NUCLEAR WEAPONS ARE BANNED! WHAT DOES THIS MEAN FOR BRITAIN?

Rebecca Eleanor Johnson



Setsuko Thurlow (Hiroshima) and Sue Haseldine-Coleman (Maralinga)
TPNW negotiations, United Nations (R.Johnson 2017)

NUCLEAR WEAPONS ARE BANNED!
WHAT DOES THIS MEAN FOR BRITAIN?

An analysis of the 2017 Treaty on the Prohibition of Nuclear Weapons and the implications for UK and global security

Written by Rebecca Eleanor Johnson Ph.D©

Dedicated to Setsuko Thurlow and all people harmed by nuclear weapons use, testing, production and deployment

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EXECUTIVE SUMMARY

Nuclear weapons continue to threaten the world with war and terror. This fact has been brought home by the invasion of Ukraine. Around 12,000 nuclear weapons are in the hands of Russia and three NATO governments (United States, UK and France). As well as these nuclear forces around Ukraine, at least a thousand more are held by militaries in China, India, Pakistan, Israel and North Korea. Recent events provide a stark reminder of what can go wrong when possessing and relying on nuclear weapons for deterrence: dangerous leaders, miscalculations, escalation, 'use them or lose them' pre-emptive strikes... it only takes a hundred Hiroshima-sized bombs to cause nuclear winter and global starvation.

This report takes the human security risks and dangers as its starting point, noting how humanitarian and national security imperatives in over 150 countries led to the UN's new Treaty on the Prohibition of Nuclear Weapons (TPNW). Through this lens, we consider UK nuclear policies and challenges, taking into account the 1968 Non-Proliferation Treaty (NPT), growing anti-nuclear and independence pressures in Scotland, and Britain's real security needs and changing role in a changing world.

These last few years have underscored how relying on nuclear weapons for deterrence increases the existential dangers of getting the messaging wrong. The war in Ukraine eerily echoes the opening scenarios of films like 'The Day After' and 'Threads', in which hubris and miscalculations turn into nuclear war quicker than anyone can blink or draw back from the brink. Though dismissed by some nuclear-armed governments, the TPNW entered into legal force on 22 January 2021. It exists. The use and possession of nuclear weapons are banned. As the TPNW grows in strength and effectiveness, its prohibitions and norms will increasingly be applied to states that have not yet signed, particularly if they wield nuclear weapons.

The elimination of some 50,000 nuclear weapons since 1987 demonstrates that the disarmament and verification requirements in the TPNW and NPT are achievable. The main obstacles are the short-term ambitions, mindsets and vested interests of the politicians and military, industrial, bureaucratic and academic (MIBA) institutions that enable, promote and perpetuate nuclear weapons and the misleading nuclear deterrence theories on which they depend.

Propelled by such vested interests, new and upgraded warheads and missiles are still being developed, including in the UK. Faced with climate destruction, Covid and the necessity to prevent nuclear war, we urgently need to have better-informed public conversations about what real security means for Britain and humanity in the 21st century. We have to decide collectively on the changes we need to make, and the resources we need to prioritise to build sustainable and cooperative security systems for the future.

The TPNW was brought into force by governments that understand the need to abolish inhumane weapons that pose catastrophic risks and threats to life, biodiversity and Mother Earth. Even before they are launched, nuclear weapons affect our human rights, health, common security, environment, water and food. They threaten the safety of our families, homes, communities, and all that we love and cherish. Ionizing radiation from nuclear production and testing disproportionately affects women and girls, and the reproductive and genetic health and development of future generations. This report looks to the future, as the first meeting of TPNW States Parties and Covid-postponed NPT Review Conference are scheduled for later in 2022.

The TPNW's explicit prohibitions on the use, acquisition, production, possession and transferring of nuclear armaments reinforce the NPT's non-proliferation objectives. It goes further on disarmament, establishing institutional objectives, principles and requirements for verifiably implementing the elimination of nuclear arsenals. In addition to the direct legal obligations and responsibilities for States that formally accede, the multilateral framework of the TPNW also provides legal structures and mechanisms to persuade and assist the nuclear-armed states to stop proliferating and relying on nuclear weapons.

In conjunction with International Humanitarian Law, relevant provisions of the NPT, UN Security Council resolutions and Sustainable Development Goals (SDG), many of the TPNW's provisions can be used to stop non-state entities from acquiring, financing or assisting in nuclear weapons production and deployment anywhere in the world. In law and effect, the TPNW provides a more effective legal and institutional toolbox for civic society, parliaments, local governments and organisations to exert political, economic and normative pressures on all governments to implement and comply with its prohibitions and provisions, including assistance, environmental remediation, and verification.

Opening with an **introduction** on the strategic context, developments and nuclear challenges, this study provides essential reading for governments, parliamentarians, elected representatives and organisations that influence security decisions nationally and locally. It contains analyses and references that will be important for defence practitioners, officials, investors, political parties, voters, civil society, journalists and everyone with responsibilities for decisions that affect our human and environmental safety and security.

Chapter 1 provides a commentary on the TPNW text, relevant negotiating history, objectives and implications. In essence, the TPNW fulfils the NPT's core nonproliferation and nuclear disarmament obligations by prohibiting activities that enable the manufacture, acquisition, testing, deployment and use of nuclear weapons, along with nuclear threats, blackmail and terrorism. It provides feasible pathways for each nuclear-armed State to eliminate its nuclear arsenal and associated capabilities.

This can be done nationally, in accordance with practical and verifiable timelines agreed with TPNW states parties and designated competent authorities. Alternatively, States can choose to get rid of their nuclear weapons unilaterally, and join the Treaty when this has been accomplished; or they may undertake bilateral agreements (with a strategic rival perhaps, as might work for Russia and the United States, or perhaps India and Pakistan); or engage in plurilateral agreements that jointly eliminate nuclear armaments and facilities, for example in conjunction with other relevant governments, in pursuit of greater regional and strategic security.

Chapter 2 analyses UK nuclear policies, problems, and infrastructure management, with particular emphasis on recent developments that include nuclear accidents and miscalculations arising in the existing and planned Trident programmes (including Dreadnought), as well as problems with the UK's Integrated Review of Security, Defence, Development and Foreign Policy (IR2021). Published in March 2021 by the Cabinet Office, IR2021 increases the risks of nuclear use and proliferation by widening the circumstances in which nuclear weapons could be fired, and raising the ceiling on the UK's nuclear arsenal by 40%.

IR2021 undermines Britain's previous commitments to transparency, nuclear disarmament and verification. The United Nations immediately raised concerns that such policies are contrary to the UK's NPT obligations and will further damage global security. Eminent

international lawyers agreed that IR2021 breaches the NPT. The Archbishop of Canterbury and members of the House of Lords sounded the alarm that such policies increase nuclear dangers, including the risks of disastrous miscalculation.

Chapter 3 analyses several possible scenarios that could change British nuclear policies and prospects. These include: shock-induced transformations following a major nuclear accident or use; pressures to improve security and economic priorities and provide greater cooperation and resources for tackling the climate emergency, Covid and other national and international security needs; or a referendum that delivers an independent Scotland that can implement policies to become nuclear free.

Chapter 4 provides a brief overview of disarmament procedures, steps and timelines for the UK (or an independent Scotland) to undertake in order to adhere to the TPNW.

Recommendations, detailed in the conclusions, include:

1. All nuclear weapons should be de-alerted, and the UK and other nuclear-armed governments must pledge not to use nuclear weapons under any circumstances. They need to take urgent steps to eliminate their nuclear arsenals and join and implement the UN Treaty on the Prohibition of Nuclear Weapons (TPNW), while also complying fully with NPT disarmament and nonproliferation commitments. All governments should attend the TPNW meetings of states parties and contribute to preventing nuclear use and war.

2. Taking into account the security and financial costs of retaining nuclear weapons, the Westminster and Scottish Parliaments should undertake separate parliamentary investigations with relevant expert and civil society inputs, to determine what would be entailed in pursuing nuclear disarmament and joining the TPNW

3. The UK should declassify archives, studies and documentation on Britain's nuclear weapons testing and production programmes, including any that relate to accidents, environmental or health impacts arising from nuclear programmes or activities.

4. The UK should recognise the rights of indigenous and local peoples, civilians and service personnel whose health and environments have been affected by British nuclear weapons testing, production and ongoing related activities, and ensure full cooperation and assistance to address and mitigate such impacts and provide redress, support and environmental remediation.

5. Encourage the UK and Scottish governments, mayors, and members of parliaments and regional assemblies to support the TPNW and participate in the first and future meetings of TPNW States Parties, which they can do as observers.

6. Encourage cities, towns and counties to align themselves with the TPNW, and work with local authorities, banks and private investors to move funds away from nuclear weapons and towards sustainable security needs, such as climate and environmental protections, health and education.

7) A working group should be convened in Scotland (under Scottish government or independent auspices) comprising people drawn from civic society with relevant experience on nuclear, safety, security, legal, technical, humanitarian, campaign, employment, monitoring and verification issues, to develop a programme of action to achieve all possible compliance with the TPNW

Contact Dr Rebecca Eleanor Johnson: info@acronym.org.uk

INTRODUCTION TO THE CHALLENGES

As humanity struggles to address the enormity of what we must change to avoid further deadly pandemics and the worst outcomes of climate destruction,[1] nuclear risks and the spectre of nuclear war are on the rise again.[2] Over 13,000 nuclear weapons are in the possession of nine nuclear-armed governments. Regional and international relations between some if not all of these governments and their leaders have been deteriorating over the past two decades, and have now become critical.

In the face of the triple challenges of the Covid pandemic, climate destruction and preventing nuclear war, we must all rethink our lives, security and future priorities. In Britain and around the world, we urgently need better informed public conversations about what security means for humanity and our countries in the 21st century, and how we want to prioritise our national and collective resources

This report from the Acronym Institute for Disarmament Diplomacy and CND explores the nuclear component of today's interconnected security risks and challenges. In looking at the opportunities and challenges presented by the multilateral TPNW, the questions we address include: Why do we still have nuclear weapons? What do they do? Do they help any governments to tackle any actual security challenges that we face today, and if so, how? What are the mechanisms, benefits and risks of continuing to deploy nuclear weapons and what are the mechanisms, benefits and risks of joining the TPNW and complying fully with the NPT's disarmament and non-proliferation obligations? What have been the main drivers behind UK nuclear policies since the 1950s? Are they valid now? Since deterrence has been part of security and defence approaches for centuries, why are nuclear weapons in Britain called 'the deterrent' as if this is the only tool in the UK's deterrence toolbox? In the nine countries that say they need nuclear weapons for deterrence, how many believe that this will work at all times and in all circumstances? What would be the consequences if nuclear weapons do not deter? What other tools for deterrence and security would be appropriate for 21st century threats? What are the worst case scenarios of a failure in nuclear deterrence by comparison with a failure in non-nuclear deterrence approaches? What policies advance our security, cooperating with others or competing with them? What do we need to change, politically and personally, in order to feel – and be – more secure? What do we need to do, individually and collectively, to lessen the risks and dangers attached to nuclear weapons

1 UNA-UK (2020), Climate 2020: Degrees of Devastation, United Nations Association UK (UNA-UK), 2020

2 2021 Doomsday Clock Statement, Bulletin of the Atomic Scientists, https://thebulletin.org/doomsday-clock/current-time/

and further our chances of surviving in the 21st century and beyond? No doubt you have questions of your own to add to this list – let us know and join the conversation!

Some of humanity's best minds are being mobilised to deal with the extraordinary security challenges we are currently facing due to climate destruction and the highly infectious Covid pandemic. Nuclear war still hangs over the Earth, threatening us with total annihilation. To survive, we need to address the causes and drivers of all these challenges together. We have to remove the nuclear sword of Damocles from aiming at our heads so that we can open up space to solve the interconnected security threats that face us. This report argues for rethinking our security approaches, recognising the military, industrial, cultural and political drivers of insecurity, and overcoming the institutional assumptions and prejudices that have thwarted decades of nuclear disarmament hopes, commitments and diplomacy. We hope you find that our analysis addresses some if not all of your questions, and look forward to your input so that we can work together to tackle these existential dangers and build peace and security without nuclear threats.

Nuclear realities

In 1985, the recognition by Presidents Ronald Reagan and Mikhail Gorbachev that 'a nuclear war cannot be won and must never be fought' was a significant breakthrough at the height of nuclear arms racing and the Cold War.[3] At that time this author was living outdoors by the gates of the Greenham Common nuclear airbase in Berkshire, the first US base designated to receive 96 new ground-launched nuclear missiles, known as 'Cruise.' Like many women in Britain, when I heard about this 'state of the art' generation of 'warfighting' nuclear weapons – Cruise, Pershing and SS20s being designed and deployed to fire across the Berlin Wall – I felt powerless and afraid. Despite my physics and international relations qualifications, it seemed that getting involved with the Greenham Common Women's Peace Camp and disrupting the deployment plans was the only way my concerns and opposition could be heard. The military-industrial systems driving nuclear possession and deployments were so huge and daunting, what could one young woman do? But one young woman committing to disrupt nuclear weapons threats and deployments was multiplied thousands, even millions, of times around the world. Because we were desperate and afraid for the future, we built an unstoppable feminist-humanitarian movement for nuclear disarmament. Like the indomitable climate activists taking to the streets and organising school strikes today, we recognised that our hopes for future survival meant rising up and stopping the business as usual industries and mindsets that were driving humanity to the brink of extinction.

3 Joint Soviet-United States statement on the Summit Meeting in Geneva, 21 November, 1985 https://www.reaganlibrary.gov/archives/speech/joint-soviet-united-states-statement-summit-meeting-geneva

The imperative for negotiating and joining the TPNW is recognition of today's humanitarian risks and impacts, which include nuclear war and is made possible by making, keeping, proliferating and threatening to use nuclear weapons. Over the past fifteen years, facts and evidence about real mistakes, miscalculations, near-misses and dangers were dusted off, updated and brought before a new generation of parliamentarians and governments. The purpose was to counteract the actions and mindsets of the military-industrial drivers of weapons, wars and climate catastrophe and open up space for transformative solutions. In establishing the International Campaign to Abolish Nuclear Weapons (ICAN) doctors, scientists, diplomats, feminists and humanitarian activists came together to ban nuclear weapons and turn the tide to enable their complete elimination.[4] For this, we not only had to oppose the military-industrial drivers in the nuclear establishments; we also had to challenge the dominant arms control and non-proliferation narratives, which for far too long have made managing nuclear weapons sound like a safe option. Intentionally or inadvertently, these management theories have enabled nine countries to acquire, proliferate and enhance nuclear arsenals for more than sixty years.

As this report discusses, miscalculations, mistakes and accidents with nuclear weapons are frequent, though many get covered up at the time. Convoys carrying nuclear warheads drive on motorways and smaller roads several times a year between UK nuclear bomb factories in Berkshire, fifty miles from London, to the Royal Navy's nuclear bases thirty miles north-west of Glasgow in Scotland.[5] One nuclear detonation, whether fired at Britain or from a British submarine fired at Moscow, would cause catastrophic destruction and overwhelm humanitarian responses.[6] Scientists have calculated that a hundred Hiroshima-yield nuclear explosions would result in the death of billions of people.[7] Immediate and short term deaths and injuries would occur mainly from blast, burns and radiation sickness. Deaths, sickness and misery over the next few years would be even greater, arising as the dust clouds from pulverised cities cause massive climate disruptions, including 'nuclear winter', when agricultural systems collapse around the world, resulting in prolonged food shortages, famine, desperation and genocide.[8]

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4 Civil Society Engagement in Disarmament Processes: The case for a nuclear weapons ban', United Nations Office for Disarmament Affairs (UNODA), 2016, especially Rebecca Johnson, 'Banning the Bomb: From 1950s activism to the General Assembly via Greenham Common.' https://www.un.org/disarmament/publications/civilsociety/volume-2016/.

5 See Nukewatch, Warhead Convoy Movements Summary 2000-2021, https://www.nukewatch.org.uk/convoys/annual-convoy-movements/; and Rob Edwards (2016), Nukes of Hazard: The nuclear bomb convoys on our roads, ICAN-UK 2016, http://acronym.org.uk/2017/03/15/nukes-of-hazard-nuclear-bomb-convoys-on-our-roads/.

6 Richard Moyes, Philip Webber and Greg Crowther (2013) Humanitarian consequences: Short case study of the direct humanitarian impacts from a single nuclear weapon detonation on Manchester, UK, Article 36, February 2013, https://article36.org/wp-content/uploads/2013/02/ManchesterDetonation.pdf; John Ainslie, If Britain Fired Trident: The humanitarian catastrophe that one Trident-armed UK nuclear submarine could cause if used against Moscow, Scottish CND February 2013, https://terrapapers.com/wp-content/uploads/2020/05/ifbritainfiredtrident.pdf; and Rebecca Johnson, Preventable Threats, Acronym Institute/ICAN-UK, http://www.acronym.org.uk/new-website/wp-content/uploads/2014/02/Preventable-threats.pdf

7 Philip Webber, The climatic impacts and humanitarian problems from the use of the UK's nuclear weapons, Scientists for Global Responsibility, February 2013, https://www.sgr.org.uk/publications/climatic-impacts-and-humanitarian-problems-use-uk-s-nuclear-weapons; and Alan Robock, I. Oman, G.I. Stenchikov, O.B. Toon, C. Bardeen, and R.P. Turco, 'Climatic consequences of regional nuclear conflicts', http://climate.envsci.rutgers.edu/nuclear/. Note that the Hiroshima uranium bomb had the explosive power equivalent to 12.5 kilotonnes of TNT (kt), and the Nagasaki plutonium bomb was estimated to be around 20 kt. Most UK warheads for Trident, by contrast, are designed with the explosive force of 100 kt.

8 Ira Helfand, Nuclear Famine: Two Billion People at Risk, International Physicians for the Prevention of Nuclear War (IPPNW), Boston, December 2013, https://www.psr.org/wp-content/uploads/2018/04/two-billion-at-risk.pdf

It is no reassurance to be told that nuclear weapons are more likely to be detonated by accident, human stupidity and miscalculations than strategy and intent.[9] We live in a world dominated by overconfident leaders with risk-taking personalities that seek personal and military dominance instead of cooperation, equality and sustainability. Such leaders add to nuclear risks, which include other kinds of human error, computer malfunction and the growing cyber capabilities that could launch nuclear war without the intention or authority of nuclear-armed governments. No-one sensible can argue these days that nuclear weapons keep us safe. People who care about security need to factor these risks and potential consequences in, not pretend they'll never happen.

These concerns led two-thirds of the UN General Assembly to come together in 2017 to negotiate and adopt the TPNW. Believing in their nuclear-armed power to coerce and persuade, the nuclear club got it wrong when they tried to derail the treaty, only to see it enter into international legal force on 22 January 2021. Persuading nuclear-armed leaders to relinquish the inhumane weapons of mass annihilation that they brandish will not be easy, but the TPNW gives us a new set of tools to get the job done.

When Reagan and Gorbachev publicly accepted the rationale underlying public fears and existential risks attached to nuclear weapons possession, deployment and use, they began to take political and diplomatic actions to prevent nuclear war. The first step was the 1987 Intermediate-Range Nuclear Forces (INF) Treaty, which served its purpose well until it was irresponsibly ditched by Presidents Donald Trump and Vladimir Putin in 2019. The INF Treaty was itself the outcome of civil society actions for disarmament, democracy, peace and freedom during the 1980s. Swift on the heels of the INF Treaty, the Cold War ended. A decade of significant progress followed, in which bilaterial steps were taken to reduce the largest nuclear arsenals, and unilateral disarmament steps were undertaken by the UK and France. During this time, long-sought multilateral treaties such as the 1993 Chemical Weapons Convention (CWC) and the 1996 Comprehensive Nuclear-Test-Ban Treaty (CTBT) were finally concluded and adopted. The NPT was indefinitely extended in 1995, and in 2000 adopted progressive and practical steps for nuclear disarmament, as discussed in more detail in Chapters 1 and 2.

The first five nuclear-armed states (the United States of America, Russia, the UK, France and China) are diplomatically referred to as the P-5, as they also occupy permanent seats on the UN Security Council. In 1992, China and France finally acceded to the NPT, just in time to participate in that 1968 treaty's indefinite extension.[10] When discussing nuclear issues, this group of five will here be denoted as the NPT5, as they are not acting on behalf of the Security Council and like to be distinguished from the other four nuclear-armed states, which are India, Israel, North Korea and Pakistan. The NPT5 like to claim special privileges as 'nuclear-weapon states' (a definition in Article IX.3 of the NPT that refers to having exploded a nuclear device before 1 January 1967), and frequently call on some if not

9 Patricia Lewis et al (2014), Patricia Lewis, Heather Williams, Sasan Aghlani, and Benoit Pelopidas, 'Too close for comfort: cases of near nuclear use and options for policy', Chatham House, April 2014, https://www.chathamhouse.org/2014/04/too-close-comfort-cases-near-nuclear-use-and-options-policy.

10 Jayantha Dhanapala with Randy Rydell (2005), Multilateral Diplomacy and the NPT: An Insider's Account, United Nations, New York, 2005; and Rebecca Johnson (1995), Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings, ACRONYM 7, The Acronym Consortium, London, September 1995.

all of the others to adhere to the NPT as 'non-nuclear weapon states' (NNWS).

From 1987 onwards, the United States and Russia reduced their nuclear arsenals by over 70 percent, but they still have thousands more nuclear weapons than the other seven – more than enough to incinerate our shared planet many times over. After decades of relating to each other through 'arms control', these two nuclear-armed states have reverted to competition over a new generation of nuclear weapons, this time with hypersonic missiles and low-yield or variable-yield warheads, which are supposed to be more usable in conflict. These destabilising innovations are attracting other nuclear-armed governments to follow. Predictably, others want to follow ,and are starting to pursue hypersonic missile capabilities for delivering what they present as 'conventional' weapons.

Leadership is a recurring theme in politics and international relations. In democracies as well as dictatorships, history is littered with the mistakes and wars of inept leaders. The dominant systems of military-industrial politics, communication and belief that have brought humanity to the brink of extinction tend to favour leaders who put their own short-term interests above national and global security. The status and profits they chase are part of the systemic problems we face, from the climate emergency to public health and security. From Covid to the consumption of tobacco and fossil fuels, wars and trafficking in people, drugs and armaments, these systems are interconnected. It is important to look at how nuclear weapons, like health inequalities and the climate emergency, embed violence against women, children and minoritised peoples across the world. Military-industrial systems rely on patriarchal power, fear and competition. If allowed to carry on, climate destruction or nuclear weapons (or both) are set to destroy life on earth.

Available nuclear warheads by country (estimated) for 1987, 1992, 2006 and 2021

	1987	1992	2006	2020
USA	23,575	13,708	7,853	5,550
Russia	38,000	26,734	6,643	6,255
UK	422	422	281	225-260*
France	420	540	350	290
China	230	234	235	350
Israel	47	58	80	90
South Africa	4			
India			50	156
Pakistan			43	165
North Korea			(8-10)*	(40-50)*
TOTALS	**62,698**	**41,696**	**15,535***	**13,081***

Estimates drawn from SIPRI, the Bulletin of the Atomic Scientists and the Federation of American Scientists,[11] *with efforts to take into account discrepancies due to varying levels of transparency in nuclear-armed states over these years and different ways of calculating deployed, active, available and reserve nuclear weapons.*

**The SIPRI total of 13,081 is based on a UK stockpile of 225 warheads, but this may be higher, as the UK's 2021 Integrated Review announced an increase in the warhead stockpile ceiling to 260. North Korean numbers are not included in these totals as they are deemed too uncertain.*

Nuclear-related challenges in 2022

The TPNW was negotiated and adopted by the United Nations five years ago, driven by growing concerns about nuclear weapons and threats. The majority of NPT members had raised these concerns and proposed disarmament steps and action plans for years, only to see them sidelined by the NPT5. With the NPT Conference postponed again, the NPT5 issued a joint statement on 3 January 2022. It goes some way to explaining why arms control has stalled – and also why the majority of NPT states parties decided they had to take

11 SIPRI Yearbook 2021 world nuclear forces, https://sipri.org/sites/default/files/2021-06/yb21_10_wnf_210613.pdf ; Bulletin of the Atomic Scientists, Global Nuclear Weapons Inventories, https://www.tandfonline.com/doi/pdf/10.2968/066004008; and Federation of American Scientists Status of World Nuclear Forces, https://bit.ly/3JSyT53 .

forward their responsibilities by negotiating and bringing into force a universally applicable, humanitarian-based legal instrument to prohibit and eliminate all nuclear armaments and programmes.

The NPT5 see the problems attached to nuclear weapons when they look at each other and the other four nuclear-armed governments with trepidation, but they are still insisting that nuclear disarmament requires others to go first. They also promulgate narratives that getting rid of their own nuclear weapons is going to be far more complicated and costly than acquiring them. According to the NPT5, disarmament steps cannot be undertaken unless they maintain strategic stability and 'undiminished security', which by their definitions are equated with retaining nuclear weapons.[12] This Catch 22 is dressed up in diplomatic jargon in order to look serious and important, like the emperor's new clothes. Hiding behind the NPT and their own pretences, the NPT5 emperors parade their old Cold War doctrines of nuclear-armed deterrence and try to ignore the inconvenient truths and realities of today.

Nuclear war is an ever present threat waiting to happen. As our report details, the NPT5 have continually failed to act on this knowledge, thereby presiding over further proliferation, arms racing and risks. In over fifty years of the NPT, they have failed to implement their nuclear disarmament obligations, commitments and steps negotiated and agreed at various review conferences. It is therefore a matter for concern that when US President Biden and Russia's President Putin repeated the Reagan-Gorbachev phrase in June 2021 it was quoted as a 'principle' rather than being a real recognition that nuclear weapons present extinction level threats that necessitate their removal and elimination as an urgent priority.[13] The NPT5 has now managed to give the same quote.

We should of course welcome that the NPT5 did not declare their mutual willingness to fight a nuclear war; we should also be wary of that iconic 1985 recognition being co-opted in linguistic games that obscure the fact that today's nuclear armed leaders are carrying on with their power struggles. Actions are stronger than words – where are the actions and practical steps to eradicate the weapons that they use for threatening and fighting nuclear war? Reducing the Reagan-Gorbachev understanding to gesture politics can only be counterproductive. We should not applaud leaders for mouthing this phrase if they are bent on upgrading their nuclear arsenals with new, hypersonic and 'usable' nuclear missiles, while still keeping thousands of nuclear weapons on hair trigger alert.[14]

As the coronavirus pandemic surges again, lives continue to be lost due to military-industrial activities and climate destruction, from famine in Afghanistan to extreme storms, fires and flooding in many countries this past year. In December 2021, as this report was being finalised, three security-related media reports jumped out as having personal and

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12 Joint Statement of the Leaders of the Five Nuclear-Weapon States on Preventing Nuclear War and Avoiding Arms Races, issued 3 January 2022, https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/03/p5-statement-on-preventing-nuclear-war-and-avoiding-arms-races/.

13 US-Russia Presidential Joint Statement on Strategic Stability, 21 June 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/16/u-s-russia-presidential-joint-statement-on-strategic-stability/, subsequently reiterated by the NPT5 on 3 January 2022.

14 Julian Borger, 'Five of the worlds most powerful nations pledge to avoid nuclear war', The Guardian, 3 January 2022, https://www.theguardian.com/world/2022/jan/03/five-nations-pledge-avoid-nuclear-war.

political relevance for the issues discussed in this report. In one, Scottish police have started investigations into an 'unexplained death' at the Royal Navy's Clyde submarine base at Faslane, where the UK's nuclear-armed and nuclear-powered Trident-carrying Vanguard submarines are deployed.[15] Even in the best of times, the confined working conditions and nuclear-related stresses for nuclear submariners on patrol are far from healthy, mentally and physically. The coronavirus pandemic has made this even worse.[16]

The second story doesn't deal with nuclear weapons directly, but draws attention to Pentagon records of airstrikes with remotely controlled drones in Afghanistan, Iraq and Syria over the past decade. The records, which document mistakes in intelligence, wrongly applied cultural assumptions and miscalculations, reveal 'patterns of failure' that caused death and injury to many civilians, including women and children. These were not one-off tragedies, but systemic failures by military personnel, algorithms, and the data on which they rely when choosing targets and deciding when to fire. A single such mistake or miscalculation when targeting and launching a nuclear weapon could kill millions.[17]

In the third article, '15 minutes to save the world', Washington-based journalist Julian Borger, who specialises in defence and security issues, wrote about a 'virtual reality' (VR) scenario for nuclear decision-makers developed by a team of scientists and security analysts from the American University and the Universities of Hamburg (Germany) and Princeton (USA). Noting the nightmarish options, tight decision-times, technological 'noise' and terrible stress levels, Borger quoted Professor Sharon Wiener of the School of International Service at American University, who expressed hope that Congressional representatives would be willing to experience the simulation 'and at least see the consequences of the choices they've made about nuclear weapons issues... They will see everybody in that virtual room is trying to do their job, but it's an impossible job.'[18]

This simulation is currently based on US systems. Would it be possible to develop VR simulations based on what is known about the command, control, military and decision-making context faced by other nuclear-armed leaders? In different ways, these news stories go to the core of nuclear deterrence and defence assumptions, raising serious questions about security realities and the consequences of getting nuclear decisions wrong.

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15 Police investigating unexplained death at Faslane nuclear submarine base. The Independent, 10 December 2021 https://www.independent.co.uk/news/uk/home-news/faslane-nuclear-submarine-base-death-b1973602.html; See also The National, 10 December 2021, https://www.thenational.scot/news/19775443.police-investigate-unexplained-death-faslane-nuclear-base/

16 Jerome Starkey, '"Hell" at sea: Sailors on Royal Navy nuclear submarine come through "patrol from hell" after Covid outbreak at sea', The Sun, 12 February 2021, https://www.thesun.co.uk/news/14036051/sailors-navy-nuclear-sub-covid-outbreak/

17 Azmat Khan, 'The civilian casualty files: Hidden Pentagon records reveal patterns of failure in deadly airstrikes', New York Times, 18 December 2021, https://www.nytimes.com/interactive/2021/12/18/us/airstrikes-pentagon-records-civilian-deaths.html

18 Julian Borger, '15 minutes to save the world', The Guardian, 14 December 2021, https://www.theguardian.com/technology/2021/dec/14/vr-game-simulating-nuclear-attack-tests-decision-making-skills

Military, industrial, bureaucratic and academic drivers

There is growing awareness now of the dangerously influential pressures being wielded by the big fossil fuel companies seeking to prevent much-needed legislation to rein in and limit climate destruction. Through public relations strategies, they have invested in institutions, academics, pundits and politicians willing to construct and promote 'alternative facts' that are used to dismiss the real facts and evidence about climate-destroying industrial emissions. The purpose is to confuse consumers and convince large parts of public opinion that there is nothing really to worry about, as they have ways to make the dangers go away. Like the 20th century tobacco companies and polluters before them, the fossil fuel promoters learned a lot from how the US 'military-industrial complex', described by President Eisenhower in the 1950s, established bureaucratic and academic networks to frame the theories and practices that would facilitate nuclear programmes and activities in the United States and its allies.

When formed in April 1949, the North Atlantic Treaty Organisation (NATO) was not established as a nuclear alliance but as a security alliance. A few months later Moscow's first nuclear test announced that the Soviet Union was nuclear weapon capable. Britain was determined to be next. The Korean War both fuelled and epitomised the East-West ideological and military conflicts between capitalist and communist standard-bearers. Though nuclear weapons were not used in Korea, some US political and military figures argued that they should be.[19] In conjunction with pro-nuclear strategies and the '*Pax Americana*' that developed after the 1939-45 war, nuclear-related facilities were embedded in all fifty US States, the better to influence (and control) politicians who might otherwise have questioned the budgets and assumptions attached to billion-dollar programmes that flourished while health and education resources were stretched thin. Internationally, many US bases were made nuclear capable, spreading from Japan, South Korea and several other Pacific countries to members of NATO in Europe, including Greenham Common.

During the Korean War, as mushroom clouds hurled radioactive dust into the atmosphere from accelerating numbers of nuclear tests, US funding was disbursed to various academics and educational institutions to frame America's growing militarism (and nuclear weapons) as 'realist' necessities for international security. The funding and educational exchange programmes spurred the development of formal and informal 'military, industrial, bureaucratic and academic' (MIBA) networks that extended tentacles and influence around the world. Within the United States and its allies, revolving doors between academic, bureaucratic and political establishments enabled pro-nuclear theories and practices to be promulgated widely. These included the 'atoms for peace' programme, by which Eisenhower sought to direct domestic and international attention towards civilian nuclear benefits and away from the costs and impacts of nuclear weapons, which were feeding calls for disarmament.

MIBA networks were also instrumental in promulgating 'nuclear deterrence' theories, by which long-standing pre-nuclear concepts of deterrence were co-opted and remodelled to justify possessing, deploying and threatening to use nuclear weapons. In Britain, it has become not just normal to call UK nuclear weapons 'the deterrent' or 'the independent

19 Daniel Calingaert (1988), Nuclear weapons and the Korean War, Journal of Strategic Studies, 11:2, 177-202, DOI: 10.1080/01402398808437337

deterrent'; these terms are practically required for anyone seeking preferment in politics, academia and the media, except in Scotland.[20] In parallel, MIBA beneficiaries were also instrumental in developing and spreading the theories and justifications for non-proliferation and arms control, with disarmament presented as a nice aspiration and disarmament advocates damned with faint praise as 'idealists'. While recognising that participants in MIBA establishments are often well meaning and sincere, the institutional purpose and roles should be recognised as political, systemic and central to sanitizing nuclear weapons and convincing voters, politicians and other governments that they can be safely managed by 'responsible States', whatever that was defined to mean.

MIBA distinctions between 'responsible' and 'irresponsible' states have proved equally useful for UK and Soviet policy-makers to justify their growing nuclear establishments and practices to international as well as domestic audiences. In 1968, the NPT embedded key MIBA concepts in law, including 'peaceful uses' of nuclear testing and technologies, and non-proliferation, which focussed more on controlling the activities of states that did not have nuclear weapons programmes (the 'have-nots') than on eliminating the nuclear threats wielded by powerful nuclear 'haves'. From then until now, these frameworks and theories have dominated academic and political discourses on defence and security, resulting in the marginalisation of alternative voices advocating cooperative security, disarmament and the abolition of nuclear weapons.[21]

Cold war anxieties about nuclear weapons diminished, as many people hoped or believed that nuclear weapons would carry on being reduced to zero. That could have happened, but didn't, in large part because the NPT5 and a handful of others have continued to attach value and status to nuclear weapons, which have therefore continued to proliferate. Then came the terrorist acts against the Pentagon and New York's twin towers by political-religious extremists armed with hijacked passenger planes on 11 September 2001. While many urged the United States to show its strength through the exercise of better intelligence, diplomacy and international cooperation to undermine terrorists by tackling the misogyny, intolerance and misery on which they thrive, US and UK leaders chose to launch wars 'on terror', starting with Afghanistan. The war on Iraq that followed was justified with misleading allegations about 'weapons of mass destruction' (WMD). These were used by the Blair government to muddle people into believing Iraq had nuclear weapons that could be fired at Britain within 45 minutes.[22] Money has been poured into military-industrial ventures from then on (and not just in the United States and UK). The theories and MIBA groupthink that dominated Cold War thinking about nuclear weapons in the Cold War have thus been passed on to a further generation of MIBA-trained students, analysts, bureaucrats and officials, some of whom have risen to positions that depend on them upholding status quo justifications and allocating resources for nuclear business as usual. Today's major challenges track back through the military-industrial systems used by patriarchal and colonialist leaders in recent centuries to gain power, wealth and control. In the nuclear-armed nations, military-industrial interests and cultures dominate.

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20 See Robert Green (2010), Security Without Nuclear Deterrence, Astron Christchurch 2010.

21 Nancy W. Gallagher (ed.) Arms Control, Frank Cass Publishers 1998.

22 Hans Blix, Disarming Iraq: the search for weapons of mass destruction, Bloomsbury, 2004.

Barack Obama is an instructive illustration. Elected US president on a wave of hope that he would transform the military-industrial status quo, he never got further than his speech in Prague. He recognised that 'One nuclear weapon exploded in one city – be it New York or Moscow, Islamabad or Mumbai, Tokyo or Tel Aviv, Paris or Prague – could kill hundreds of thousands of people. And no matter where it happens, there is no end to what the consequences may be – for our global safety, security, society, economy, and ultimately our survival.'[23] But his MIBA-trained advisers persuaded him to condition his commitment to free the world of nuclear weapons with 'perhaps not in my lifetime', and then to increase budgets to modernise US nuclear weapons in return for Congressional ratification of the bilateral 2010 New START agreement that reduced the Russian and American strategic arsenals.[24]

New START was important, but very limited. It cemented the power of US and Russian establishments to maintain the nuclear arsenals, albeit at lower numbers. The risks of nuclear use and war with these slightly reduced numbers remains very high. Ignoring the mechanisms of nuclear risk does not make the dangers disappear. Whether people are paying them attention or not, the possession and deployment of nuclear weapons have continued to pose existential threats to all who share this planet. MIBA vested interests in maintaining and managing nuclear weapons in their own countries have spread the justifications on which they depend around their world. As a handful of ideologically driven leaders use nuclear weapons as a currency of power in their dealings with others, nuclear threats and dangers have become more salient than ever. The UK is part of this problem.

NPT developments leading to the TPNW

Outside the influence of dominant military-industrial establishments and endorsers, banning and eliminating nuclear weapons have been the long-sought objectives of many nations and peoples. Since the first atomic bombs were used and tested, civil society – women, men and children of many countries – have promoted disarmament and peace-building. After nuclear war was narrowly averted in 1962, important steps were finally taken towards limiting nuclear testing (the 1963 Partial Test Ban Treaty), and then the NPT, which was originally conceived by Ireland and Sweden to promote the interdependent objectives of non-proliferation and nuclear disarmament. Various regional nuclear weapon free zone (NWFZ) treaties were negotiated from 1967 onwards, starting with the Tlatelolco Treaty that covered Latin America and the Caribbean. Taken together, NWFZ have banned nuclear weapons from the whole Southern Hemisphere and swathes of Central and South East Asia.

Bilateral US-Russian agreements in the 1970s limited some nuclear arms developments, but the major breakthrough was the INF Treaty, discussed above, which eliminated the class of nuclear weapons that included American ground-launched Cruise and Pershing missiles as well as Soviet SS20s. The INF Treaty was driven by years of civil society protest at various

23 Barack Obama, President of the United States of America, Speech at Hradcany Square, Prague, 5 April, 2009.

24 2010 Treaty on Measures for the further reduction and limitation of strategic offensive arms, known as New START, https://www.state.gov/new-start/

US nuclear bases, in addition to Greenham Common. Through the Aldermaston Women's Peace Camp, founded in 1985 by Greenham Women, Greenham's legacy of feminist-humanitarian activism continues in many forms.[25]

After the Berlin Wall was brought down by European civil society activism in 1989, the long-awaited CWC and CTBT treaties were finally achieved. The NPT was extended indefinitely in 1995, with a package of decisions and agreements relating to progress on nuclear disarmament, strengthening NPT implementation, and a zone free of nuclear and other weapons of mass destruction in the Middle East.[26] As briefly discussed in this report, efforts on these issues began to stall soon after, as members of the NPT5 nuclear club pulled away from the commitments they made in the period from 1995 to 2000. The NPT Conference of 2005 failed abysmally, and the 2010 NPT Conference only just reached consensus on some watered down action points and commitments that the NPT5 have subsequently failed to honour and implement. Amid criticisms of 'dangerous complacency', the 2015 Conference 'collapsed in disarray' when the UK, USA and Canada refused to join consensus on the president's text relating to taking forward previous commitments to hold a conference to address WMD issues in the Middle East.[27]

To salvage what was possible, more than half of the NPT's States Parties subsequently signed a 'humanitarian pledge', initiated by Austria at the December 2014 International Humanitarian Impacts of Nuclear Weapons (HINW) Conference held in Vienna. This humanitarian pledge 'to fill the legal gap for the prohibition and elimination of nuclear weapons' was overwhelmingly adopted at the 2015 UN General Assembly, leading to formal discussions in the 2016 UN Open-Ended Working Group (OEWG) on 'multilateral nuclear disarmament' in Geneva. Thailand, which chaired this OEWG, took its key recommendations for negotiations to the UN First Committee, where they were adopted by a large majority. Subsequently, UNGA Resolution 71/258, on 'Taking forward multilateral nuclear disarmament negotiations', was overwhelmingly adopted in December 2016, after UN funding and the allocation of facilities in New York were agreed for the negotiations to take place under UN auspices in 2017. This was the last phase of a long diplomatic process that led to UN negotiations and the adoption of the TPNW in 2017.[28]

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25 See https://greenhamwomeneverywhere.co.uk/ and https://www.facebook.com/pages/category/Community/Aldermaston-Womens-Peace-Camp-176886025697350/

26 Rebecca Johnson (2009), Unfinished Business: The Negotiations of the CTBT and the End of Nuclear Testing, (United Nations, 2009) GE09-00299 https://www.unidir.org/files/publications/pdfs/unfinished-business-the-negotiation-of-the-ctbt-and-the-end-of-nuclear-testing-346.pdf

27 Rebecca Johnson (2015), 'NPT: Cornerstone of nuclear non-proliferation or stumbling block?' openDemocracy, 28 May 2015, https://www.opendemocracy.net/en/5050/npt-107-nations-pledge-to-negotiate-on-nuclear-disarmament/ For analysis on NPT meetings and developments since 1994, and TPNW developments since 2010, see www.acronym.org.uk and over 50 contemporaneous articles published from 2010 to 2021 in openDemocracy.

28 Alexander Kmentt (2021), The Treaty on the Prohibition of Nuclear Weapons: How it was achieved and why it matters, Routledge 2021.

