may consider the use of its nuclear weapons capability.

A move away from transparency

However, to extend the UK's position of deliberate ambiguity, the review confirms that the UK will no longer provide public figures on the UK's **operational** stockpile,²³ deployed warheads and deployed missile numbers.²⁴

In doing so the review states:

This ambiguity complicates the calculations of potential aggressors, reduces the risk of deliberate nuclear use by those seeking a first-strike advantage, and contributes to strategic stability.²⁵

The move has been met with some disappointment, with critics arguing that it decreases transparency, an important element of confidence building vis-à-vis other nuclear weapon states.

In 2019 the United States took a similar path and announced that it would be withholding future data on the size of its nuclear inventory. Hans Kristensen, of the Federation of American Scientists, wrote at the time:

The United States or its allies are not suffering or at a disadvantage because the nuclear stockpile numbers are in the public. Indeed, there seems to be no rational national security factor that justifies the decision to reinstate nuclear stockpile secrecy.

The decision walks back nearly a decade of U.S. nuclear weapons transparency policy – in fact, longer if including stockpile transparency initiatives in the late-1990s – and

²¹ Plant and Harries, [Going ballistic: the UK's proposed nuclear build up](#), RUSI Commentary, 16 March 2021

²² HM Government, *Global Britain in a competitive age*, CP403, p.77

²³ As opposed to total stockpile numbers.

²⁴ The 2010 SDSR reduced the number of operational launch tubes of the Vanguard class SSBN from 12 to 8 (each submarine has 16 independently controlled missile tubes in total) and reduced the maximum number of deployed warheads onboard from 48 to 40. Each Trident missile is capable of carrying 12 warheads apiece, although the limitations imposed in 2010 suggests that each missile carries, on average, five. The Government has never confirmed the ratio of warheads to missiles.

²⁵ *Ibid*, p.77

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places the United States in the same box as over-secretive nuclear-armed states, several of which are U.S. adversaries.²⁶

In response to the UK's announcement, Daryl Kimball and Kingston Reif of the Arms Control Association accused the Government of being "irresponsible and undemocratic":

Like the United States, the United Kingdom's past commitment to transparency about its nuclear forces has set it apart from other nuclear powers. Both governments have rightly criticized China for its excessive nuclear secrecy, for example. Such opacity is irresponsible and undemocratic.²⁷

Sebastian Brixey-Williams, co-Director of BASIC, also argues that it "directly challenges the UK's longstanding commitment to transparency around these numbers and represents an unfortunate step back for multilateral oversight".²⁸

Security assurances

The Integrated Review says that security assurances extended to other countries by the UK are now also subject to review "if the future threat of weapons of mass destruction, such as chemical and biological capabilities, or emerging technologies that could have a comparable impact, makes it necessary".²⁹

The inclusion of "emerging technologies" is new language³⁰ in the Integrated Review that has prompted some commentators to suggest that nuclear weapons could be used in response to a cyber attack on the UK.³¹

The US' 2018 Nuclear Posture Review contained similar references to cyber capabilities.³² Experts expressed concern at the time that it could have the effect of lowering the bar on the first use of nuclear weapons and that threatening such use in response to cyberattacks would lack credibility. James Acton of the Carnegie Endowment for International Peace suggested, at the time, that the use of nuclear weapons in such circumstances would "violate any notion of proportionality".³³ Whether the US under President Biden will retain this language in the current review of US nuclear posture, is unclear. He has in the past expressed the belief that nuclear weapons should play a smaller role in US defence strategy and opposed the decision in the 2018 NPR to introduce lower yield, non-strategic nuclear options into the nuclear arsenal.³⁴

²⁶ [Federation of American Scientists Blog](#), 17 April 2019

²⁷ [New United Kingdom Defense Strategy a troubling step back on nuclear policy](#), Arms Control Association, 15 March 2021

²⁸ [The nuclear weapons dimension of the 2021 integrated review: a first look](#), British American Security Information Council, 16 March 2021

²⁹ HM Government, *Global Britain in a competitive age*, CP403, p.77

³⁰ The [2015 SDSR](#) only refers to WMD, such as chemical and biological capabilities, para 4.69

³¹ See for example "UK could use Trident to counter cyber-attack", *The Guardian*, 16 March 2021

³² The declaratory policies set out in the 2018 NPR are examined in greater detail in CBP9082, [Nuclear weapons at a glance: United States](#), House of Commons Library

³³ "Trump seeks expanded nuclear capabilities", *Arms Control Today*, March 2018

³⁴ Joe Biden, "Why America must lead again", *Foreign Affairs*, March/April 2020

Implications for Disarmament

As a State Party to the Nuclear Non-Proliferation Treaty (NPT), the UK has a legal obligation to pursue, “in good faith”, disarmament under Article VI.