UK policies and NPT reporting

As many countries move forward to fulfil their responsibilities under the NPT by banning nuclear weapons and pushing for their total elimination, the UK is still squandering billions of pounds of taxpayers' hard-earned money on new nuclear-powered submarines to carry a further generation of nuclear weapons. A key questioned posed in this report is what must happen to enable the UK to move beyond its military-industrial past? What will shift the carefully constructed delusions about nuclear weapons conferring status and security?

When the UN multilateral disarmament negotiations opened in March 2017, the UK government chose to stand its diplomats outside the UN General Assembly Hall to complain rather than participate. In doing so, the UK became aligned with a boycott strategy led by the Trump administration, which exerted pressure on NATO allies to do the same. The boycott was apparently supposed to stop the majority of UN States from negotiating the proposed nuclear ban treaty. The tactic was weakly supported and failed. Multilateral UN negotiations went ahead without the UK.

When the text of the new Treaty on the Prohibition of Nuclear Weapons was adopted by 122 UN Member States on 7 July 2017, the representatives of US President Trump, French President Macron and UK Prime Minister Theresa May issued a joint press statement. This declared indefinite opposition to the new treaty, based on the specious claims that it risked 'undermining the existing international security architecture which contributes to the maintenance of international peace and security' and would create 'even more divisions at a time when the world needs to remain united in the face of growing threats, including those from the DPRK's ongoing proliferation efforts.' They also raised a red flag by stating that they would not accept that this treaty 'contributes to the development of customary international law.'[29]

The TPNW, like other international treaties, is legally binding on its states parties. Like the NPT, the TPNW has also been designed to have wider impacts, for example, to constrain and deter actions likely to undermine its purposes and objectives, encourage states to sign, and put in place mechanisms to ensure adherence and universality. Expecting the NPT Review Conference to go ahead in January 2022, the British government published the UK's National Report to the NPT Review Conference in November 2021. This report's Ministerial Introduction stated: 'We are strongly committed to full implementation of the NPT in all its aspects.'[30] Sounds good, but what does it mean in practice? For that matter, what is meant by 'Global Britain in a Competitive Age', the strap line for the March 2021 Integrated Review of Security, Defence, Development and Foreign Policy (IR2021)[31] published by the Cabinet Office?

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29 Joint Press Statement (7 July 2017), from the Permanent Representatives to the United Nations of the United States, United Kingdom and France, 'Following the Adoption', accessed 30 November 2021. https://usun.usmission.gov/joint-press-statement-from-the-permanent-representatives-to-the-united-nations-of-the-united-states-united-kingdom-and-france-following-the-adoption/

30 National Report of the United Kingdom on the NPT (2021), published by the UK government, November 2021.

31 Integrated Review of Security, Defence, Development and Foreign Policy (IR2021), Global Britain in a Competitive Age, March 2021 (CP 403). See also Ministry of Defence (2021), Defence in a Competitive Age, March 2021 (CP 411).

The National Report starts with the recognition that the 'Covid-19 pandemic has shown the importance of the international community standing shoulder to shoulder against shared challenges', but it fails to carry that into action to remove nuclear-weapon-related threats or use resources for the priorities it identifies.[32] From pandemics to nuclear weapons and climate destruction, tackling shared challenges requires collective action. IR2021 and the National Report show UK policies moving in the opposite direction. Appearing to emulate policies of 'ambiguity' for which Israel is famous,[33] the UK is seen to ditch long-standing commitments to transparency about nuclear doctrines and arsenals, which Britain previously supported. Instead, 'transparency' is reframed as little more than discussions, roundtables and exploring with other states their 'conceptions of their responsibilities in relation to nuclear weapons'.[34] By these choices, the UK is paving the way for discarding and contravening most if not all of the nuclear disarmament commitments and steps that the UK participated in negotiating and agreeing to in the Review Conference outcomes of 1995, 2000 and 2010.

Alongside plans to reinforce and widen dangerous nuclear use and deterrence policies, IR2021 and the National Report seek to justify upgrading and increasing warhead numbers for the British nuclear arsenal without even attempting to explain why the government felt such an increase was required. It is significant that the United Nations took the unusual step of castigating these policies as 'contrary to [the UK's] obligations under Article VI of the Nuclear Non-proliferation Treaty', warning that they could have a 'damaging impact on global stability and efforts to pursue a world free of nuclear weapons'.[35]

IR2021 indicates a reckless hardening of UK dependence on nuclear weapons. Taken together with the desperate-looking touting for trade in sensitive nuclear technologies, as exemplified by the 'AUKUS' trilateral Australian, UK and US nuclear submarine deal,[36] and the UK's pro-nuclear sales efforts during COP26, it is clear that this government is moving in the wrong direction, increasing nuclear risks at home and around the world. Changing past governments' rhetoric from 'the UK is a responsible nuclear weapon state' to the National Report's recently announced identification of the UK as 'a Nuclear Weapon State that takes its responsibilities seriously'[37] is linguistic gymnastics pretending to be woke – it won't wash. Reality matters, and as long as nuclear weapons are deployed, nuclear war can be fought.

32 UK National NPT Report 2021.

33 Avner Cohen, Israel and the Bomb (1998), Columbia University Press, 1998.

34 UK National NPT Report 2021, p 9.

35 UN spokesperson on UN/UK nuclear weapons, UNifeed, 17 March 2021. https://www.unmultimedia.org/tv/unifeed/asset/2608/2608243/

36 Troubled Waters: Nuclear Submarines, AUKUS and the NPT, ICAN Australia, January 2022.

37 UK National NPT Report 2021.

Civil society drivers

When the TPNW entered into force, the UN Secretary-General António Guterres described the new Treaty as the 'first multilateral nuclear disarmament treaty in more than two decades' and 'an important step towards a world free of nuclear weapons'. He also commended the 'instrumental role of civil society in advancing the TPNW's negotiation and entry into force'.[38] As at 22 January 2022, the Treaty has 86 signatories and 59 States Parties.[39]

The NPT included incentives, such as the 'inalienable right' in Article IV to have access to nuclear technologies for peaceful purposes, and constraints, such as safeguards requirements for non-nuclear weapon states. The TPNW and more recent humanitarian disarmament treaties go further in containing incentives, national implementation measures and assistance provisions that can apply to non-state actors, industries, investors and entities in states that have not yet acceded.

New York City provides a significant recent example of how civil society continues to engage with the TPNW and encourage local authorities, elected representatives, banks and investors to take forward the aims and objectives of the Treaty. On 9 December 2021, New York's City Council passed legislation to align with the TPNW's objectives, initiate steps to divest from companies that produce nuclear weapons, and set up a committee to educate the public about nuclear disarmament.[40] New York has thus joined a growing number of important cities that have taken legislative steps to promote the TPNW and abolish all nuclear 'weapons of terror'.[41] Significantly, as non-nuclear states make progress in signing and acceding to the Treaty, the majority of cities that are taking TPNW-related legislative steps are in countries where nuclear weapons are owned or deployed.

As discussed more fully in Chapter 3, elected representatives and councils in cities such as New York, Paris, Glasgow, Edinburgh, Manchester, Washington D.C., Los Angeles and Berlin are leading the way in countries that are currently nuclear-armed or which facilitate nuclear deterrence policies and operations.[42] The more states that accede, the closer the TPNW gets to becoming treated as customary international law. But even before that legal recognition, the norms and provisions of the TPNW are being used by civil society to close down nuclear financing, production and deployment options in states that are not doing enough to get rid of their nuclear weapons. Even SERCO, which until 2021 was part of a commercial consortium (AWEML) that managed the UK's nuclear bomb factories and other Atomic Weapons Establishment facilities, is pulling out of nuclear-weapons-related work because of concerns by fund managers and shareholders who wish to comply with Environmental, Social and Governance (ESG) standards.[43]

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38 'Guterres hails entry into force of the TPNW', UN News, 22 January 2021, https://news.un.org/en/story/2021/01/1082702

39 For updates on Treaty status and developments see https://www.un.org/disarmament/wmd/nuclear/tpnw/ and https://www.icanw.org/the_treaty

40 See: https://www.icanw.org/new_york_city_joins_ican_cities_appeal

41 Weapons of Terror: Freeing the world of nuclear, biological and chemical arms, Report of the International Weapons of Mass Destruction Commission, Stockholm, June 2006.

42 See https://cities.icanw.org/list_of_cities

43 Ben Gartside, 'Ethical investors block bid for nuclear weapons contracts', Daily Telegraph, 7 November 2021, https://www.telegraph.co.uk/business/2021/11/06/ethical-investors-block-bid-nuclear-weapons-contracts/

From terrorism to nuclear targeting and operational plans, cities full of people in countries that possess or host nuclear weapons are the designated targets for nuclear bomb use. In recognition of the many roles played by civil society, the announcement of New York's legislative victory paid tribute not only to the vision of this city's elected leaders, but also 'the courage, love, dedication and grit of New York City' and its activists who built coalitions, and were 'mentored by the wisdom of stalwart activists from legendary groups like ACT-UP and the 1982 Central Park action where over one million people marched for nuclear disarmament.'[44] This is just one example among many. As discussed in this report, as well as pressuring for the global abolition of these weapons of mass annihilation, we all have a part to play in eliminating nuclear weapons that are possessed and deployed on our behalf, so that they can never be used again.

Aims and Outline of the Report

The title summarises this report's central question: Now that nuclear weapons are banned under international law, what are the implications for Britain? It takes as its starting point that nuclear weapons are now prohibited in international law. This is an important step towards reducing nuclear dangers and creating conditions and pressures for nuclear disarmament. Yet, as long as nuclear weapons are deployed, prized and relied on by leaders in significant governments like the UK, nuclear use and war will continue to be only an accident or mistake away.

As well as the nine nuclear-armed leaders, more than thirty countries are tied into nuclear sharing and deterrence arrangements that embed threats to use nuclear weapons in certain circumstances. Since the NPT entered into force in 1970, nuclear-armed States and their allies have failed to eliminate their nuclear arsenals, and most if not all (inside as well as outside the NPT) have carried on modernizing and making new nuclear weapons. This fact explains why the majority of NPT parties that have renounced nuclear weapons concluded that banning nuclear weapons was the biggest step that they themselves could undertake to remove the constant threat of nuclear use and war. As a perpetrator of nuclear threats, what does this mean for Britain?

Chapter 1 analyses the TPNW article by article, including its relationship with the NPT, and discusses the challenges and tasks facing the first and subsequent meeting of TPNW States Parties. This chapter discusses how the negotiators – supported by civil society – did as much as they could in the narrow window of opportunity they had to achieve an impasse-breaking legal, normative and practical step to end the power attached to nuclear weapons and take forward global security, including the NPT regime's core non-proliferation and disarmament objectives.

44 See: https://www.icanw.org/new_york_city_joins_ican_cities_appeal

The chapter draws on many different analyses to explore the TPNW's essential objectives, prohibitions and principles, and its potential to adapt and develop a strong, effective and sustainable nuclear disarmament regime. Going beyond the NPT's cornerstone was necessary, but as this chapter discusses, the new treaty clearly builds on the NPT, CTBT and related nuclear treaties and agreements. The TPNW's clear, non-discriminatory prohibitions and pathways are intended to be adaptable enough to bring the different nuclear armed States on board, while taking into account their specific arsenals and capabilities.

Chapter 2 gives an overview of UK nuclear policies, infrastructure and challenges, drawing from governmental and non-governmental sources over many years, including the Acronym Institute's publications and journal *Disarmament Diplomacy* (1995-2009) and research by the late John Ainslie,[45] Peter Burt and David Cullen in reports published by the Nuclear Information Service, Scottish CND and elsewhere. Chapter 2 highlights shifts in UK nuclear policies and positions, with particular emphasis on nuclear-weapons-related decisions and documents from 2006-2021, encompassing the administrations of Tony Blair, Gordon Brown, David Cameron, Theresa May and Boris Johnson, including the 2021 Integrated Review. This section also covers relevant legal analyses and the recent Joint Opinion on the Legality under International Law of the United Kingdom's Nuclear Policy as set out in the 2021 Integrated Review, written by Christine Chinkin and Louise Arimatsu of the University of London School of Economics and Political Science (LSE), and published by CND.

Chapter 3 discusses five possible scenarios that illustrate some of the drivers and factors that might pressure and enable UK leaders and politicians to undertake nuclear disarmament in good faith, leading to adherence to the TPNW. These scenarios may not necessarily represent the most probable course of events, but each of them is a plausible possibility in the coming years, with the feasibility of combining to take the UK into the TPNW as time goes on.

The five indicative scenarios are:

- Security and economic imperatives lead to decisions that end Britain's nuclear weapons production and deployment programmes.
- Further shocking nuclear accidents or the use of nuclear weapons somewhere heighten public fears and increase pressure to eliminate British nuclear weapons and implement the TPNW.
- Decisions by Scottish voters to make Scotland nuclear free and independent result in the withdrawal of bases in Scotland from continuing to participate in deploying UK nuclear weapons.
- Loss of currently-perceived value attached to nuclear weapons as more NATO partners and allies join the TPNW.
- Elections deliver parliaments and governments that are able to carry out nuclear disarmament and accede to the TPNW.

45 John Ainslie died in 2016, but left a legacy of important research and campaign materials for Scottish CND and the Nuclear Information Service to archive.

Chapter 4 discusses the requirements, stages and possible timelines that a UK roadmap would likely entail. Here we draw on lessons from how UK and other countries' nuclear weapons have been dismantled and destroyed, as well as research undertaken by John Ainslie, notably 'Disarming Trident.'[46]

The first and subsequent meetings of States Parties to the TPNW will be open to observers. These meetings will begin to take important decisions on how best to take forward and implement the Treaty. Even before the UK and other nuclear-armed states sign, their governments are being invited and encouraged to attend as observers. These governments are also being urged internationally, and in some cases domestically, to engage constructively with the TPNW's provisions on disarmament, verification, and also on assisting people harmed by nuclear weapons use and testing, and remediating environments that have been contaminated by such activities.

46 John Ainslie, Disarming Trident, Scottish CND, 2012, https://www.nuclearinfo.org/wp-content/uploads/2020/09/Disarming-Trident.pdf

1. UN TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS

On 7 July 2017, the UN General Assembly finalised the Treaty on the Prohibition of Nuclear Weapons (TPNW)[47] which was adopted by 122 votes to 1 against (Netherlands), with 1 abstention (Singapore). After being opened for signature on 20 September 2017 by the UN Secretary-General, António Guterres, the TPNW entered into international legal force on 22 January 2021.

This UN-negotiated step towards a multilateral nuclear ban treaty was gestated by civil society over many decades. It was diplomatically launched at the 2010 NPT Review Conference, which framed future disarmament actions in the consensus part of its outcome document with two important paragraphs. One key paragraph expressed 'deep concern at the catastrophic humanitarian consequences of any use of nuclear weapons and reaffirms the need for all States at all times to comply with applicable international law.' The other key paragraph (relating to the objective of a further treaty) referenced the UN Secretary-General's 2008 disarmament plan, which endorsed 'consideration of negotiations on a nuclear weapons convention or agreement on a framework of separate mutually reinforcing instruments...'[48]

There had been more explicit concerns and objectives along these lines, but in the final week's culling process aimed at getting consensus, numerous similar concerns and objectives were cut from the draft 2010 NPT reports after being opposed by one or more of the NPT5 nuclear weapon States. These key paragraphs were both the consequence and further propulsion for civil society and diplomatic strategies and activities that led to the UN General Assembly's adoption of the TPNW in 2017. As the box shows, these included three intergovernmental 'humanitarian impacts of nuclear weapons' (HINW) conferences, held in Oslo, Nayarit (Mexico) and Vienna; two UN open-ended working group on multilateral nuclear disarmament, and numerous civil society meetings and events.

47 https://www.un.org/disarmament/wmd/nuclear/tpnw/. The Treaty text is also reproduced verbatim in Appendix 1.

48 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document, Part 1, UN Doc. NPT/CONF.2010/50 (Vol. I), para 1-A (v), and 1-B (iii). See Rebecca Johnson (2010) 'Linking Humanitarian Law and Nuclear Disarmament Action: The Case for a Nuclear Weapons Convention', *Austrian Review of International and European Law*, vol 15, 2010, pp 173-196.

Milestones to TPNW

2007	Physicians and feminist-humanitarian activists set up the International Campaign to Abolish Nuclear Weapons (ICAN) in Australia.
2010	NPT Review Conference frames future disarmament actions on international humanitarian law and further treaty-making.
2011	ICAN office established in Geneva.
2013	Oslo Conference on Humanitarian Impacts of Nuclear Weapons (128 States).
2013	UN Open-Ended Working Group (OEWG) on multilateral nuclear disarmament.
2014	Nayarit HINW Conference (146 States) – 'point of no return.'
2014	Vienna HINW Conference December (157 States) – Austrian Pledge to 'fill the legal gap.'
2015	NPT Review Conference collapses without adopting any ways forward.
2016	UN Open-Ended Working Group on multilateral nuclear disarmamant votes to start negotiations.
2016	UN Resolution 71/258 on 'Taking forward multilateral nuclear disarmament negotiations' adopted by General Assembly.
2017	UN multilateral negotiations in New York result in 122:1:1 adoption of TPNW on 7 July 2017.
2021	TPNW enters into international legal force on 22 January 2021.

Purpose and Objectives

The fundamental purpose of the TPNW is to prevent nuclear weapons being used and promote their total elimination. Its origins are rooted in the humanitarian imperatives to prevent nuclear use and war. The treaty brings into legal force clear prohibitions on the use, development, testing, production, deployment, stockpiling, acquisition and possession of nuclear weapons, as well as stationing and transfering nuclear weapons – in effect covering all the practical activities that would facilitate or enable anyone (non-state actors as well as States) to use nuclear weapons.

The TPNW requires the total elimination of nuclear weapons and provides two practical pathways for nuclear-armed and nuclear-endorsing States in alliances to comply and join, requiring that they eliminate nuclear weapons and programmes from their territories, including through national implementation measures covering persons and territory under their jurisdiction and control. It also, for the first time in nuclear agreements, it contains positive obligations and responsibilities, environmental remediation and international cooperation and assistance to fulfil States' obligations, including technical and financial assistance for surviving victims and environments affected by the use and testing of nuclear weapons. Compliance, national and international implementation, and universal adherence to the Treaty are also emphasised.

The treaty's preamble and provisions reflect the global humanitarian security interests of its framers. As well as UN member States, these included the humanitarian, feminist, disarmament, medical and security practitioners who reframed the discourse on nuclear weapons, built ICAN into an influential, global civil society comprising over 600 partner organisations in over a hundred countries, and persuaded the majority of NPT members to negotiate the treaty.[49]

The preamble recognizes that unacceptable suffering was caused to the victims and survivors of nuclear use (known by the Japanese word hibakusha) and 'downwinders' (people affected by nuclear testing and radioactive contamination), and that nuclear weapon activities have had 'disproportionate impact' on indigenous peoples. The rights of victims are enshrined, together with the requirement to take feasible steps to assist and give technical, material and financial support to anyone 'affected by nuclear weapons use or testing', including through environmental remediation. The text encompasses not only direct survivors but affected generations and people living in places that have been contaminated by nuclear weapons related activities. The particular harm caused by nuclear technologies and radiation to women and girls is explicitly recognised. Peace education and women's full participation in disarmament and peace processes are upheld as important for future progress, along with the 'role of public conscience in the furthering of the principles of humanity.'

The TPNW was concluded with a set of clear legal prohibitions on a range of activities that for over seven decades have enabled States to acquire, produce, station, deploy, use and threaten to use nuclear weapons. This text echoes the NPT's prohibitions on transferring and receiving nuclear weapons and explosive devices, but does not reproduce the ambiguities that have enabled advocates of nuclear deterrence to share nuclear weapons, as currently practised by North Atlantic Treaty Organisation (NATO) allies.[50] Under the TPNW, States Parties may not allow 'stationing, installation or deployment' of nuclear weapons anywhere under their jurisdiction of control. Actions that 'assist, encourage or induce' anyone to

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49 A snapshot of these can be found in UNODA (2016), Civil Society Engagement in Disarmament Processes: The Case for a Nuclear Weapons Ban, published by UN Office for Disarmament Affairs, 2016. See also Rebecca Johnson (2019), The Nuclear Ban Treaty and Humanitarian Strategies to Eliminate Nuclear Threats, in Bård Nikolas Vik Steen and Olav Njolstad (eds), in Nuclear Disarmament: A Critical Assessment, Routledge: Taylor & Francis Group (London and New York), 2019, pp 75-93.

50 Mohamed Shaker (2010), The Nuclear Non-Proliferation Treaty: Origins and Implementation, 1959-1979, published online by Middlebury Institute of International Studies, Monterey, 2010, https://www.non-proliferation.org/the-nuclear-non-proliferation-treaty-origins-and-implementation-1959-1979/ See also Rebecca Johnson (2000), 'The 2000 NPT Review Conference: a Delicate, Hard-Won Compromise', Disarmament Diplomacy 46, May 2000.

commit prohibited acts are also banned. Nuclear weapons sharing is therefore not allowed.

Consistent with its unlimited duration (Article 17), the framers clearly recognized that the Treaty needs the capacity to adapt, to be credible and effective for the foreseeable future. Those that criticize this future-proofing adaptability as a weakness are failing to understand the dynamic characteristics of nuclear risks, technologies, proliferation and unpredictability inherent in security challenges. To deal with developments and complexities as they arise, a treaty needs to be designed with enough adaptability to increase its effectiveness and capabilities over time.

The TPNW follows – and takes forward – the prohibitions and disarmament provisions in the 1968 Non-Proliferation Treaty (NPT) and 1996 Comprehensive Test Ban Treaty (CTBT), which are cross-referenced in the preamble. Its negotiations in 2017 were framed in terms of taking forward multilateral nuclear disarmament[51] and filling 'the legal gap for the prohibition and elimination of nuclear weapons.'[52] Whether interpreted as referring to the fact that 'by far the most dangerous and indiscriminate weapon of all' was not subject the the same explicit prohibitions as chemical and biological weapons despite being similarly classified as 'weapons of mass destruction'[53] (WMD), or to the absence of a clear and unequivocal prohibition on the use and threat of use of nuclear weapons,[54] filling 'the legal gap for the prohibition and elimination of nuclear weapons' became a driving purpose for the Treaty.

The TPNW also drew lessons from the 1972 Biological and Toxin Weapons Treaty (BTWC) and 1993 Chemical Weapons Convention (CWC) and the humanitarian disarmament approaches in the 1997 Mine Ban Treaty (MBT) and the 2008 Cluster Munitions Convention (CMC). Like them, the TPNW is rooted in the core rules of 'customary humanitarian law regarding distinction, proportionality and superfluous injury.'[55] Multilaterally negotiated under UN General Assembly mandate and rules, the TPNW was designed to be universally applicable. It therefore joins these crucial disarmament treaties as part of the body of international law known as International Humanitarian Law (IHL), which continues to apply in all situations, whether war has been declared or not. This is important, in view of the arguments from some scholars and governments that the NPT and certain arms control treaties would cease to operate in times of war.[56]

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51 Resolution 71/258, adopted by the UN General Assembly on 23 December 2016, https://undocs.org/A/RES/71/258

52 Austrian Federal Ministry of Foreign Affairs, Report and Summary of Findings of the Vienna Conference on the Humanitarian Impact of Nuclear Weapons, 8 to 9 December 2014. It should be noted that the Vienna Conference was attended by several nuclear-armed states, including the UK, United States, China, India and Pakistan, as well as several British parliamentarians, think tanks (including Chatham House), and civil society organisations.

53 Gro Nystuen, Kjolv Egeland, Torbjorn Graff Hugo, The TPNW and its implications for Norway, Norwegian Academy of International Law, September 2018.

54 Decision E (divided), International Court of Justice Reports 1996, p 225. [Reported for July 8, 1996, General List No. 95]. See Johnson 2019.

55 Gro Nystuen, Kjolv Egeland, Torbjorn Graff Hugo, The TPNW and its implications for Norway, Norwegian Academy of International Law, September 2018.

56 See, for example, William Alberque, 'The NPT and the Origins of NATO's Nuclear Sharing Arrangements', IFRI Proliferation Papers No. 57, February 2017.

The TPNW does not reproduce the NPT definition of 'nuclear-weapon state', that was applied to the first five States that conducted at least one nuclear test by 1967.[57] That definition, and the NPT's differentiated obligations and safeguards requirements (which fall most heavily on States Parties that do not have nuclear weapons) have impeded disarmament and nonproliferation by – in result if not intention – letting all nine of the nuclear-armed States off the hook. This is not to suggest that the NPT has not also played an extremely important part in building norms and institutions to prevent the spread and acquisition of nuclear weapons. It helped to pull the world back from uncontrolled nuclear arms racing and the horrors of nuclear war so vividly illuminated by the 1962 Cuban Missile Crisis. However, it is widely recognised that the NPT also contributed to legal, institutional and security impediments that undermined its own universalisation and implementation over fifty years.[58] To move towards security and peace in a world free of nuclear weapons for the 21st century, the legal gaps inherited from the Cold War needed to be filled.

The TPNW is more precise in its obligations and provisions for nuclear disarmament than the NPT, which in Article VI stated: '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...'[59]

Universally applicable and binding on all States Parties, the TPNW establishes a framework of principles and provisions to enable legal and institutional requirements for compliance, verification and enforcement to be constructed and future-proofed through adaptable capacities that can grow and incorporate emerging technologies and further instruments for implementation, where necessary. It enshrines the principle that the law must apply equally to everyone, but does not assume that one pathway to compliance will cover all situations.

The rest of Chapter 1 provides detail and analysis on the TPNW text, article by article.

Preamble: putting human and environmental security first

The TPNW preamble, comprising 24 paragraphs, frames the Treaty provisions and in some cases, such as nuclear energy, mentions issues that the TPNW does not directly address (although the International Atomic Energy Agency (IAEA) safeguards system is reinforced in Article 3). It starts with objectives such as 'realization of the purposes and

57 Article IX.3, 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)

58 Gro Nystuen, Kjolv Egeland, Torbjorn Graff Hugo, The TPNW and its implications for Norway, Norwegian Academy of International Law, September 2018. See also Rebecca Johnson, 'The 2000 NPT Review Conference: A Delicate, Hard-Won Compromise', Disarmament Diplomacy, Vol. 46, May 2000; and statements from NPT States Parties at successive review conferences, as documented by the Acronym Institute's journal Disarmament Diplomacy (1995-2009) http://acronym.org.uk/publications/disarmament-diplomacy/ ; see also www.reachingcriticalwill.org.

59 Article VI, 1968 Treaty on the Non-Proliferation of Nuclear Weapons.

principles of the Charter of the United Nations' and 'the achievement and maintenance of a world free of nuclear weapons, including the irreversible, verifiable and transparent elimination of nuclear weapons.'[60]

The objectives of banning and eliminating nuclear weapons from the face of the Earth are framed in terms of nuclear risks, humanitarian impacts and the responsibilities of everyone to do their part. The driving force underpinning this Treaty is epitomised in paragraph 4:

'Cognizant that the catastrophic consequences of nuclear weapons cannot be adequately addressed, transcend national borders, pose grave implications for human survival, the environment, socioeconomic development, the global economy, food security and the health of current and future generations, and have a disproportionate impact on women and girls, including as a result of ionizing radiation...'[61]

The preamble particularly highlights:

- **the importance of complying with the principles and rules of international law and the ethical imperatives and urgency of achieving nuclear disarmament;**
- **the disproportionate impacts, harm and suffering caused by nuclear weapons to indigenous people and survivors of nuclear use and testing, and their rights arising from these nuclear-related impacts;**
- **the need for effective participation of women in nuclear disarmament, treaty compliance and attaining peace and security;**
- **peace and disarmament education (an important issue promoted by the United Nations since the early 1990s);**
- **the TPNW's compatibility with other relevant treaties such as the NPT and CTBT; and**
- **the important role of international organisations like the Red Cross and Red Crescent Movement and civil society, explicitly mentioning nongovernmental organisations (NGOs), parliamentarians, religious leaders, academics and the hibakusha (the Japanese word given to survivors and their descendents following the atomic bombs used on Hiroshima and Nagasaki).**

60 Preamble of the 2017 Treaty on the Prohibition of Nuclear Weapons, adopted by the United Nations on 7 July 2017 http://undocs.org/A/CONF.229/2017/8 . See text in official UN languages at https://treaties.un.org/doc/Treaties/2017/07/20170707%2003-42%20PM/Ch_XXVI_9.pdf

61 TPNW Preambular paragraph 4 (2017).

Article I Prohibitions

Article I sets out the Treaty's fundamental prohibitions in clear terms that cover the range of activities that could enable anyone to use, make or acquire nuclear weapons. It is prohibited to develop, test, produce, manufacture, otherwise acquire, possess, stockpile, use or threaten to use nuclear weapons. To avoid any misunderstandings or legal games, the prohibitions cover 'nuclear explosive devices' whether described as weapons or not. In essence, these activities are already forbidden to States that have joined the NPT as 'non-nuclear weapon States' (NNWS). The TPNW prohibits them explicitly and applies them to all States Parties and 'any circumstances'.

Banning nuclear weapons use and threats



TPNW negotiations chaired by Amb. Elayne Whyte-Gomez, United Nations 2017 (R.Johnson)

At the core of the Treaty's purpose, banning nuclear use is as clear and unequivocal as it can be, filling a massive legal gap that has existed since nuclear weapons were first used in 1945. As was exposed in the 1996 nuclear weapon case in the International Court of Justice (ICJ), elites in military-industrial, colonialist and nuclear-armed States made use of the gaps and ambiguities in international law whenever they could. Preventing nuclear war was alluded to in the preamble of the NPT, which spoke of 'the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples.'[62] However, despite efforts by many States to get security assurances and/or some kind of prohibitions or restrictions on nuclear possessors being able to use and threaten to use nuclear weapons against non-nuclear-weapon States who joined the non-proliferation treaty, opposition from the US and Soviet governments ensured that no such security assurances or restrictions were achievable in the NPT.[63]

62 NPT Preambular paragraph 1 (1968).

63 Shaker 2010.

Article 1 Prohibitions – at a glance

Each State Party undertakes never under any circumstances to:

(a) Develop, test, produce, manufacture, otherwise acquire, possess or stockpile nuclear weapons or other nuclear explosive devices;

(b) Transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly or indirectly;

(c) Receive the transfer of or control over nuclear weapons or other nuclear explosive devices directly or indirectly;

(d) Use or threaten to use nuclear weapons or other nuclear explosive devices;

(e) Assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty;

(f) Seek or receive any assistance, in any way, from anyone to engage in any activity prohibited to a State Party under this Treaty;

(g) Allow any stationing, installation or deployment of any nuclear weapons or other nuclear explosive devices in its territory or at any place under its jurisdiction or control.

Source: 2017 Treaty on the Prohibition of Nuclear Weapons

When the ICJ issued its Advisory Opinion in the wake of the 1995 decision to renew the NPT indefinitely, its consideration of witness testimonies and relevant law and practice, led to an important unanimous conclusion that there existed an 'obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.'[64] This recognition was subsequently fed into 13 key paragraphs of the consensus outcome document adopted by the 2000 NPT Review Conference. Often referred to as the 'Thirteen Steps', these paragraphs were adopted as an NPT-mandated disarmament plan following high level negotiations between the five nuclear-armed States in the NPT (NPT5) and the New Agenda Coalition of seven significant non-nuclear NPT parties (Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden). In adopting this disarmament plan of action, the NPT5 and other States Parties

64 Decision F, International Court of Justice Reports 1996, p 225. [Reported for July 8, 1996, General List No. 95]. The full decision, documentation and dissenting decisions also formed the Annex to 'Advisory Opinion of the International Court of Justice on the legality of the threat or use of nuclear weapons', Note by the Secretary-General, United Nations General Assembly A/51/218, October 15, 1996 pp 36-37.

agreed to the 'unequivocal undertaking by the nuclear weapon States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament...'[65]

However, it was not lost on humanitarian disarmament activists that once the ICJ had failed to conclude that using nuclear weapons was illegal, its 1996 Opinion was coopted by nuclear weapons advocates to argue that their weapons and deterrence postures were lawful.[66] UK governments, for example, had opposed the ICJ case, but after 1997 found it convenient to incorporate the concept of 'extreme circumstances of self defence' into justifications for their Trident nuclear weapons system, claiming that it would only be fired as a 'last resort.'[67] These co-options, therefore, made it clear to many governments and civil society actors that diplomatic action would have to be taken to explicitly ban the use of nuclear weapons in international law, and also require the total elimination of all nuclear arsenals.

the catastrophic consequences of nuclear weapons cannot be adequately addressed, transcend national borders, pose grave implications for human survival, the environment, socioeconomic development, the global economy, food security and the health of current and future generations, and have a disproportionate impact on women and girls

The humanitarian process that led to the TPNW highlighted the problems, paradoxes, dangers and risks inherent in nuclear weapons based deterrence.[68] For nuclear deterrence, dissuasion or coercion to work, nuclear threats have to be convincing and the threateners have to convince their targets that they have the power and capability. Non-nuclear nations have long called for legally binding positive and negative security assurances. In 1968, 1978 and 1995 the NPT5 gave security assurances that were put on the record. These declaratory policies have never been fully trusted because they were hedged with caveats and lacked legal force and compliance mechanisms to prevent nuclear-armed countries 'going equipped' to use nuclear weapons in a first strike. The primary basis for the 'melting into the countryside' deployments of mobile intermediate-range cruise and ballistic missiles in the 1980s was 'going equipped' for using nuclear weapons without warning or detection. The TPNW goes beyond non-use and no-first use commitments in various countries' security assurances. This is necessary, for even when such assurances are given in good faith they are not verifiable. They would not necessarily obviate nuclear weapons deployment and firing exercises, with entailed threats, mistakes and nuclear dangers.

65 Article VI and preambular paragraphs 8-12, Para 15, sub-para 6, Final Document of the 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, NPT/CONF.2000/28 (Vol 1, Part I and II), May 25, 2000.

66 Decision E (divided), International Court of Justice Reports 1996, p. 225. [Reported for July 8, 1996, General List No. 9.5. See also, House of Commons Library briefing on 'Replacing the UK's 'Trident' nuclear deterrent,' July 2016.

67 Rebecca Johnson (2016) 'Dangerous and Inhumane: UK nuclear policy and humanitarian nuclear ban strategies,' in Andrew Futter (ed.), The United Kingdom and the Future of Nuclear Weapons, Rowman & Littlefield, 2016, pp 121-138.

68 Acronym Institute (2016), 'Security and Humanitarian Implications of Relying on Nuclear Weapons for Deterrence, and Effective Legal Alternatives,' UN Open-ended Working Group on Multilateral Nuclear Disarmament, A/AC.286/NGO/22/Rev.1, 11 May 2016, https://undocs.org/A/AC.286/NGO/22/Rev.1

Going beyond declaratory policies, the TPNW now enshrines security assurances through its explicit prohibitions on the use and threat of use of nuclear weapons and, importantly, the major activities and operations that enable nuclear weapons to be acquired and used. The clarity of these prohibitions leaves no room for co-option by States that want to keep on modernising nuclear arsenals while asserting that their purpose is deterrence not military use. In time, the TPNW will develop ways to strengthen the security assurances with monitoring and verification means.

Prohibiting threats to use nuclear weapons

It is anticipated that there may be uncertainty at first about what activities constitute 'threatening to use'. Referring to the exchange of nuclear threats traded in 2016-2017 in which North Korean warned of a 'pre-emptive nuclear strike of justice' and US President Trump threatened 'fire and fury... the likes of which this world has never seen before, Norwegian lawyers commented, 'these statements could reasonably be understood as threats covered by Article 1 (1) (d).[69]

The importance of the TPNW's unequivocal and explicit prohibition on using and threatening to use nuclear weapons should not be under-estimated. This will carry increasing weight as the Treaty's States Parties and institutional capabilities grow. There may have been a normative taboo on nuclear use,[70] but that never stopped the money going into nuclear weapons production and deployment, alongside alliances based on policies and practices that threatened to use nuclear weapons. The justifications for nuclear arsenals in case they might be needed in an 'extreme circumstance of self-defence' are even less credible now than they were in the 1990s.



Hiroshima 1945 (GettyImages)

69 Gro Nystuen, Kjolv Egeland, Torbjorn Graff Hugo, The TPNW and its implications for Norway, Norwegian Academy of International Law, September 2018.

70 Nina Tannenwald, The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945, Cambridge University Press, 2007. See also Ken Berry, Patricia Lewis, Benoît Pélopidas, Nikolai Sokov and Ward Wilson, Delegitimizing Nuclear Weapons: Examining the Validity of Nuclear Deterrence, Monterey Institute 2010.

In his authoritative book Nuclear Weapons and International Law in the Post Cold War World, US attorney and legal scholar Charles J. Moxley Jr concluded that the policy of nuclear deterrence is 'vulnerable under the established principle of law accepted by the United States and confirmed by the ICJ in the Nuclear Weapons Advisory Opinion, to the effect that it is unlawful to threaten to do that which it is unlawful to do.' In this regard, Moxley specifically raised concerns that the continued pursuit of nuclear deterrence policies introduces 'significant risk factors with implications both for security and for compliance with the principles and obligations in the international, US and British legal systems: the danger of precipitating a nuclear war; the fostering of an arms race; the fostering of nuclear proliferation; the risks of terrorism; the risks of human and equipment failure; risks of testing, production, storage and disposal of nuclear weapons materials; the risk of the degradation of conventional weapons capability; jeopardy to rule of law; and overriding risk factors as to the likelihood that the unlikely will occur.'[71]

Prohibiting the development, production, manufacturing, stockpiling and possession of nuclear weapons

There is some overlap in how these terms are defined. Including them all was deemed necessary to reduce the risk of legal ambiguities that nuclear-endorsing and armed States might try to hide behind. As noted by the Norwegian Academy of International Law, the NPT's lack of a prohibition on development fostered diverging views about 'whether weaponisation activities prior to the actual assembly of a nuclear weapon are prohibited.' By prohibiting development, according to Gro Nystuen et al, 'the TPNW leaves less room for contestation... [and this prohibition] is widely understood to include preparations and planning with a view to subsequent production/manufacture.'[72]

During the negotiations, there was considerable discussion about whether it was necessary to ban both the possession and the stockpiling of nuclear weapons, or if one term encompassed the other. In the end it was decided to include both, to preclude legal arguments that might try to create loopholes. It was also – and persuasively – argued that production and stockpiling referred not only to the weapons but also to the production and stockpiling of fissile materials involved in producing and manufacturing nuclear weapons.

This could be useful if efforts are made to take forward long-standing commitments to negotiate a fissile materials treaty (FMT). It should be recalled that in 1995, the Conference on Disarmament (CD) adopted an agreement, known as the 'Shannon Mandate', for negotiating an FMT. Despite endorsements from the 1995 and subsequent NPT review conferences and UN resolutions, the CD failed to get negotiations off the ground. The central conflict was about scope: many CD members argued that the treaty should support disarmament by banning both future production and stockpiling (the products of past production) of

71 Charles J. Moxley, Jr, Nuclear Weapons and International Law in the Post Cold War World, Austin & Winfield, 2000.

72 Gro Nystuen, Kjolv Egeland, Torbjorn Graff Hugo, The TPNW and its implications for Norway, Norwegian Academy of International Law, September 2018, quoting from a 2006 VERTIC analysis on 'IAEA verification of military research and development,' and citing the CWC with regard to meaning of 'development' etc.

fissile materials for weapons, but some nuclear-armed States and their allies insisted that negotiations should be limited to a fissile materials cut-off treaty (FMCT) that would only prohibit future production. The Shannon Mandate fudged this contested issue in hope that it would get resolved through negotiations, which never happened.[73]

The entry into force of the TPNW now opens up interesting new possibilities for how some or all of the nuclear-armed states might move towards achieving the objectives of the Shannon Mandate. The humanitarian and non-discriminatory context in which the TPNW prohibits the production and stockpiling of nuclear weapons and the materials to make them could be helpful for some or all relevant states to now move forward on this issue. If so, that would be a step forward for nuclear-armed states to take even before they are ready to join the TPNW. For example, the NPT5 could now go ahead and negotiate a fissile materials treaty amongst themselves – or even with some or all of the nuclear-armed States outside the NPT – as some have proposed at times during the long impasse after 1995. India and Pakistan might consider capping their regional nuclear arms race by negotiating a bilateral pact. The point here is that the need for legally binding fissile material restrictions and prohibitions to be negotiated by nuclear-armed States and other relevant producers of weapons usable fissile materials still stands. There were structural as well as political reasons why the CD could not take this forward, but there may be other ways that now become more feasible. The TPNW helps to reframe what is possible and what is at stake. Verification agreements and technologies the nuclear-armed States are able to develop to support and build confidence around such interim steps like this would also strengthen the wider disarmament, security and non-proliferation regimes.

Reinforcing the CTBT's ban on nuclear testing

The Comprehensive Test Ban Treaty (CTBT) was negotiated in the 1990s to ban all nuclear test explosions. As of 2 December 2021, the CTBT has 185 member States, of which 170 have ratified. Despite attracting so many UN Member States to join, the CTBT has not achieved its extraordinarily stringent treaty-mandated conditions for entry into force.[74]

By listing 'testing' among the explicitly prohibited activities in Article I and stating support for the CTBT 'and its verification regime as a core element of the nuclear disarmament and non-proliferation regimes' the TPNW negotiators' intent is clearly to reinforce the CTBT and support its Vienna-based Comprehensive Test Ban Treaty Organisation (CTBTO).

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73 See https://www.opanal.org/wp-content/uploads/2017/11/Dia_2_b_UNODA_Fact_sheet_Fissile_material.pdf

74 The CTBT's Article XIV entry into force conditions stipulated signature and ratification by 44 listed states with nuclear capabilities, along with some complicated provisions that could be triggered to prevent a single nuclear-armed or nuclear-energy-capable state a legal veto to block entry into force. This is the CTBT's tragic 'Achilles Heel,' and has enabled a handful of governments (nuclear-armed China, India, Israel, North Korea, Pakistan and the United States; as well as Egypt, Iran, Saudi Arabia and Syria) to hold this 1996 treaty to ransom and prevent it becoming international law these past 25 years. https://www.ctbto.org/the-treaty/status-of-signature-and-ratification. For a detailed analysis of the CTBT negotiations and decisions, see Rebecca Johnson, 2009.

This decision was not without controversy during the negotiations. As the TPNW gathered steam before 2017, diplomats from some nuclear-armed States (reportedly France, Russia and the United States) exerted pressure on highly placed officials in both the IAEA and the CTBTO to argue against the TPNW, using similar talking points to the ones in the 'non-paper' circulated among US allies in NATO and the Asia-Pacific region.[75] As a consequence, some TPNW negotiators were persuaded that there may be adverse consequences if the TPNW reproduced or duplicated the CTBT's language on prohibiting nuclear test explosions in the TPNW. Many TPNW and CTBT advocates also took seriously threats from US Republicans to 'bury' and 'unsign' the CTBT and cut funding to the CTBTO during the presidencies of George W. Bush (2001-2008) and Donald Trump (2016-20).[76] Such actions aimed at undermining the existing test ban treaty and CTBTO convinced TPNW negotiators to reinforce the CTBTO's role in monitoring and verifying the ban on nuclear testing in case the CTBT cannot be brought into full legal force in the near future.[77]



CTBTO on-site inspection exercise IFE08 (R.Johnson)

After much agonising, the compromise solution was not to reproduce CTBT text directly, but to support the CTBT in the preamble and add 'testing' to the list of prohibited activities in Article 1 of the TPNW. One consequence of this compromise is that the prohibition on testing in the TPNW reinforces the prohibition on 'development' by covering low yield hydrodynamic tests and other forms of nuclear weapons related testing that were arguably not covered by the CTBT's Article I prohibition on carrying out 'any nuclear weapon test explosion or any other nuclear explosion.'[78]

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75 The US arguments and 'non-paper' are discussed in Richard Lennane and Tim Wright (2021), A Non-nuclear Alliance: why NATO Members Should Join the UN Ban on Nuclear Weapons, ICAN, June 2021.

76 See for example, Jack Mendelsohn (2001) 'The Bush Presidency: Reconsidering the CTBT', Disarmament Diplomacy 53, 2001, http://www.acronym.org.uk/old/archive/53ctbt.htm; and Thom Shankar and David E. Sanger (2001), 'White House wants to Bury Pact Banning Tests of Nuclear Arms', New York Times, 7 July, 2001, https://www.nytimes.com/2001/07/07/world/white-house-wants-to-bury-pact-banning-tests-of-nuclear-arms.html. On Trump, see Maximilian Hoell, The Comprehensive Nuclear-Test-Ban Treaty is in danger: Here's how to save it, European Leaders Network Policy Brief, 2019 https://www.europeanleadershipnetwork.org/wp-content/uploads/2019/08/The-CTBT-is-in-danger.pdf

77 Though France, Russia and the UK had ratified the CTBT before the 2000 NPT Review Conference, China and others have been hanging back, apparently waiting for the United States to ratify. Rebecca Johnson, Embedding the CTBT in Norms, Law and Practice, UNA-UK 2013. https://una.org.uk/publication-series-non-proliferation

78 The CTBT Article I was publicly presented as a comprehensive 'zero yield' prohibition on all nuclear test explosions. Confidential sidebar negotiations among the NPT5 nuclear-armed states in 1996 decided on 'activities not prohibited' (ANP), including hydrodynamic and low yield nuclear experiments below 1.8 kg (4 lbs) explosive yields. The NPT5 agreements on activities not prohibited were not openly discussed or agreed with other negotiators, and some – notably Indonesia and India – argued that such exceptions should not be allowed. See Rebecca Johnson 2009.

Nuclear weapon test explosions 1945 - 2020

	Year of First Test	Number of Atmospheric Tests	Number of Underground Tests
USA	1945	217	815
Russia/USSR	1949	219	496
UK	1952	21	24
France	1960	50	160
China	1964	23	22
India	1974	0	3
Pakistan	1998	0	2
North Korea	2006	0	6
Israel	?*	?	?

* The 1979 Vela Incident is widely believed to have been a joint Israel-South African atmospheric test. It is not known whether Israel has carried out other atmospheric or underground tests[79]
Source: SIPRI

79 In 1979 a flash detected in the South Atlantic was identified as a possible nuclear weapons test; known as the 'Vela Incident' this is widely believed to have been an Israeli or joint Israel-South African nuclear test. This has never been confirmed, and it is not known whether Israel has conducted other nuclear tests.

Prohibiting the transferring, stationing and deployment of nuclear weapons

Five members of the North Atlantic Treaty Organisation (NATO) currently enable between 120 and 190 US nuclear weapons to be stationed on their territories. Based on a frequently modified B-61 gravity bomb, being modernised now as B-61 12 air-dropped guided missile, these are currently deployed in: Belgium (10-20), Germany (10-20), Italy (40-60), Netherlands (10-20) and Turkey (50-70).[80] Over many years, there have been divisions within NATO about whether the nuclear components of current policies are necessary, useful or a hindrance.[81] NATO 's nuclear sharing arrangements have also been heavily criticized at NPT review meetings, with many Parties arguing that they violate the spirit and letter of the NPT.[82] NATO academics and spokespeople have attempted to refute these accusations by claiming that their nuclear sharing arrangements predated the NPT, and that nuclear exercises are necessary to train non-American as well as American military personnel in the event that control of the weapons has to be transferred. These justifications rely on the contested argument that the NPT will not be legally applicable in times of war.[83] This begs many questions, not least arising from the characterisation of the post 9/11 military interventions in Afghanistan and Iraq as a 'war on terror' by US President George W. Bush and British Prime Minister Blair.

Article 1 of the TPNW was designed to strengthen the NPT's existing prohibitions on transferring or receiving 'nuclear weapons or explosive devices or control over such weapons'[84] and removes perceived ambiguities. Article 1.1 (g) prohibitions on stationing, installing and deploying nuclear weapons directly apply to the NATO countries that 'host' nuclear weapons. These prohibitions apply to everyone and 'any circumstances', which covers not only NATO policies in the future, but alliances with any other nuclear-armed States, should that be considered in the future. Of legal importance, the Treaty entered into force as part of the body of laws, treaties and agreements known as International Humanitarian Law, which are deemed to apply at all times, whether war has been declared or not.[85]

The TPNW removes any perceived ambiguities by clearly ruling out the possession and control of nuclear weapons and devices, as well as their transfer (Articles 1.1 (a – c). Under 1.1 (e) and (f) actions to 'assist, encourage or induce' anyone to commit prohibited acts are also banned. Article 1.1 (g) prohibits 'stationing, installation or deployment' of nuclear weapons anywhere under their jurisdiction of control. They are also banned from seeking or receiving assistance from anyone engaging in any activity that is prohibited to a state party.

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80 Estimated numbers are in a range drawn from the Bulletin of the Atomic Scientists https://www.tandfonline.com/doi/full/10.1080/00963402.2019.1606503 and Nuclear Threat Initiative (NTI) https://www.nti.org/analysis/articles/nato-nuclear-disarmament/ accessed 27 November 2020.

81 See, for example, Lennane and Wright 2021.

82 This has been documented over 1996-2009 in the Acronym Institute's journal Disarmament Diplomacy. For relevant statements and documents of NPT meetings and Review Conferences from 2000, see www.reachingcriticalwill.org.

83 See William Alberque, 'The NPT and the Origins of NATO's Nuclear Sharing Arrangements', IFRI Proliferation Papers No. 57, February 2017.

84 https://www.un.org/disarmament/wmd/nuclear/npt/text

85 Tim Caughley, with Yasmin Afina, https://www.chathamhouse.org/sites/default/files/2020-05-29-nato-npt-frameworks-caughley-afina-2.pdf.

A central question is whether States that are in military alliances with nuclear-armed States – including Japan, Australia and South Korea, can join the TPNW without ending those alliances. These Article 1 prohibitions rule out current NATO policies in which some national governments participate practically in nuclear sharing policies and practices, or host and station nuclear weapons and facilities. Nuclear sharing is not an equal relationship. As noted by the Norwegian Academy of International Law, 'NATO as an alliance does not possess nuclear weapons – Britain, France and the United States do.'[86]

No excuse for assisting, encouraging and inducing prohibited acts

In conjunction with getting rid of nuclear weapons and facilities from their territories and under their jurisdiction or control, former host nations (and, indeed, all States Parties) need to comply with Article 1.1 (e), by which it is prohibited to 'assist, encourage or induce, in any way, *anyone to engage in any activity prohibited to a state party* under this Treaty', and its corollary in 1.1 (f) which bans seeking or receiving such assistance.

Noting that treaties such as the Mine Ban Convention, BTWC and CWC have not been interpreted as proscribing membership in military alliances with States that do not adhere to those treaties, the Norwegian Academy of International Law concluded that the 'TPNW's assistance provision does not preclude membership in military alliances or participation in joint military operations with nuclear-armed States.'[87] Gro Nustuen et al also took the view that the Treaty's Article I is 'wide and is meant to cover all forms of physical presence, be it temporary, short term or long term, of a nuclear weapon in a state's territory or under its jurisdiction or control.'[88]

Legal scholars associated with the Harvard International Human Rights Clinic (IHRC), some of whom had direct access to discussions and documents during the TPNW negotiations in 2017, have concluded that claims that joining the TPNW is incompatible with NATO membership are legally mistaken. Australian scholar Monique Cormier studied this question and concluded: 'Australia can renounce its 'nuclear umbrella' arrangement and preserve its military alliance with the United States.'[89]

Stuart Casey-Maslen underlines that the prohibition on assistance is an 'integral component of the prohibition of nuclear weapons' and is 'broad in scope, requiring explicit disavowal

86 Gro Nystuen, Kjolv Egeland, Torbjorn Graff Hugo, The TPNW and its implications for Norway, Norwegian Academy of International Law, September 2018,

87 Nystuen, Egeland and Graff Hugo, 2018.

88 Nystuen, Egeland and Graff Hugo, 2018. See also Emil Dahl, 'A Balancing Act: NATO States and the Nuclear Ban Treaty' and Nick Ritchie, 'The Treaty on the Prohibition of Nuclear Weapons: Delegitimising Unacceptable Weapons,' in S. Shetty and D. Raynova (eds), Breakthrough or Breakpoint? Global Perspectives on the Nuclear Ban Treaty (London: European Leadership Network, 2017).

89 Monique Cormier, Australia and the Treaty on the Prohibition of Nuclear Weapons, International Human Rights Clinic (IHRC), Harvard Law School, 2018.

of any existing nuclear-umbrella guarantee, but realistic in application.'[90] Casey-Maslen also argues that joining the TPNW as a NATO member would preclude activities such as supplying fissile materials, missiles or targeting technologies intended for nuclear weapons production, deployment, possession or use. However, provided that TPNW parties renounce nuclear-armed and deterrence practices and refrain from assisting and carrying out such policies, they are not prevented 'from generally collaborating with other States in military affairs and operations or from being a member of a regional organization, some of whose members possess nuclear weapons.'[91]

the TPNW's assistance provision does not preclude membership in military alliances

In Chapter 3 there will be a more detailed discussion of the current legal and political debates in a growing number of NATO States, with some already lining up to observe the first meeting of States Parties in Vienna.

Article 2 on Declarations

After the list of prohibitions in Article 1, the Treaty sets out the basic principles and legal and institutional requirements for implementing, verifying and enforcing its prohibitions and provisions. Within 30 days of the Treaty entering into force for a given state, its government must submit to the UN Secretary-General a declaration that clarifies whether it has ever 'owned, possessed or controlled nuclear weapons or nuclear explosive devices', whether it currently owns, possesses or controls' nuclear weapons or devices, and/or whether 'there are any nuclear weapons or other nuclear explosive devices in its territory or in any place under its jurisdiction or control that are owned, possessed or controlled by another State.'

Each state then has two options: either its declaration must confirm that prior to entry into force it has removed or eliminated the nuclear weapons on its territory, and that it has eliminated or irreversibly converted all nuclear-weapons-related facilities (characterised during the negotiations as 'destroy and join'); or, alternatively, it can choose the 'join and destroy' option. This second option, as discussed below, allows a state to sign and then negotiate with States Parties and the treaty's designated 'competent authority' to establish the steps and timelines for removing, decommissioning and eliminating any nuclear weapons, facilities or programmes they own or host.

90 Stuart Casey-Maslen, The Nuclear Weapons Prohibition Treaty: Interpreting the Ban on Assisting and Encouraging, Arms Control Today, October 2018 https://www.armscontrol.org/act/2018-10/features/nuclear-weapons-prohibition-treaty-interpreting-ban-assisting-encouraging

91 Casey-Maslen, 2018; See also Stuart Casey-Maslen and Tobias Vestner, A Guide to International Disarmament Law, Routledge, London/Oxon 2019.

Article 3 on Safeguards

After heated discussions, the TPNW negotiators decided to enshrine the legal adoption of the NPT's current 'comprehensive safeguards agreements' (CSA) in the TPNW and also require that any state party that has adopted the IAEA Additional Protocol must retain that protocol in place as their minimum baseline.[92] In other words, States Parties to the TPNW must retain and abide by the safeguards they already have in place as a minimum. As part of the overall efforts to futureproof the TPNW, Article 3.1 states: 'Each State Party shall thereafter maintain such obligations, without prejudice to any additional relevant instruments that it may adopt in the future.'

Many of the negotiators were very disappointed that their efforts to promote stronger safeguards based on the IAEA's Additional Protocol 'fell short, just as they have for many years in the NPT.'[93] The reasons why a small number of governments continue to oppose proposals to make the Additional Protocol the safeguards baseline is instructive and, as noted above, has stymied NPT as well as TPNW agreements on this issue. When the NPT was negotiated, it was not possible to make detailed provisions for how it would be verified or implemented. Article III required IAEA safeguards, but left the details to be worked out in negotiations after NPT entry into force. The CSA were formalised in INFCIRC/153. Since 1970 further nuclear proliferation has been enabled by a combination of technological and political developments and the NPT's own Article IV provision not to restrict nuclear developments intended 'for peaceful purposes.'

By the 1990 NPT Review Conference it was clear that the IAEA needed to update and strengthen the safeguards system under the NPT. Lessons were learned from the nuclear programmes of India, Iraq, Iran, Pakistan, North Korea and South Africa, among others. After several years of IAEA '93+2' negotiations, the Agency adopted the 1997 Additional Protocol to CSA safeguards, for which there was a significant majority, but not consensus. Efforts have been made in NPT Review Conferences since 2000 to establish the Additional Protocol as the NPT's safeguards standard, but consensus has proved impossible. As of 31 December 2020, 137 NPT States Parties have an Additional Protocol in force, with another 14 signed but not yet brought into force.[94]

In view of this difficult history, there is a certain irony in seeing the TPNW lambasted for not instituting the Additional Protocol as the safeguards standard by denizens of the 'MIBA'[95] academic and bureaucratic wings of respective military-nuclear establishments. A very large majority of the TPNW negotiators wanted this, but confronted with the legacy of the IAEA's contested negotiations and NPT failures to achieve consensus on the Additional Protocol,

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92 International Atomic Energy Agency (IAEA) (1971, reprinted 1972, Austria/IAEA), The Structure and Content of Agreements between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, INFCIRC/153 (Corrected), known as Comprehensive Safeguards Agreements (CSA) https://www.iaea.org/sites/default/files/publications/documents/infcircs/1972/infcirc153.pdf. See also https://www.iaea.org/topics/additional-protocol, both accessed on 20 November 2020.

93 Tim Caughley, with Yasmin Afina, https://www.chathamhouse.org/sites/default/files/2020-05-29-nato-npt-frameworks-caughley-afina-2.pdf .

94 IAEA safeguards 2021, https://www.iaea.org/topics/additional-protocol, accessed November 2021.

95 See Introduction.

they had to make compromises. The hold-outs, a handful of NPT States with significant nuclear technologies and programmes, blocked efforts to make the Additional Protocol mandatory on the grounds that it has been treated as voluntary and not mandatory in NPT meetings. Some States also lobbied hard for a paragraph in the TPNW's preamble that echoes the NPT's Article IV: '... nothing in this Treaty shall be interpreted as affecting the inalienable right of its States Parties to develop research, production and use of nuclear energy for peaceful purposes without discrimination.'

States Parties to the TPNW must retain and abide by the safeguards they already have in place as a minimum

This political context, which relates directly to the NPT's provisions on nuclear energy and safeguards, has to be understood as the backdrop for the compromises on safeguards. Nonetheless, according to the former Head of the IAEA's Verification and Security Policy, Tariq Rauf, the TPNW 'secures the current de facto standard of non-proliferation verification, which is higher than the one stipulated by the NPT'[96]

Article 4 on Eliminating Nuclear Weapons

Treaties, however well verified and enforced, do not provide full security assurances until they are fully implemented and all the weapons are irreversibly destroyed. Preventing nuclear use and war requires not only prohibitions, but active work to ensure and verify the total elimination of nuclear weapons. From the conceptualisation of a global nuclear ban treaty to the adoption of the TPNW, it was widely agreed that this treaty must not only prohibit activities that enable nuclear weapon use, possession and production, but also require and oversee the elimination of nuclear arsenals and associated weapons capabilities. Article 4 takes the provisions on prohibitions, declarations and safeguards to the next stage.

TPNW negotiators took into account fifty years of learning from a range of disarmament and arms control treaties, from the bare-bones of the 1968 NPT and 2002 US-Soviet Strategic Offensive Reductions Treaty (SORT), to the detailed verification regimes established for the 1987 INF Treaty, the 1993 CWC and 1996 CTBT. With the help of civil society analysts, much was also learned from the different experiences and implementation models from other weapons-related and humanitarian disarmament agreements, including the 1997 and 2008 prohibitions on landmines and cluster munitions. Spurred on by the narrow window of political opportunity that faced negotiators in 2017, and guided by the wisdom and experience of the president of the UN negotiations, Ambassador Elayne Whyte-Gomez of Costa Rica, decisions were made to prioritise agreement on core purposes, principles, objectives, and a legal framework that can be built on and strengthened over time. An adaptable, more

96 Tariq Rauf (2020) Does the TPNW Contradict or Undermine the NPT? Toda Peace Institute, 22 November 2020, https://toda.org/global-outlook/does-the-tpnw-contradict-or-undermine-the-npt.html

evolutionary approach to institutional and verification issues was therefore taken, with the intention of developing appropriate institutional and verification requirements through meetings of States Parties.

The TPNW, like many of today's security and normative treaties, needs to remain relevant and effective for decades, even centuries, into the future. Article 4 therefore embeds adaptability in its key obligations, principles and requirements, but generally puts responsibility for evolving the verification, oversight and implementing systems and infrastructure into the hands of States Parties, with meetings due to commence in 2022. Nonetheless, some decisions were made on the basis of what is already well understood.

Deadlines for removing and destroying nuclear weapons

Article 4 requires that an acceding state that 'owns, possesses or controls' any 'nuclear weapons or other nuclear explosive devices'[97] must 'immediately remove them from operational status, and destroy them as soon as possible but not later than a deadline' that will need to be determined by States Parties in the first Meeting of States Parties (1MSP). These provisions have particular significance for reducing nuclear dangers and preventing nuclear uses. Article 4 also articulates some basic responsibilities for a 'competent international authority or authorities to negotiate and verify the irreversible elimination of nuclear-weapons programmes', among other requirements.

Unlike the NPT, the TPNW does not confer special status on any of the nuclear-armed States or their nuclear umbrella allies, but it does need to take into account the differences in the size, complexity and location of weapons that need to be removed from operational status and destroyed.

The destruction of weapons 'deadline' requirement that Article 4.2 requires States Parties to determine at their first meeting is not unambiguously clear. The first and most practical option under consideration is the establishment of a fixed period of time that is allowed to all relevant (i.e. nuclear-armed) States, starting from the ratification/accession dates when each became a TPNW party. The 'deadline' would be the endpoint by which each acceding nuclear-armed state would need to have destroyed its weapons.

Two other interpretations have also been considered. Some have looked at a hoped-for future date by which all nuclear arsenals must be collectively destroyed, as can be found in historical disarmament proposals. Others have suggested that 1MSP might need to calculate and set a destruction deadline for each relevant acceding State, based on factors such as the number of nuclear weapons and devices and technical capabilities, facilities, capacities etc. to dismantle and irreversibly destroy the nuclear warheads. This would be a very onerous, time-consuming and probably impossible burden to place on the first ever

97 The term 'nuclear explosive devices' is included in several treaties for important legal reasons. To avoid repeating this necessary but clumsy phrase all the time, the term 'nuclear weapons' will be deemed to include all nuclear explosive devices.

meeting of States Parties. Though these three options have different political, technological and practical implications, all appear to be legally valid interpretations of Article 4's text, so 1MSP will need to determine which would be best for the TPNW to apply.

It also appears from the text that a different deadline might need to be set for acceding States to confirm that any nuclear weapons they possess, deploy or control – including ones that are deployed on their territory or in their territorial waters – have been removed from operational status and taken out of deployment. For countries that host nuclear weapons that they do not possess, this deadline would apply to the weapons being returned to the possessor States by the agreed deadline. This has relevance for NATO States that host US nuclear weapons (currently Belgium, Germany, Italy, the Netherlands and Turkey) and also Scotland, if independence makes it possible for the Scottish government to accede to the TPNW prior to UK accession. As host country negotiations with the relevant possessor state could be short or long depending on political relations and conditions, the practical option would be for the host country to ensure removal of nuclear weapons before ratifying and fully acceding to the TPNW. Such negotiations might commence before or after signing the treaty, and it might be most practical for a host country to sign as soon as it legally can, and ratify once the offending weapons have been removed.

With regard to the destruction deadline, Moritz Kütt and Zia Mian of Princeton University's Program on Science and Global Security favour the first option, which they summarise as a 'common deadline for the destruction of nuclear weapons that will apply to all such States which join the treaty while still possessing their weapons'. Fulfilling the 1MSP requirement specified in Article 4.2 will require States Parties to agree also on what constitutes effective destruction of a nuclear weapon for the purposes of the TPNW. Kütt and Mian discuss this issue and conclude that 'all major components of the warhead are assumed destroyed if they would require remanufacture to be used in a weapon.'[98]

Taking into account what is known about the experiences of dismantling a range of nuclear weapons in the largest nuclear arsenals possessed by Russia and the United States, and available data on the nine nuclear arsenals, Kütt and Mian noted: 'it seems plausible that all nine current nuclear-armed States could dismantle their weapons inventories in less than 10 years if they gave this task priority'. Given the abiding dangers attached to nuclear weapons in all their aspects, it would be hoped and expected that States would make the quick, safe and security elimination of their arsenals a high priority. The Treaty makes clear that notwithstanding the agreed deadline, all nuclear weapon possessors should finalise the destruction of their arsenals and nuclear weapons capabilities 'as soon as possible'. Those with smaller arsenals, such as the UK, should be in a position to accomplish this obligation in significantly less time than 10 years. As noted by Kütt and Mian, ending the extensive nuclear weapon production and maintenance programmes in most if not all nuclear-armed programmes should free up 'facilities and workers to focus on weapon dismantlement and destruction.'[99]

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98 Moritz Kütt & Zia Mian (2019) 'Setting the Deadline for Nuclear Weapon Destruction under the Treaty on the Prohibition of Nuclear Weapons', Journal for Peace and Nuclear Disarmament, 2:2, 410-430, DOI: 10.1080/25751654.2019.1674471

99 Kütt & Mian 2019.

Kütt and Mian conclude therefore that 1MSP 'could adopt 10 years as the deadline required in Article 4.2 for weapon destruction' with a further period of up to 10 years granted upon request to allow for unexpected difficulties'. This has been accepted in other disarmament treaties, such as the CWC, where States undertaking the destruction of chemical weapons needed to take additional time to meet environmental and safety concerns that had not been adequately factored in despite detailed discussions during the treaty negotiations.[100]

Two pathways for nuclear-armed states to join the TPNW

Recognising that political conditions and sensitivities will weigh differently on the various nuclear-armed and host states, the TPNW allows those states to decide which of two pathways will suit them best.

(i) 'Destroy and Join' is modelled on South Africa's experience of getting rid of its nuclear programme and joining the NPT in 1992. This option allows states that currently have nuclear weapons, facilities and sharing arrangements to organize their own actions to come into compliance with the Treaty. When they have removed and/or eliminated the weapons, denuclearised their policies and dismantled or safely repurposed facilities in preparation for joining the TPNW, governments are required to inform the States Parties so that 'the competent international authority or authorities' can verify that they have been meaningfully denuclearised. Once this is agreed, each state will determine for itself when to sign and accede to the Treaty. This option does not preclude consultations with the competent international authority/ies and meetings of States Parties along the way, especially if further activities or help is needed.

(ii) 'Join and Destroy' is an option for states that want to sign the Treaty at an earlier stage and commit to its prohibitions and obligations while they still possess some nuclear weapons or capabilities. After removing applicable nuclear weapons from deployment and rendering them non-operational, States that choose this option are required to undertake negotiations with the competent international authority/ies and Treaty Parties to agree a 'legally binding, time-bound plan for the verified and irreversible elimination' of their nuclear devices and relevant capabilities on their territory or under their control or jurisdiction 'as soon as possible' (Article 4.2).

Tariq Rauf, who served from 2002–11 as the IAEA's head of Verification and Security Policy, challenged Trump Administration officials who criticised the TPNW by saying it was 'inconsistent as it allows for States with nuclear weapons to adhere to it, and it also allows States to join that had nuclear weapons but have disarmed'. In response, Rauf pointed out that Article 4 of the TPNW followed the same logic as the Chemical Weapons Convention by allowing current weapon possessor states to join and verifiably destroy their stocks under the auspices of the designated competent international authority (the OPCW in the case of chemical weapons), while also providing for states that have previously destroyed their

100 Kütt & Mian 2019.

weapons stocks to join after having this verified by the designated authority, as South Africa did in 1991-92 before acceding to the NPT.[101]

What is meant by 'competent international authority or authorities' and how soon does this need to be ready?

Article 4.6 states that the Treaty's 'States Parties shall designate a competent international authority or authorities' to negotiate and verify the irreversible elimination of nuclear-weapons programmes, including the elimination or irreversible conversion of all nuclear-weapons-related facilities…' and it will be the task of States Parties to develop this, starting with the first meeting of States Parties. The role of the competent authority or authorities is to oversee negotiations and verification as and when states that possess and control nuclear weapons signal that they are ready to sign and join the TPNW.

At present, the nuclear-armed governments are still clinging to these weapons of mass destruction, and it will take some years for their citizens and nuclear free neighbours to persuade them to sign. With that in mind, decisions do not have to be taken immediately, but discussions on options need to begin as soon as possible to provide appropriate engagement in time to oversee accession and adherence by nuclear weapon holders. The writing is on the wall, so it will be important for TPNW States Parties to begin setting up a process for determining the best way(s) to fulfil the responsibilities designated to the competent international authority or authorities.

Conferences and meetings of States Parties are the decision-making bodies for the TPNW. Though ideas for an 'implementing organisation', small 'secretariat', 'implementation support unit' (ISU) and ways to provide administrative and technical support for the Treaty were floated before and during the 2017 negotiations, time constraints and financial concerns meant that it was not possible to discuss these issues sufficiently for any detailed decisions to be made.

As the UN Secretary-General is the legal depositary of the Treaty, it was envisaged that – at least initially – the UN Office for Disarmament Affairs (UNODA) would provide some secretariat services for the TPNW and meetings of States Parties, as ODA does for other treaties, including the NPT. This has been agreed. In accordance with UN rules regarding payment and administration, ODA has undertaken secretariat services for 1MSP and will probably continue in this role as the TPNW gets up and running. It is necessary, however, for States Parties to consider what further institutional support and expertise will be needed as the TPNW becomes further embedded.

The Treaty provides basic principles and indications but does not specify what the competent international authority or authorities would need to comprise or whether the negotiating, verifying and oversight tasks should be centralised in one country or dispersed among several. To the political constraints and considerations when the Treaty was negotiated in 2017, the financial, practical and Covid-related challenges for governments and international

101 Tariq Rauf 2020.

organisations make it necessary as well as wise for TPNW States Parties to start small and build carefully.

Relevant competencies and synergies with other treaties

The Vienna International Centre (VIC, also called UNO City) is already home to the IAEA and the CTBT's implementing organisation (CTBTO), and provides well established institutional and security infrastructures. The TPNW now bans nuclear testing, and also seeks to reinforce the safeguards role provided by the IAEA. Even before the TPNW negotiations in 2017, these factors led to Vienna being floated as a location for a TPNW implementing organisation. The Hague, home to the OPCW and International Criminal Court (ICC) was also raised as a possibility. Before any decision is made about where to locate a future implementing organisation, it is important to recall that the Treaty referred to the 'competent international authority or authorities'. The plural option was inserted into Article 4.6 to give broad leeway to Treaty parties to call on different organisations with a range of competencies, if that will be the most effective way to oversee and verify irreversable nuclear disarmament.

Though some have already argued that the IAEA should verify the TPNW,[102] this would not be a simple solution. The IAEA was founded in 1957 following President Eisenhower's 'Atoms for Peace' address to the UN General Assembly in 1953, with the primary purpose of regulating and promoting nuclear technologies for peaceful purposes. It administers and oversees the NPT's Article III safeguards obligations, and has developed into being a central international authority on nuclear and fissile materials accounting and uses. That said, however, the IAEA lacks legal and practical competencies in nuclear disarmament, weapons dismantlement and destruction. Given time and resources, these might be developed. The major barriers foreseen at present are the IAEA's institutional and political legacy, its Charter, Board of Governors, dominating role of certain nuclear-armed states, and complex legal responsibilities and constraints in relationships under the NPT and with states outside the NPT. For the IAEA to become the implementing authority for the TPNW would require a fundamental transformation of the Agency. While this would not be impossible, current political relations would make it very difficult. At this stage the point is to encourage and facilitate closer cooperation between the Agency and the TPNW.

Similarly, the CTBTO with its institutional and verification competencies has an important role to play, but many considerations would need to be taken into account, and a range of additional technical, legal and institutional competencies would need to be developed before further decisions could be made. Nonetheless, it should be noted that the CTBT text co-located the CTBTO with the IAEA in Vienna, to 'utilize existing expertise and resources, as appropriate, and to maximise cost efficiencies through cooperative arrangements…'[103] Though it is premature for any decision on an international implementing organisation for the TPNW to be taken at the first meeting of States Parties, Vienna should be a contender when the time comes. Austria has already shown its commitment by taking important roles

102 See for example, Adina Carla Loghin (2019), 'Which International Authority should be Designated for Verifying the Irreversible Elimination of Nuclear Weapons under Article 4 of the Nuclear Ban Treaty?' Amsterdam Law Forum 11(2), pp 73-96.

103 The Comprehensive Nuclear-Test-Ban Treaty Article II.8. See Rebecca Johnson (2009), Unfinished Business: The Negotiations of the CTBT and the End of Nuclear Testing, (United Nations, 2009) GE09-00299 https://www.unidir.org/files/publications/pdfs/unfinished-business-the-negotiation-of-the-ctbt-and-the-end-of-nuclear-testing-346.pdf

to carry the TPNW from concept to entry into force and beyond, as host of 1MSP.

The CTBTO was established to administer and verify the Comprehensive Test Ban Treaty, which had been overwhelmingly adopted by the United Nations General Assembly and opened for signature in 1996. Like the CWC, which was adopted by the Geneva Conference on Disarmament in 1993, the test ban treaty was finally achieved as the Cold War ended. As Russian and US diplomats worked together in those first optimistic years, disarmament and arms control negotiators were able to agree on detailed verification regimes with far more resources for institutional support than available to the TPNW in 2017 (or, for that matter, the NPT in 1968).

This accounts for a number of similarities between the texts relating to the OPCW and CTBTO. Both comprise a Conference of States Parties, an Executive Council and a Technical Secretariat, headed by a Director-General. Both treaties state the purpose of their respective Organizations as 'to achieve the object and purpose of this Treaty, to ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and cooperation among States Parties.'[104]

achieve the object and purpose of this Treaty, to ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and cooperation

The CWC identified verification as a key organisational role for the OPCW and enshrined two key principles. First, that the Organization 'shall conduct its verification activities provided for under this Convention in the least intrusive manner possible consistent with the timely and efficient accomplishment of their objectives'; and also that in 'undertaking its verification activities the Organization shall consider measures to make use of advances in science and technology.' Most of the technical and organisational details were then put into a Verification Annex, which was more open to being updated than the text of the head treaty.[105]

By contrast, the CTBT included a whole section (Article IV) on verification, with certain technologies and arrangements explicitly specified. Pending entry into force, signatory states in November 1996 agreed to set up a Preparatory Commission, which was given 'standing as an international organization' and 'authority to negotiate and enter into agreements, and such other legal capacity as necessary' to 'establish all necessary measures to ensure the rapid and effective establishment' of the CTBTO.[106] An unintended consequence of the CTBT's

104 The Comprehensive Nuclear-Test-Ban Treaty Article II (The Organization) and Chemical Weapons Convention Article VIII (The Organization).

105 Chemical Weapons Convention Article VIII and Verification Annex https://www.opcw.org/chemical-weapons-convention

106 Resolution establishing the Preparatory Commission for the Comprehensive-Nuclear-Test-Ban Treaty Organization, CTBT/MSS/RES/1, adopted 19 November 1996, https://www.ctbto.org/fileadmin/user_upload/public_information/2009/prepcom_resolution.pdf

more detailed textual approach on verification has been that one or more signatory states have been able to constrain, delay or obstruct changes deemed necessary by the CTBTO to keep up with developments in scientific understandings, technologies, humanitarian needs and policies during the past twenty-five years. Nonetheless, through the years the CTBTO (through its Preparatory Commission) has set up and maintains an extensive International Monitoring System (IMS) capable of detecting and identifying nuclear explosive tests down to very low yields and across all relevant geographic environments, underground, underwater, in the atmosphere and space. Due to its unprecedentedly narrow entry-into-force conditions, as noted earlier, the CTBT has been unable to enter into full legal force, but the CTBTO is a thriving and important contributor to international security. As the TPNW grows in normative and legal force, it underlines the need for the CTBTO to maintain its extensive IMS and robust verification capabilities. And the CTBTO's carefully developed systems and specialists, including manuals, field exercises and training developed for on-site inspections, offer much for the TPNW to draw on.

It is important to recognise also its more recent contributions towards global efforts in emergency planning, early warning and disaster response networks, recognising the important humanitarian benefits of the CTBTO's detection and location capabilities relating to radiation releases, tsunamis and other potential risks to human lives and security. A close relationship with the TPNW offers opportunities not only to maintain the CTBTO's institutional and verification capabilities to reinforce both treaties' prohibitions on nuclear testing, but also to explore additional ways to support environmental remediation arising from harm caused by decades of nuclear tests in many places in the world.

Also relevant are the European Atomic Energy Community (Euratom, established in 1957) and the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC, established in 1991 when these two military rivalries decided to end their nuclear weapon programmes and join the 1967 Tlatelolco Treaty that brought about the first Nuclear Weapon Free Zone (NWFZ) for the Latin American and Caribbean region). TPNW implementation can also learn much from the experiences gained through the UN Special Commission (UNSCOM) set up from 1991-99 to monitor and verify the disarmament of Iraq's weapons of mass destruction, and its successor, the UN Monitoring, Verification and Inspection Committee (UNMOVIC, established in 1991).[107]

All these organisations lack the breadth and depth of nuclear disarmament capabilities and verification expertise that will be needed, and none of them would be able to be turned into the sole international authority for the TPNW without fundamental legal and structural changes. But at least there are encourages signs, following the TPNW's entry into force, that in their different ways these established institutions are more willing to engage in discussing how their expertise can contribute to and benefit from closer cooperation as the TPNW develops the monitoring, verification and institutional capacities to reinforce the UN's nuclear disarmament objectives and obligations.

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107 UNSCOM was set up pursuant to UN Security Council resolution 687 (1991) https://www.un.org/ga/search/view_doc.asp?symbol=S/RES/687(1991) . UNMOVIC was established with wider powers following UN Security Council resolution 1284 (1999). https://www.un.org/Depts/unmovic/

Proposals for a TPNW Implementation Support Unit and Scientific Advisory Board

During the 2017 negotiations and in various analyses since, various NGOs have suggested that the TPNW would benefit from some form of implementation support unit (ISU) and scientific advisory board (SAB), which could be established early on and provide cost effective support for the treaty. While linked as relatively low cost ways to build up knowledge and institutional capacities proposals for a SAB could be considered separately from proposals for an ISU. These are being thought about now as interim ways to carry the Treaty forward until political and financial resources are made available to enable States Parties to build a longer term implementing organisation, such as an 'Organisation for the Prohibition of Nuclear Weapons' (OPNW).

Experiences from other treaties with ISU vary, but generally indicate that this is an idea to take very seriously. In 2001, the third meeting of States Parties to the ground-breaking 1997 Mine Ban Treaty decided to establish an 'implementation support unit.'[108] Since then, ISU have been set up for various different treaties, including the Biological and Toxin Weapons Convention (BTWC) in 2006,[109] the Convention on Certain Conventional Weapons (CCW) in 2009,[110] and the Cluster Munitions Convention (CMC) in 2015.[111] The terms and objectives of each of these ISU are different, depending on the specifics of each treaty's needs, conditions and objectives. The ISUs set up by BTWC and CCW States are hosted within UNODA in accordance with UN rules, whereas the Mine Ban Convention and CMC ISUs are hosted by the Geneva International Centre for Humanitarian Demining (GICHD) and funded through contributions from States Parties.

Some form of ISU for the TPNW is worth considering as early as the first meeting of States Parties. Even with limited resources, this could combine secretariat support for meetings and conferences, for example, by liaising with UNODA (useful in any case and necessary for any meetings held on UN premises), and overseeing other institutional, compliance, and implementation tasks as the TPNW grows and becomes further embedded in international law.

Princeton University scientists have published a number of articles which look at the options for fulfilling Article 4 of the TPNW through 'an evolutionary adaptive approach' comprising three phases. Phase 1, according to Tamara Patton, Sébastian Philippe and Zia Mian on one of the Princeton articles, would establish an ISU and a SAB, which they describe as a 'scientific and technical advisory board.'[112] In their view, both the SAB and the ISU could be set up and run at relatively low cost and very cost-effectively. Working together, the

108 https://www.apminebanconvention.org/implementation-support-unit/overview/

109 https://www.un.org/disarmament/biological-weapons/implementation-support-unit/

110 https://www.un.org/disarmament/the-convention-on-certain-conventional-weapons/ccw-implementation-support-unit/

111 https://www.gichd.org/resources/organisations/detail/organisation/implementation-support-unit-of-the-convention-on-cluster-munitions/

112 Tamara Patton, Sébastien Philippe and Zia Mian (2019), 'Fit for Purpose: An Evolutionary Strategy for the Implementation and Verification of the Treaty on the Prohibition of Nuclear Weapons,' Journal for Peace and Nuclear Disarmament 2019, vol. 2, No. 2, 387-409, https://sgs.princeton.edu/sites/default/files/2019-11/patton-philippe-mian-2019.pdf

a scientific advisory group of some kind and a small ISU (that would combine secretariat functions with treaty development) could be established fairly quickly, the sooner the better

ISU and SAB would 'provide a focal point for engagement with states and existing international organizations, as well as information management and other activities related to treaty implementation... while the SAB would help TPNW States begin to build the necessary guidelines and standards upon which a future authority will base its actions.'[113]

Arguing that the OPCW's Science Advisory Board (OPCW-SAB, established in 1998) provides a recent and relevant model for the TPNW, Patton, Philippe and Mian noted that in its first session OPCW-SAB 'established a temporary working group (TWG) on verification methodologies, a TWG dealing with on-site monitoring equipment, and a TWG on issues related to the destruction of chemical weapons.'[114] The propose that a TPNW-SAB might establish working groups on:

(1) Scope and technical standards for irreversible nuclear weapon programme elimination

(2) Nuclear disarmament verification approaches and options

(3) Technical methods for supporting implementation of TPNW positive obligations.[115]

These are key verification preparations that TPNW States will need to work on in readiness for when domestic and international pressures create the conditions for the first nuclear arms states to join the TPNW. Without prejudging the outcome of consultations among TPNW States Parties, Princeton's Phase 1 looks like a good place to start, as a scientific advisory group of some kind and a small ISU (that would combine secretariat functions with treaty development) could be established fairly quickly, the sooner the better. These could be started with very modest resources contributed by TPNW parties, and develop as more states join the Treaty.

With regard to Phases 2 (establishing an authority to manage disarmament verification) and 3 (embedding disarmament verification capabilities within the global regime complex for nuclear weapons), the authors provide more detailed discussions that will not be covered here.[116]

113 Patton, Philippe and Mian 2019.

114 Patton, Philippe and Mian 2019.

115 Patton, Philippe and Mian 2019.

116 Patton, Philippe and Mian 2019.

Six points to emphasise before leaving Article 4:

(1) The IAEA, CTBTO, OPCW and other international treaties and regimes have skills, competencies and experiences that are relevant and important for TPNW States Parties to draw on and engage with, but none of them can provide the range of technical expertise, understanding, values, skills and approaches that are needed to implement the TPNW as a whole.

(2) All efforts should be made to find appropriate cost-effective ways to provide necessary institutional support for meetings of States Parties and the development of implementation and verification capacities as the TPNW evolves over time. Setting up an ISU, SAB or both would offer an interim way forward, and could be started with very modest resources. Consideration should be given to ways in which civil society as well as States could cover the costs without compromising the TPNW's objectives and independence. An ISU would probably need to be hosted by the UN or a State Party with good travel and communication links, such as Vienna.

(3) It would not be necessary (or desirable, I would argue) for a SAB to comprise only participants from countries that have acceded to the TPNW. The point is to draw on relevant expertise from relevant countries and participants willing and able to contribute effectively. In view of Covid and to keep costs as low as possible, the SAB could carry out its deliberations and functions mainly (or even wholly) online.