In the Integrated Review the Government confirms its commitment “to the long-term goal of a world without nuclear weapons” and that it is “committed to full implementation of the NPT in all its aspects, including nuclear disarmament, non-proliferation, and the peaceful uses of nuclear energy...” However, in doing so, the Government also stresses that it takes into account “the prevailing security environment”.³⁵

In the past successive British Governments have also argued that the NPT contains no prohibition on updating existing weapons systems and gives no explicit timeframe for nuclear disarmament.

The Government’s decision to increase the UK’s nuclear stockpile, and reverse decades of gradual disarmament progress, has met with anger and criticism from disarmament advocates. They have accused the Government of contravening its disarmament obligations under the Non-Proliferation Treaty, which a number of analysts have highlighted as an interesting approach to a multilateral treaty, given the Integrated Review’s overwhelming emphasis and commitment to multilateralism as a way of addressing the world’s problems.³⁶

Beatrice Fihn, Head of the International Campaign to Abolish Nuclear Weapons, described the UK’s decision to increase its nuclear stockpile as “outrageous, irresponsible and very dangerous”,³⁷ while Daryl Kimball and Kingston Reif called the decision “a needless and alarming reversal of the longstanding British policy to reduce the number and role of nuclear weapons”.

In response to the review’s announcement, Leader of the Opposition, Sir Keir Starmer, questioned the strategic purpose behind the Government’s decision:

this review breaks the goal of successive Prime Ministers and cross-party efforts to reduce our nuclear stockpile. It does not explain when, why or for what strategic purpose, so the Prime Minister needs to answer that question today.³⁸

While Ian Blackford MP of the Scottish National Party condemned the move:

Finally, on Trident nuclear weapons, the review disgracefully endorses the attainment of 80 more of these weapons of mass destruction. Will the Prime Minister tell us who gave his Government the democratic right to renege on the UK’s obligations under the nuclear non-proliferation treaty?³⁹

The UK will now also have to justify its actions at the delayed NPT Review Conference, which is tentatively scheduled for August 2021. Previous NPT Review Conferences have been marred by frustration at the lack of disarmament progress made by the nuclear weapon states, which has played a significant role in the establishment of the [Treaty on the Prohibition of Nuclear Weapons](#). As Brixey-Williams notes:

Over the coming months, as the Review Conference approaches, the United Kingdom will need to make the reasoning behind these changes clearer, and demonstrate

Article VI of the NPT

“Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.”

³⁵ HM Government, Global Britain in a competitive age, CP403, p.78

³⁶ See for example Plant and Harries, [Going ballistic: the UK’s proposed nuclear build up](#), RUSI Commentary, 16 March 2021

³⁷ [“Integrated review: UK to lift cap on nuclear stockpile”](#), BBC News, 17 March 2021

³⁸ HC Deb 16 March 2021, c164

³⁹ Ibid, c166

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through its actions – not just its words – its unwavering commitment to advancing the risk reduction and disarmament agendas.⁴⁰

The impact on the Joint Comprehensive Plan of Action and efforts to bring Iran back into compliance is also unclear. Responding to the announcement Iran's foreign minister called the Prime Minister a hypocrite, stating:

In utter hypocrisy, @BorisJohnson is 'concerned about Iran developing a viable nuclear weapon'. On the same day he announces his country will increase its stockpile of nukes.⁴¹

Box 2: Suggested reading

- [Replacing the UK's nuclear deterrent: the long-awaited warhead decision](#), House of Commons Library, March 2021
- Serhii Plokhy, ["Opinion: Boris Johnson is playing a dangerous nuclear game"](#), *The Guardian*, 19 March 2021
- Daryl Kimball and Kingston Reif, [New United Kingdom Defense Strategy a troubling step back on nuclear policy](#), Arms Control Association, 15 March 2021
- [The nuclear weapons dimension of the 2021 integrated review: a first look](#), British American Security Information Council, 16 March 2021
- Tom Plant and Matthew Harries, [Going ballistic: the UK's proposed nuclear build up](#), RUSI Commentary, 16 March 2021
- "Britain is adding nukes for the first time since the cold war", *The Economist*, 16 March 2021

⁴⁰ [The nuclear weapons dimension of the 2021 integrated review: a first look](#), British American Security Information Council, 16 March 2021

⁴¹ [Javad Zarif on Twitter](#), 16 March 2021

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