(4) Decisions on implementing authorities may not need to be taken at the very first MSP, but they do need to be taken as soon as possible in order to build confidence in the TPNW. The ISU and SAB can start modestly, but the ISU needs to be given legal 'standing as an international organization' and 'authority to negotiate and enter into agreements, and such other legal capacity as necessary.'[117]

(5) Even if CTBT entry into force continues to be blocked by a handful of governments, the CTBTO's verification and training capacities should continue to be maintained by all its signatory states. As the TPNW grows and becomes further embedded and resourced, all efforts should be made to support the CTBTO so that both treaties can draw on each others' synergistic capabilities.

(6) In order to carry out their mandated responsibilities, TPNW States Parties may need to agree before or during 1MSP on what is meant – for the purposes of this Treaty – by terms such as 'deadline', 'nuclear weapon' and 'destruction', as used in Article 4.

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117 Quoted from the Resolution establishing the Preparatory Commission for the Comprehensive-Nuclear-Test-Ban Treaty Organization, CTBT/MSS/RES/1, adopted 19 November 1996, https://www.ctbto.org/fileadmin/user_upload/public_information/2009/prepcom_resolution.pdf

Article 5: National Implementation

National implementation measures are a standard requirement for treaties nowadays, especially with the realisation of weapons threats from non-state actors. Significantly, the NPT did not require that States Parties enact national implementation, although some did so as part of their national ratification processes. States that have joined regional nuclear free zone may have national implementation measures that cover some but not all TPNW obligations and requirements, and where possible should take the opportunity to bring their nuclear-related legislation up to date in order to fully comply with this Treaty.

Under Article 5, each state party to the TPNW is required to take all appropriate legal, administrative and other measures, including penal sanctions, to prevent and suppress any activity prohibited by this Treaty if undertaken by persons (which legally covers individuals, organizations and companies) or on territory under its jurisdiction or control.

This, combined with the word 'anyone' in the prohibitions on assistance and encouragement in Articles 1.1 (e) and 1.1 (f) reinforces the objectives of UN Security Council Resolution 1540 (2004)[118] with regard to non-state actors.

Cross referencing Article 5 with Article 12 which contains the obligation on States Parties to 'encourage States not party' to join the Treaty, and we can see that national implementation legislation could be used to create and strengthen economic and political incentives on nationally-based companies, industries, organisations and individuals to delink and divest from nuclear weapons production and related promotional or financial activities that violate TPNW obligations and purposes. In these ways, national implementation legislation to comply with the TPNW will help to strengthen local and international tools to prevent nuclear weapons use, deployment and proliferation, as well as promoting education, compliance, implementation and universality for the TPNW.[119]

Article 6 on victim assistance and environmental remediation

The 2017 Treaty prohibiting nuclear weapons is the first nuclear treaty to put victim assistance and environmental remediation into its positive obligations. Unlike most conventional weapons, nuclear armaments not only caused damage through direct exposure, but also to further generations. The category of 'victims' in this provision should be understood to cover not only the living survivors of the Hiroshima and Nagasaki atomic bombs and nuclear testing around the world, but also their children and other descendents who may still carry

118 For information and links on UNSCR 1540, see https://www.un.org/disarmament/wmd/sc1540/, accessed on 20 November 2020.

119 Stuart Casey-Maslen, The Nuclear Weapons Prohibition Treaty: Interpreting the Ban on Assisting and Encouraging, Arms Control Today, October 2018 https://www.armscontrol.org/act/2018-10/features/nuclear-weapons-prohibition-treaty-interpreting-ban-assisting-encouraging.

the burden of weakened health, genetic harm, reproductive challenges and stigma because of the use or testing of nuclear weapons.

Article 6.1 primarily addresses the national obligations on each state party to assist 'individuals under its jurisdiction who are affected by the use or testing of nuclear weapons', recognising the importance of 'age- and gender-sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support.' This positive obligation also includes supporting victims' 'social and economic inclusion', taking account of the ways in which survivors and their descendants have sometimes been shunned and discriminated against because they suffered physical, mental or genetic damage or whose exposure to radioactivity had wrecked their ability to have healthy, viable babies.



Survivors of nuclear use and testing speak at TPNW negotiations, United Nations 2017 (R.Johnson)

Over 60 locations around the world were used by the nine states that carried out over 2050 nuclear tests between 1945 and today, causing high levels of humanitarian, health and environmental harm particularly from over 530 atmospheric and underwater explosions carried out in the Pacific (many different islands and atolls), Kazakhstan, Siberia, Arctic islands, Sahara Desert, and North America.

In addition to the Japanese civilians and Korean and other prisoners in Hiroshima and Nagasaki, the vast majority of victims of nuclear use and testing have been indigenous people living a long way away from the capitals of the governments that carried out the bombings and tests. As noted in the Treaty's preamble, nuclear tests and use has been shown to have a 'disproportionate impact on women and girls, including as a result of ionizing radiation.' Many defence service personnel associated with the nuclear test programmes were also exposed and contaminated, causing harm not only to their own health, but in some cases to their children and families. The British Nuclear Test Veterans Association (BNTVA) and a new organisation LABRATS International (Legacy of the Atomic Bomb: Recognition for Atomic Test Survivors, which grew out of Nuclear Veterans Worldwide) have been lobbying for support and compensation on this.[120] Less visible – and less researched – are more than 1,500 underground test explosions carried out by all nine nuclear-armed states. More studies will be necessary on both counts.

Article 6.2 addresses environmental remediation, and requires that States Parties that have been contaminated by nuclear testing or use must take 'necessary and appropriate measures' to remediate – i.e. clean up and restore – the environment. Primary responsibility for assisting victims and remediating the environment rests with affected States Parties. At first glance this might seem unfair, in view of the fact that Kazakhstan, Algeria and the many

120 See LABRATS International https://www.labrats.international/ British Nuclear Test Veterans Association https://www.bntva.com/ and https://www.gov.uk/government/news/new-guidance-for-british-nuclear-test-veterans

Pacific Islands that have joined the TPNW are victims not perpetrators or willing colluders in the nuclear violence inflicted on their lands and people. Articles 6 and 7 also make clear that TPNW obligations are 'without prejudice' to any other duties or obligations under bilateral or international agreements.

Bonnie Docherty, who leads the International Human Rights Clinic (IHRC) at Harvard Law School, explains:

'They do not bear the burden by themselves. While it may seem counterintuitive that the country harmed by use or testing of nuclear weapons should have such obligations, affected state responsibility makes both practical and legal sense. Affected states are well situated to understand their own needs and those of their people. They are also in the best position to provide assistance because they are closest to the problem. The approach protects the sovereignty of the affected state by allowing it to manage matters within its own boundaries. In addition, it is consistent with both humanitarian disarmament law and international human rights law, under which a state must take care of ensuring its people can enjoy their rights.'[121]

The nuclear production chain from uranium mining to deployment and transporting of warheads should also be brought into TPNW discussions from now on. Along with testing, these activities have caused considerable harm to people's health and shared environments, with disproportionate impacts on indigenous people, women and girls. Nuclear production activities should be addressed in conjunction with the Treaty provisions covering assistance to victims and environmental remediation, and also in relation to their risks, from accidents to nuclear proliferation. These current and ongoing humanitarian consequences of nuclear weapons will need to be addressed alongside nuclear use and testing, consistent with the TPNW's preamble, prohibitions, environmental and disarmament provisions.

It should be noted that in addition to the Harvard International Human Rights Clinic, several of ICAN's partners are engaged in studies on the Treaty's Article 6 and 7 obligations, with particular reference to recommendations for how 1MSP can take these forward for the future.

Article 7 on International cooperation and assistance

Article 7.1 makes it a legal as well as normative and political obligation for all States Parties to cooperate with each other in facilitating the implementation of the TPNW. The next paragraph enshrines the right to seek and receive assistance 'where feasible' from others, which is of particular importance in light of the Article 6 obligations relating to victim assistance and environmental remediation. Assistance may be technical, material, humanitarian and financial, and shall be provided by States Parties 'in a position to do so', bilaterally and/or through the UN system and various international or non-governmental organisations.

121 Bonnie Docherty (2018), A 'light for all humanity': the treaty on the prohibition of nuclear weapons and the progress of humanitarian disarmament, published online 8 May 2018 by Global Change, Peace & Security, DOI: 10.1080/14781158.2018.1472075, https://doi.org/10.1080/14781158.2018.1472075.

Assistance may be technical, material, humanitarian and financial, and shall be provided by States Parties 'in a position to do so', bilaterally and/or through the UN system and various international or non-governmental organisations

Article 7 imposes the legal obligation on States Parties that used or tested a banned weapon to provide 'adequate assistance' to help affected States Parties assist victims and remediate the environment. Going further than the Mine Ban Treaty and Cluster Munitions Convention, the TPNW makes user state responsibility a legal obligation and applies it to victim assistance as well as clearance of contaminated areas. According to Docherty, 'during the negotiations, many states argued that inclusion of such a provision was of vital importance as a matter of principle and practical impact.'[122] Though Docherty's analyses focus mainly on the commitments and decisions States Parties need to make to take forward the Article 6 and 7 obligations to assist victims and ensure environmental remediation, her recommendations in 2020 focus on what needs to be done by the first meeting of States Parties, which 'sets the stage for turning legal obligations into concrete actions.'[123]

Article 8: Meetings of States Parties

The TPNW mandated that the first meeting of States Parties (1MSP) must be convened by the UN Secretary-General within one year of the Treaty entering into force. Due to the Covid pandemic, NPT needs, and other circumstances beyond the control of TPNW States Parties, 1MSP had to be moved from its originally scheduled date within a year of its entry into force on 22 January 2021 to later in 2022 (Covid willing).

There are several basic tasks that 1MSP is required to begin addressing and deciding on. The first key decision is to adopt rules of procedure not just for 1MSP, but to facilitate future meetings of States Parties. The designated Chair of 1MSP, Austria's Ambassador Alexander Kmentt, has already circulated a substantive draft rules of procedure for consideration and adoption by TPNW States Parties. The rules for TPNW meetings need to clarify procedures to meet the Treaty's objectives, enable accountable decision-making and leave the way open to develop different kinds of formal and informal ways to discuss, consult, and build capacities for implementing the Treaty, though these do not have to be spelled out. Where possible, the rules should avoid restrictive wording that would rule out options that could usefully contribute resources and expertise as the Treaty regime develops.

As briefly discussed in the section on Article 4 (above), 1MSP is also required to decide on a 'deadline' for the 'destruction' of 'nuclear weapons', in accordance with Article 4.2, which requires that 'each State Party that owns, possesses or controls nuclear weapons or other

122 Bonnie Docherty 2018.

123 Bonnie Docherty (2020) 'From Obligation to Action: Advancing Victim Assistance and Environmental Remediation at the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons', Journal for Peace and Nuclear Disarmament, DOI: 10.1080/25751654.2020.1842657

nuclear explosive devices shall immediately remove them from operational status, and destroy them as soon as possible but not later than a deadline to be determined by the first meeting of States Parties, in accordance with a legally binding time-bound plan for the verified and irreversible elimination of that State Party's nuclear weapon programme, including the elimination or irreversible conversion of all nuclear-weapons-related facilities.' [italics added] Some but not all appear to interpret this text as also requiring 1MSP to decide on a deadline for nuclear weapons to be 'immediately' removed from operational status, so that may need to be clarified in advance.

Article 8 explicitly provides for the participation of observers from states that are not yet party to the TPNW, as well as relevant UN bodies, international and regional organisations and non-governmental organisations. The Treaty requires that meetings of States Parties will take place 'regularly', and should include, inter alia, 'further measures for nuclear disarmament, including … Measures for the verified, time-bound and irreversible elimination of nuclear weapon programmes, including additional protocols to this Treaty.' (Article 8.1 (b))

If 1MSP can adopt workable and enabling rules of procedure, it will provide the foundation for most if not all its other objectives and tasks. TPNW Parties do not need to get everything decided in 1MSP. The focus should be on achieving what must be done at 1MSP, and initiating preliminary discussions on the principles, objectives and mechanisms that will enable the TPNW to keep moving forward, such as proposals for an ISU and treaty-articles and topics for subsidiary bodies to work on in further meetings and, if possible, intersessionally. For the Treaty to become fully effective as a humanitarian, normative, legal and institutional tool to prevent nuclear use, production and accidents, 1MSP must begin to work out what further legal, institutional and verification structures will have to be developed to oversee and implement the Treaty as it grows. As we've seen with the NPT and many other treaties, this will be an evolving process.

Participation

Participation is a very important issue for 1MSP to get right. It is clearly in the interests of States that have not yet signed to attend 1MSP and future Treaty meetings. It is also important for TPNW States Parties to welcome non-signatory states as observers, but without giving them power or influence to undermine the work of these meetings. As with other humanitarian disarmament treaties, the TPNW's rules should reflect the basic presumption of openness and transparency in meetings of States Parties (call this the open participation rule). In extraordinary circumstances that necessitate holding some discussions in closed and confidential meetings, this should be enabled but not perpetuated beyond the specified sensitive discussion.

All governments need to engage with the TPNW, understand how it is developing, and consider how they can contribute and benefit as the Treaty's infrastructure is established over time to implement and verify the Treaty. States that commit to the Treaty by signing, participating and sharing costs, earn the right to sit closer to the centre than those who stand outside. While all may enjoy the security provided by the Treaty's broad roof, it's the ones who commit to implementing and building on all its provisions who will have the most say on how it develops. The text and negotiating history point to a presumption that the meetings of States Parties will be generally open, with only States Parties accorded decision-making rights. This is normal, and ensures accountability, while also serving as an incentive for other states to accede fully to the treaty. Those who accede get to enjoy the fullest possible rights and positions.

By lumping together a range of different entities as 'observers', the text leaves open to question certain issues that will have to be clarified either in the rules of procedure or through MSP discussions. These include:

- To what extent will distinctions need to be made between the rights and responsibilities of different categories of observers?

- Must coordination and management roles for MSPs, conferences and other policy-making bodies always be held by representatives or nationals from States Parties?

- If, as hoped, meetings of States Parties decide to convene working groups or other kinds of subsidiary bodies to take forward treaty implementation on issues such as victim assistance, environmental remediation, institutional and verification developments, could participants and coordinators be drawn from other sources – for example, signatory states that have not yet acceded, or individuals with appropriate experience and skills that are not nationals of States Parties or signatories, but relevantly associated with the Treaty in other ways, such as international, academic or civil society organisations? If so, what criteria need to be developed?

Not all these issues need to be decided now, but from 1MSP onwards, governments and civil society need to work together to strengthen the Treaty's norms and determine how best to develop the necessary diplomatic, institutional, disarmament and verification infrastructure to ensure that the TPNW will be able to play its intended role in global security. This means enabling the fullest possible informal as well as formal mechanisms to involve and engage with civil society, especially victims and relevant specialists with knowledge and experience that are needed to take the next steps forward.

Working groups, intersessional consultations, scientific groups and other formal and informal ways to take key issues forward

The rules should enable States Parties to convene and benefit from any and all legitimate forms of consultation, as deemed useful. In general, special coordinators and subsidiary bodies (committees, working groups et al) appointed by States Parties would be required to report back to States Parties. Advisers or facilitators appointed by the Chair of a meeting would be expected to report back to the Chair. Getting these rules and agreements right is important for accountability and decision-making in the future, even if resources and other circumstances mean that decisions cannot yet be formalised on many of the substantive issues.

Focussing on the positive obligations in Article 6 and 7, Bonnie Docherty proposed that 1MSP should convene 'standing committees of experts' with a remit to carry out intersessional work on victim assistance, environmental remediation and 'address the practicalities of international cooperation and assistance.'[124] Docherty's ideas for 1MSP provide stimulating ways of thinking about how TPNW States Parties can discuss needs and establish diplomatic

124 Bonnie Docherty (2020) 'From Obligation to Action: Advancing Victim Assistance and Environmental Remediation at the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons', Journal for Peace and Nuclear Disarmament, DOI: 10.1080/25751654.2020.1842657

and technical mechanisms to address compliance and implementation of all its aims and provisions, not only the positive obligations.

It is important to be realistic, however, and avoid overburdening 1MSP, which is taking place amidst unprecedented health, climate and financial challenges. The danger with Standing Committees is that it may then become difficult to stand them down. Ad hoc committees that can serve for renewable terms would probably be a better and more flexible, cost-effective approach. While important to articulate these ideas now (not least to ensure that the rules of procedure keep the institutional options as open and adaptable as possible for future use), priorities will have to be determined.

Taking decisions and recording outcomes

Every MSP and review conference will need to record progress, challenges, decisions that have been agreed, and action plans to take them forward. States Parties and TPNW advocates have a lot of practical work to think through, enact and implement. It is inevitable that disagreements will occur. Substantial outcomes of TPNW meetings are likely to be consequential for human security, disarmament and peace. Meetings of States Parties will need to make difficult decisions to safeguard security into the future and underpin international democracy and accountability under international law. Outcome documents and substantive decisions need to be credible, sustainable, and contribute to effective implementation of the Treaty in all its aspects.

The best rules have built-in flexibility to enable decision-makers and Chairs get the best practicable outcomes in the circumstances they face

While consensus may be considered desirable, making this into a rule has stymied the Conference on Disarmament and made agreed outcomes difficult to achieve in other negotiations. Lessons can be learned from the NPT. Though not mandated in its rules, NPT review conferences, committees, subcommittees, preparatory committee meetings (PrepComs) and other subsidiary bodies were expected to adopt outcome documents by consensus. This frequently led to deadlock, in which decisions could be blocked by just one government. Consensus rules also backfire because they tend to favour lowest common denominator texts that omit or fudge contentious and important issues. TPNW rules of procedure should place a high but not insuperable bar for substantive decisions to be adopted, for example, requiring a majority of three-quarters of States Parties present and voting. Procedural decisions could be set a bit lower; for example, requiring a two-thirds majority (present and voting) or a simple majority of all States Parties.

It is instructive to recall that only when extension of the NPT was up for renewal in 1995, was the NPT Review and Extension Conference president given space and 'permission' to take an innovative approach on outcome that bypassed the deadlocks. In the last week of the 1995 Review Conference, it became clear that consensus could not be achieved on the usual form of a final document. Failure to decide opened the possibility of the NPT being ended not by decision but by default, with attendant risks for the credibility of the Treaty. The Conference president, Jayantha Dhanapala (Sri Lanka) consulted various civil society and governmental experts and proposed a 'package of legally binding decisions': the extension decision (which got consensus by recognising the fact that there was a majority

for indefinite extension); a Decision on Strengthening the NPT's review process; a second Decision on Principles and objectives for nuclear non-proliferation and disarmament; and a Resolution on the Middle East.[125]

Drawing on the humanitarian treaties that have come into force since the 1997 Mine Ban Treaty, as well as this NPT experience, Harvard's Bonnie Docherty has proposed that MSPs should consider at least three kinds of outcome documents – final reports, declarations, and action plans. This is a good way to start thinking about the different ways to record outcomes and forward-looking commitments and plans, as these forms have proved useful in a variety of different treaties and meetings, including the NPT, humanitarian disarmament meetings of States Parties, and the HINW meetings that led to the TPNW. Final reports are useful to provide on the record summaries of the proceedings of the meeting, including relevant areas of agreement and contention. Declarations could take the form of a communiqué, a short document for publicising key decisions, aspirations, intentions and next steps, or even a declaration of intent such as the 'Austrian Pledge'[126] issued by the Chair of the Vienna HINW Conference on 9 December 2014. The 'action plan' envisaged by Docherty would provide 'detailed guidance for implementation of the treaty's obligations and sets goals that States Parties should achieve.' It could take a variety of forms and be as headlined or detailed as each meeting requires.[127] While useful in different ways and for different audiences and purposes, it should not be assumed that documenting the outcomes would require all. The important point is to avoid language that would create unnecessary restrictions for 1MSP and future meetings.

Experience teaches that it is not necessary to get consensus on any of these documents though efforts to get the broadest possible levels of agreement should of course be encouraged. The rules of procedure may need to identify processes for adopting outcome documents, such as the majorities by which each could be adopted (simple, two-thirds or three quarters or some other formula). The best rules have built-in flexibility to enable decision-makers and Chairs get the best practicable outcomes in the circumstances they face. The rules need to be enabling and adaptive, not overly restrictive or detailed, bearing in mind Docherty's maxim that the 'first meeting of States Parties of any disarmament treaty sets the stage for turning legal obligations into concrete actions.'[128]

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125 Jayantha Dhanapala with Randy Rydell (2005), Multilateral Diplomacy and the NPT: An Insider's Account, United Nations, New York and Geneva, 2005. and Rebecca Johnson (1995), Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings, ACRONYM 7, The Acronym Consortium, London, September 1995

126 Pledge presented to the Vienna Conference on the Humanitarian Impacts of Nuclear Weapons, by by Austrian Deputy Foreign Minister Michael Linhart, 9 December 2014, https://www.bmeia.gv.at/fileadmin/user_upload/Zentrale/Aussenpolitik/Abruestung/HINW14/HINW14_Austrian_Pledge.pdf

127 Bonnie Docherty (2020) From Obligation to Action: Advancing Victim Assistance and Environmental Remediation at the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons, Journal for Peace and Nuclear Disarmament, DOI: 10.1080/25751654.2020.1842657

128 Bonnie Docherty (2020) 'From Obligation to Action: Advancing Victim Assistance and Environmental Remediation at the First Meeting of States Parties to the Treaty on the Prohibition of Nuclear Weapons', Journal for Peace and Nuclear Disarmament, DOI: 10.1080/25751654.2020.1842657

Article 9: Costs

This confirms that costs of TPNW meetings will be borne by States Parties and 'States not party to this Treaty' who participate in meetings as observers. Costs are related to the UN scale of assessment 'adjusted appropriately.'

Costs related to implementing Article 4 requirements to destroy nuclear weapons, convert or eliminate nuclear facilities and programmes, as well as implementation of verification measures 'should be borne by the States Parties to which they apply.' In other words, the states that built up the nuclear arsenals will need to be responsible for the costs of getting rid of them.

Article 10: Amendments

This sets out the procedure for proposing and deciding on amendments to the TPNW, as well as the conditions for amendments to enter into force for States Parties.

Article 11: Settlement of Disputes

This sets out the procedure for consultations and settlements of disputes 'relating to the interpretation or application' of the TPNW, including through 'peaceful means of the parties' choice in accordance with Article 33' of the UN Charter. Article 11 also allows for other States Parties to contribute to settlement of any disputes.

Article 12: Universality

This Article states the obligation on States Parties 'to encourage States not party to this Treaty, with the goal of universal adherence of all States to the Treaty.' Increasing the number of signatories and ratifications is an obvious goal for all multilateral treaties. This is particularly vital when taking the overriding objective of global security and preventing the use of nuclear weapons into account. It is likely that ways to comply with Article 12 will be discussed at all meetings.

Writing in early 2021, Nick Ritchie and Ambassador Alexander Kmentt noted that the TPNW was 'negotiated against the wishes of the nuclear-armed states and many of their supporters and this context defines the challenges and opportunities for its universalisation.' They argued that 'universalisation should be understood as a strategy for maximising the authority of the treaty and its core norms and principles across four categories of State: disarmament advocacy states, a non-nuclear-armed state majority, nuclear client states, and nuclear-armed states.' In particular, they argued that 'States Parties to the TPNW working with civil society will need to engage non-nuclear-armed states with a range of normative arguments for the treaty and against the narratives of its critics›, and that engaging ‹nuclear client states and nuclear-armed states will be more difficult and require a different approach

based on carving open a discursive space in which the TPNW's humanitarian, ethics, and risk rationales must be confronted.[129]

Noting that it is up to each State Party to determine 'how it goes about fulfilling its obligations under Article 12', ICAN has circulated a 'checklist' suggesting a number of actions that States Parties can consider, under headings the general headings of:

- At the United Nations;
- At meetings of States Parties;
- In bilateral dealings;
- In regional forums;
- In the national context.[130]

As reflected on later, checklists such as this one, which is not exhaustive, are intended to assist all TPNW advocates as they engage with governments and encourage them towards supporting, joining and implementing the Treaty.

Article 13: Signature

This confirmed the opening for signature at UN Headquarters from 20 September 2017, as has already taken place under the auspices of the UN Secretary-General.

Article 14: Ratification, acceptance, approval or accession

This standard clause opens the Treaty for accession in its various national and legally acceptable forms.

Article 15: Entry into force

This set the conditions for entry into force as 90 days following the deposit of 'ratification, acceptance, approval or accession' by at least fifty states. The fiftieth ratification instrument was deposited with the United Nations in New York on 24 October 2020, and the TPNW entered into force on 22 January 2021.

States that join now, after the TPNW has entered into force, will need to wait 90 days after depositing their ratification or accession instruments with the UN.

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129 Nick Ritchie & Ambassador Alexander Kmentt (2021) Universalising the TPNW: Challenges and Opportunities, Journal for Peace and Nuclear Disarmament, 4:1, 70-93, DOI: 10.1080/25751654.2021.1935673

130 ICAN (2021), Article 12 Checklist, June 2021, https://www.icanw.org/article_12_checklist

Article 16: Reservations

The TPNW does not allow reservations to be attached by any states regarding any of the Treaty articles.

This is in keeping with the Treaty's interconnected purposes and objectives, serving as (i) a multilateral disarmament treaty with the objective of eliminating all nuclear weapons as safely, securely and verifiably as possible, (ii) an international human security treaty with the purposes of preventing the use of nuclear weapons, nuclear accidents and harm resulting from nuclear weapons related activities, and (iii) a globally responsible humanitarian and environmental treaty with positive obligations on victim assistance and environmental remediation.

Article 17: Duration and withdrawal

This article states that the TPNW shall be of unlimited duration. Many negotiators, along with ICAN and others with treaty experience, opposed allowing for withdrawal from the Treaty once a State has acceded – for much the same reasons as they argued for Article 16 not to permit reservations to be made. In the end, with time running out, it was decided that not allowing for the possibility of withdrawal could counterproductively act against the TPNW's core purposes and objectives if the result was that states with nuclear weapons would refuse to join and disarm.

Article 17.2 mirrors withdrawal text found in the NPT, CWC and CTBT. This gives each State Party the right to withdraw 'if it decides that extraordinary events related to the subject matter of the Treaty have jeopardized the supreme interests of its country.'

The NPT's subject matter is nuclear weapons and preventing proliferation, including disarmament and civil nuclear technologies. The TPNW's subject matter is essentially human security and nuclear disarmament, ranging from prevention of further nuclear weapons use and ending all proliferation, production, testing, deployment, possession and acquisition of these weapons of mass destruction in all their aspects. In this regard, it is necessary to recognise that the supreme interests of the people living in a 'country' are not necessarily the same as the personal or group interests of any designated political leader or government of a 'state.'

Article 17.3 varies from the NPT text, giving more time (12 months instead of only 3) for the withdrawing state, other States Parties and the United Nations to address the 'extraordinary events' and persuade the State Party not to carry through its notice to withdraw. Article 17.3 also stipulates that if – on expiry of the 12 month period – 'the withdrawing State Party is a party to an armed conflict' it 'shall continue to be bound by the obligations of the Treaty and of any additional protocols until it is no longer party to an armed conflict.'

There are dangerous precedents for how withdrawal provisions can be used. Relying on the NPT's Article X withdrawal provision, Kim Jong-il started North Korean withdrawal proceedings from the NPT in 1993 and after ten years of to-ing and fro-ing, announced in 2003 that the Democratic People's Republic of Korea (DPRK) had withdrawn. The DPRK under both Kim

Jong-il and his son and successor Kim Jong-un then proceeded to conduct several nuclear test explosions, numerous missile test launches, and declare itself to be a 'nuclear weapon state.' Lawyers for various governments have argued over whether the DPRK's withdrawal was legal, since the state was being investigated for violating the Treaty and so was deemed to be noncompliant. When the 2010 NPT Review Conference discussed this, many states argued that 'under international law a withdrawing party is still responsible for violations of the Treaty committed prior to its withdrawal,' while others argued that as the NPT withdrawal text did not attach conditions or penalties, NPT parties could not do so either.[131]

Clarifying and, where necessary, agreeing what is legally meant by 'extraordinary events' and 'supreme interests' relating to a 'country' in the TPNW could avoid irresponsible leaders evoking the withdrawal provision and then jeopardizing the supreme interests of their own country, humanity and our shared planet in the future.

Article 18: Relationship with other agreements

This article states: 'The implementation of the Treaty shall not prejudice obligations undertaken by States Parties with regard to existing international agreements, to which they are party, where those obligations are consistent with the Treaty.'

It has not previously been thought necessary to put this into other disarmament treaties, as relationships among different treaties and agreements are governed by the 1969 Vienna Convention on the Law of Treaties (VCLT). The primary reason for this article is to address concerns based on politically influential criticisms made years before TPNW negotiations commenced, which claimed that any treaty to ban nuclear weapons would automatically undermine the NPT.

The TPNW text clearly and explicitly recognises the NPT and declares that this 1968 Treaty is 'the cornerstone of the nuclear disarmament and non-proliferation regime' as well as reaffirming that its 'full and effective implementation' has 'a vital role to play in promoting international peace and security.' The TPNW thereby gives the NPT an 'unequivocal endorsement,' according to international lawyer Stuart Casey-Maslen.[132]

In 2018, the Norwegian Academy of International Law published a report that examined the main allegations and criticisms found in speeches and documents that were circulated by a handful of government officials and academics after the TPNW had been overwhelmingly

131 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document, Volume I, Part I, Article X, paras 118-121.

132 Stuart Casey-Maslen (2018) 'Friend or Foe? The Treaty on the Prohibition of Nuclear Weapons and the NPT,' Arms Control Law, https://armscontrollaw.com/2018/08/20/friend-or-foe-the-treaty-on-the-prohibition-of-nuclear-weapons-and-the-npt/ Casey-Maslen was responding to a written critique of the TPNW circulated by the United States government in 2018, titled 'Nuclear Weapons Ban Treaty: Outline of Legal Risks for States Contemplating Joining,' Supplement to U.S. Presentation, ASEAN Regional Forum, Seoul (4–6 April 2018). See also Dr Christopher A. Ford (2017), Responding to the 'Ban', Remarks by the Special Assistant to President Trump on WMD and Counterproliferation, delivered Washington DC (CEIP 22 August 2017). https://carnegieendowment.org/files/Ford_CEIP%20Ban%20Treaty%20Remarks%20 8-22-17.pdf

adopted. Recognising the similarities between warnings that were issued before negotiations took place in order to dissuade States from joining the multilateral negotiations and unfounded allegations about the finalised Treaty, the authors concluded: 'Reviewing the main objections raised by sceptics, we suggest that the debate over the TPNW text and negotiating process… constitutes a sideshow that masks the real source of opposition: profound differences over the acceptability of nuclear weapons. The most fundamental objection to the TPNW is that it delegitimizes the policy of nuclear deterrence.'[133]

When considering the relationship between the TPNW and other agreements, it is important to recall that the diplomatic launch of the 'humanitarian initiative' to ban nuclear weapons took place at the 2010 NPT Review Conference, and was carried forward through meetings of the NPT and UN First Committee from then until multilateral negotiations commenced on the Treaty in 2017, 'pursuant to paragraph 8 of UN General Assembly resolution 71/258 of 23 December 2016, on a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination.'[134] This resolution was adopted by 123 votes in favour, with 38 against and 16 abstentions. It is also a fact that the multilateral negotiations on the TPNW were open to all UN Member States, and that the 124 UN member states present and voting at the time of the Treaty's adoption on 7 July 2017 were all NPT States Parties.

Far from undermining the NPT, as the NPT5 and some of their nuclear endorsing allies continue to complain, the TPNW directly addresses the humanitarian concerns expressed in the first substantive paragraph of the NPT's preamble: 'Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples…' The TPNW also takes forward the purpose and objectives enshrined in the NPT's preambular paragraph 12, which desires to: 'further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery…'[135]

A criticism that has been often levelled at the TPNW is that it does not make the IAEA's Additional Protocol (AP, INFCIRC/540) mandatory for all its States Parties. As made clear in my discussion of the TPNW's Article 3 obligations on safeguards, this is another example of the TPNW supporting and, in fact, reinforcing the NPT's safeguards regime. The IAEA's former Head of Verification and Security Policy, Tariq Rauf in 2020 commended the TPNW for going further on its safeguards requirements than the NPT review conferences and IAEA's own Board of Governors, which have been 'unable to agree to make the 1997 Model Additional Protocol' mandatory for NPT States Parties.[136]

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133 Gro Nystuen, Kjolv Egeland and Torbjorn Graff Hugo (2018), 'The TPNW: Setting the Record Straight', Norwegian Academy of International Law (NAIL), http://intlaw.no/wp-content/uploads/2018/10/TPNW-Setting-the-record-straight-Oct-2018-WEB.pdf

134 https://undocs.org/A/RES/71/258

135 Treaty on the Non-Proliferation of Nuclear Weapons (1968) https://www.un.org/disarmament/wmd/nuclear/npt/text/

136 Tariq Rauf 2020.

Negotiations always involve compromises, but we should not ignore that the NPT's preambular framing and aspirations are far closer to the explicit prohibitions in the TPNW than the 'negotiations in good faith' language contained Article VI of the NPT after getting watered down by US and Soviet negotiators in the 1960s. Despite only just dodging nuclear war during the Cuban Missile Crisis of 1962, Soviet and American leaders tried to square the circle of preventing further states from acquiring nuclear weapon capabilities without themselves giving up the power and status that they attached to being treaty-defined 'nuclear weapon states', as they pursued their arms racing and Cold War rivalries.

The relationship between the TPNW and NPT is close but has to take into account that the TPNW was negotiated nearly fifty years after the NPT. While taking non-proliferation seriously, the TPNW is a humanitarian as well as disarmament Treaty, negotiated to prohibit and eliminate all nuclear weapons. From the 2014 Vienna HINW Conference onwards, the diplomacy that led to the TPNW was explicitly focussed on 'effective measures to fill the legal gap for the prohibition and elimination of nuclear weapons.'

The legal gaps left open by the NPT and addressed by the TPNW include the use of nuclear weapons and the special status accorded to five states that were defined in the NPT as 'nuclear weapon states.' The TPNW was negotiated to prohibit the use of nuclear weapons and universalise the prohibitions on possessing, making and deploying nuclear weapons that are binding on non-nuclear-weapon states in the NPT but not on the nuclear weapon possessors. Addressing this point, Thomas Hajnoczi, an Austrian diplomat who played a key role in TPNW negotiations, responded to complaints by 'two nuclear weapons states' in UN meetings that 'the TPNW does not respect their prerogatives as nuclear weapon states that are contained in the NPT' by pointing out that granting certain states a prerogative to have nuclear weapons would run counter to the object and purpose of the TPNW. [137]

A complete prohibition of nuclear weapons may not be to the liking of states demanding certain prerogatives. However, it is fully consistent with the NPT and the goal of achieving a world without nuclear weapons to which all NPT States Parties are committed

Noting that '[t]here are good reasons why neither the BTWC nor the CWC contain such exceptions,' Hajnoczi argues: 'While the duration of the NPT was extended indefinitely in 1995, this did not mean that the status granted to nuclear weapon states under the NPT was also meant to be extended for an indefinite period. Quite to the contrary, NPT membership agreed to this extension under the condition of the goal of achieving a world without nuclear weapons and the full implementation of Article VI... A complete prohibition of nuclear weapons may not be to the liking of states demanding certain prerogatives. However, it is fully consistent with the NPT and the goal of achieving a world without nuclear weapons to which all NPT States Parties are committed.'[138]

137 Thomas Hajnoczi (2020) The Relationship between the NPT and the TPNW, Journal for Peace and Nuclear Disarmament, 3:1, 87-91, DOI: 10.1080/25751654.2020.1738815

138 Hajnoczi 2020.

The TPNW takes into account the reality that some nuclear-armed states are inside the NPT and others are not. As Hajnoczi explains, 'the TPNW has created an option for nuclear weapon possessor states to become States Parties even before they have completed the destruction of their nuclear weapons. Articles 2 to 4 of the TPNW set out a clear pathway for nuclear weapon possessor states.'[139]

There are differences, but not inconsistencies per se, in the TPNW-NPT relationship. The inconsistencies reside most damagingly in the large gap between the objectives and obligations enshrined in the NPT text and their fulfilment by the NPT5 nuclear-armed States and some of their complicit allies who enjoy status as 'non-nuclear-weapon states' in the NPT, while continuing to rely on and promote nuclear deterrence policies that require the maintenance of a dangerous panoply of nuclear threats, possession, deployment and use.

Article 19: Depositary

The UN Secretary General is the designated Depositary for this Treaty, as has become increasingly normal for multilateral treaties.

Article 20: Authentic Texts

In keeping with its origins and status as a UN Treaty, the equally authentic texts of the TPNW are in Arabic, Chinese, English, French, Russian and Spanish.

Reflections on TPNW challenges ahead

While some parts of the Treaty may seem easier to get started on than others, States and civil society must not lose sight of the fact that the vital humanitarian purpose of the TPNW is to prevent nuclear war and the intentional use and accidental detonations of nuclear weapons – and that the only way to fulfil this humanitarian and security imperative is to ban and eliminate the use, threats, deployment, production and possession of nuclear weapons and related, contributory activities. This is the central 'legal gap' that TPNW negotiators promised to fill. It is the fundamental purpose of the Article 1 prohibitions and the provisions and obligations that follow.

The first meeting of States Parties, scheduled for 2022, has a very important role to play in establishing the rules, objectives and procedures by which States Parties will build a strong, adaptable and effective legal regime for preventing nuclear use, implementing nuclear disarmament, and addressing the needs of indigenous communities, people and

139 Hajnoczi 2020.

environments that have been harmed by over eight decades of nuclear weapons-related use, testing, production and related activities. It must also be borne in mind that there are limited resources and three days is not a lot of time. It will probably not be possible to get agreements on everything that needs to be done, but it is important that at least some of the necessary practical, technical and institutional actions get off to a credible start.

Civil society and States Parties to the TPNW should not underestimate the importance of laying good groundwork for establishing the implementing, verification and enforcement institutions that are needed to turn TPNW aspirations into disarmament actions. It is especially important for people in the nine nuclear-armed states, including the UK, to see that the TPNW is a legally empowered instrument that will grow to provide credible disarmament, non-proliferation and verification tools and institutions, as well as strengthening humanitarian law.

With that in mind, while advocating a range of ways for States Parties and civil society to engage with and take forward all aspects of the TPNW, this report especially highlights the importance of developing further understanding and resources for these three priorities to be worked on:

- **Institutional infrastructure** for supporting treaty compliance, implementation and verification, including ideas for an implementation support unit and some form of scientific and technical advisory board;

- **Victim assistance and environmental remediation**, which embody the TPNW's humanitarian imperatives and demonstrate the importance of eliminating nuclear weapons and their technologies and practices before they cause further harm;

- **Universality**, to encourage and assist all States to contribute to the Treaty's implementation and to sign, ratify and bring it nationally into full legal force.

Fulfilling the Treaty and bringing about its universality are vitally important objectives for international security. ICAN partners around the world have for some time been discussing what forms of encouragement would be most useful for influencing different constituencies, with emphasis on helping their own and other countries in their region to sign and adhere to the TPNW.[140] For organisations and civil society in nuclear-armed countries such as the UK and host nations such as Scotland and in NATO, it is important to challenge the MIBA establishment narratives driven and mindsets. This means engaging on both humanitarian and security issues with governments, parliamentarians, other elected officials at local, national and regional levels includes also faith groups, investors, banks and a media establishment that is either hostile to nuclear disarmament or embedded in mindsets that unthinkingly call nuclear weapons 'the deterrent.'

140 ICAN (2021), Article 12 Checklist, June 2021, https://www.icanw.org/article_12_checklist

2. UK NUCLEAR WEAPONS POLICIES AND CHALLENGES

Recent Developments

On 16 March 2021, UK Prime Minister Boris Johnson released his government's 'Integrated Review of Security, Defence, Development and Foreign Policy' (IR2021).[141] The promotion of larger arsenals, nuclear ambiguity and broader nuclear use options in IR2021 have raised many questions.

IR2021 was launched in September 2020 under the auspices of Johnson's Chief Adviser Dominic Cummings[142] who had called for input from civil society organisations and actors.[143] was sacked from his position and influence in Johnson's administration. When Cummings was sacked soon after, the review and its corollary on defence[144] were handed back to traditional hands at Whitehall's military-industrial, bureaucratic and defence establishments to conclude.

Titled 'Global Britain in a Competitive Age', IR2021 was described by the respected NGO Rethinking Security as presenting 'a major reallocation of resources from international development to the Ministry of Defence, a strategic 'tilt' to the 'Indo Pacific', and the authorisation of 'persistent military engagement' with Russia, China and other perceived adversaries.'[145] Of its 114 pages, IR2021 has only a couple of pages on nuclear policy, presented under five sub-headings. The first is 'The nuclear deterrent', followed by a longer subtitle: 'The UK's minimum, assured, credible nuclear deterrent.' These subtitles reproduce

141 IR Global Britain 2021, Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy (2021), Cabinet Office Policy Paper CP403, 16 March 2021 [abbreviated as Global Britain (2021)] https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy

142 Jim Dunton (2020) 'MPs demand Dominic Cummings explain 'unclear' role in defence review' Civil Service World, 18 August 2020, https://www.civilserviceworld.com/news/article/mps-demand-dominic-cummings-explain-unclear-role-in-defence-review

143 Many NGOs, including Rethinking Security, the Acronym Institute CND, Nuclear Information Service and XR Peace, provided written responses to questions posed by the Cabinet Office prior to 11 September 2020. IR Call for Submissions, Integrated Review of Security, Defence, Development & Foreign Policy, https://www.gov.uk/government/collections/integrated-review-ministry-of-defence.

144 Ministry of Defence (2021), Defence in a Competitive Age, March 2021 (CP 411).

145 Rethinking Security News Release, 15 March 2021, https://rethinkingsecurityorguk.files.wordpress.com/2021/03/news-release-150321-rethinking-security-announces-alternative-security-review.pdf

the latest PR labels for UK nuclear weapons, portraying them as the MIBA establishment would like them to be rather than what they really are. The purpose is to distract attention from the fact that these are nuclear weapons of mass destruction, made and operationally deployed to threaten, terrorise, and be ready to launch nuclear war. The evidence we have from the past few decades indicate that UK nuclear armaments are not a minimum force, and not very credible for assuring or deterring. But if ever fired, they would probably cause appalling human suffering and environmental devastation.[146] It is easy to see why insecure bureaucrats hide behind these public relations labels in order to suppress inconvenient truths and disguise real dangers. But it is dangerous for our security and democratic decision-making when so many politicians, journalists and academics do the same.

After claiming that the 'fundamental purpose' of UK nuclear weapons is 'to preserve peace, prevent coercion and deter aggression', IR2021 announced that the government would increase the cap it puts on the UK nuclear arsenal by 40%, up to 260 warheads.[147] This represents a significant shift away from the commitments that have been made by successive governments since 1995, as discussed later. Notably, it overturns the 2015 Conservative Government's National Security Strategy and Strategic Defence and Security Review, which six years ago committed to reduce the UK arsenal from 225 to below 180 warheads by the mid-2020s.[148]

IR2021 also ditched long-standing UK commitments to transparency, adopted as part of the 'Thirteen Steps' for disarmament, adopted at the 2000 NPT Review Conference.[149] Since 2000, the UK had been actively promoting 'Increased transparency by the nuclear weapon States with regard to their nuclear weapons capabilities and the implementation of agreements pursuant to Article VI and as a voluntary confidence-building measure to support further progress on nuclear disarmament'. These steps were agreed to by all States Parties to the NPT and enshrined in the Final Document of the 2000 NPT Review Conference.[150] Now, we read in IR2021 that the UK will 'no longer give public figures for our operational stockpile, deployed warhead or deployed missile numbers'. This reversion to older postures of 'nuclear opacity' is dressed up as an extension of a 'long-standing' deterrence posture associated with states that practise 'deliberate ambiguity'. Nowadays, this is most notably associated with Israel.[151]

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146 John Ainslie, If Britain Fired Trident: The humanitarian catastrophe that one Trident-armed UK nuclear submarine could cause if used against Moscow, Scottish CND February 2013; Philip Webber, The climatic impacts and humanitarian problems from the use of the UK's nuclear weapons, Scientists for Global Responsibility, February 2013.

147 IR Global Britain 2021.

148 National Security Strategy and Strategic Defence and Security Review 2015, Crown Copyright, CM2151, 15 November 2015, Web ISBN 9781474125963, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/555607/2015_Strategic_Defence_and_Security_Review.pdf

149 Rebecca Johnson (2000), 'The 2000 NPT Review Conference: A delicate, hard-won compromise', Disarmament Diplomacy 46 (May 2000), http://www.acronym.org.uk/old/archive/46npt.htm

150 NPT (2000), 2000 Review Conference of the Parties to the Treaty on Non-Proliferation of Nuclear Weapons, Final Document, Volume 1 (NPT/CONF.2000/28 (Parts I and II)), https://documents-dds-ny.un.org/doc/UNDOC/GEN/N00/453/64/PDF/N0045364.pdf?OpenElement.

151 Avner Cohen, Israel and the Bomb (1998), Columbia University Press, 1998.

In a further back-tracking development, IR2021 reserves 'the right' to weaken the UK's NPT-related 'negative security assurances' by expanding the circumstances in which UK nuclear weapons might be used, including 'future threat of weapons of mass destruction, such as chemical and biological capabilities, or emerging technologies that could have a comparable impact.'[152] The UK's declared position on negative security assurances since 1995 was set out in a statement delivered to the Conference on Disarmament and then encoded (together with policy statements from China, France, Russia and the United States) in UN Security Council Resolution 984 (1995). This was relied on during the decisions by States Parties to 'indefinitely' extend this fundamental non-proliferation and disarmament Treaty when it came up for renewal in May 1995.[153] No wonder that a few days after IR2021 was published, a UN spokesperson publicly called the UK's plans 'contrary to its obligations under Article VI of the Nuclear Non-proliferation Treaty.'[154]

IR2021 justifies these shifts in terms of 'the changing security and technological environment.'[155] Though presented as 'Global Britain', such postures actually signal national anxiety and insecurity. Washington commentator Daryl Kimball noted that London's efforts over decades to present the UK as the most 'responsible' of all the nuclear-armed States are in tatters.[156] Nonetheless, the Johnson administration is presenting the IR2021 shifts as continuities, doubling up on proclamations of the UK as the most 'responsible' nuclear weapon state, a self-identification promoted by British governments for many years. As of November 2021, the UK's National Report to the 2022 NPT Review Conference has begun to call the UK as 'a Nuclear Weapon State that takes its responsibilities seriously.' This attempt at a makeover was apparently developed through government-funded research by the British American Security Information Council (BASIC) and other academics.[157] A bit like changing Windscale's name to Sellafield in 1981, after a series of bad accidents (that made Windscale a byword for nuclear problems from 1957), government officials are probably hoping that changing the words will make people forget the realities. It didn't work for Sellafield, and is unlikely to prevent further 'PR trouble ahead.'[158]

Relying on PR and emphasising UK compliance with the NPT might have served UK diplomats reasonably well in the last two decades, but these tactics are wearing thin, and the UK may be given a harder time than usual at the 2022 NPT Review Conference. Richard Reeve, coordinator of the British-based NGO network Rethinking Security, was among many security experts who raised concerns: 'Increasing the number of nuclear warheads in the UK stockpile

152 IR Global Britain 2021.

153 Dhanapala 2005, Jayantha Dhanapala (President of the 1995 NPT Review Conference), with Randy Rydell, Multilateral Diplomacy and the NPT: an Insider's View, UNIDIR, United Nations, 2005.

154 UN spokesperson on UN/UK nuclear weapons, UNifeed, 17 March 2021. https://www.unmultimedia.org/tv/unifeed/asset/2608/2608243/

155 IR Global Britain 2021.

156 Daryl G. Kimball (2021), 'The UK's nuclear U-turn', Arms Control Today, April 2021,

157 UK National NPT Report (2021) makes explicit reference to government funding of 'academia and think tanks', and in an online presentation in November 2021 two organisations that were named on page 9 as recipients of this funding, were specifically thanked for developing the new 'responsibilities' phrasing, which was extensively used to promote IR2021 in the National Report.

158 Peter Walker, 'From Windscale to Sellafield: a history of controversy', The Guardian, 18 April 2007, https://www.theguardian.com/environment/2007/apr/18/energy.nuclearindustry

and increasing ambiguity around their deployment is unjustified, irresponsible, unlawful, and sends a clear message to other States to do likewise.'[159] In an Open Letter to the Prime Minister on 13 May 2021, over 60 of ICAN's British partners echoed concerns by many defence experts, former senior military figures and politicians on all sides of the political spectrum that IR2021 'is incompatible with the principles and commitments to non-proliferation, disarmament and transparency to which Britain has committed' under the NPT.[160]

Noting that IR2021 had failed to present any 'evidence-based analysis on how increasing reliance on nuclear weapons will affect British security', the Open Letter argued that it 'fails to take into account today's real security priorities and new multilateral opportunities to accelerate global progress on disarmament, such as the new UN Treaty on the Prohibition of Nuclear Weapons', and concludes: 'At a time when Britain and nations across the world continue to tackle the global public health crisis and collapsing economic systems with long-term consequences, we urge you to rethink the government's security and budgetary priorities, uphold international law including the NPT, and reject pressures to increase the nuclear arsenal or widen nuclear use policies.'[161]

rethink the government's security and budgetary priorities, uphold international law including the NPT, and reject pressures to increase the nuclear arsenal or widen nuclear use policies

During the House of Lords debate on the Queen's Speech on 19 May 2021, various Peers raised concerns relating to nuclear policy and IR2021. The Archbishop of Canterbury, Justin Welby, stated: 'there has been much talk about the increase in the number of nuclear warheads. That is a very serious and concerning step, but not nearly as serious as the commitment, to which the noble Lord, Lord Hannay, also referred, to increase deliberate ambiguity in the condition of the use of nuclear weapons and the absence of a stated commitment not to use them first. It is widely accepted that, even for those who argue the moral case for having these weapons—a very contested point indeed—clarity of purpose is essential to deterrence. Ambiguity increases the risk of disastrous miscalculation.'[162]

In July, the Scottish Daily Record reported that 'the Campaign for Nuclear Disarmament is now calling for members of the public to report the UK Government to the United Nations as it believes ministers are in breach of international law.'[163] This CND campaign was launched following the Joint Opinion by legal scholars Professor Christine Chinkin and Dr Louise

159 Reeve (16 March 2021), Richard Reeve, Rethinking Security News Release, 16 March 2021, https://rethinkingsecurityorguk.files.wordpress.com/2021/03/news-release-160321-integrated-review-blind-to-its-contradictions.pdf

160 'Nuclear Weapons and the Integrated Review', Open Letter to the Prime Minister from ICAN UK Partners, 13 May 2021, available from UNA-UK.

161 'Nuclear Weapons and the Integrated Review', Open Letter to the Prime Minister from ICAN UK Partners, 13 May 2021, available from UNA-UK.

162 House of Lords (May 2021) Debate on the Queens Speech, Hansard vol. 812, 19 May 2021, https://hansard.parliament.uk/Lords/2021-05-19/debates/A14BD90D-6E0D-451E-8E92-DEF39C645EFD/Queen%E2%80%99SSpeech#contribution-06465944-8072-4EAB-8DDE-41E487A93BDB

163 Chris McCall, 2021, 'UK Government behaving like 'rogue state' over plans for more nuclear weapons on Clyde', Daily Record, 12 July 2021, https://www.dailyrecord.co.uk/news/politics/uk-government-behaving-like-rogue-24514670

Arimatsu, of the London School of Economics and Political Science (LSE). They concluded that IR2021 and related nuclear policies and weapons upgrades constitute 'a breach of the NPT article VI', raising fundamental legal concerns about the incompatibility between UK policies on nuclear use and international law as it currently stands.[164] This recent legal Opinion and main conclusions will be discussed in more detail later, following analyses drawn from previous legal opinions and discussions relating to US-UK nuclear collaboration, the NPT, and Trident renewal from 2004 to the present.

The next sections consider policy shifts from 1970 until IR2021, with particular emphasis on the period relating to Trident replacement from 2006. We then provide an overview of the main nuclear weapons facilities in England (AWE Burghfield and Aldermaston) and Scotland (Faslane and Coulport), with consideration of the worrying frequency of nuclear-related accidents and breaches of safety and security.

UK nuclear dependencies and shifts 1970 – 2006

After signing the NPT in 1968, British governments have frequently claimed to have more responsible policies than the other NPT5 nuclear-armed States. They have been somewhat successful in this after reducing nuclear numbers (largely by retiring legacy tactical nuclear weapons), defining nuclear use parameters using 'extreme circumstances' language adopted by the International Court of Justice in 1996, and engaging in disarmament verification projects after NPT States Parties adopted the 'Thirteen Steps' in 2000. As a small nuclear-armed State, the UK's failures to comply with the NPT's Article VI were largely overshadowed by the modernisation projects of the United States, Russia and, in recent years, China. The UK also managed to hide behind common EU positions that partially protected British and French nuclear positions. It will be interesting to see whether the UK is treated differently at the 2022 NPT Review Conference.

To understand the public relations juggling of successive governments after the UK signed the NPT in 1968, we have to recall how 'deterrence' had become embedded to justify all kinds of different nuclear policies. In 1969, for example, Harold Wilson's Labour government decided that a naval nuclear weapons system, based on US Polaris missiles, needed to have at least one nuclear-armed submarine on patrol at all times, coining the description 'continuous at-sea deterrence' (CASD). In the 1970s, Labour Prime Minister James Callaghan took initial steps to replace Polaris, and then lost the 1979 election. Margaret Thatcher became Prime Minister and ensured that her Cabinet took the decision to commission four new nuclear-powered 'Vanguard class' submarines in July 1980.

Thatcher did this over the heads of senior opposition from the Royal Navy, which considered Trident irrelevant to its operations and feared being saddled with the high costs. The First Sea Lord, Sir Henry Leach, dismissively referred to Trident as 'a cuckoo in the [naval] nest',

164 Chinkin and Arimatsu (2021), Joint Opinion from Professor Christine Chinkin and Dr Louise Arimatsu on the Legality under International Law of the United Kingdom's Nuclear Policy as set out in the 2021 Integrated Review, published 18 May 2021, available from CND at https://cnduk.org/cnd-legal-opinion-on-increasing-the-uks-nuclear-arsenal/

according to the distinguished naval analyst Eric Grove, who noted: 'Whatever the cost, the [Trident] system was so central to Prime Minister Thatcher's views of defence policy that it would stand or fall with her.'[165] Thatcher signed up for Trident I (C4) missiles to replace Polaris, only to have the Reagan Administration and Lockheed decide in 1982 to upgrade to more expensive and longer range Trident II (D5) missiles for the US fleet. According to former Royal Navy Commander and bombardier Robert Green, 'Thatcher had no choice but to accept the D5 version', which the UK leases from the US Navy's missile pool at King's Bay, Georgia.[166] In 1987, the UK's National Audit Office noted: 'most of the expenditure on the UK Trident warhead's development and production 'is incurred in the US.'[167]

In 1985, US President Ronald Reagan and Soviet General-Secretary Mikhail Gorbachev publicly recognised that 'nuclear war could not be won and must never be fought.'[168] After their Summit in Reykjavik in October 1986, the conclusion of the Intermediate-Range Nuclear Forces (INF Treaty) in 1987 heralded a new era of arms control and deep strategic and geo-political change. The Soviet Union's unsustainable military-industrial economic dependence came crashing down as domestic pressures for reconstruction, greater democracy and openness came to the fore. The Berlin Wall was pulled down in 1989, enabling new States to assert regional independence. Washington and Moscow subsequently embarked on Strategic Nuclear Arms Treaty (START) negotiations, along with bilateral nuclear threat reduction measures and significant mutual unilateral reductions in short-range (sometimes called 'tactical') nuclear weapons.[169]

nuclear war cannot be won and must never be fought

Belarus, Kazakhstan and Ukraine joined the NPT as 'non-nuclear-weapon States' in 1992, after transferring to Russia the nuclear weapons and major activities that the Soviet Union had built and retained on their territories.[170] Russia assumed the former USSR's responsibilities as one of the NPT's three Depositary States, as well as its treaty-described identification as a 'nuclear weapon state.'[171] As East and West Germany embarked on reunification, the UK's Conservative government cancelled programmes for the replacement of air launched WE.177 weapons on cost-saving grounds and accelerated plans to remove and destroy all remaining 'tactical' nuclear armaments from deployment. According to reports, the entire stock of British tactical nuclear weapons – including an

165 Eric J. Grove (1987) Vanguard to Trident: British Naval Policy since World War Two, Bodley Head 1987, notably pp 347-354, quote at p394.

166 Robert Green (2010), Security Without Nuclear Deterrence, Astron Christchurch 2010, p46.

167 Report by the Comptroller and Auditor General [National Audit Office], 'Control and Management of the Trident Programme', July 1987, HC27 para 3.27, quoted in Robert Green (2010), p47

168 Joint Soviet-United States statement on the Summit Meeting in Geneva, 21 November, 1985 https://www.reaganlibrary.gov/archives/speech/joint-soviet-united-states-statement-summit-meeting-geneva

169 'The Presidential Nuclear Initiatives (PNIs) on Tactical Nuclear Weapons', Arms Control Association https://www.armscontrol.org/factsheets/pniglance.

170 'The Lisbon Protocol at a Glance', Arms Control Association, https://www.armscontrol.org/node/3289, accessed 13 December 2020.

171 The depositary states for the NPT were the USSR (now Russia), USA and UK. See Article IX, Treaty on the Non-Proliferation of Nuclear Weapons (1968, entered into force 1970).

estimated 317 WE.177 warheads – were successfully (and, indeed, unilaterally) dismantled before the 2000 NPT Review Conference.[172] The 1992-97 Conservative Government also reduced the theoretical maximum ceiling for the number of warheads carried by each Trident submarine from 128 to 96.[173] Meanwhile, the Vanguard-Trident system began to take over from Polaris in 1994. Under Thatcher and Major, Conservative governments carried on with the 1969 CASD policy and four-submarine configuration, which Theresa May was still defending as an article of faith for nuclear deterrence in 2016.

With the MoD insisting that several further nuclear tests were needed to upgrade the UK's W76 warheads for Trident, Thatcher's government supported US opposition to the CTBT at the 1990 NPT Review Conference. The next UK test for Trident warheads was halted on 14 November 1990 by three Greenham women and an American Peace Test guide. Planned by Greenpeace, this action was carried out with the blessing of Elders of the Western Shoshone Nation, who have long opposed nuclear testing on their sacred, ancestral lands of Newe Segobia, and continue to call for their lands and rights to be respected and protected under the Ruby Valley Treaty. In London Greenpeace drew added attention by hanging a huge banner demanding 'Stop UK Nuclear Tests' from the top of Tower Bridge, increasing press coverage on both sides of the Atlantic and beyond.

The UK managed only one further nuclear explosion, in 1991, codenamed Julin Bristol. President Clinton took office in 1992 and implemented the US testing moratorium, joining Russia and France. In July 1993 Greenham and Aldermaston campaigners gatecrashed a royal garden party at Buckinghom Palace with placards that highlighted the humanitarian harm caused by British nuclear tests.[174] The women's action called for restoration of Western Shoshone land and sovereignty. It exposed the MoD's attempts to persuade Clinton to end the US moratorium and allow three planned UK nuclear tests to go ahead. The UK tests were not allowed, the US moratorium was not abrogated, and CTBT negotiations went ahead in 1994.

Twenty-five years after entering into force, the NPT faced the crucial decision of whether it should be extended and by how much. The 1995 Review and Extension Conference concluded with a legally binding decision on a political package that included 'indefinite extension' and consensus decisions on 'principles and objectives for nuclear non-proliferation and disarmament' and a strengthened review process.[175] In the run-up to this crucial NPT Conference, China and France signed and ratified the NPT in 1992, CTBT negotiations finally got underway in the Conference on Disarmament in 1994, and the NPT5

172 Brian Burnell (2020), 'WE.177.' Nuclear Weapons: A Guide to British Nuclear Weapon Projects. http://www.nuclear-weapons.info/vw.htm#WE.177%20Retirement, SIPRI Yearbook 1992, Stockholm International Peace Research Institute https://www.sipri.org/sites/default/files/SIPRI%20Yearbook%201992.pdf, and Federation of American Scientists website https://fas.org/nuke/control/start1/.

173 See Rebecca Johnson, Nicola Butler and Stephen Pullinger, Worse than Irrelevant: British Nuclear Weapons in the 21st Century, Acronym Institute for Disarmament Diplomacy, London, 2006.

174 'Mass Break-in at the Palace – The Queen in Residence as Protest Women Scale the Walls,' Evening Standard, 6 July, 1993. See also 'Nuclear test delayed after three women infiltrate site,' The Daily Telegraph, 15 Nov, 1990; 'Protest dive off Tower Bridge,' Daily Express, 13 Nov 1990; and more detail in Rebecca Johnson (2004) The Comprehensive Test Ban Treaty: A Study in Post Cold War Multilateral Arms Control Negotiations, Ph.D thesis, 2004, http://etheses.lse.ac.uk/663/1/Johnson_1996_comprehensive_test_ban.pdf pp 112-128, inc. fn 19, 48.

175 Jayantha Dhanapala, with Randy Rydell, Multilateral Diplomacy and the NPT: an Insider's View, UNIDIR, United Nations, 2005.

nuclear-armed States updated the 'security assurances' they made to NPT States that did not possess nuclear weapons, enshrining these in UN Security Council Resolution 984, which was accompanied by national statements on their policies of nuclear use.[176]

In 1997, Labour's new Prime Minister Tony Blair undertook a Strategic Defence Review (SDR), which was published on 8 July 1998. This confirmed that the overall UK stockpile would be reduced from a ceiling of 300 to 'less than 200 operationally available' warheads.[177] At that time, the Vanguard submarines carrying Trident were usually deployed with around 60-65 warheads per boat.[178] While perpetuating the commitment to CASD, the 1998 SDR stated: 'The submarine's missiles will not be targeted and it will normally be at several days 'notice to fire'. This reduced state of alert will enable greater use of ballistic missile submarines for secondary tasks such as exercises with other vessels, equipment trials and hydrographic work. Similarly, current threat levels do not require large numbers of conventional forces permanently allocated to the protection of the deterrent.'[179]

The reduction in 'notice to fire' led some to conclude that the UK had de-alerted its Trident nuclear weapons in 1998. This was not physically the case. The SDR made clear that the UK 'can restore a higher state of alert should this become necessary at any time.'[180] In an off the record conversation that the Acronym Institute organised for Professor Frank von Hippel with MoD officials and MPs after the SDR announcements, it was made clear that no physical de-alerting had taken place or was planned: the guidance systems could be reprogrammed relatively simply with new targets, and an order from the Prime Minister would restore operations to bring the command and control procedures for firing 'back to minutes'.[181] Sir Michael Quinlan, who was Margaret Thatcher's Permanent Secretary at the MoD in 1979 when she decided with a small subset of her Cabinet to go ahead with the Vanguard-Trident system, confirmed this technical and political reality in 2006, when he told the Defence Committee that in the event of 'a serious crisis', the readiness to fire could be changed and the nuclear weapons retargeted by computer operation within minutes.[182]

the readiness to fire could be changed and the nuclear weapons retargeted by computer operation within minutes

176 UK Declaration on Security Assurances, Made on 6 April 1995 by the Permanent Representative of the United Kingdom to the Conference on Disarmament, Sir Michael Weston; and UK Statement to the NPT Review and Extension Conference, 21 April, 1995. See Rebecca Johnson, Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings: Report of the 1995 NPT Review and Extension Conference, New York, 17 April to 12 May 1995, Acronym Report No. 7, London 1995.

177 1998 Strategic Defence Review, HMG Cm3999, 8 July 1998.

178 Debate on Royal Navy, House of Commons, Hansard, November 1998, Col.551.

179 1998 Strategic Defence Review.

180 1998 Strategic Defence Review.

181 Johnson, Butler and Pullinger, 2006. Frank von Hippel cofounded the Princeton University Program on Science and Global Security, and served the Clinton Administration as Assistant Director in the White House Office of Science and Technology.

182 Sir Michael Quinlan, oral evidence to the House of Commons Defence Committee, February 2006, HC 986 Ev 2, quoted in Johnson, Butler and Pullinger, 2006.

After cancelling an additional seven Trident missile bodies, leaving a new total of 58 to be leased from the US stockpile, the Labour Government announced that no more than 48 warheads would be deployed on the Vanguard-Trident submarines, lowering the previous ceiling of up to 96 that had been envisaged when Trident was commissioned in the 1980s. This was of course described as 'the minimum necessary to provide for our security for the foreseeable future and smaller than those of the major nuclear powers.'[183] The 1998 SDR did not explicitly reconfirm or rescind the UK's 1995 political declarations on negative security assurances, which had been internationally regarded as the UK's on-the-record policy on the use of nuclear weapons.[184] Instead, it referred to a 'sub-strategic' role for Trident, thereby upholding a policy variation originated in 1993 by Malcolm Rifkind, the Conservative Party's Secretary of State for Defence. Notwithstanding the international view that any use of nuclear weapons would be 'strategic' in intention and effect, Rifkind had argued for a 'sub-strategic' role for Trident, proposing that nuclear weapons could be used to send 'warning shots' or a 'shot across the bows' of an adversary.[185]

To the surprise of many Labour Party members and international onlookers, the 1998 SDR endorsed Rifkind's argument, stating: 'The credibility of deterrence also depends on retaining an option for a limited strike that would not automatically lead to a full scale nuclear exchange.' Unlike Polaris and Chevaline, said Blair's government, 'Trident must also be capable of performing this 'sub-strategic role.'[186] Members of Parliament questioned how the use of a nuclear weapon against another country could ever be 'seen as anything other than a strategic assault or a strategic threat.'[187] Sir Michael Quinlan later noted that operational details are not disclosed, but that 'sub-strategic roles' probably entail that 'some missiles may carry only one live warhead, and that that one warhead may have an explosive yield – perhaps through the use of only the 'primary' detonation – well below that of the normal warhead.'[188] Des Browne, New Labour Defence Secretary at the time, announced in 2007 that the UK had decided to cease using the term 'sub-strategic Trident', with the inference that UK nuclear weapons would no longer be used in this role, and the phrase has practically disappeared from UK nuclear doctrine since then.[189]

On grounds of national security and political sensitivity, the MoD maintains secrecy about the UK's nuclear operations and targeting, which are coordinated with the United States, France and NATO. Through government documents, parliamentary sources and US open source accessed between 2005 and 2019, it appears that UK and NATO nuclear allies

183 1998 Strategic Defence Review, HMG Cm3999, 8 July 1998.

184 Rebecca Johnson, John Borrie and Tim Caughley, Decline or Transform: Nuclear disarmament and security beyond the NPT review process, Acronym Institute for Disarmament Diplomacy, London, April 2012.

185 Malcolm Rifkind, UK Defence Strategy: A Continuing Role for Nuclear Weapons? Speech to the Centre for Defence Studies, London, November 16, 1993. See also Rebecca Johnson (1998), British Perspectives on the Future of Nuclear Weapons, Henry L Stimson Center, Washington DC, January 1998.

186 1998 Strategic Defence Review.

187 House of Commons Defence Committee, 'The Strategic Defence Review', Volume III – Minutes of Evidence and Memoranda, September 10, 1998.

188 Michael Quinlan, 'The Future of United Kingdom Nuclear Weapons: Shaping the Debate', International Affairs, 82:4 July 2006.

189 'The United Kingdom's nuclear deterrent in the 21st century', Speech by the Secretary of State for Defence, King's College London, 25 January 2007.

subscribe to the 'counter-value' targeting of cities, transport links and communications, as well as 'counter-force' targeting of military forces, and military-nuclear operations and capabilities for 'punishing' aggressors, pre-emptive first use and extinction-level retaliatory uses of nuclear explosive power.[190] A source who refers to 'conventional wisdom', spoke of the likelihood of having different targeting suites for different scenarios: NATO suites are drawn from US OPLAN and are counter-force in nature; UK's own suites for 'independent' use are more counter-value in nature.191

As long as documentary evidence is kept secret, it is important to distinguish between nuclear policy statements and the operations and strategies that govern UK nuclear use and targeting in practice. It is reasonable to deduce that apart from some operational adjustments to the decision-making and communications procedures, all aspects of targeting Trident are likely to have remained in situ from the 1998 SDR to the present. Targets are still selected and their geographic coordinates programmed into the guidance systems in accordance with NATO's targeting doctrine and policies.

Renewing the Trident nuclear system 2006 – 2016

In December 2006, Tony Blair's Government issued a White Paper on The Future of the United Kingdom's Nuclear Deterrent. This made New Labour's public case for proceeding with a further generation of nuclear weapons by focussing on arguments to replace the submarine 'platforms'. With regard to new warheads, the White Paper indicated that 'a decision is likely to be necessary in the next Parliament', while also promising 'a 20 percent reduction' in 'our stockpile of operationally available warheads'. It was assumed that Britain would continue to use US Trident D5 missiles, noting that 'our current holding' of these 'has reduced to 50' from 58, 'as a result of a number of test firings'. Careful wording appeared to make reductions but did not commit Britain to reduce the deployed firepower, efficacy or number of nuclear weapons 'that are continuously deployed, armed and ready to launch on the order of the Prime Minister'.[192] In other words, the renewal of Trident combined with 'the UK posture of deterrence [and] the maintenance of continuous at-sea patrols' was not coupled with actual reductions in the nuclear forces as deployed, but in aggregate terms reduced the 'number of operationally available warheads from fewer than 200 to fewer than 160', along with 'a corresponding reduction in the size of our overall stockpile'.[193]

190 The US Joint Chiefs of Staff periodically publish documents outlining US doctrines and policies for 'Joint Nuclear Operations'. The most recent that I have been able to access is from 2019, see Nuclear Operations, Joint Publication 3-72, 11 June 2019. https://fas.org/irp/doddir/dod/jp3_72.pdf

191 Credible source who requested anonymity.

192 2006 White Paper, The Future of the United Kingdom's Nuclear Deterrent, Cm6994, December 2006.

193 2006 White Paper; see also Rebecca Johnson, 'The UK White Paper on Renewing Trident: the wrong decision at the wrong time', Disarmament Diplomacy 83, Winter 2006.

In his White Paper foreword, Blair justified the cost and decision as an 'insurance policy' and means to 'prevent nuclear blackmail' and safeguard Britain's 'vital interests.'[194] Blair's 2010 memoir A Journey, acknowledged that 'on simple pragmatic grounds there was a case either way... The expense is huge, and the utility in a post-Cold War world is less in terms of deterrence, and non-existent in terms of military use...' In the period following the Iraq war, he recognised that in defence terms, spending the 'money on more helicopters, airlift, and anti-terror equipment' was 'not a daft notion. In the situations in which British forces would most likely to be called upon to fight, it was pretty clear what mattered most.'[195] Notwithstanding his recognition that defence considerations pointed against renewing Trident, Blair's primary decision came down to nuclear status in a world where over 184 nations have voluntarily joined the NPT as non-nuclear-weapon States. In his own words: 'I thought giving it up [would be] too big a downgrading of our status as a nation... it's a big step to put that [status] beyond your capability as a country.'[196]

Blair's memoir indicates that renewing Trident was not primarily a decision about security. The paucity of a security case for nuclear weapons had been made in 2005 by Blair's first Foreign Secretary, Robin Cook MP, who had headed the UK delegation to the 2000 NPT Review Conference. Asking 'what practical return Britain ever got out of the extravagant sums we invested in our nuclear systems', Cook pointed out: 'None of our wars was ever won by them and none of the enemies we fought was deterred by them. General Galtieri was not deterred from seizing the Falklands, although Britain possessed the nuclear bomb and Argentina did not.'[197] Cook's strong voice in favour of human security, nuclear disarmament and ethical foreign policies was silenced by a heart attack two weeks later. The Defence Secretary and Foreign Secretary who put their names to the 2006 White Paper were Des Browne and Margaret Beckett. Notwithstanding misgivings that they publicly acknowledged years later, they and Blair ignored concerns raised by the House of Commons Defence Committee, and fronted the Parliamentary debate on Trident renewal that was held on 14 March 2007.

none of our wars was ever won by nuclear weapons and none of the enemies we fought was deterred by them

Blair put Labour Party MPs under a 'three line whip' to vote for the motion: 'this House supports the Government's decision as set out in the white paper The Future of the United Kingdom's Nuclear Deterrent (CM6994) to take the steps necessary to maintain the UK minimum strategic nuclear deterrent beyond the life of the existing system and to take further steps towards meeting the UK's disarmament responsibilities under Article VI of

194 2006 White Paper.

195 Tony Blair (2010), A Journey, Random House, 2010, quoted by Nuclear Information Service, https://www.nuclearinfo.org/blog/nuclear-information-service/2010/09/blair-trident-there-was-case-either-way

196 Tony Blair (2010).

197 Robin Cook (2005), 'Worse than Irrelevant?' The Guardian, 29 July 2005, http://www.theguardian.com/politics/2005/jul/29/labour.politicalcolumnists.

the Non-Proliferation Treaty."[198] The Opposition Conservative leader David Cameron broke precedent by also putting Conservative MPs under a three line whip to vote in favour. Unsurprisingly under that double party whip, the motion was overwhelmingly carried by 409 votes to 161.

The numbers, however, hid a rather different narrative of opposition. A number of Scottish and Welsh ministers had to resign their ministerial positions in order to defy the Labour Party whip and vote against Trident renewal. A majority of MPs from all parties representing Scottish constituencies voted against. This should no doubt have acted as a warning for the Labour Party, since Scottish opposition to nuclear weapons was a major factor in Labour's defeat in Scottish Parliamentary elections in May 2007, and subsequent decline in Scotland.

Neither Blair, nor his Chancellor Gordon Brown, recognised how their decision to renew Trident would give the reins of Scottish governance to the SNP. Brown, who according to Blair's memoir, went along with his reasons for replacing Trident, fought the 2010 General Election as Labour's Prime Minister, and lost to David Cameron who formed a coalition government with the Liberal Democrats under Nick Clegg. When their coalition government released its 2010 Strategic Defence and Security Review (SDSR), Prime Minister Cameron announced that the Government had reviewed the UK's deterrence requirements and concluded that the requirement could be met for an effective and credible deterrent with a smaller nuclear weapons capability. The 2010 SDSR clarified that by 2020 'the number of warheads on board each submarine would be reduced from a maximum of 48 to a maximum of 40, the number of operational missiles on the Vanguard Class submarines would be reduced to no more than eight, and the number of operational warheads reduced from fewer than 160 to no more than 120.[199]

2016 Parliament votes for 'Dreadnought'

Despite briefings and much talk about Trident renewal and various MoD decision requirements labelled 'gates' from 2007 onwards, Cameron chose 18 July 2016 for the parliamentary debate and vote to finance the new nuclear submarines for Trident's renewal. When that day arrived, it wasn't Cameron who proposed the Motion, but Theresa May, on her fifth day as Prime Minister.

Cameron, who had taken a 'calculated' risk and gambled British membership of the European Union on a referendum tactic that he thought would finally end the internecine problems inflicted on Conservative leaders by a noisy group of persistent Tory jingoists, made the political miscalculation of his life, and lost the referendum on 23 June 2016. Horrified, he didn't stay to clear up the mess, but downed tools and ran, which of course pitched Britain

198 Rebecca Johnson (2007), 'Blair wins Trident vote after telling Parliament that the NPT gives Britain the 'Right' to have nuclear weapons', Disarmament Diplomacy 84, Spring 2007 http://www.acronym.org.uk/old/archive/dd/dd84/84news01.htm

199 David Cameron (2010), Prime Minister's statement on 2010 Strategic Defence and Security Review and Trident, 19 October 2010. See also MoD Factsheets following the SDSR, and statement from Defence Secretary Philip Hammond MP, 29 June 2011 https://www.gov.uk/government/news/reduction-in-uk-nuclear-warheads-begins

into an even more unstable quagmire.[200] As Boris Johnson and Michael Gove fought to replace Cameron as Prime Minister, Theresa May ended up as the last candidate standing. She became Prime Minister on 13 July 2016 without going through a democratic election. Five days later, this former Home Secretary with little or no background in defence, security, finance or foreign policy, was presiding over one of the most critical security decisions any government has to face.

May appeared well rehearsed on the answers she was required to give if difficult questions came up, and did her best to uphold the articles of faith that underpin UK nuclear politics. When asked by Scottish MP George Kerevan (SNP) during the debate whether 'she personally [is] prepared to authorise a nuclear strike that could kill 100,000 innocent men, women and children', May had her positive reply at the ready. Without any sign of hesitation her reply was an emphatic 'Yes!'[201] After a brief pause she recalled the explanation she was supposed to give to make this palatable and enable her MPs to enjoy a guffaw at Labour's expense: 'The whole point of a deterrent is that our enemies need to know that we would be prepared to use it, unlike the suggestion that we could have a nuclear deterrent but not actually be willing to use it, which seemed to come from the Labour Front Bench.'[202]

Cameron had deliberately tabled the debate for July 2016 in the knowledge that the Labour Party was in the middle of reviewing its security, nuclear and defence policies. Believing that he would preside over this debate having victoriously seen off the Brexit thorns on the Tory right, Cameron had envisaged the Trident debate as an opportunity to widen the splits in Labour. May could have postponed, as she had only been in Downing Street for a few days and needed to give serious consideration to ministerial appointments and all kinds of urgent matters that her new government must address. Instead she made Boris Johnson Foreign Secretary and pushed forward with Cameron's plan to pre-empt the Labour Review.

Having failed to persuade Cameron to postpone the Trident debate and decision until the Labour Party completed its Review in the Autumn, Labour's Shadow Defence and Foreign Affairs spokespeople, Clive Lewis and Emily Thornberry, then condemned May for playing tactical politics on such serious, multibillion pound decisions affecting the country's security, and urged their Labour colleagues in Parliament to protest by abstaining.

The motion that was proposed and adopted was this: 'that the UK's independent minimum credible nuclear deterrent, based on a Continuous at Sea Deterrence posture, will remain essential to our security today as it has for over 60 years, and for as long as the global security situation demands, to deter the most extreme threats to our national security and way of life and that of our allies; supports the decision to take the necessary steps required to maintain the current posture by replacing the current Vanguard Class submarines with four

200 See Jonathan Freedland, 'For the Record: David Cameron's Memoir is honest but still wrong', The Guardian, 19 September 2019, https://www.theguardian.com/politics/2019/sep/19/david-cameron-autobiography-for-the-record-review-brexit-referendum

201 Parliamentary Debate on Trident (18 July 2016) on Motion that 'This House supports the Government's assessment in the 2015 National Security Strategy and Strategic Defence and Security Review...' opened by Prime Minister Theresa May MP, Hansard vol 613, 18 July 2016, https://hansard.parliament.uk/commons/2016-07-18/debates/7B7A196B-B37C-4787-99DC-098882B3EFA2/UKSNuclearDeterrent

202 Parliamentary Debate on Trident, 18 July 2016.

Successor submarines; recognises the importance of this programme to the UK's defence industrial base and in supporting thousands of highly skilled engineering jobs; notes that the Government will continue to provide annual reports to Parliament on the programme; recognises that the UK remains committed to reduce our overall nuclear weapon stockpile by the mid-2020s; and supports the Government's commitment to continue work towards a safer and more stable world, pressing for key steps towards multilateral disarmament.'[203]

The Motion passed by 472 to 117. Conservative MPs were under a 'three line whip' to vote in favour. Labour leader Jeremy Corbyn, a long-standing advocate of nuclear disarmament, did not impose the whip but allowed his MPs to vote 'according to conscience.' Altogether, 140 Labour MPs filed into the 'yes' lobby to vote with the Tory majority. The 117 votes against the Motion were recorded from Scottish National Party (SNP) and Plaid Cymru (Party of Wales) MPs, most of the Liberal Democrats, the sole Green MP and 47 Labour MPs. The UK Parliament has no facility for registering abstentions, which were just counted in with no-show MPs.

The Motion was silent on the nuclear replacement programme's actual costs, risks and plans, including the need to upgrade British nuclear warheads to fit in with plans from Washington and Lockheed to upgrade the US Trident missiles, but some of the more thoughtful speeches raised these issues in the context of Britain's real security needs. Several MPs tried to describe the humanitarian and environmental consequences of making, deploying and using nuclear weapons. It was pointed out that the Prime Minister was most likely to face this dilemma after deterrence has failed; what then would be the security purpose, defence gain or legal objective that firing Trident at a city full of non-combatants might achieve?[204]

One of the most well researched and compelling interventions was from Crispin Blunt, the Conservative Chair of the House of Commons Foreign Affairs Committee, who chose to defy the Tory whip on this issue. Blunt made three essential arguments to explain why he needed to vote against his own government: costs of Trident replacement; opportunity costs, including the necessity to prioritise funding for Britain's real defence requirements, and technical risks and developments that will make the submarines and Trident nuclear weapons system obsolete and unfit for the purpose of deterrence operations. Blunt, a former army officer, had crunched the government's own numbers and come up with the likely price tag of replacing Trident as at least £179 billion.[205] Notably, this was similar to the cost estimates made by the Liberal Democrats and the £205 billion price tag CND had previously published, which had included some costs for decommissioning. Likening Trident to history's 'Dreadnought blind alley', Blunt concluded that replacing Trident 'does not pass any rational cost-effectiveness test.'[206]

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203 Parliamentary Debate on Trident, 18 July 2016.

204 Parliamentary Debate on Trident, 18 July 2016. See also Rebecca Johnson (2016), 'Do British Members of Parliament Remember Hiroshima?' openDemocracy 6 August 2016, https://www.opendemocracy.net/en/5050/do-british-member-of-parliament-remember-hiroshima/

205 Parliamentary Debate on Trident, 18 July 2016; Crispin Blunt's contribution at https://www.theyworkforyou.com/debates/?id=2016-07-18c.558.5#g584.5

206 https://cnduk.org/resources/205-billion-cost-trident/

In response to the Prime Minister saying that she did not 'believe that submarines will be rendered obsolete by unmanned underwater vehicles or cyber-techniques,' Blunt described the development of various new technologies that will breach the advertised invisibility and invulnerability of the submarines by making the oceans 'transparent.' These included, 'distributed sensors detecting acoustic, magnetic, neutrino and electromagnetic signatures, on board unmanned vehicles in communication with each other, using swarming algorithms and autonomous operations associated with artificial intelligence, able to patrol indefinitely and using the extraordinary processing capabilities now available and improving by the month...'[207]

Nonetheless, following Parliament's July 2016 vote, Defence Secretary Michael Fallon visited the Barrow shipyard in October and ceremonially 'cut steel'[208] for the first submarine, which for some reason Whitehall decided to call 'Dreadnought.' Addressing a group of BAE workers, he announced: 'You are going to be building over the next 20 years the largest and most powerful submarines ever built in Britain. You will be the ones electrifying a new generation of engineers to continue building for Britain as well as manufacturing security, prosperity and jobs, you will also manufacture confidence in global Britain.'[209] When Fallon said the submarines would 'go down in the history of this country,' what was he thinking about?[210]

the missile veered off in the wrong direction towards America and caused a major panic at the highest level of government and the military

Not public knowledge in 2016, in the leaderless turmoil a couple of weeks before this Trident renewal debate, the first Trident D5 missile test for four years 'experienced an alarming failure after being launched... off the coast of Florida in June last year.' According to a 'senior naval source' the missile, which if armed with nuclear warheads 'can kill millions... veered off in the wrong direction towards America after being launched from HMS Vengeance, one of Britain's four nuclear-armed submarines... and caused a major panic at the highest level of government and the military...'[211] Criticising Downing Street's 'news blackout,' the *Sunday Times* Investigation team on 22 January 2017 exposed this 'disastrous failure.' Admiral Lord West, former first sea lord and chief of the naval staff, was quoted telling the BBC: 'If a firing goes wrong you should say that it's gone wrong, unless there's something that means it's so fundamentally wrong that it means the whole system is no longer viable . . . otherwise we're rather like the Soviet Union used to be,

207 Parliamentary Debate on Trident, 18 July 2016; Crispin Blunt's contribution at https://www.theyworkforyou.com/debates/?id=2016-07-18c.558.5#g584.5

208 Billions had already been spent on various research and concept phases, but in MoD parlance, 'cutting steel' signified an irreversible decision to build big ticket hardware like submarines and aircraft carriers.

209 Alex Grove (2016), 'Michael Fallon cuts steel on first Trident submarine in Barrow,' In_Cumbria, 6 October 2016, https://www.in-cumbria.com/news/17250924.michael-fallon-cuts-steel-on-first-trident-submarine-in-barrow/ ; see also https://modmedia.blog.gov.uk/2016/10/01/defence-in-the-media-1-october-2016/

210 'Defence Secretary Michael Fallon cuts steel on first Successor-class submarine in Barrow,' NWEMail, 4 October 2016, https://www.nwemail.co.uk/news/barrow/16451743.defence-secretary-michael-fallon-cuts-steel-on-first-successor-class-submarine-in-barrow/

211 'No 10 covered up Trident missile fiasco,' Sunday Times, 22 January 2017, https://www.thetimes.co.uk/article/no-10-covered-up-trident-missile-fiasco-hch3shsrn.

or like North Korea or China, where they won't admit to things going wrong.'[212]

Blunt's prescient reference to Trident replacement as a 'Dreadnought blind alley' looks even more apt now.[213] The early 20th century Dreadnought battleships started out as cutting edge technologies to project British status and military force, but proved to be irrelevant in the 1914-18 war and thereafter. They encouraged reckless military adventurism, provoked arms racing by other nations, and diverted resources away from alternative approaches that might have been better for security, defence and deterrence. As Britain and Germany went to war again in 1939, Dreadnoughts were all but consigned to history.[214] They might have seemed cutting edge technologies for the 19th century, but had proved all wrong for Britain's security needs in the 20th – expensive, useless burdens that were more trouble than they had ever been worth.

Less than a year later, multilateral nuclear disarmament negotiations in the United Nations had delivered the TPNW, which on 22 January 2021 entered into legal force internationally. Five years on, Dreadnought submarines continue to bleed billions of pounds down the drain, and yet everything else has changed beyond recognition. As governments in different parts of the British Isles reassess security in light of Covid, the global climate emergency, Brexit realities and economic chaos, keeping and upgrading any kind of nuclear weapons looks as bizarre as the hubristic white elephants the submarines were named for. They are worse than irrelevant, as nuclear weapons consume much needed resources and stand in the way of honest and realistic appraisals of Britain's needs in this rapidly changing world, especially regarding security, defence, jobs and the environment.

Vanguard-Trident, UK's Current Nuclear Weapons System

Britain's current nuclear weapons are deployed on four nuclear-powered 'Vanguard class' SSBN submarines, which were each designed to carry 16 US-made Trident II D5 missiles. The missiles were designed to carry up to 12 UK-made thermonuclear warheads each, but in line with changing threat assessments and the harsh realities of production difficulties in manufacturing warheads, submarines on patrol carried only a quarter of the maximum capacity of 192 warheads since the 1990s.[215] As discussed above, this number was further reduced in the early 2010s and after the 2015 Strategic Defence Review, deployed Vanguard-class submarines were understood to carry 40 warheads or fewer on multiple independently

212 'No 10 covered up Trident missile fiasco', Sunday Times, 22 January 2017.

213 Parliamentary Debate on Trident, 18 July 2016; Crispin Blunt's contribution at https://www.theyworkforyou.com/debates/?id=2016-07-18c.558.5#g584.5

214 Giles Edwards (2014), How the Dreadnought sparked the first 20th Century's arms race, BBC News magazine, 2 June 2014, https://www.bbc.co.uk/news/magazine-27641717

215 House of Commons Select Committee on Defence. 2006. 'Defence - Eighth Report.' https://publications.parliament.uk/pa/cm200506/cmselect/cmdfence/986/98605.htm.

targeted re-entry vehicles (MIRV)[216] with no more than 8 Trident missiles. Since IR2021, these numbers are up for question.

Following Parliament's go-ahead, the first two Dreadnought submarines are now under construction at the BAE Systems shipyard (formerly Vickers) in Barrow-in-Furness. They will be powered by an up-dated design of military-nuclear reactors built by Rolls Royce Submarines. Although fabrication of the hull sections is underway, the first submarine will not enter service for at least a decade. This time-frame would require the Vanguard submarines to remain in operation long beyond their original service life, and it is by no means certain that it will be possible to keep one of them on patrol at all times through the 2020s.[217] The Ministry of Defence is so sensitive about this possibility that it no longer publishes an official in-service date for the Dreadnought submarines, just stating that the first is expected to be available in the 'early 2030s.'[218]



Nuclear-armed Vanguard-Trident near Faslane base (R.Johnson)

The current Trident II D5 missiles are manufactured in the United States and leased to the MoD under an amendment to the 1963 Polaris Sales Agreement.[219] The transfer of warhead technology, knowledge and materials is governed by a separate agreement, the UK-US Mutual Defence Agreement, which was originally signed in 1958 and has been renewed on subsequent occasions.[220]

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216 'Nuclear Deterrent: Written Statement - HCWS210'. 2015. UK Parliament. 20 January 2015. https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2015-01-20/HCWS210/

217 David Cullen (2019). Trouble Ahead: Risks and Rising Costs in the UK Nuclear Weapons Programme. Nuclear Information Service. p41; Toby Fenwick. 2018. '(Dis)Continuous Deterrence: Challenges to Britain's Nuclear Doctrine'. The British American Security Information Council (BASIC).

218 Comptroller and Auditor General (2018), The Defence Nuclear Enterprise: A Landscape Review. London: National Audit Office. https://www.nao.org.uk/wp-content/uploads/2018/05/The-Defence-Nuclear-Enterprise-a-landscape-review.pdf. P10.

219 Doyle, Suzanne (2017), 'The United States Sale of Trident to Britain, 1977–1982: Deal Making in the Anglo–American Nuclear Relationship'. Diplomacy & Statecraft 28 (3): 477–93. https://doi.org/10.1080/09592296.2017.1347447.

220 1958 Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation on the uses of Atomic Energy for Mutual Defense Purposes (known as Mutual Defence Agreement, MDA), renewed most recently in 2014, including an 'Amendment to the Agreement, Cooperation on the uses of Atomic Energy for Mutual Defense Purposes. Foreign and Commonwealth Office, https://www.gov.uk/government/publications/cs-ukus-amendment-to-the-agreement-for-cooperation-on-the-uses-of-atomic-energy-for-mutual-defense-purposes, accessed from UN Government website on 25 November 2020; Claire Mills. 2014. 'UK-US Mutual Defence Agreement.' House of Commons Library. http://researchbriefings.files.parliament.uk/documents/SN03147/SN03147.pdf.

New nuclear warheads for Trident?

The current British warhead is closely modelled on the American W76 warhead, which the US Navy deploys on its own Trident submarines.[221] Both countries have carried out life-extension upgrades, with the US version being known as the W76-1 (with W76-2 in the works) and the UK version known as the Mark 4A.[222] These are boosted thermonuclear (hydrogen or H-bomb) designs, with an estimated yield of 100 kilotons.[223]

In July 2016, then Prime Minister Theresa May had assured the British Parliament that building a new generation of nuclear submarines was necessary to 'maintain the current posture' of the UK's 'nuclear deterrent.' Despite concerns being raised by some MPs and nongovernmental analysts about parallel programmes to upgrade the Trident missiles and warheads, the government assured Members of Parliament and the United Nations that replacing the UK's nuclear submarines was 'not an upgrade of our capabilities.'[224] In February 2020, this was shown to be untrue. British government representatives were forced to explain to Parliament that new (not just 'upgraded') warheads were indeed planned for deployment on the Dreadnought submarines.[225] This admission followed statements by US officials who had publicly linked their lobbying efforts for congressional support for new US warheads to supporting development for new UK warheads as well.[226]

Following the Defence Secretary's statement to Parliament on 25 February 2020, Green MP Caroline Lucas tabled a written question to the Secretary of State for Defence on 3 March 2020, asking 'what steps he plans to take to ensure that close work with the US on new warhead development is compatible with UK obligations' under the NPT. She also asked about the costs and completion date of the proposed Trident warhead replacement programme.[227] Responding for the government on 11 March, Jeremy Quin replied, 'We will continue to work closely with the US to ensure it remains compatible with the Trident strategic weapon system. This is consistent with our approach to our current warhead and we will continue to be fully compliant with our obligations under the Treaty on the

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221 Hans M. Kristensen (2006), 'Britain's Next Nuclear Era.' Federation Of American Scientists. December 2006. https://fas.org/blogs/security/2006/12/britains_next_nuclear_era/.

222 Peter Burt (2016), 'AWE: Britain's Nuclear Weapons Factory; Past, Present, and Possibilities for the Future.' Nuclear Information Service. http://nuclearinfo.org/sites/default/files/AWE-Past%2C%20Present%2C%20Future%20Report%202016.pdf. p26-17; the US has controversially carried out a further modification to some of its W76 stockpile which means that

223 Shannon N. Kile and Hans M. Kristensen, (2020). 'World Nuclear Forces.' In SIPRI Yearbook 2020, 325–93. Oxford University Press. https://www.sipri.org/sites/default/files/2020-06/yb20_10_wnf.pdf.

224 Matthew Rowland, Ambassador for the United Kingdom, Statement on Nuclear Weapons, delivered to the UN First Committee, on 14 October 2016, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com16/statements/14Oct_UK.pdf

225 Ben Wallace, Secretary of State for Defence (2020), 'Nuclear Update.' Written statements - Written questions, answers and statements - UK Parliament. https://questions-statements.parliament.uk/written-statements/detail/2020-02-25/HCWS125. See also David Cullen (2020), 'What Do We Know about the UK's Nuclear Warhead Plans?' Nuclear Information Service, 23 March 2020. https://www.nuclearinfo.org/blog/david-cullen/2020/03/what-do-we-know-about-uk's-nuclear-warhead-plans/.

226 Charles A Richard (2020), 'Statement of Charles A. Richard, Commander United States Strategic Command, before the Senate Committee on Armed Services.' https://www.armed-services.senate.gov/imo/media/doc/Richard_02-13-20.pdf.

227 Caroline Lucas MP (2020), Written question for the Ministry of Defence, 3 March 2020, https://questions-statements.parliament.uk/written-questions/detail/2020-03-03/24309

Non-Proliferation of Nuclear Weapons.' He withheld information about costs and in-service dates, citing 'national security' purposes, but did say that 'the replacement warhead is not required until at least the late 2030s.'[228]

Opposition in the US Congress placed the funding of the W93 programme in doubt in 2019-20, despite lobbying by the UK government.[229] Recent speculation that President Joseph Biden's Administration will take a 'critical look' at the W93 and related programmes raises further questions about whether the UK programme to upgrade warheads would be able to go ahead as currently planned. Sir Stephen Lovegrove, permanent secretary at the Ministry of Defence, admitted in December that there would be 'very significant implications' for Britain's nuclear weapons 'if Democrats in the US Congress refused to fund a next-generation warhead.'[230]

Technical information about the proposed W93 warhead is sparse, but it is 'crudely estimated to be twice as explosive' as the ageing W76 warhead[231] and designed for use with the Mk7 aeroshell. British and American military-industrial advocates of the W93 have argued that it will work with the current Trident missile and any planned replacement.[232] It should be noted that as British nuclear weapons all depend on Trident missiles that are leased from the US-owned stockpile, the UK government contributed £352m towards the US Trident 'life extension programme', which was deemed necessary to extend their service life into the 2040s.[233]

AWE Aldermaston and Burghfield

Since 1950, the UK's Atomic Weapons Research Establishment site near the village of Aldermaston in Berkshire has been central to UK nuclear weapons research, design, manufacture and dismantlement. In 1952, the first plutonium from Windscale (now Sellafield) arrived at AWRE Aldermaston for processing into an atomic bomb. This was detonated in the UK's first nuclear test, code-named Hurricane, on 3 October 1952 at Monte Bello,

228 eremy Quin, Minister for Defence Procurement (2020), reply re Question for the Ministry of Defence, 11 March 2020 https://questions-statements.parliament.uk/written-questions/detail/2020-03-03/24309

229 Julian Borger (2020), 'UK Lobbies US to Support Controversial New Nuclear Warheads', The Guardian, 1 August 2020. http://www.theguardian.com/world/2020/aug/01/uk-trident-missile-warhead-w93-us-lobby.

230 Dan Sabbagh (2020) 'US Nuclear Warhead Standoff 'has significant implications for the UK', The Guardian, 8 December 2020, https://www.theguardian.com/uk-news/2020/dec/08/us-nuclear-warhead-standoff-has-significant-implications-for-uk

231 Julian Borger (2020) 'UK Lobbies US to Support Controversial New Nuclear Warheads', The Guardian, 1 August 2020. http://www.theguardian.com/world/2020/aug/01/uk-trident-missile-warhead-w93-us-lobby.

232 There are suggestions that the US plans to extend the life of the Trident missiles rather than build a replacement. See Megan Eckstein (2019), 'Navy Beginning Tech Study to Extend Trident Nuclear Missile Into the 2080s' (2019), USNI News. 14 November 2019. https://news.usni.org/2019/11/14/navy-beginning-tech-study-to-extend-trident-nuclear-missile-into-the-2080s.

233 Comptroller and Auditor General (2018), The Defence Nuclear Enterprise: A Landscape Review, London: National Audit Office. https://www.nao.org.uk/wp-content/uploads/2018/05/The-Defence-Nuclear-Enterprise-a-landscape-review.pdf. p20; See also 'The United Kingdom's Future Nuclear Deterrent: The Submarine Initial Gate Parliamentary Report' (2011), Ministry of Defence, p9.

Australia. This was the beginning of a shameful history of UK testing on indigenous people's lands far from the British Isles. Forty five nuclear explosive tests and other so-called 'safety tests', associated with testing plutonium dispersal and contamination effects, were carried out from 1952 until the UK signed the CTBT in 1996. Among places contaminated by British testing are islands in the Pacific, Aboriginal homes in Australia, and Western Shoshone land in the US State of Nevada.

In 1954 the Royal Ordnance Factory in Burghfield was brought into the nuclear weapons programme.[234] Built during the Second World War, this occupies a low-lying 225 acre site near the village of Burghfield, six miles east of Aldermaston. These co-located sites make up the majority of today's Atomic Weapons Establishment (AWE). The sites are owned by the Ministry of Defence, but following a privatisation decision in 1989[235] were from 2000-2021 managed by a privately owned profit-making consortium, AWE Management Ltd, (AWEML) comprising UK service company SERCO and two US arms manufacturers, Lockheed Martin, which produces the Trident II missiles, and Jacobs Engineering. In November 2020, after years of concern about safety performance at the sites[236] and management failures in its infrastructure upgrades, the Government announced that AWE plc would go back into national management, becoming an 'arms-length body' owned by the MoD.[237] On 1 July 2021, this change was finalised, as AWE became a Non-Departmental Public Body, wholly owned by MOD.[238]

among places contaminated by British testing are islands in the Pacific, Aboriginal homes in Australia, and Western Shoshone land in the US State of Nevada.

AWE Aldermaston is responsible for the major research, design, and manufacture of the nuclear components of the UK's Trident warheads. Major facilities include plutonium and uranium fabrication plants, explosives manufacturing facilities, supercomputers and the Orion laser facility, which can subject materials to conditions similar to those of a nuclear explosion. Aldermaston-connected scientists also engage in seismology and infrasound

234 'Our History – AWE', from Atomic Weapons Establishment Website, Accessed 4 December 2020. https://www.awe.co.uk/about-us/our-history/.

235 *Ibid.*

236 Mark Foy (2020), 'Chief Nuclear Inspector's Annual Report on Great Britain's Nuclear Industry.' Office for Nuclear Regulation. p35. See also: Nuclear Information Service (2020), 'Aldermaston in 'special Measures' until at Least 2022', 1 December 2020. https://www.nuclearinfo.org/article/aldermaston-in-special-measures-until-at-least-2022/.

237 Ministry of Defence, and Defence Nuclear Organisation (2020), 'Atomic Weapons Establishment (AWE) Written Ministerial Statement.' https://www.gov.uk/government/news/atomic-weapons-establishment-awe-written-ministerial-statement. See also: Nuclear Information Service. 2020. 'AWE to Be Renationalised', 6 November 2020. https://www.nuclearinfo.org/article/awe-to-be-renationalised/.

238 See https://www.gov.uk/government/news/awe-plc-transferred-to-the-mod.

monitoring work in support of the CTBT International Monitoring System.[239] Since 2000, a team at AWE Aldermaston has been engaged in a small research project on verifying nuclear disarmament, in partnership first with the Norwegian government, and then expanding to other partners, including the United States and Sweden.[240]

AWE Burghfield is responsible for the assembly, disassembly and refurbishment of the warheads. Assembly involves putting together the various nuclear warhead components, including linking the plutonium pit with a deuterium tritium gas bottle, beryllium and chemical high explosives, and arming, firing and fusing systems. Some of these warhead components deteriorate within a few years, including the chemical explosives and radioactive tritium gas, which decays due to its short half-life of 12.3 years. Batches of warheads are therefore transported several times a year by public roads and motorways between Burghfield and the Royal Navy's Storage Depot in Coulport, Scotland, so that their components can be checked and, if necessary, replaced. Nuclear materials, explosives, and special components are also regularly transported between Aldermaston and Burghfield. Warhead assembly and disassembly currently takes place in facilities known as 'Gravel Gerties', which are designed to collapse inwards in the event of an explosion. These are scheduled to be replaced before 2026 by a two-storey rectangular building with an arched metal roof, surrounded by 16 lightning protector towers, which will be known as 'Mensa.'[241]

Safety problems, time and cost over-runs

Since at least 2002, AWE has struggled to persuade its regulators, notably the Nuclear Installations Inspectorate (NII) and subsequently the Office for Nuclear Regulation (ONR), that operations in these facilities have met the required safety standards. In 2006, NII rejected the risk assessments provided by AWE for disassembling warhead and only gave limited permission for some work to continue after being told that it was 'necessary to support the UK Strategic Deterrent.'[242]

The Mensa project to build a replacement assembly and disassembly facility at Burghfield has been dogged with problems. Mensa itself is a sub-project of the £20 billion Nuclear Warhead Capability Sustainment Programme, an ongoing project at AWE which encompasses the Mark 4A warhead upgrade and numerous infrastructure projects.[243] When the Mensa project

239 Henrietta Wilson, (2020) 'Disarmament Verification Research at AWE: What It Is, Why It's There, and What Next', Nuclear Information Service, https://bit.ly/3o0ukwp. For more information on the important role played by AWE's verification scientists during the CTBT negotiations, especially regarding the CTBTO's International Monitoring System, see Rebecca Johnson 2009

240 'International Partnership for Nuclear Disarmament (IPNDV) blog. Accessed 4 December 2020. https://www.ipndv.org/about/partners-participants/

241 AWE (2008), 'Design and Access Statement - Project Mensa.' https://www.nuclearinfo.org/wp-content/uploads/2020/09/Design-and-Access-Statement_10.pdf.

242 'Report to Justify the Agreement to the Implementation of the Trident Modified Disassembly Process, Burghfield' (2006), Nuclear Installations Inspectorate. https://www.nuclearinfo.org/wp-content/uploads/2020/09/AWE-Burghfield-Project-Assessment-Report-25-2006.pdf.

243 Peter Burt (2016), 'AWE: Britain's Nuclear Weapons Factory; Past, Present, and Possibilities for the Future', Nuclear Information Service, June 2016, https://www.secretintelligenceservice.org/wp-content/uploads/2016/06/AWE.pdf, p19

began in 2011 it was expected to cost £734 million and be completed by 2017. A report by the National Audit Office in January 2020[244] revealed that the project is now expected to cost £1.8 billion and will not be ready before 2023 at the earliest. These problems are apparently due to construction having begun when the design was only 10-20% settled.[245]

In 2015 the Office for Nuclear Regulation (ONR) gave AWE permission to 'implement the enabling works associated with the existing warhead service life modifications at the AWE Burghfield Assembly Facility,'[246] This is understood to refer to the first stage in production of the Mark 4A life-extended version of the UK warhead. Due to the delays with Mensa, it seems likely that the entire life-extension project will be carried out in the Gravel Gerties. In 2018 ONR once again did not accept the periodic risk assessment AWE provided for continuing operations in the Gravel Gerties.[247] ONR threatened to withhold permission for operations to continue unless short-term improvements were made. Even with those improvements, permission was only given for the Gravel Gerties to be used until 2026. As had been the case with the previous risk assessment, AWEML was very late in providing the assessment to ONR.

After AWEML were also 18 months late providing a similar assessment for Aldermaston, ONR cited these delays as a major reason to keep both these AWE sites under enhanced regulatory attention – that is, 'special measures' intended to ensure that AWE gives adequate attention to safety performance.[248] Along with the problems with Mensa and other large construction projects at AWE, these chronic delays in providing safety documentation – together with a string of safety incidents – are thought to have contributed to the decision to bring AWE back into MoD management.

Safety failures within the UK nuclear weapons programme are by no means limited to AWE. The 2017 Nuclear Information Service report 'Playing With Fire'[249] documented 110 accidents, near misses and dangerous occurrences over its 65 year history. Not counting the above-mentioned 'disastrous' Trident missile test of 2016 (exposed by the



AWE Burghfield (D.Cullen)

244 'Managing Infrastructure Projects on Nuclear-Regulated Sites', (2020), HC 19 Session 2019-20, National Audit Office.

245 'Oral Evidence - Managing the UK's Nuclear Deterrent - 2 Jul 2018', Public Accounts Committee. 2 July 2018. http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/public-accounts-committee/managing-the-uks-nuclear-deterrent/oral/86353.html.

246 http://www.onr.org.uk/pars/2014/burghfield-14-016.pdf

247 Nuclear Information Service. 2018. 'Safety Issues May Call Time on Burghfield Warhead Assembly Plant', 6 August 2018. https://www.nuclearinfo.org/article/burghfield-safety/safety-issues-may-call-time-burghfield-warhead-assembly-plant/

248 Nuclear Information Service (2020), 'Aldermaston in 'special measures' until at Least 2022', 1 December 2020. https://www.nuclearinfo.org/article/aldermaston-in-special-measures-until-at-least-2022/.

249 Peter Burt (2017), 'Playing With Fire: Nuclear Weapons Incidents and Accidents in the United Kingdom.' Nuclear Information Service. http://nuclearinfo.org/sites/default/files/Playing%20With%20Fire%20Report-Web.pdf.

Sunday Times in January 2017),[250] these include 27 fires, eight explosions and seven deaths at Aldermaston in industrial accidents, plus a further nine deaths thought to be caused by radioactive contamination. Four of the incidents in the report involved a nuclear weapon being damaged, and two of them could have potentially resulted in an unintended nuclear detonation.[251]

Among the incidents listed in the report are the Windscale fire of 1957, Britain's most serious (known) nuclear accident. This occurred because corners were cut by technicians trying to meet government demands for higher quantities of nuclear weapon fissile material to be produced as quickly as possible. Farmland, sheep and dairy herds were contaminated, and radiological researchers estimate that 100 or so deaths may have resulted from the radiation released by the fire.[252]

In 1987 a vehicle carrying two nuclear warheads in a nuclear convoy skidded off an icy road and rolled onto its side.[253] Nuclear-armed submarines have been involved in numerous collisions, including a 2009 incident in the Bay of Biscay, where one of Vanguard submarines carrying Trident collided with Le Triomphant, a French nuclear-armed submarine. The collision, for which each side blamed the other, caused significant damage to both nuclear-armed submarines.[254]

In July 2007 serious flooding at Burghfield came close to overwhelming buildings where nuclear warheads are assembled. Eighty-four buildings were flooded, some to a depth of two feet. Radioactive materials had to be recovered from two flooded buildings, posing substantial challenges in recovering the material and decontaminating the buildings. All live nuclear work at Burghfield was halted by NII for nine months and the cost of damage reached £5 million.[255] Questions about these events and dangers were raised in the House of Commons.[256]

In April 2010 a fire in the explosives manufacturing facility in Aldermaston raged for five hours and required 68 firefighters from four fire brigades to bring it under control. A worker suffered burns to his face and arm, and a subsequent report by the Health and Safety Executive (HSE) found that the incident could have resulted in numerous fatalities. HSE

250 'No 10 covered up Trident missile fiasco', Sunday Times, 22 January 2017, https://www.thetimes.co.uk/article/no-10-covered-up-trident-missile-fiasco-hch3shsrn.

251 Peter Burt, 2017.

252 Richard Wakeford (2007), 'The Windscale Reactor Accident—50 Years On.' Journal of Radiological Protection 27 (3): 211–15. https://doi.org/10.1088/0952-4746/27/3/E02.

253 Peter Burt 2017, pp 39-41

254 Peter Burt 2017, pp 73-75

255 Peter Burt 2017, pp 19-20;

256 Peter Luff MP Defence Minister (2010), Response to Parliamentary Question from Caroline Lucas MP, Hansard 16 Jun 2010, Column 465W, https://publications.parliament.uk/pa/cm201011/cmhansrd/cm100616/text/100616w0009.htm#100616103000738. See also Nuclear Information Service, 'Swamped: The devastating impact of the July 2007 floods on Britain's nuclear weapons factories, October 2008, available http://nuclearinfo.org/article/awe-burghfield-accidents-safety-media/swamped. See also the 2012 Large Report on Radiation (Emergency Preparedness and Public Information) Regulations), John Large (2012), The Lay-person's Alternative Guide to REPPIR Relating to the Atomic Weapons Establishment (AWE) Aldermaston and Burghfield, Nuclear Information Service, April 2012.

said that there were numerous management failings and the fire could have been avoided if safety guidance had been followed. AWE was prosecuted and fined £200,000.[257]

More recently, AWE was fined one million pounds in 2018 over an electrical accident where an employee suffered burns to his arm. The trial judge described the incident as an 'accident waiting to happen.' It emerged during the trial that AWE had been sent an enforcement letter by ONR in 2015 over a similar incident, but did not take sufficient steps to prevent a recurrence.[258] In December 2020, ONR prosecuted AWE over another electrical incident where a contractor narrowly avoided injury, resulting in a fine of £660,000.[259]

Faslane and Coulport

The UK's nuclear-armed submarine fleet is based at Faslane on the Gare Loch, west of Glasgow. The location of the base on the Clyde estuary gives its formal name: HMNB Clyde. In 2020 Faslane became the sole base for the UK's fleet of attack submarines, which are nuclear powered but not nuclear armed.[260] The UK's warheads are stored in RNAD Coulport on Loch Long, a sea loch adjacent to Faslane.

Twice, in 1977 and 1987, Polaris missiles came close to being damaged in near-miss incidents with a crane and a hoist. In 1973 two Polaris submarines collided when one of them left the dry dock at Faslane. On at least six occasions (1975, 1980, 1988, 1992, 1995 and 2006) there have been fires on nuclear armed submarines while in service in Scotland.[261] In 1988 the primary coolant pumps for the nuclear reactor on board a submarine shut down due to a fault, and the back-up pumps and emergency power also failed. A serious accident was only avoided after a diesel generator was able to supply power.[262] On at least one of those incidents the submarines were carrying missiles armed with nuclear warheads. [263] Further problems and the political relevance of Faslane and Coulport are discussed in more detail in Chapter 3.



Faslane nuclear submarine base, Scotland (R.Johnson)

257 Peter Burt (2017), 'Playing With Fire: Nuclear Weapons Incidents and Accidents in the United Kingdom.' Nuclear Information Service. http://nuclearinfo.org/sites/default/files/Playing%20With%20Fire%20Report-Web.pdf. p21-24

258 'AWE Fined £1 Million for Electrical Injury Incident' (2018), Nuclear Information Service, 28 November 2018. http://www.nuclearinfo.org/article/aldermaston-burghfield-safety-legal/awe-fined-£1-million-electrical-injury-incident/.

259 'AWE Fined £660,000' (2020), Nuclear Information Service, 11 December 2020. https://www.nuclearinfo.org/article/awe-fined-660000-for-electrical-near-miss/.

260 'Clyde's Got Talent' 2019, n.d. Royal Navy, https://www.royalnavy.mod.uk/news-and-latest-activity/news/2019/august/09/190809-clydes-got-talent

261 Peter Burt, 2017 pp 64-68.

262 Burt 2017 p 65

263 Burt 2017 pp 44-45.

UK Nuclear Diplomacy, NPT and Legal Obligations

This final section of Chapter 2 gives a brief overview of Britain's disarmament obligations under the NPT, and a charting of key UK statements signalling governmental positions and changes in nuclear policies from 2004, when the current Trident replacement was put on the political agenda. The section covers relevant legal assessments and concludes with the findings of the *Joint Opinion on the Legality under International Law of the United Kingdom's Nuclear Policy as set out in the 2021 Integrated Review*, published by Professor Chinkin and Dr Louise Arimatsu of the London School of Economics on 18 May 2021.

Since entering into force in 1970, the NPT has been the primary legal instrument governing the development and acquisition of nuclear weapons. Ireland brought the original UN resolution that led to the NPT in October 1958, but by the time the NPT was being negotiated in the 1960s the power and rivalry of the United States and Soviet Union dominated consideration of what was feasible to achieve. At that time it was not common practice to designate the United Nations and its Secretary-General as the Depositary for international treaties. The UK was named in Article IX.2 of the NPT as one of three Depositary Governments, along with the USA and Soviet Union. After the USSR bloc became politically independent States when the cold war ended, Russia assumed responsibility for Soviet obligations in treaties, as well as the USSR's UN Security Council seat and nuclear weapons.

there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control

As of December 2021, the NPT has 191 States Parties. Five of these (the NPT5: China, France, Russia, UK and USA) were identified as 'nuclear-weapon states' in Article IX.3 of the Treaty, in recognition that they had made and exploded a nuclear device before 1 January 1967. Of the nine nuclear-armed states in the world, India, Israel and Pakistan have never joined the NPT; North Korea joined the Treaty in 1985, and then withdrew and began to conduct nuclear testing from 2003.[264]

The NPT's purpose, as in its name, was primarily non-proliferation but it was politically recognised that non-proliferation would be impossible to sustain over time without nuclear disarmament. The NPT was widely understood as a legal measure to halt and prevent both the horizontal acquisition and transfers of nuclear weapons to countries that did not already have them, and also further vertical proliferation by the NPT5. The NPT does not address nuclear use, possession and deployment, but due to pressure from important non-nuclear states, Article VI enshrines basic obligations to negotiate on disarmament, though these were watered down by US and Soviet diplomats: *'Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of*

264 NPT (1968), Article IX.3, 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) https://www.un.org/disarmament/wmd/nuclear/npt/text . For clarity, we refer to the NPT5 and N4 collectively as nuclear-armed states. While recognising that the NPT5 are the same states as the P5 'permanent' members of the UN Security Council, it is important to keep these roles separate. Note also that some N4 states self identify as 'nuclear weapon states' without complying with the Article IX.3 definition, and that China and France did not accede to the Treaty until 1992.

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.'[265]

In 1996, the International Court of Justice (ICJ) unanimously agreed as part of its Opinion on the legality of the threat and use of nuclear weapons, that following from the NPT Article VI text and taking into account the legal meaning of the term 'good faith', *'There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.'*[266] UK governments appeared since then to endorse this view, but some MPs and government representatives have publicly misrepresented (or misunderstood) the UK's legal obligations relating to nuclear weapons. For example, during Parliamentary Questions in February 2007, just before the first debate and vote on Trident renewal, Tony Blair told MPs that 'Britain has the right to possess nuclear weapons.'[267] This was not correct.

As noted above, Article IX defines a 'nuclear weapon state' based on the criterion of making and exploding a nuclear device before 1967. The NPT negotiators found it necessary to make this status quo definition to cover differentiated obligations for non-proliferation: non-nuclear weapon states (NNWS) were required not to seek to acquire nuclear weapons, and the NPT5 nuclear weapon states were required not to supply or trade in nuclear weapon technologies or components and, importantly, to cease nuclear arms racing and pursue disarmament.

When Labour MP Chris Mullin quoted the IAEA's Director-General, Dr Mohamed ElBaradei who had raised concerns about the 2006 White Paper, saying 'Britain could not modernise its Trident missile system and then credibly tell countries such as Iran that they do not need nuclear weapons.[268] Blair injudiciously dismissed the head of the IAEA's concerns: 'As Mohamed ElBaradei is the custodian of that treaty's [NPT] implementation, I think it would be a good idea for him to act accordingly.' Dr ElBaradei, a renowned international lawyer (and subsequent Nobel Peace laureate), refers to this exchange in his memoir, 'The Age of Deception: Nuclear Diplomacy in Treacherous Times.'[269] With the exception of Gordon Brown, Blair's successors and a worrying number MIBA-aligned officials and media also seem to think that the NPT confers rights to possess and use nuclear weapons on the NPT5 nuclear armed states (and no-one else).

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265 NPT 1968, Article VI. See Shaker, 2010.

266 International Court of Justice (ICJ 1996), Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion [Reported for July 8, 1996, General List No. 95]

267 Parliamentary exchange between Chris Mullin MP and Prime Minister Tony Blair MP, 21 February 2007, as published here: https://publications.parliament.uk/pa/cm200607/cmselect/cmdfence/225/22502.htm.

268 Rebecca Johnson 'Blair wins Trident vote after telling UK Parliament that the NPT gives Britain the Right to have nuclear weapons', Disarmament Diplomacy 84, Spring 2007, http://acronym.org.uk/old/archive/dd/dd84/84news01.htm

269 Mohamed ElBaradei, *The Age of Deception: Nuclear Diplomacy in Treacherous Times*, Picador, 2012.

Obligations UK accepts under NPT

Since signing the NPT as one of three depositary States in 1968, successive UK governments have proclaimed their support for this Treaty, as do all NPT States. For decades, the NPT5 governments and a handful of nuclear aspirants and proliferators have largely got away with 'do as we say and not as we do' behaviour, but that impunity is changing, due primarily to the TPNW and increasing awareness of past, present and future humanitarian and environmental impacts of nuclear weapons, which go beyond geographical and temporal borders.

In the wake of the 1995 decision to extend the NPT indefinitely, the 1996 conclusion and UN adoption of the CTBT, and the 1996 ICJ Legal Opinion on nuclear threat and use,[270] the 2000 NPT Review Conference adopted a Final Document that received consensus agreement on how NPT obligations needed to be legally and politically interpreted in the post 1995 era.[271] One notable decision was an agreed interpretation 'in the light of the Comprehensive Nuclear-Test-Ban Treaty' of the NPT's Article V, which had permitted and enabled 'peaceful nuclear explosions' to be conducted. By giving priority legal weight to the CTBT over Article V of the NPT, the NPT's 2000 review conference final document in effect updated the 1968 to nullify the permissive language relating to some nuclear explosions in favour of the multilaterally agreed CTBT prohibition on 'any nuclear weapons test explosion or any other nuclear explosion.' This was done without having to embark on a formal amendment procedure.[272]

Most famously, as mentioned in Chapter 1, the 2000 NPT Review Conference Final Document contained an explicit 13-paragraph 'programme of action for nuclear disarmament' that was negotiated between the NPT5 and representatives of the 'New Agenda Coalition' of non-nuclear nations. This became known as the 'Thirteen Steps.' In their legal advice of 2004, Rabinder Singh QC and Dr Christine Chinkin noted three paragraphs as having particular relevance with regard to the UK's NPT obligations:

- Para 5. The principle of irreversibility to apply to nuclear disarmament, nuclear and other related arms control and reduction measures.';
- Para 6. An unequivocal undertaking by the nuclear weapon States to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament, to which all States parties are committed under article VI.' and
- Para 9. Steps by all the nuclear-weapon States leading to nuclear disarmament in a way that promotes international stability, and based on the principle of undiminished security for all:

270 ICJ 1996.

271 NPT (2000), 2000 Review Conference of the Parties to the Treaty on Non-Proliferation of Nuclear Weapons, Final Document, Volume 1 (NPT/CONF.2000/28 (Parts I and II)), https://documents-dds-ny.un.org/doc/UNDOC/GEN/N00/453/64/PDF/N0045364.pdf?OpenElement. See also Rebecca Johnson (2000), 'The 2000 NPT Review Conference: A delicate, hard-won compromise', Disarmament Diplomacy 46 (May 2000).

272 Rebecca Johnson (2000 and 2009).

- Further efforts by the nuclear-weapon States to reduce their nuclear arsenals unilaterally;

- Increased transparency by the nuclear weapon States with regard to the nuclear weapons capabilities and the implementation of agreements pursuant to article VI and as a voluntary confidence building measure to support further progress on nuclear disarmament;

- The further reduction of non-strategic nuclear weapons, based on unilateral initiatives and as an integral part of the nuclear arms reduction and disarmament process;

- Concrete agreed measures to further reduce the operational status of nuclear weapons systems;

- A diminishing role for nuclear weapons in security policies to minimize the risk that these weapons will ever be used and to facilitate the process of their total elimination…'

- The engagement as soon as appropriate of all the nuclear-weapon States in the process leading to the total elimination of their nuclear weapons.'[273]

The UK recognises the legal jurisdiction of the UN Charter, the ICJ, the International Criminal Court (ICC), the Vienna Convention on the Law of Treaties (VCLT), as well as International Humanitarian Law and many treaties and agreements that address human rights, environmental and climate protections, States' responsibilities and conduct in war, and the prohibiting of specific weapons deemed to be abhorrent and inhumane, including treaties that ban biological, toxin and chemical weapons, landmines and cluster munitions. Though opposed to the CTBT during the 1980s until 1994, the UK participated in negotiations and was one of the first to sign in 1996. Following this the UK ratified in 1998, and has been one of the loudest voices calling on all the 'hold-out' States to accede to the CTBT.

Legal Implications of Upgrading, Renewing and Using Trident 2004-2020

As Trident renewal began to raise its head in the period 2004-7, legal Advice specific to the UK was sought by different civil society groups. These are a good place to start when considering the existing legal obligations that apply to the UK even before further political decisions are taken to become a state party to the TPNW.

273 NPT (2000), as quoted in Singh and Chinkin (2004), Rabinder Singh QC and Professor Christine Chinkin (London School of Economics), Mutual Defence Agreement And The Nuclear Non-Proliferation Treaty, (London: Matrix Chambers, July 20, 2004), paragraph 20. Discussion and full text of the legal advice can be found at http://acronym.org.uk/old/archive/dd/dd78/78news02.htm .

In 2004, Rabinder Singh QC and Professor Christine Chinkin raised questions about legality of US-UK nuclear collaboration agreements entered into after the indefinite extension of the NPT and related decisions adopted by States Parties at the 1995 NPT Review and Extension Conference. They argued that States' non-proliferation and disarmament obligations are not reducible to the 1968 NPT text: *'A Declaration of a Review Conference such as that adopted by consensus [in 1995 or 2000] would fall within the wording of article 31 (3) (a) [of the Vienna Convention on the Law of Treaties (VCLT)] and is thus an appropriate source of interpretation of the obligations of the NPT.'*[274]

In 2006, Philippe Sands QC and Helen Law provided a Legal Advice for Greenpeace on renewal and potential upgrading of Trident such as enhanced targeting capability and increased yield flexibility. They argued: 'A broadening of the deterrence policy to incorporate prevention of non-nuclear attacks so as to justify replacing or upgrading Trident would appear to be inconsistent with Article VI [of the NPT]; attempts to justify Trident upgrade or replacement as an insurance against unascertainable future threats would appear to be inconsistent with Article VI; enhancing the targeting capability or yield flexibility of the Trident system is likely to be inconsistent with Article VI; renewal or replacement of Trident at the same capability is likely to be inconsistent with Article VI; and in each case such inconsistency could give rise to a material breach of the NPT.'[275]

For over 20 years, British governments have reneged on most if not all of the commitments and undertakings contained in the consensus Final Document adopted by the NPT States Parties attending the 2000 NPT Review Conference. The one exception is paragraph 13 of the 'Thirteen Steps' disarmament plan, which commits to the 'further development of the verification capabilities that will be required to provide assurance of compliance with nuclear disarmament agreements for the achievement and maintenance of a nuclear-weapon-free world.'[276] But resources for verification are extremely small compared with what is spent on making and deploying nuclear weapons. Nonetheless, Britain's expertise could contribute to developing robust nuclear disarmament verification systems and reinforce nuclear prohibitions, non-proliferation and treaty compliance for both the TPNW and NPT.[277]

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274 Singh and Chinkin (2004). Among other eminent jurists who make a similar argument are Judge Christopher Weeramantry, former Vice-President of the International Court of Justice, as well as Judge Mohammed Bedjaoui, president of the ICJ from 1994-1997 when the Court deliberated on questions regarding the use and threat of use of nuclear weapons. See presentations in Johnson and Zelter (2011), Rebecca Johnson and Angie Zelter, Trident and International Law: Scotland's Obligations, Luath Press, 2011.

275 Philippe Sands QC and Helen Law, 'Legal Advice on The United Kingdom's Nuclear Deterrent: Current and Future Issues of Legality', first published on 13 November, 2006, reprinted with permission in Rebecca Johnson and Angie Zelter, Trident and International Law: Scotland's Obligations, Luath Press, 2011, pp 114-150.

276 2000 NPT Review Conference Final Document, Volume 1 relating to Article VI and eighth to twelfth preambular paragraphs, (NPT/CONF.2000/28 (Parts I and II)) pp 13-15. https://documents-dds-ny.un.org/doc/UNDOC/GEN/N00/453/64/PDF/N0045364.pdf?OpenElement.

277 Henrietta Wilson (2020), 'Disarmament Verification Research at AWE: What it is, why it's there and what's next', Nuclear Information Service, 30 July 2020, https://www.nuclearinfo.org/blog/henrietta-wilson/2020/07/disarmament-verification-research-awe-what-it-why-it%E2%80%99s-there-and-what

In 2008, while discussing relevant International Law applicable to nuclear weapons in a talk at the Palais des Nations, Geneva, in May 2008[278] H. E. Judge Mohammed Bedjaoui, who served on the International Court of Justice from 1982-2001, stated: 'Article VI, which lays out the obligation to negotiate nuclear disarmament in good faith, was clearly conceived as the necessary counterpart to the commitment by the non-nuclear States not to manufacture or acquire nuclear weapons; it is without a doubt one of the essential elements of the 'acceptable equilibrium of mutual responsibilities and obligations between nuclear powers and non-nuclear powers' which, according to the [United Nations] General Assembly, was to be established by the Nuclear Non-Proliferation Treaty which it called for in 1965. In 1995, at the time of the fifth Conference of Parties, which decided the extension of the NPT for an indefinite duration, the reciprocal nature of the said obligations was vigorously reaffirmed. Article VI should for this reason be considered an *essential provision* of the NPT, the breach of which could be considered 'material' in terms of Article 60 of the Vienna Convention on the Law of Treaties and could entail the legal consequences thereto attached.'[279]

any state that aids and abets another country in the deployment and maintenance of nuclear warheads of explosive power comparable with Trident warheads would also be acting unlawfully

In this regard, Judge Bedjaoui made clear: 'The modernisation, updating or renewal of [the Trident] nuclear weapon system would also be a material breach of NPT obligations, particularly the unequivocal undertaking by the nuclear-weapon States to 'accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament'[280] and the fundamental Article VI obligation to negotiate in good faith on cessation of the arms race and on nuclear disarmament, with the understanding that these negotiations must be pursued in good faith and brought to conclusion in a timely manner.'[281] In response to questions at a conference held in Edinburgh in 2009, which addressed Scotland's obligations relating to international law and the UK's Trident nuclear weapon system, Judge Bedjaoui advised, 'Any state that aids and abets another country in the deployment and maintenance of nuclear warheads of explosive power comparable with Trident warheads would also be acting unlawfully.'[282]

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278 Bedjaoui 2008, Judge Mohammed Bedjaoui, "Good Faith, International Law and Elimination of Nuclear Weapons,' keynote address during the NPT Preparatory Committee meeting, at the Palais des Nations, Geneva, on 1 May 2008, reprinted with permission in Rebecca Johnson and Angie Zelter, Trident and International Law: Scotland's Obligations, Luath Press, 2011, pp 52-91, quote at p 74.

279 According to VCLT paragraph 3, a material breach of a treaty consists, inter alia, in 'the violation of a provision essential to the accomplishment of the object or purpose of the treaty.' See also paragraph 2 of Article 60.

280 Quoted from the Final Document of the 2000 Review Conference of the Parties to the Treaty on Non-Proliferation of Nuclear Weapons, Volume 1 (NPT/CONF.2000/28 (Parts I and II), at which the UK joined consensus.

281 Judge Mohammed Bedjaoui, 'Good Faith, International Law and Elimination of Nuclear Weapons,' keynote address during the NPT Preparatory Committee meeting, at the Palais des Nations, Geneva, on 1 May 2008, reprinted with permission in Rebecca Johnson and Angie Zelter, *Trident and International Law: Scotland's Obligations*, Luath Press, 2011, pp 52-91, quote at p 74.

282 Judge Mohammed Bedjaoui, op cit p 90.

Judge Christopher Weeramantry, formerly Vice President of the ICJ, likewise told the Edinburgh Conference: 'In relation to the positive obligation imposed by the unanimous opinion of the International Court of Justice, the continuing work on Trident and its replacement with a further nuclear weapon system constitutes a violation of Article VI of the NPT.'[283]

Nuclear Use Policies and International Humanitarian Law

As previously noted, when Prime Minister May was asked whether 'she personally [is] prepared to authorise a nuclear strike that could kill 100,000 innocent men, women and children', she emphatically replied 'Yes!' before adding: 'The whole point of a deterrent is that our enemies need to know that we would be prepared to use it, unlike the suggestion that we could have a nuclear deterrent but not actually be willing to use it.'[284]

Using and threatening to use nuclear weapons requires both the capability and intent. Judge Mohammed Bedjaoui, who was President of the ICJ when it deliberated on the 'Legality of the Threat or Use of Nuclear Weapons' in 1994-96, referred to the UK when he described arguments from nuclear-armed States that international humanitarian law (IHL) would not necessarily be breached by the use of imagined future types of nuclear weapons posited as 'low-yield nuclear weapons', 'clean weapons', 'reduced-effect weapons', and 'tactical weapons' that may be 'capable of discrimination and, in particular, able to strike combatants while sparing non-combatants.'[285] In a keynote address at an NPT event in 2008, Judge Bedjaoui noted that these speculations were mistakenly treated as elements of fact, and stated that 'the Court should not have credited such reports, in particular because it had not received any evidence to prove the existence of nuclear weapons that emit no radiation and have no prolonged effects in space and time.' He concluded that the Court had been mistakenly swayed by the argument about imaginary nuclear-type weapons or uses that – even if they had existed – would not have met the Court's definition of a nuclear weapon, being 'rather some new and wholly other type of classical or conventional weapon, lying beyond the 'nuclear threshold''.[286]

Judge Bedjaoui subsequently argued: 'In accordance with evidence heard by the Court, it is clear that an explosion caused by the detonation of just one 100 kt warhead would release powerful and prolonged ionising radiation, which could not be contained in space or time, and which would harmfully affect civilians as well as combatants, neutral as well as belligerent states, and future generations as well as people targeted in the present time. In view of

283 Christopher Weeramantry in Rebecca Johnson and Angie Zelter, *Trident and International Law: Scotland's Obligations*, Luath Press, 2011, p 47.

284 Debate on motion that 'This House supports the Government's assessment in the 2015 National Security Strategy and Strategic Defence and Security Review…' opened by Prime Minister Theresa May MP, Hansard vol 613, 18 July 2016.

285 Mohammed Bedjaoui (2011), 'Good Faith, International Law, and Elimination of Nuclear Weapons', in Rebecca Johnson and Angie Zelter (eds.) *Trident and International Law: Scotland's Obligations*, Luath Press, 2011, pp 52-91. In making these arguments, Bedjaoui referred specifically to the UK as one of the nuclear weapon states to make these arguments. See also United Kingdom, *Written Statement*, International Court of Justice, Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996. [Reported for July 8, 1996, General List No. 95] at 53, para. 3.70, quoted in *Legality of the Threat or Use of Nuclear Weapons*, *supra* note 7, at 261-262, para. 91.

286 Mohammed Bedjaoui (2011).

these extraordinarily powerful characteristics and effects, any use of such a warhead would contravene international and humanitarian laws and precepts. In other words, even in an extreme circumstance of self-defence, in which the very survival of a State would be at stake, the use of a 100 kt nuclear warhead—regardless of whether it was targeted to land accurately on or above a military target—would always fail the tests of controllability, discrimination, civilian immunity, and neutral rights and would thus be unlawful.'[287]

the use of a 100 kt nuclear warhead—regardless of whether it was targeted to land accurately on or above a military target—would always fail the tests of controllability, discrimination, civilian immunity, and neutral rights and would thus be unlawful

Applying this revised understanding to the ICJ's deliberations, Judge Bedjaoui wrote: 'the use of even a single [Trident] warhead in *any* circumstance, whether a first or second use and whether intended to be targeted against civilian populations or military objectives, would inevitably violate the prohibitions on the infliction of unnecessary suffering and indiscriminate harm as well as the rule of proportionality including with respect to the environment. In my opinion, such a system deployed and ready for action would be unlawful.'[288]

Diplomatic positioning after 2016 Trident debate

Following the July 2016 parliamentary debate on Trident renewal, there were small but significant shifts inserted into the speeches of Britain's Disarmament Ambassador, Matthew Rowland, at the United Nations, NPT and related meetings. The 2021 Integrated Review took the next step by ditching the commitments on reducing the UK's arsenal while more formally embedding the wider circumstances in which British leaders imagine they might decide to launch nuclear weapons.

The UK has long sought to be counted as a 'responsible state' in the world, but has often struggled to match this diplomatic rhetoric with shifting government policies, especially with regard to nuclear weapons. Around the time that UK Defence Secretary Michael Fallon was 'cutting steel' for the first Dreadnought submarine in Barrow in front of the media in October 2016, the UK's Disarmament Ambassador Matthew Rowland delivered two contrasting nuclear-relevant statements to the UN General Assembly's First Committee (International Security and Disarmament).

In the opening General Debate, Rowland declared that the UK was a 'responsible nuclear weapons state' that 'remains committed to the NPT.' He extolled 'the long-term goal of

287 Mohammed Bedjaoui (2011).

288 Mohammed Bedjaoui, 'Good Faith, International Law, and Elimination of Nuclear Weapons,' in Rebecca Johnson and Angie Zelter (eds.) Trident and International Law: Scotland's Obligations, Luath Press, 2011

a world without nuclear weapons' and the UK's desire to 'build trust and confidence' and 'take tangible steps towards a safer and more stable world, where countries with nuclear weapons feel able to relinquish them.' He underlined several times Britain's belief in 'the rules-based international order', which 'has done much to encourage predictable behaviour by states and the non-violent management of disputes.' Among important objectives were 'democracy, the rule of law, open, accountable governments and institutions, human rights' as well as 'equality of opportunity, including the empowerment of women and girls' and the 'enforcement of standards and laws covering a wide range of activities and behaviours.' The UK 'remained committed to the NPT,' said Rowland, as well as to entry force of the CTBT and 'universal membership' of the CWC and BTWC.[289]

This was feelgood rhetoric with a dollop of extra honey on a range of themes. The bitter dose was administered in Rowland's subsequent statement to the UN First Committee's session on 'Nuclear Weapons' a few days later. This left no-one in doubt that the UK had no intention of supporting initiatives that might genuinely lead to nuclear disarmament any time soon. In view of IR2021, it is instructive to recall that after saying that the UK wanted a 'safer and more stable world where countries with nuclear weapons feel able to relinquish them', Rowland portrayed 2016's UK nuclear policy to deploy at least one nuclear-armed submarine on patrol, armed with up to 40 warheads on Trident missiles as if reductions were still taking place: warheads down from 48 to 40; no more than 120 operationally available warheads; and plans to further reduce the UK nuclear stockpile to 'no more than 180 warheads by the middle of the next decade.'[290]

Referring to the Cameron government's 2015 National Security Strategy (NSS) and Strategic Defence and Security Review (SDSR), Rowland further underlined: 'the UK's independent minimum credible nuclear deterrent, based on a Continuous at Sea Deterrence [CASD] posture, will remain essential to the UK's security today as it has for over 60 years, and for as long as the global security situation demands, to deter the most extreme threats to the UK's national security and way of life and that of the UK's allies... The UK maintains a minimum credible level of deterrence, with a single Trident submarine on patrol, normally on several days 'notice to fire' and for almost twenty years now, UK nuclear weapons have been de-targeted...'[291]

289 Matthew Rowland (5 October 2021), Ambassador for the United Kingdom, General Debate Statement to 71st UNGA First Committee, delivered on 5 October 2016, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com16/statements/5Oct_UK.pdf

290 Matthew Rowland, Ambassador for the United Kingdom, Statement on Nuclear Weapons, delivered to the UN First Committee, on 14 October 2016, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com16/statements/14Oct_UK.pdf

291 Matthew Rowland, Ambassador for the United Kingdom, Statement on Nuclear Weapons, delivered to the UN First Committee, on 14 October 2016, https://www.reachingcriticalwill.org/images/documents/Disarmament-fora/1com/1com16/statements/14Oct_UK.pdf

UK boycotts UN negotiations to ban nuclear weapons in 2017

A few months later, on 27 March, the British ambassador to the United Nations in New York, Matthew Rycroft, was required to stand next to Donald Trump's envoy Nikki Haley, in what she called a 'stake out' of the UN General Assembly.[292] At the time, some 400 diplomats from over 130 nations were entering the General Assembly Hall to begin multilateral nuclear disarmament negotiations in accordance with UNGA resolution 71/258. By way of explanation, Rycroft told the UN media representatives that 'the UK is not attending the negotiations on a treaty to prohibit nuclear weapons because we do not believe that those negotiations will lead to effective progress on global nuclear disarmament.'[293]

On 7 July 2017, an hour after the multilaterally negotiated Treaty on the Prohibition of Nuclear Weapons was finalised and adopted by 122 of the UN Member States in the negotiating chamber, the US, UK and France issued a joint declaration saying they did 'not intend to sign, ratify or ever become party' to this new Treaty.[294] Once upon a time, such opposition from three permanent members of the UN Security Council might have deterred others, but not now. The statement was widely criticised as 'pathetic', and some pointed out that issuing a 'lifelong rejection' of a multilateral nuclear disarmament treaty negotiated under UN auspices was hardly consistent with Article VI of the NPT.[295]

In the run-up to the scheduled 2020 NPT Review Conference, the Conservative governments of May and Johnson published various documents that reiterated UK acceptance of the applicability of the NPT and asserted their continuing commitment 'under the Treaty to the pursuit of good faith negotiations on effective measures related to nuclear disarmament'. The Johnson government's 2021 Integrated Review especially highlighted commitment to 'peaceful uses of nuclear energy' along with nuclear disarmament and non-proliferation, while also repeating 'there is no credible alternative route to nuclear disarmament' from the 2020 P5 meeting, which the UK chaired.[296] See also the UK's National Report to the NPT, which is mentioned in the Introduction.

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292 Ray Acheson (2021), Banning the Bomb: Smashing the Patriarchy, Rowman and Littlefield, 2021.

293 Michelle Nichols (2017), 'U.S., Britain, France, others skip nuclear weapons ban treaty talks, Reuters, https://www.reuters.com/article/us-nuclear-un-idUSKBN16Y1QI

294 Joint Press Statement from the Permanent Representatives to the United Nations of the United States, United Kingdom and France Following the Adoption, issued 7 July 2017, accessed 30 November 2021. https://usun.usmission.gov/joint-press-statement-from-the-permanent-representatives-to-the-united-nations-of-the-united-states-united-kingdom-and-france-following-the-adoption/

295 Rebecca Johnson (2017), 'New hope for a nuclear free world – but where is UK?' openDemocracy, 21 September 2017, https://www.opendemocracy.net/en/opendemocracyuk/new-hope-for-nuclear-free-world-but-where-is-uk/

296 Integrated Review (2021) p 78, quoted in Chinkin and Arimatsu (2021), including P5 statement.

Legal implications of the government's 2021 Integrated Review

In May 2021, CND published a Joint Opinion from Professor Christine Chinkin and Dr Louise Arimatsu on the Legality under International Law of the United Kingdom's Nuclear Policy as set out in the IR2021. In 40 closely-argued pages, the Chinkin-Arimatsu Joint Opinion addressed whether the March 2021 Integrated Review's announcement on (i) an increase in nuclear warheads 'constitutes a breach of the NPT article VI'; whether it would be unlawful for the UK to implement the expanded nuclear use policies announced in the IR, especially regarding (ii) if UK were to 'use or threaten to use nuclear weapons against a state party to the NPT that is in breach of its non-proliferation obligations'; and (iii) if UK were to use or threaten to use nuclear weapons in 'self-defence where the future threat of weapons of mass destruction, such as chemical and biological capabilities or emerging technologies...'[297]

The Joint Opinion considers NPT developments and recent UK policy statements, along with obligations under the NPT's Article VI to negotiate in 'good faith' and to take effective measures towards nuclear disarmament, and interpretations of 'state responsibility'. With regard to the specific questions above, Chinkin and Arimatsu examine and elucidate the relevant legal considerations in conjunction with the VCLT, the 1996 ICJ Opinion on the use and threat of use of nuclear weapons, and principles of international law and international humanitarian law (IHL) with regard to nuclear weapons and legal meanings of 'armed attack' and 'imminence', 'necessity', 'proportionality', and 'self defence'.

The Joint Opinion concludes:

(i) The announcement by the UK government of the increase in nuclear warheads and its modernisation of its weapons system constitutes a breach of the NPT article VI;

(ii) The UK would be in breach of international law were it to use or threaten to use nuclear weapons against a state party to the NPT solely on the basis of a material breach of the latter's non-proliferation obligations;

(iii) The UK would be in breach of international law were it to use or threaten to use nuclear weapons in self defence solely on the grounds that the future threat of weapons of mass destruction, such as chemical and biological capabilities or emerging technologies, could have comparable impact to nuclear weapons.298

297 Chinkin and Arimatsu (2021), pp 1-2 and pp 15-39

298 Chinkin and Arimatsu (2021), pp 39-40.

3. FIVE SCENARIOS TO END NUCLEAR RELIANCE

'Global Britain in a Competitive age', the government's integrated review of security, defence, development and foreign policy, states that 'We remain committed to the long-term goal of a world without nuclear weapons.'[299] If so, the timing, not the legal obligation or goal, appears to be the issue of contention. As underlined by Professor Chinkin and Dr Arimatsu above, and recognised by most if not all British politicians, the UK is legally bound by the NPT, which requires negotiations in good faith to end the nuclear arms race and undertake nuclear disarmament, as well as to pursue all forms of disarmament.[300] If the specific commitments and steps that the UK and other NPT States Parties agreed and adopted in 1995 and 2000 had been implemented, substantial if not total nuclear disarmament would have been achieved by now. In that event, we would now be in a stronger position to face the world's environmental and health challenges without having to worry about nuclear weapons, war and terrorism.

Fifteen years before the TPNW banned nuclear weapons, the International Weapons of Mass Destruction Commission, chaired by Dr Hans Blix, recognised: 'Weapons of mass destruction cannot be uninvented. But they can be outlawed, as biological and chemical weapons have been, and their use made unthinkable. Compliance, verification and enforcement rules can, with the requisite will, be effectively applied. And with that will, even the eventual elimination of nuclear weapons is not beyond the world's reach.'[301]

Having acceded to the CWC and BTWC, the UK now has the opportunity to join their nuclear ban counterpart and contribute to developing and strengthening the TPNW's necessary compliance, verification and enforcement rules. At the moment, however, British leaders appear unable to see beyond the status they attach to being a 'nuclear-weapon state' and their fears of becoming a 'non-nuclear-weapon state', which they associate with having less status. As a consequence they tie themselves in knots to make, keep and deploy nuclear weapons while engaging in the ridiculous linguistic gymnastics of changing their long-standing self-identification as a 'responsible nuclear-weapon state' to 'a Nuclear-Weapon State that takes its responsibilities seriously' (sic).[302] This isn't how the NPT works; nor is this compatible with what the world needs in the 21st century.

299 IR2021

300 Chinkin and Arimatsu (2021)

301 Weapons of Terror: Freeing the world of nuclear, biological and chemical arms, Report of the International Weapons of Mass Destruction Commission, Stockholm, June 2006, p 17.

302 UK National NPT Report 2021.

In accordance with the NPT's definitions, accomplishing nuclear disarmament would not make the UK a 'non-nuclear weapon state'. Becoming nuclear free would result in the UK attaining the status of a nuclear-weapon state that has fully complied with its obligations under Article VI. Moreover, the TPNW has already been accepted by the UN Secretary General and an ever growing number of NPT States Parties as an important new pillar of the global non-proliferation and disarmament regime. Around the world, people are becoming far more aware of the need to cooperate internationally instead of fighting with other countries. Even in Britain, domestic politics and economic circumstances are combining to change the UK's security options and objectives, putting greater priority on health security and protecting our shared planet from further environmental harm.

This is a far cry from the UK government's response to the conclusion and adoption of the TPNW by 122 UN member states on 7 July 2017, when Britain's Ambassador to the United Nations declared that the UK did 'not intend to sign, ratify or ever become party' to this new UN Treaty.[303] As discussed earlier, the circumstances of this declaration were bizarre, and it cannot be accepted as a credible position for this country - or any nation - to adhere to. It was not taken seriously at the time, and did not end debate about the TPNW or nuclear disarmament.[304]

The salient question addressed by Chapter 3 is: what would propel and enable British leaders to undertake the necessary steps to get rid of nuclear weapons and join the TPNW? TPNW States Parties are scheduled to hold their first meeting in 2022. As well as States Parties, this meeting will be attended by observers from around the world, including NATO States, parliamentarians and civil society, including from Britain. This multilateral UN Treaty exists and has entered into international legal force, whether or not the UK is on board. Chapter 3 also poses the question: If not through the TPNW, then what would enable and encourage the UK to fully comply with their existing nuclear disarmament and non-proliferation obligations, and contribute UK expertise and resources to establish strong verification and effective compliance mechanisms to underpin global nuclear disarmament, non-proliferation and security?

Five possible scenarios are put forward to illustrate some of the drivers and factors that might pressure and enable UK leaders and politicians to undertake nuclear disarmament in good faith, leading to compliance with the NPT and, sooner or later, adherence to the TPNW.

The five indicative scenarios are:

- Security and economic imperatives lead to decisions that end Britain's nuclear weapons production and deployment programmes.

303 Joint Press Statement from the Permanent Representatives to the United Nations of the United States, United Kingdom and France Following the Adoption, issued 7 July 2017, accessed 30 November 2021. https://usun.usmission.gov/joint-press-statement-from-the-permanent-representatives-to-the-united-nations-of-the-united-states-united-kingdom-and-france-following-the-adoption/

304 Acheson 2021.

- Further shocking nuclear accidents or the use of nuclear weapons somewhere heighten public fears and increase pressure to eliminate British nuclear weapons and implement the TPNW.

- Decisions by voters to make Scotland nuclear free and independent result in the withdrawal of bases in Scotland from continuing to participate in deploying UK nuclear weapons.

- Loss of currently-perceived value attached to nuclear weapons as more NATO partners and allies join the TPNW.

- Elections deliver parliaments and governments that are able to carry out nuclear disarmament and accede to the TPNW.

The scenarios are not sequentially ordered, competitive or mutually exclusive. They may not necessarily represent the most probable course of events, but each of them is plausible, with the feasibility of combining to take the UK into the TPNW. Some provide warnings and others offer ways to think about our national and global security in more joined-up ways. When the tipping point is reached and necessary decisions are taken, the political explanations will probably attribute the policy shifts to several, if not all, of these scenarios, as relevant at the time.

A) Security-economic decision

Scenario

The UK government decides it is no longer worth pursuing a nuclear weapons programme for one or more security and economic reasons, such as:

- long term security planning that prioritises security and health priorities more highly than running a nuclear weapons programme;

- economic decline or a series of economic shocks that mean that the UK can no longer afford to squander resources on nuclear weapons;

- changes in the global security situation that clearly convince the British people and policymakers that nuclear weapons are a security problem and not an asset;

- recognition of the risks and dangers attached to nuclear weapons and theories of nuclear deterrence;

- the development of further technologies that undermine perceived requirements of nuclear weapons efficacy and doctrines; and

- new thinking on British and global security, taking into account other priorities for resources and budgets to tackle national and global security threats such as climate destruction, coronavirus pandemics, regional conflicts and challenges.

Analysis

Scenario A reflects assumptions that defence procurement and deployment decisions are based on security needs and objectives, current and foreseeable risks and threats, rational economic priorities, and assessments of changing conditions. That's what ought to happen, perhaps, but does not reflect reality in nuclear-armed countries, including the UK. Diplomatic rhetoric is all too often used to cover up bad policies. Obsessions with national status and outdated concepts of 'punching above our weight' have enabled pro-nuclear politicians to elevate the value attached to nuclear weapons and disproportionately undervalue the broader range of affordable tools to reduce risks, prevent threats, and integrate security, defence and peace-building at all levels of government policy, including health, environment, industrial sustainability and education.

A reasonable, truthful and forward-looking process of analysing security risks and requirements would already have set the UK on a sensible path towards nuclear disarmament and joining the TPNW. But as we keep finding out – to our cost – this is not how decisions on British security, defence and economic priorities are generally made. Blair's decision to renew Trident is a case in point: he took decisions that led British soldiers into illegal and unnecessary wars on the basis of exaggerated WMD threat analyses, but felt unable to tell voters the truth about why it made sense to ditch the UK's expensive and useless nuclear WMD. Nuclear-related proliferation and security risks will continue as long as we keep holding on to these weapons of mass destruction and broadcasting to others that we cannot feel secure without them.

the UK spent £4.3 billion in 2020 on making, deploying and maintaining British nuclear weapons – over £8,000 per minute

Britain's perilous security environment is rooted in past failures in foreign and economic policies linked with national military-industrial narratives that promote the nationalist illusion that Britain is respected for 'punching above our weight.' Due to short-sighted policies that for far too long have equated security and defence with national military and industrial capabilities, enormous amounts of 'blood and treasure' have been wasted on weapons of mass destruction, disastrous military interventions, and out of date, inappropriate capital projects such as the Vanguard and now Dreadnought submarines for Trident. Successive governments have actively contributed to national and international threats and dangers, while overlooking, underplaying, and failing to prepare for real security threats, risks and vulnerabilities.

Most if not all the major threats we face, including climate chaos and nuclear destruction, have military-industrial origins and continue to be driven by the most heavily armed States and military-industrial economies (state-managed as well as free-market capitalist). They are based on cold war political ideologies that continue to be nationally driven and transmitted transnationally through the MIBA (military-industrial and associated bureaucratic and academic) networks, previously discussed, as well as economic alliances, starting with the

P5 permanent members of the UN Security Council. A recent ICAN analysis calculated that the UK spent £4.3 billion in 2020 on making, deploying and maintaining UK nuclear weapons. That amounts to over £8,000 per minute.[305]

Country Spending On Nuclear Weapons In 2020 (source: ICAN)

The United States	**$37.4 billion** $70,881 / minute
China	**$10.1 billion** $19,149 / minute
Russia	**$8 billion** $15,222 / minute
The United Kingdom	**$6.2 billion** $11,769 / minute
France	**$5.7 billion** $10,786 / minute
India	**$2.48 billion** $4,567 / minute
Israel	**$1.1 billion** $2,059 / minute
Pakistan	**$1 billion** $1,968 / minute
North Korea	**$667 million** $1,265 / minute
2020 Total	**$72.6 billion** $137,666 / minute
2019 Total	**$71.2 billion*** $135,424 / minute

**Adjusted for inflation*

Decades of failure to tackle environmental pollution and sufficiently reduce emissions from greenhouse gases (GHG, including CO_2) mean that the world faces average rises in global temperatures of 2-4°C, which will continue to rise unless deep cuts in emissions are made. Decades of failure to pursue nuclear disarmament, as required by the NPT, have resulted in British nuclear programmes and military spending becoming major contributors of GHG.[306]

As illustrated more fully in Chapter 2 of this report, the obstacles to nuclear disarmament are primarily the Westminster-Whitehall MIBA establishment's groupthink regarding military

305 ICAN 2021, Complicit: 2020 Global Nuclear Weapons Spending, June 2021. https://www.icanw.org/2020_global_nuclear_weapons_spending_complicit

306 Stuart Parkinson (2020), The Environmental Impacts of the UK Military Sector, Scientists of Global Responsibility, Scientists for Global Responsibility, April 2020. https://www.sgr.org.uk/publications/environmental-impacts-uk-military-sector.

force projection and jingoistic myths of status and deterrence. This combines with the political, financial and career interests of a rather small cohort of business leaders, politicians and analysts that have disproportionate influence on decisions to keep and modernise UK nuclear weapons. The nuclear disarmament debates of the 1980s applied as much to the project to replace the Polaris weapons system as cruise missile deployments, but where civil society pressure helped bring about the INF Treaty that removed cruise missiles and its Pershing and SS20 counterparts, the Thatcher government PR machine succeeded in making nuclear disarmament a party political football, condemning the Labour Party as 'one-sided disarmers', contrasting this with her government's 'multilateralism'. In reality, UK nuclear weapons reductions (and increases) have always been decided unilaterally. Not one British warhead has been destroyed through any form of multilateral negotiations, and yet the UK's nuclear arsenal is today considerably smaller than its Cold War peak of around 466 warheads.[307]

entry into force of the TPNW has put a spotlight on investments in nuclear weapons as never before

In 2006, Labour Prime Minister Tony Blair's first foreign secretary, Robin Cook, took on his 'multilateralist' party leader, who decided to replace the Vanguard-Trident system because he and his Chancellor, Gordon Brown, did not feel bold enough to make the security-economic case for scrapping Trident. Cook gained considerable credibility by making this case, memorably describing nuclear weapons as not just irrelevant for security, but 'worse than irrelevant' because such weapons steal resources, including security attention, opportunity costs and other financial priorities, from other areas that play far more relevant roles in national, human and international security.[308] As discussed below, Labour's whipped decision to back Trident renewal failed to please voters, especially in Scotland: the Scottish Labour Party lost its majority to the antinuclear SNP in the 2007 Scottish Parliamentary elections, and Gordon Brown was ousted as Prime Minister in the 2010 General Election. Soon after the Cameron-Clegg government took power in 2010, a slew of significant former defence service officers and officials publicly questioned the priority given to renewing Trident.[309]

In 2013, Steven Erlanger's report from Brussels in the *International Herald Tribune* recorded misgivings in NATO and Washington about British (and French) nuclear modernisation plans. With regard to the UK, Erlanger quoted a senior US official who told him: 'They can't afford Trident, and they need to confront the choice: either they can be a nuclear power and nothing else or a real military partner.'[310] This advice was ignored, the UK's credibility as a responsible military and security partner has eroded, and the UK's nuclear-weapon-related credibility and management have continued to come under pressure.

307 John R Walker 2021, 'British Nuclear Weapons Stockpiles by Year: 1953-77, RUSI Journal, 27 August 2021, p5. https://www.rusi.org/explore-our-research/publications/rusi-journal/british-nuclear-weapons-stockpiles-year-1953-77

308 Robin Cook, 'Worse than Irrelevant', The Guardian, 29 July, 2005.

309 Patrick Barkham and Richard Norton-Taylor, 'Trident: Deadly – and very, very expensive', The Guardian, 20 May 2010.

310 Steven Erlanger, 'NATO faces turning point as members spend less', International Herald Tribune 12 April 2013. See also Rebecca Johnson, Trident in a time warp: Party politics versus defence needs, openDemocracy, 5 August, 2016. https://www.opendemocracy.net/en/5050/trident-time-warp-party-politics-defence-needs/

The entry into force of the TPNW has put a spotlight on investments in nuclear weapons as never before. ICAN's 'Don't Bank on the Bomb' campaigning is beginning to bite, along with appeals to local councils, unions and initiatives by faith groups in Britain to raise awareness of the humanitarian impacts of nuclear weapons and discourage investments that enable nuclear weapons production. As a consequence, divestment actions are being taken up not only by institutions that support the aims and objectives of the TPNW, but as a precaution to avoid financial exposure and risks associated with companies involved in the production, maintenance and deployment of nuclear weapons.[311]

Nuclear weapons are a major part of global security problems and do not offer any protection

As noted earlier, in 2000 the Labour government privatised the management and operations of AWE Aldermaston and Burghfield, which make and maintain the UK's nuclear warheads. This turned out to be a bad decision. The commercial consortium Atomic Weapons Establishment Management Ltd (AWE ML, comprising Lockheed Martin, Jacob's Engineering and SERCO, as discussed in Chapter 2) had made good profits for its shareholders while presiding over years of serious problems affecting safety, security and management. Following the November 2020 announcement that the MoD's Defence Nuclear Organisation (DNO) contract with AWE ML would be terminated early, the management, operations and maintenance of the UK's nuclear stockpile were renationalised in July 2021, and AWE plc became a Non-Departmental Public Body, wholly owned by the MOD.[312] Subsequently, SERCO has abandoned plans to compete for nuclear weapon contracts, following 'warnings from fund managers that working with nuclear weapons might force them to dump SERCO shares due to non-compliance with Environmental, Social and Governance (ESG) standards'.[313] According to a new report from ICAN and Pax (Netherlands), among the 25 nuclear weapon producing companies, shareholding values have dropped between January 2019 and July 2021 'by $67 billion, and bondholding value by $2 billion'.[314]

In economic as well as security terms Trident appears to be a massively inconvenient, gold-plated submarine in a defence pool where it crowds the space and guzzles much-needed resources without having any kind of exit plan. Stuck there getting fatter and more useless with each swallowed pound, these nuclear weapons get in the way of security policies that need to move beyond nuclear dependency. Covid hit the Faslane base hard.[315] In addition, according to recent reports, 2,500 military personnel are being put at serious fire risk at the Faslane nuclear submarine homeport (and over a thousand more left in danger at other UK

311 Nuclear Weapons Financing Research Group (2020), Investing in Change: Banks, Pensions and Nuclear Weapons, 2020.

312 See https://www.gov.uk/government/news/awe-plc-transferred-to-the-mod.

313 Ben Gartside, 'Ethical investors block bid for nuclear weapons contracts', Daily Telegraph, 7 November 2021, https://www.telegraph.co.uk/business/2021/11/06/ethical-investors-block-bid-nuclear-weapons-contracts/

314 Perilous Profiteering (2021), principal author Susi Snyder, Pax and ICAN, November 2021.

315 Mark McLaughlin, Coronavirus in Scotland: Scores laid low by virus at Faslane nuclear submarine base', The Times, 12 December 2020, https://www.thetimes.co.uk/article/coronavirus-in-scotland-scores-laid-low-by-virus-at-faslane-nuclear-submarine-base-ddz09psfs

bases) due to unsafe cladding on residential tower blocks. The MoD appears unable – or unwilling – to remove the dangerous cladding and increase the safety of service personnel and their families.[316] From conversations with serving defence personnel, it appears that many recognise that deterrence and defence, as well as national security, neither require nor are enhanced by the possession and deployment of nuclear weapons; but few express their scepticism publicly before they retire.

enable the UK's skills and expertise to shine and lead in establishing verification tools and techniques that contribute to international security, disarmament and non-proliferation

COP26 and Covid have increased awareness that our real security needs are more urgent and non-military than successive British governments recognise. Nuclear weapons are a major part of global security problems and do not offer any protection. With the Bulletin of Atomic Scientist's Doomsday Clock at 100 seconds to midnight, preventing the existential threats of climate destruction and nuclear war are widely recognised as urgent and pressing security imperatives. The security case for the UK to abandon its opposition to the TPNW and begin to engage will continue to grow. Engagement and accession will help us to plan for transition policies that take care of jobs and benefit the UK in terms of opportunity costs and prestigious participation in building lucrative monitoring and verification systems. There is no need here to detail these arguments further, as they have been cogently updated by eminent academics such as Professor Paul Rogers, as well as new generations of analysts who argue for rethinking security at all levels.[317]

For people all over the world, the global climate crisis and coronavirus experience are resulting in new conversations about the personal and political meanings attached to security and safety. Many governments and leaders are rethinking security means as well as ends. COP 26 and the TPNW demonstrate that many are beginning to transform their political and economic priorities and seek better ways to use their resources to conserve lives and environments for the future. Billions of human lives are at stake, and our resources and options are not unlimited. These are vitally important questions for all of us.

Reflections

- Despite the political rhetoric of parliamentarians Britain's defence services increasingly (if privately) understand that nuclear weapons are worse than useless and can never be a credible response to the security challenges we face today.

316 Tony Driver, 'Thousands of military personnel living in tower blocks with unsafe cladding' Daily Telegraph, 4 November 2021. https://www.telegraph.co.uk/news/2021/11/04/concerns-raised-safety-2500-military-personnel-living-tower/

317 Paul Rogers (2021), Tighter Lips and Looser Controls: https://rethinkingsecurity.org.uk/2021/06/25/uk-nuclear-posture-in-the-2020s/ ; and Rethinking Security: A discussion paper (2016) https://rethinkingsecurity.org.uk/find-out-more/rethinking-security-paper/

- Most if not all current and future security threats are likely to be made worse by the existence of nuclear weapons.

- The TPNW and NPT together provide the most constructive multilateral alternative to nuclear weapons, and also enable the UK's skills and expertise to shine and lead in establishing verification tools and techniques that contribute to international security, disarmament and non-proliferation.

- The security and economic risks of producing nuclear weapons mean that current procurements should be discontinued as a matter of urgency.

- The main drivers for continuing to sink billions into British nuclear weapons are greed, fear and military-industrial politics, which are mainly pursued by industries like BAE Systems and Lockheed Martin, as well UNITE and a handful of defence industry unions, along with an embedded MIBA core among the UK's civil service, senior military, business, academic and media elites, who essentially shape and make nuclear decisions which nervous politicians then rubber stamp.

- Once a decision to pursue nuclear disarmament is taken, governments will mobilise security and economic arguments as major justifications for this step, so why not use those arguments to bring the remaining opponents to nuclear disarmament on board?

B) Further shocking accidents or nuclear bomb use

Scenario

Use of a nuclear weapon, or a serious accident involving nuclear weapons, results in the British government ending its nuclear weapons programme. Whether for technical reasons or political pressures because the public is no longer willing to accept the risks from nuclear weapons, the precipitating factor in this scenario is some kind of 'shock', which may be humanitarian, military or political.

Analysis

Campaigners to abolish nuclear weapons have long been lectured on the theme that 'the only way to get nuclear disarmament is if…' Such lectures are generally finished off with a variety of different clinchers. These were often (if not always) meant as a put down to tell us that our campaigns and protests will not lead to significant achievements. When living at the Greenham Common Women's Peace Camp in the 1980s, I noticed that the common endings after 'if….' tended to be along the lines of 'there is another Cuban Missile Crisis', 'there's a nuclear war', and 'nuclear weapons are used'. Saying this exemplifies a fatalism in which civil society – and especially women – have little or no agency, especially when the

'hard' security issues like nuclear weapons and defence are concerned.[318] After the 1986 Chernobyl accident, peace campaigners would often hear 'if there's another Chernobyl' or 'if there's a major nuclear disaster', which interestingly fed the connections the public were now making between catastrophic nuclear accidents involving nuclear power and weapons. Whether consciously or not, such statements subscribe to what is sometimes called the 'shock theory' of political change.[319] The campaigner response is to acknowledge that terrible and shocking events can precipitate political change, but the devastating human and environmental costs of just one nuclear explosion are so appalling that we must do our best to achieve nuclear disarmament in time to prevent further nuclear use, accidents and nuclear war.

the devastating human and environmental costs of just one nuclear explosion are so appalling that we must do our best to achieve nuclear disarmament in time to prevent further nuclear use, accidents and nuclear war

Certainly we can point to policy impacts based on nuclear accidents or uses of weapons of mass destruction, but we cannot rely on these to get rid of nuclear weapons. As historians have demonstrated, events that shock may not be clinchers for change. And even if they are catalysts, they do not necessarily lead to the right kinds of change that will make us more secure.[320]

In the aftermath of the 9/11 terrorist attacks, for example, George W. Bush and Tony Blair framed their military retaliations on Afghanistan and Iraq as a 'war on terror.' Their war strategy, with 'shock and awe' tactics, may have removed some obnoxious leaders but caused killings and atrocities on an even larger scale, while failing to usher in democracy or good governance. On the contrary, US-UK led wars in the past two decades have enabled some more cruel and corrupt ideologies and leaders to gain military power. Two decades later, civilians, especially women and children, are still trapped, targeted and killed in the wars that have ensued. Like the 'war to end all wars', as Europe's 1914-18 military carnage was labelled, the 'war on terror' mainly reinforced nationalist-extremist ideologies and the military-industrial profiteers that make and sell weapons, thereby creating greater problems for the future. Though nuclear weapons were not launched by Bush or Blair, when leaders brandish nuclear weapons and declare 'war on terror', what does this mean?

The nuclear explosions that flattened Hiroshima and Nagasaki in 1945 came as a shock to the imperialist leaders of Japan, but there is considerable disagreement among historians about whether the nuclear attacks were decisive in ending the war. Documents from the time indicate that the Japanese surrender was brought about by other considerations, not least the impending invasion from Soviet troops from the north (which had been agreed between Soviet leader Joseph Stalin, US president Harry Truman and British prime minister Winston Churchill) and the US decision not to put Japan's emperor on trial, a concession

318 Carol Cohn, Felicity Hill, and Sara Ruddick, 'The Relevance of Gender for Eliminating WMD', Disarmament Diplomacy 80, Autumn 2005, and Ray Acheson, 'Time to Reframe the Debate', UN First Committee statement, 5 October 2009.

319 Michael K. Miller (2021), Shock to the System, Princeton University Press 2021.

320 See, for example, Ward Wilson (2014), Five myths about nuclear weapons, First Mariner Books 2014.

given by President Truman immediately after the two atomic bombs had been dropped.[321]

The serious accidents at Three Mile Island (Pennsylvania/USA, 1979) and Chernobyl (Ukraine/Soviet Union, 1986) shocked people at the time. These led to protests and intensified discussions about nuclear safety, but did not significantly change political decisions about relying on nuclear technologies. The March 2011 destruction of the Fukushima nuclear reactors after a massive tsunami had more political impact, as they contaminated large swathes of agricultural land and homes in a populated part of Japan. Japan subsequently ramped up its renewable energy production capacities and put nuclear new builds on hold. The Fukushima incident apparently ended years of wrangling about ending reliance on nuclear energy in Germany, so acted as a catalyst for its firm decision to phase out nuclear power. There is reportedly a maxim among senior officers in the Royal Navy that 'the Navy is only one nuclear accident away from the end of the UK's nuclear weapons programme'.[322]



Medical tent in Hiroshima, 9 August 1945 (Yotsugi Kawahara, Hiroshima Peace Memorial Museum)

But is that how we want it to go? Humane and reasonable people don't sit back and hope for a nuclear weapon use or disaster to occur before they take preventive steps. This may be a scenario that shocks the world into nuclear disarmament, but it cannot be what anyone wishes for. Being confronted with the terrible effects and consequences when nuclear technologies go wrong may lead to progressive change, but that is by no means inevitable, especially if significant policy changes are opposed by powerful military-industrial interests with profits on the line. Demonstrating the horrors of nuclear war can work both ways. There is an obvious logic in advocating that inhumane and mass destructive weapons should be banned and eliminated – they can't be used if they no longer exist. That is why the academic, bureaucratic nuclear weapons advocates use public fears to promulgate elaborate nuclear deterrence theories that require nuclear weapons to be possessed and deployed in order to

321 Gar Alperovitz (1985), Atomic Diplomacy: Hiroshima & Potsdam, the use of the Atomic Bomb and the American Confrontation with Soviet Power, Penguin Books, 1965 (updated 1985).

322 From personal communication.

provide prophylactic deliverance from the horrors of war. If the objective is prevention, then shocking people with future horrors won't be sufficient of itself – there has to be a strategy for actions that will help the world to prevent those horrors.

Following the disastrous 2005 NPT Review Conference,[323] feminist activists, doctors and disarmament campaigners from several parts of the world developed different elements of the intersecting strategies that were taken forward from 2009 by ICAN's international core group: to convince the public, parliamentarians and decision-makers all around the world to recognise the real risks and humanitarian consequences of nuclear accidents and use; and to take preventive action by legally banning nuclear weapons in order to create the conditions for them to be eliminated. In effect, ICAN aimed to create a political shock to the cosy nuclear fiefdom of the NPT5 and convince the nuclear free governments (as a first step) that banning nuclear weapons is in their security interests and within their sovereign rights and powers to achieve. For far too long, nuclear weapons were treated as solely the business of the nuclear-armed States, which gave them considerable status, with the power to control the discourse and decide if, when, and how to reduce (but seldom eliminate) their nuclear arsenals.

States that had renounced nuclear weapons and joined the NPT had become frustrated to find themselves constantly patronised and marginalised when they tried to get nuclear disarmament agreements fulfilled through the NPT, which appeared to exert little or no influence on any of the nine nuclear armed states. Loosening the diplomatic power of nuclear-armed vetoes opened up space for the non-nuclear majority to act more effectively in their own security interests.[324] Building on this strategy, a core group of influential governments and civil society made the case that bringing into force a multilaterally negotiated nuclear ban treaty under the auspices of the United Nations and International Humanitarian Law would be a significant and ground-breaking step towards nuclear disarmament.[325]

In addition to international analyses cited previously, several of ICAN's British-based partners published short studies on UK-related risks and humanitarian consequences. These deliberately eschewed the larger nuclear use and war scenarios and focussed on 'minimum' British scenarios, such as the impacts of one nuclear explosion on a city the size of Manchester,[326] and the impacts of firing Trident from one nuclear submarine at targets in Moscow and a small number of Russian cities.[327] Other studies looked at safety hazards

323 Rebecca Johnson, 'Politics and Protection: Why the 2005 NPT Review Conference Failed' Disarmament Diplomacy 80, Autumn 2005. http://www.acronym.org.uk/old/archive/textonly/dd/dd80/80npt.htm

324 Rebecca Johnson (2013) The fetishists of nuclear power projection have had their day, openDemocracy, 8 March 2013; and Johnson (2014), 'The humanitarian impacts of nuclear weapons – an imperative for achieving nuclear disarmament', Irish Studies in International Affairs, Vol 25, 2014.

325 Kmentt 2021; and Ray Acheson (2021), Banning the Bomb: Smashing the Patriarchy, Rowman and Littlefield, 2021.

326 Richard Moyes, Philip Webber and Greg Crowther (2013) Humanitarian consequences: Short case study of the direct humanitarian impacts from a single nuclear weapon detonation on Manchester, UK, Article 36, February 2013.

327 John Ainslie, If Britain Fired Trident: The humanitarian catastrophe that one Trident-armed UK nuclear submarine could cause if used against Moscow, Scottish CND February 2013; Philip Webber, The climatic impacts and humanitarian problems from the use of the UK's nuclear weapons, Scientists for Global Responsibility, February 2013; and Rebecca Johnson (2013), Unacceptable Risks, Acronym Institute/ICAN-UK February 2013.

and potential accidents involving UK nuclear facilities and transports.[328] Instead of the apocalyptic scenarios, which can fail to engage public and political attention because they are too familiar and also too overwhelming, the purpose of these short, locally detailed reports was to attract attention and raise awareness of what might be termed the daily risks and dangers of having nuclear weapons. By focussing on what might happen accidentally rather than by strategic intention, these limited studies also avoided getting caught up in the MIBA establishment's pro-nuclear justifications that reassure the public with elaborate deterrence doctrines and promises that 'nuclear weapons keep us safe and we won't use them.'

the more narcissistic and incompetent the leader and government, the heavier will become their reliance on nuclear weapons in their domestic politics and international power games

Most importantly, they heard from many different hibakusha and survivors of nuclear weapons use and testing, who gave their personal testimonies on the impacts and effects of nuclear weapons. These included Hiroshima-born anti-nuclear campaigner Setsuko Thurlow, who was a thirteen-year old schoolgirl when the first atomic bomb flattened her city and killed almost all of her classmates[329]; and downwinders such as former Senator Abacca Anjain Maddison[330], who suffered the impacts of US nuclear testing in the Marshall Islands, Karipbek Kuyukov[331] a disabled Kazakh artist and activist born and raised near the Soviet nuclear test site at Semipalatinsk, Kazakhstan, and Aboriginal Elder Sue Coleman-Haseldine from Maralinga in Australia, where the UK's plutonium tests were carried out, with appalling consequences.[332] Many other experts provided facts and evidence about nuclear accidents, radiation, and all kinds of risks and mistakes, alongside speakers from the Red Cross and UN agencies dealing with humanitarian assistance, public health and food insecurity. Such testimonies, facts and evidence seemed to shock most if not all of the participants who attended the HINW conferences, which included up to 157 governments. These testimonies and studies all fed into the UN negotiations in 2017, which led to the overwhelming adoption of the TPNW.

This box highlights the Chair's summary delivered by Mexico's Deputy Foreign Minister, Juan Manuel Gómez Robledo, at the end of the second HINW conference, in Nayarit, February 2014.

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328 John Large, The Lay-person's Alternative Guide to REPPIR Relating to the Atomic Weapons Establishment (AWE) Aldermaston and Burghfield, Nuclear Information Service, April 2012; Rob Edwards, Nukes of Hazard: The nuclear bomb convoys on our roads, ICAN-UK 2016.

329 https://en.wikipedia.org/wiki/Setsuko_Thurlow

330 https://en.wikipedia.org/wiki/Abacca_Anjain-Maddison

331 Karipbek Kuyukov (2016) 'My parents were witnesses of nuclear tests', https://e-history.kz/en/news/show/23943/; and Wudan Yan (2019) 'The nuclear sins of the Soviet Union live on in Kazakhstan', Nature, 3 April 2019. https://www.nature.com/articles/d41586-019-01034-8

332 ICAN Nobel Peace Prize win shines spotlight on Maralinga horror, 4 December 2017, https://www.sbs.com.au/nitv/nitv-news/article/2017/12/04/ican-nobel-peace-prize-win-shines-spotlight-maralinga-horror.

Humanitarian Impacts of Nuclear Weapons

Intergovernmental Conference, Nayarit, Mexico, 14 February 2014

- The effects of a nuclear weapon detonation are not constrained by national borders – it is therefore an issue of deep concern shared by all
- Beyond the immediate death and destruction caused by a detonation, socio-economic development will be hampered and the environment will be damaged.
- Suffering will be widespread, the poor and vulnerable being the most severely affected;
- Reconstruction of infrastructure and regeneration of economic activities, trade, communications, health facilities and schools would take several decades, causing profound social and political harm.
- Radiation exposure could result in short and long-term negative effects in every organ of the human body and would increase cancer risks and future hereditary pathologies.
- The risk of nuclear weapons use is growing globally as a consequence of proliferation, the vulnerability of nuclear command and control networks to cyber attacks and to human error, and potential access to nuclear weapons by non-state actors, in particular terrorist groups.
- As more countries deploy more nuclear weapons on higher levels of combat readiness, the risks of accidental, mistake, unauthorised or intentional use of these weapons grow significantly.
- It is a fact that no state or international organisation has the capacity to address or provide the short and long term humanitarian assistance and protection needed in case of nuclear weapon explosion [and] it would not be possible to establish such capacities, even if attempted.[333]

Human history shows many examples of leadership hubris and miscalculations that cause foreseeable and avoidable wars and disasters, sometimes with appalling and tragic consequences. People die, sometimes in their millions, when risks and consequences are downplayed. Human frailties, miscalculations, computer errors and realistic assessments of

333 Juan Manuel Gómez Robledo, Chair's Summary, Second Conference on the Humanitarian Impact of Nuclear Weapons, Nayarit, Mexico, 14 February 2014. This summary was drawn to the attention of MPs through extensive extracts reproduced in 'Conference on the Humanitarian Impact of Nuclear Weapons', House of Commons Library Information, International Affairs and Defence Section, 3 December 2014, SN/IA/7028, pp 4-5. https://researchbriefings.files.parliament.uk/documents/SN07028/SN07028.pdf

the consequences of nuclear mistakes frequently don't fit into the theories that put nuclear weapons at the centre of deterrence policies of nine countries, including the UK. Far from being a failsafe attribute of nuclear armaments, the long-standing concept of deterrence recognises that it is dependent on multiple factors, particularly effective knowledge and communications shared by adversaries; failure is always on the cards. The personalities, capabilities, experience and psychologies of leaders as well as political structures, laws and norms, influence risks, consequences, security and survivability for many people, not only living within a country's borders, but regionally and internationally.

Since 1945, nuclear weapons have been acquired, stockpiled and pursued because of the elevated constructs of power and status they are believed to confer. Deterrence underpins the public relations and myths that enable leaders to argue that nuclear weapons provide security for their people, while everyone else must be prevented from ever acquiring these weapons of mass destruction. But deterrence is little more than faith-based theories, based on the assumption that an adversary will make the same calculations as we would in a crisis. The more narcissistic and incompetent the leader and government, the heavier will become their reliance on nuclear weapons in their domestic politics and international power games. The looming climate emergency and Covid are forcing us to learn lessons about human security that go beyond the geostrategic assumptions and practices of the 20th century. The political myths that justified keeping nuclear weapons rely on people believing in 'safe hands' and 'responsible countries'. Those times have passed.[334]

Some nations have learned these lessons faster than others. The consequences of nuclear use and mistakes are potentially so far reaching and irrevocable that over 130 nations participated in the multilateral UN negotiations and endorsed the TPNW as a legal means to remove nuclear weapons from all hands and countries. These countries looked at the facts and evidence and took hard-headed national security decisions to increase international legal and disarmament powers to stigmatise, ban and create the institutional and verification structures to put nuclear weapons out of reach for everyone.

It is a reality that deterrence sometimes fails. With some miscalculations it is possible for those affected to pick up the pieces and carry on. They may not be as happy, safe, healthy or free as they were before their leaders made the wrong decisions; but if alive, they can still hope to go forward and build a better future. Miscalculate with nuclear weapons, and a failure of deterrence could turn into nuclear war too quickly for any leaders to call a ceasefire.

This is a problem for international security, as demonstrated by Chatham House and others who studied the near nuclear catastrophes such as the 1979 and 1980 Norad computer mistakes, 1983's miscommunication and miscalculations over the Able Archer NATO exercise at the height of East-West tension, and various other near misses since the 1962

334 David Axe, 'Enraged and isolated, Donald Trump still has sole control of America's nukes', Forbes, 6 January 2021. https://www.forbes.com/sites/davidaxe/2021/01/06/enraged-and-isolated-donald-trump-still-has-sole-control-of-americas-nukes/; and Edward Docx, 'The Clown King: how Boris Johnson made it by playing the fool, The Guardian, 18 March 2021. https://www.theguardian.com/news/2021/mar/18/all-hail-the-clown-king-how-boris-johnson-made-it-by-playing-the-fool.

Cuban Missile Crisis.[335] As noted in one of the Chatham House reports described by Patricia Lewis at the conference in Mexico, there were at least a dozen incidents since the Cuban Missile Crisis which came 'too close for comfort' to triggering nuclear war.[336] Luck and courageous individuals on the scene at the time saved the world.[337] When French and British nuclear-armed submarines collided while on patrol in the Atlantic on 6 February 2009, both navies were shocked and tried to keep the accident hidden. When the news emerged nearly two weeks later, the collision was explained as 'a stroke of bad luck.'[338]

Cyber attacks and new technologies with threatening capabilities should undoubtedly be on the government's radar. But these cannot be deterred by nuclear weapons. On the contrary, since the biggest nuclear-related risks and dangers come from nuclear systems vulnerabilities and terrorist attacks on nuclear facilities and transports, countries most at risk are the ones that make and deploy nuclear weapons, not those that reject them.[339] As one of the nine nuclear-armed States, which has spent thousands of billions of pounds over the years to maintain nuclear status, the UK continues to cling to the comforting theories and myths attached to nuclear umbrellas and the faith-based infallibility of 'our minimum, credible, nuclear deterrent.'

If Covid-19 has taught us anything, it is the importance of paying attention to foreseeable risks and undertaking preparations. If something bad can happen, sod's law says it probably will. The best preparation of all is to avoid and prevent potential security risks from turning into catastrophic events. But most of our political systems appear deficient in the leadership, foresight and education that are necessary for prevention. This is gendered as well as political and structural. Fighting and winning wars are associated with masculinity and heroism in many cultures, whereas credit for preventing humanitarian catastrophes belongs to the many, and is therefore overlooked.

Reflections

- Nuclear war, use and accidents pose real and ever present risks in today's world. There have already been a shocking number of close calls and 'nearly nuclear detonations'by mistake. If something can go wrong, it probably will, sooner or later.

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335 Berry et al (2010), and 'Security and humanitarian implications of relying on nuclear weapons for deterrence, and effective legal alternatives', Working Paper from the Acronym Institute for Disarmament Diplomacy, 11 May 2016, A/AC.286/NGO/22/Rev.1.

336 Patricia Lewis et al (2014), Patricia Lewis, Heather Williams, Sasan Aghlani, and Benoit Pelopidas, 'Too close for comfort: cases of near nuclear use and options for policy', Chatham House, April 2014.

337 Eric Schlosser, 'World War Three by Mistake', The New Yorker, 23 December 2016, https://www.newyorker.com/news/news-desk/world-war-three-by-mistake

338 Richard Norton-Taylor, 'Two subs, dozens of nuclear warheads, one huge ocean - and a stroke of bad luck', The Guardian, 17 February 2009, https://www.theguardian.com/uk/2009/feb/17/nuclear-submarine-collision. According to a personal conversation with a naval officer in a position to know, one submarine began to plunge towards the seabed before being stabilised. This has not been officially corroborated.

339 M.V.Ramana and Benoît Pelopidas, 'Taking nuclear vulnerabilities seriously', The Hindu, 6 August 2020, https://www.thehindu.com/opinion/op-ed/taking-nuclear-vulnerabilities-seriously/article32279584.ece; and Andrew Futter (2016) Cyber Threats and Nuclear Weapons: New questions for command and control, security and strategy, RUSI Occasional Paper July 2016.

- Risk calculations multiply the probability of an event by its impacts.
- Any major nuclear detonation would shock the world, but would not necessarily bring about a damascene conversion of nuclear-armed leaders to disarm and work for security without nuclear weapons.
- The humanitarian and environmental impacts of miscalculation could be far, far worse than leaders seem to believe.
- Preventing nuclear use and accidents is a better strategy than waiting for the next inevitable nuclear catastrophe.
- Shocking leaders through real life images, testimonies and accurate information can bring about desired outcomes without having to undergo disasters directly.
- Joining and contributing to the TPNW will greatly reduce the UK's nuclear dangers, and enable more resources, jobs, skills and capabilities to be directed towards preventing worst case scenarios.

C) Scotland votes to become nuclear free and independent

Scenario

The Scottish people vote for independence from the UK and Westminster rule in a referendum in the coming years. In conjunction with independence, there is widespread support for Scotland to become nuclear free and join the TPNW. In the transition period between the referendum vote and finalisation of separation from the UK, Scotland assumes its share of the UK's legal and treaty responsibilities, including the NPT. During separation negotiations with Westminster, the Scottish government makes clear its intention to remove nuclear weapons from its land and waters, and requests the UK government to ensure that all nuclear weapons are permanently removed.

Analysis

Brexit has propelled the prospect of Scottish independence over the horizon again, and this time Scotland could well vote to become nuclear free and independent. In September 2021, British media reported that Whitehall has conducted exercises in contingency planning for what to do about UK nuclear bases in Scotland in the event of a referendum vote for independence. This news was based on a *Financial Times* article that 'officials' have considered a range of options in the event of Scottish independence, from relocating

to 'securing a long-term lease at their present sites on the west coast of Scotland.'[340] The contingency options, which have been unconvincingly denied by unnamed officials, also included basing the Vanguard-Trident submarines in the United States or France.

The questions raised by Malcolm Chalmers and William Walker in *Uncharted Waters,* their 2001 analysis of the implications of Scottish devolution on UK nuclear policy,[341] have in twenty years become a realistic scenario that must now be taken very seriously. Chalmers and Walker wrote about the possibility of independence, the high levels of scepticism about nuclear deterrence and status among Scottish political elites, and the failure by 'Whitehall' to recognise the 'special and distinct' problems for Scotland arising from the fact that UK nuclear weapons are based at Faslane and Coulport. Thinking ahead, they considered a number of relevant issues and devoted a whole chapter to the question of whether Trident could be relocated, concluding the 'implausibility' of finding feasible alternative sites for storing nuclear warheads and deploying nuclear submarines in England or Wales.[342] Their conclusion was confirmed in Scottish CND's analyses ten years later, in the run-up to the 2014 Scottish independence referendum.[343]



Hiroshima and Nagasaki A-bomb survivors and descendents at Faslane 2007 (R.Johnson)

If the Scottish people deliver a majority for independence in the coming years, current thinking allows for a two year transition period for Scotland and the rest of the UK (rUK, a term used by Chalmers and Walker) to accomplish the legal and political separation. During the transition to independence, Chalmers and Walker assume that rUK and the Westminster-Whitehall political infrastructures that remain in place will inherit the UK seat on the UN Security Council, along with obligations under all treaties and agreements to which the UK is a signatory. That would need to be negotiated. If that were to be the agreement, then the Scottish government would be expected to join most if not all the existing treaties that Scotland was party to during its union with the UK, including the NPT, CWC, CTBT, UNFCCC, etc.

There are precedents in how Kazakhstan, Ukraine and Belarus negotiated the transfer of all Soviet nuclear weapons to Russian territory and control. It was agreed that Russia, as the larger political and military entity, would 'inherit' the treaty commitments that had been made by the Soviet Union, while the other States applied to accede to treaties in their

340 Steven Swinford (2021), 'Trident nuclear submarines could move to US if Scots break away', The Times, 2 September 2021 https://www.thetimes.co.uk/article/trident-nuclear-submarines-could-move-to-us-if-scots-break-away-9j8js0bff

341 Malcolm Chalmers and William Walker (2001), Uncharted Waters: the UK, Nuclear Weapons and the Scottish Question, (East Linton: Tuckwell Press, 2001).

342 Chalmers and Walker, 2001.

343 John Ainslie (2012), Trident: Nowhere to Go, Campaign for Nuclear Disarmament and Scottish CND, February 2012. https://cnduk.org/wp-content/uploads/2018/02/Trident-Nowhere-to-Go.pdf

own right. In the case of the NPT, Russia became recognised as a 'nuclear-weapon state', while the others acceded as 'non-nuclear-weapon States.' It was important for international security and the NPT regime that Kazakhstan, Ukraine and Belarus were persuaded not to hold on to the nuclear weapons and facilities on their territory or try to be accepted as 'nuclear weapon States' alongside Russia. Since the majority of Scottish people have no desire to retain any nuclear weapons or facilities on their territory, it is assumed that they want to join the NPT as a non-nuclear-weapon state.

Scottish MPs were sidelined in the Westminster parliament votes on renewing Trident in 2007 and 2016. Blair's insistence on a Labour Party three line whip in favour of Trident in 2007 deeply damaged support for Labour in Scotland. Scottish Ministers in the UK government were forced to resign in order to vote against Trident. This was also a time of heightened civil society protests, including a yearlong 'Faslane 365' blockade of the HMNB Clyde, homeport for Trident-Vanguard. From October 2006 to 2007, thousands of people participated – and over 800 were arrested – from all over the world, but especially from towns and villages the length and breadth of Scotland, notably women, young people, teachers, doctors, elected politicians and religious leaders.[344]

a reasonable, truthful and forward-looking process of analysing security risks and requirements would already have set the UK on a sensible path towards nuclear disarmament and joining the TPNW

In the run-up to the May 2007 elections for the Scottish Parliament, Scottish CND, Faslane 365 and other activists promoted one simple demand 'Please don't vote for anyone who supports Trident.' The Scottish National Party (SNP), which strongly advocated nuclear disarmament as well as independence, trounced Scottish Labour and became the largest party for the first time.[345] The SNP formed a minority government with support from the Greens and others and immediately changed its designation from 'Scottish Executive' to 'Scottish Government. The 2007 vote proved to be a turning point for Scottish politics, hopes and ambitions to become both nuclear free and independent. The Westminster Parliament's vote on Trident renewal in March 2007 was considered decisive, whereas the overwhelming vote against this nuclear policy in the Scottish Parliament in June 2007 was 'treated as irrelevant.'[346]

On 22 October 2007, Nicola Sturgeon MSP, then deputy First Minister, welcomed members of the Westminster and Scottish parliaments, faith leaders, councillors, trades unionists, prominent lawyers, journalists and members of Scottish CND and the Faslane 365 steering group to a ground-breaking Summit for a Nuclear Free Scotland. Convened by the Scottish

344 Zelter 2008. Angie Zelter (ed.), Faslane 365: a year of anti-nuclear blockades, Luath Press 2008.

345 Rebecca Johnson and David Mackenzie (2008), 'Focusing on Scotland to Break the Nuclear Chain', in Zelter 2008. In disclosure, Rebecca Johnson lived in Rhu, near Helensburgh, at the time, and served as a member of this Scottish Government Working Group (2007-09).

346 William Walker, Reflections on the Legality and Legitimacy of Trident Renewal, in Andrew Futter (ed.) Andrew Futter (ed.), The United Kingdom and the Future of Nuclear Weapons, Rowman & Littlefield, 2016, p 100. Professor Walker also served on the Working Group on Scotland Without Nuclear Weapons.

Government and held in Glasgow, one of the outcomes of this Summit was the establishment of a Working Group on 'Scotland without Nuclear Weapons' in April 2008. This working group was chaired by Scottish Government Minister Bruce Crawford MSP, and included members of the Scottish Parliament, trades unions, academics, nuclear specialists and civic leaders. It was able to raise concerns and make recommendations on safety and security issues relating to nuclear transports and facilities, but government lawyers strictly limited what could be discussed and achieved, on the grounds that defence and foreign policy issues were 'reserved' to Westminster under the 1998 Scotland Act that governed devolution.[347]

When the SNP was re-elected with an overall majority in the Scottish Parliament in 2011, pressure mounted for a referendum on independence. UK Prime Minister, David Cameron, decided to allow this, reportedly banking on a majority decision to remain in the UK that would take Scottish independence off the political agenda for at least a generation.



RNAD Coulport nuclear bomb store (R.Johnson)

Before the referendum on Scottish Independence, Scottish CND's John Ainslie published several analyses dealing with nuclear issues. In 'Trident: Nowhere to Go', he examined a range of options for basing Trident outside Scotland. These included Devonport, Falmouth and Barrow-in-Furness; Milford Haven in Wales; the US naval facilities at Kings Bay Georgia and Bangor in Washington State; and Ile Longue, France's submarine base in Brittany. With regard to the US and French possibilities, Ainslie raised political and NPT-related legal issues, and quoted defence officials describing Scottish independence as a 'nightmare scenario' for Trident. While Philip Hammond, Defence Secretary for the Cameron-Clegg government, was quoted saying that 'relocating Trident would cost billions and take many years', Admiral Lord West's recognition that relocating the warhead storage depot from Coulport would be a 'huge, huge, complex operation' was most significant. Ainslie died in 2016, but his analysis and conclusions stand the test of time: 'A government which had deep pockets and which placed nuclear weapons at the top of their agenda could, with enough political will and financial commitment, find some way to relocate Trident. However the economic and political realities of today mean that none of the alternatives are practical.'[348]

The campaign for independence ran much closer than Cameron had foreseen. Public opinion polls showed voting to be neck and neck before UK and EU politicians piled in during the final weeks of the referendum to undermine the SNP's arguments that an independent Scotland could be fast tracked to join the European Union. Staying in the European Union was a persuasive argument and reportedly tipped the balance for significant numbers of 'undecided voters' to vote against Scottish independence on polling day. In the end,

347 Working Group on Scotland Without Nuclear Weapons: Report to Scottish Ministers, August 2009, https://www.gov.scot/Topics/People/swnw-working-group (archived)

348 John Ainslie (2012), Trident: Nowhere to Go.

advocates of Scottish independence lost by a ten point margin. Cameron was emboldened to try the referendum tactic again, gambling Britain's European Union membership in his bid to marginalise UKIP and Eurosceptics in the Conservative Party. This time he lost, for reasons that will continue to be argued about for decades. Scotland overwhelmingly voted to remain in the EU, and felt particularly betrayed. In the wake of Brexit and the strong support given to Nicola Sturgeon's leadership and SNP candidates in the 2021 Scottish elections, the prospect of Scotland becoming independent and nuclear free has moved much closer.

Contingency planning

It is understood that at the beginning of the 2014 Scottish referendum confidence was sufficiently high in the Westminster-Whitehall establishment that contingency plans for Trident, in the event of a vote for independence, were not undertaken.[349] Of course, the MoD had read Ainslie's report. In conversations I had with officials at the time, it was clear that they didn't disagree with his conclusions. The fact that the MoD is now making contingency plans is evidence of higher levels of concern in the MoD that Brexit has swelled the tide of Scottish voters who want independence from the rest of the UK.

there simply isn't anywhere else where we can do what we do at Coulport, and without that, there is no deterrent

The SNP is developing policies and plans for managing the transition. As soon as an independent Scotland achieves UN recognition as a Member State, the Scottish Government will ensure that it accedes to all relevant treaties and agreements undertaken on its behalf by the former UK, including the NPT (as a non-nuclear weapon state). If led by the SNP, as seems likely, the government will also undertake to join treaties and agreements to which the rUK is not currently a party, including the European Union. The SNP and Scottish Green coalition already have policy support for joining the TPNW. Details have not been worked out regarding which TPNW pathway to eliminating nuclear weapons from Scotland's territory will be chosen. However the 2021 SNP Motion supported removing UK nuclear weapons, capabilities and facilities from Scotland within three years of Scottish independence becoming legally recognised.

At time of writing, the MoD's contingency planning reported by the *Financial Times* and others has not been made public. From the news reports, it is understood that this was an 'exercise' that 'concluded that there are three options for the future of the Trident bases following a vote for independence. The first would involve the submarines being relocated to the Royal Navy's Devonport base, which experts believe could cost as much as £4 billion. The second would be to move them to an allied country such as the US. The Treasury is said to favour this as it would be significantly cheaper. A third option is to negotiate a new British Overseas Territory within an independent Scotland that would include the Faslane and Coulport bases.'[350]

349 See response by to Parliamentary Questions from Lord Moonie referenced in Column WA54 and WA55 responses for , and the parliamentary reports for 18 July 2021. https://publications.parliament.uk/pa/ld201213/ldhansrd/text/120718w0001.htm#120718109000235%20%2018%20July%202012%20:%20Column%20WA54%20references%20this.

350 Swinford 2021.

Ainslie had suggested that finding a homeport for Britain's nuclear submarines would be doable if the UK is willing to sink enough money and political capital into such a move. That could be correct, although the costs and practical difficulties are greater now than when his report was published. The defence services are increasingly sceptical of the arguments for maintaining nuclear weapons when their own personnel and equipment budgets are being cut to the bone. The biggest question remains: where and how would the UK manage to store its nuclear warheads and carry out related operational requirements?

In 2012, an unnamed official dismissed that there would be a problem finding submarine berths, but confirmed that 'there simply isn't anywhere else where we can do what we do at Coulport, and without that, there is no deterrent.'[351] AWE Burghfield may be able to handle a few warheads at a time, but it does not have the right geographical and geological conditions to provide warhead-to-missile handling capabilities or secure storage for the numbers of warheads that the MoD currently relies on Coulport to hold. Moreover, Burghfield is not in sufficiently close proximity to any candidate location for a new Trident submarine base. If transferring to Devonport (perhaps the least unrealistic option) – or anywhere else – the lack of appropriate facilities for storing and handling the warheads and missiles will be prohibitive. In that case a British government is unlikely to get the necessary planning decisions and agreements past legal, security, planning, safety, environmental, economic and political obstacles, including public, local and NIMBY (not in my back yard) opposition.



Nuclear warhead convoy heading to Coulport, M74 Scotland, 2021 (Nukewatch UK)

As British nuclear weapons already depend on leasing US Trident D5 missiles under the Anglo-American Mutual Defence Agreement that dates back to 1958, one can see some in Whitehall hoping that the United States will offer a haven for London's nuclear submarines. Even if a UK Prime Minister was desperate enough to ask, it is not at all certain that Washington would agree. Such an arrangement would give rise to serious practical, legal, political and NPT-related challenges. What would be done with UK warheads? Would the Royal Navy be given an autonomous space within US nuclear facilities? Would arrangements to accommodate British nuclear weapons and submarines mirror what the US military has enjoyed when deploying its nuclear and conventional forces in other countries (including the UK)? What are the legal, insurance and liability issues, for example in the event of accidents? If (and it is a big if) the US Navy were minded to agree, the United States could well decide that in light of shifting geostrategic relations and other priorities the costs and complexities, not to mention domestic and international criticisms, would not be worth any foreseeable benefits.

351 James Kirkup (2012), 'Nuclear subs will stay in Scotland Royal Navy chiefs decide', Daily Telegraph, 26 January 2012 https://www.telegraph.co.uk/news/uknews/defence/9043092/Nuclear-subs-will-stay-in-Scotland-Royal-Navy-chiefs-decide.html

Similar, but even more challenging, problems are attached to the option of asking France to rescue the UK's nuclear weapons with a home-port for British nuclear submarines. Some aspects of Anglo-French cooperation were enabled from 2010, under the so-called Teutates Treaty that French president Nicolas Sarkozy proposed to David Cameron within months of this new Conservative prime minister's election.[352] That was prior to Brexit. French president Emmanuel Macron is angling now to become the EU's nuclear champion and deterrence provider, although most NATO and EU members remain unconvinced.[353] Ainslie dismissed France as an option on practical grounds, noting that Ile Longue is a much smaller base 'lacking the separation distances between facilities which are found at British and American nuclear submarine sites.'[354] If the UK continues to depend on US missiles while moving its nuclear submarines to Brittany, where will the warheads be put?

Chalmers and Walker had considered the possibility that an independent Scotland might agree to leasing arrangements to enable the UK to keep using Faslane and Coulport. This argument builds on the fact that the SNP has long been divided over NATO. Even as SNP leaders and party members underscore their determination to rid Scotland of nuclear weapons, membership of NATO has remained contentious. Angus Robertson MP, then SNP defence spokesperson and leader of the SNP Members of the UK House of Commons, proposed a motion to the 2012 SNP Conference that the SNP reverse its opposition to NATO, arguing that a commitment to join NATO could make Scottish independence more palatable to Westminster and improve the chances of winning the referendum. Then First Minister Alex Salmond supported Robertson's motion, which was narrowly passed by 394 votes to 365. It is important to note that the SNP's position is that the motion to join NATO in the event of independence was contingent on not accepting any nuclear-weapons role. As it turned out, reversing the SNP's long-held opposition to NATO did not take independence over the line in 2014, and it is not known whether or how many supporters of NATO voted for independence as a result of that SNP policy shift. The narrowness of the vote demonstrated high levels of opposition to NATO in the governing party, and the issue has not been tested with the SNP's membership since 2012.

In addition, the Scottish Greens have long-standing policies that oppose NATO as a military and nuclear alliance, while also advocating that Scotland should join the TPNW and be nuclear free and independent. The Scottish Greens, which now have two ministerial portfolios in the Scottish government, entered into a 'cooperation agreement' with the SNP when the May 2021 election outcome left the SNP one seat short of an overall majority in the Scottish Parliament.[355] In contrast to the high level of support for Scotland to rejoin the European Union after independence, it should be expected that any efforts to join NATO would be highly contentious. Given Scotland's strategic location, and the fact that it has a

352 See https://www.nuclearinfo.org/article/government-awe-aldermaston-development/anglo-french-nuclear-co-operation-agreement-new; Teutates Treaty text here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228571/7975.pdf

353 Rebecca Johnson, 'Macron's post-Brexit nuclear ambitions are destined to fail,' The Guardian, 10 February 2020, https://www.theguardian.com/commentisfree/2020/feb/10/emmanuel-macron-brexit-nuclear-britain-president-france

354 Ainslie 2012.

355 See https://www.itv.com/news/2021-08-28/scottish-greens-and-snp-to-lead-scottish-government-in-historic-deal It should be noted that Scottish Parliamentary elections are determined by proportional representation, unlike the first-past-the-post system used for electing the Westminster Parliament.

number of unique military facilities that NATO might want to retain, some believe that NATO could be a bargaining chip that an independent Scotland might play to its advantage. In response to Chalmers and Walker raising the possibility that an independent Scotland might agree to leasing arrangements to enable rUK to keep using Faslane and Coulport, Ainslie dismissed this on grounds of the strong ideological connection between nuclear abolition and independence among the main pro-independence parties in Scotland. Nonetheless, the SNP's 2012 vote to consider the option of joining NATO after independence may have encouraged hopes that this is something the UK might use as leverage to get a long-term lease or other agreement to keep Faslane and Coulport as UK nuclear bases.[356]

The above-mentioned 2021 contingency planning exercise also came up with the option of negotiating a 'nuclear Gibraltar', described as a new 'British Overseas Territory' within an independent Scotland that would include the Faslane and Coulport bases.[357] Even if agreement were to be given for Faslane and Coulport to continue to be nuclear bases as part of separation deals between the rUK and Scottish government, it is questionable whether or how this could work in practice. How would the rUK maintain security and manage the practicalities of transporting nuclear weapons through Scotland by road and sea, given the likelihood of fierce and continuing public opposition? In view of the locations and access roads to Faslane and Coulport it is difficult to imagine how an arrangement like that would be negotiated, what would be entailed and how it would work.

One exception only might be consistent with the policies and values of the SNP and Scottish Greens' commitments to join the TPNW: a temporary arrangement and limited lease to permit UK warheads to be securely stored pending their complete removal and destruction. The justification for this would be safety and security for the whole British Isles. Such an agreement would need to include provision for the transports carrying nuclear warheads, components and materials to travel in only one direction, to AWE Burghfield, for these warheads to be destroyed and the materials and components to be disposed of as safely as possible. That contingency plan might become more feasible if the UK was also prepared to sign the TPNW and enter into negotiations with both Scotland and the TPNW States Parties on the steps and timelines for the UK to destroy its nuclear arsenal.

Scottish commitment to the TPNW

In January 2021, Scotland's First Minister Nicola Sturgeon promised: 'An independent Scotland would be a keen signatory [to the TPNW] and I hope the day we can do that is not far off.'[358] A few months earlier she affirmed in a letter to Hiroshima survivor Setsuko Thurlow, who represented ICAN in accepting the 2017 Nobel Peace Prize, that 'the Scottish government is firmly opposed to the possession, threat, and use of nuclear weapons.' Referring to the TPNW, she added: 'I have called on the UK government to sign and ratify the treaty.'[359]

356 Ainslie 2012.

357 Swinford 2021.

358 'First Minister endorses the Scottish Women's Covenant on the Nuclear Ban Treaty', media release, 18 January 2021.

359 Nicola Sturgeon (2020), Letter to Setsuko Thurlow, ICAN, 16 July 2020.

Recent general elections and opinion polls provide strong indicators of Scottish people's hopes and aspirations to become nuclear free and independent. Many Scottish politicians and activists have made clear that their desire to be nuclear free and independent are linked with demands that the whole of the British Isles should get rid of nuclear weapons, as should NATO, Europe and the remaining nuclear-armed countries.[360]

Once Scotland has signed the TPNW, it will need to negotiate a timetable for Westminster to remove all nuclear weapons and capabilities from Scotland's territory. The SNP has set a deadline of three years for that to be accomplished. Joining the TPNW is incompatible with allowing the UK to hold onto part of Scotland for nuclear weapons purposes that are prohibited under the Treaty. It is far fetched for the UK to believe they can persuade an independent Scottish government to enable UK nuclear weapons to continue to be deployed and operated from Scotland through a legal loophole such as a 'British Overseas Territory' located in Scotland like a 'nuclear Gibraltar' arrangement.

There is a very active contingent of Scottish voters who argue for an independent and nuclear free Scotland to become a new moral and political force for humanitarian peace-building and global security, an important role that would be impeded and undermined if the SNP pushes for NATO membership. By way of example, advocates of a more global, humanitarian and peace-building role for Scotland cite Ireland and Austria, which are at the heart of Europe but not members of NATO, and which have become highly respected diplomatic actors for global security and development in the world.[361]

In light of the security-economic and jobs arguments that already favour nuclear disarmament over continuing with the Trident-Dreadnought nuclear weapons programme, joining the TPNW would prove to be better for British security and prestige – as well as being less politically and economically challenging than the relocation options the contingency planners have come up with.

Reflections

- The tides are moving inexorably towards independence from the UK for Scotland.
- Many Scottish voters like the idea of an independent Scotland getting rid of nuclear weapons and playing a more global, humanitarian and peace-building role, connected to both Europe and Scandinavia.
- Scottish aspirations to be nuclear free and independent are inextricably linked and internationalist: they encompass demands that nuclear weapons be removed from the whole of Europe and eliminated globally.

360 https://cnduk.org/new-poll-shows-mass-backing-for-tpnw/

361 See Janet Fenton (2022), 'UK Chapter, Assuring Destruction Forever', Reaching Critical Will, 2022 Edition. See also https://www.justiceandpeacescotland.org.uk/

- Though submarine berths might be found elsewhere in the UK, there is nowhere to replace what Coulport provides in terms of weapons storage, handling and operations.
- The SNP is overwhelmingly in favour of joining the TPNW but divided over joining NATO.
- The SNP and Scottish Greens, as well as Scotland's First Minister Nicola Sturgeon, have a governing majority and are committed to joining the TPNW soon after Scottish independence is legally recognised.
- If an independent Scotland joins the TPNW, rUK may as well sign at the same time, as the MoD will not be able to deploy its nuclear weapons without Scotland's assistance.
- A move by the UK to sign the TPNW now would be warmly welcomed by the many Scottish voters who are opposed to nuclear weapons but feel undecided about the independence question.

D) Other NATO States join the TPNW

Scenario

With treaties, as with much else, joining can be easier if your friends are doing the same. If one or more nuclear endorsing or armed governments decided to sign the TPNW, that would make a significant difference in enabling more to follow.

Some NATO members have already been given legal advice that no legal barrier stands in the way of adhering to the TPNW and remaining in NATO's security alliance. Four years since the TPNW was adopted in 2017 there is greater positivity towards engaging with the TPNW among key NATO Members such as Norway and Germany, which have committed to participating in the first Meeting of States Parties in Vienna. This scenario posits that one or more NATO Members decides that it is in their sovereign interests to sign the TPNW and undertakes negotiations within NATO to make this possible.

Analysis

UK nuclear dependence is facing pressures from Scottish independence, the unconvincing security rationale for nuclear weapons, as well as costs and opportunity costs needed for more compelling security priorities. UK politicians could show real leadership on security if they ditched these expensive and unusable WMD. As the foregoing discussion about contingency planning suggests, however, the Westminster-Whitehall mindset is such that they will try to cling on to US or French coat-tails rather than contemplate nuclear disarmament.

In other regions, currently unpropitious political situations may change rapidly and propel NATO members or other governments with nuclear-endorsing security alliances with the United States or other nuclear-armed countries to become disarmament leaders instead.

South Africa provides a compelling example of a nuclear-armed State that responded to political and security changes at the end of the 1980s by eliminating its nuclear weapons and programmes and joining the NPT in 1992. Following post-Apartheid democratic elections in 1994, South Africa's new government, headed by Nelson Mandela, began a new era of constructive international diplomacy. With its nuclear-free status and new-found national confidence, South Africa was instrumental in the 1995 NPT Review Conference outcomes, including the Treaty's indefinite extension.[362] As part of the New Agenda Coalition, South Africa then played an important role in promoting proposals for practical and progressive steps on nuclear disarmament and negotiating with the NPT5 during the 2000 Review Conference, leading to the consensus adoption of the Thirteen Steps.[363]

All kinds of political shifts in nuclear postures may occur to change the calculus for nuclear-armed States and alliances. When President Mitterrand unilaterally adopted the French moratorium on nuclear testing in April 1992, his move took most of the world by surprise. Greenpeace, which was working on this objective behind the scenes with the French Greens, was one of the few organisations to see the decision coming (and, indeed, to help it happen). US activists were already working on legislation for a US moratorium and support for CTBT negotiations to get started. Mitterrand's moratorium helped them get this legislation passed by the US Congress, which in turn contributed to creating the conditions for CTBT negotiations to open in the Geneva Conference on Disarmament in 1994.[364]

These examples are illustrative, and more can be found. The rest of this section will consider the likelihood and implications of TPNW accession by one or more NATO members or nuclear-endorsing US allies such as Australia and Japan. First, it will be useful to consider NATO's unsuccessful attempts to derail the TPNW.

NATO's early efforts to derail the TPNW

As the humanitarian initiatives developed into a treaty process to ban and eliminate all nuclear weapons, the United States, UK and France tried unsuccessfully to pressure all NATO States and other perceived allies to oppose UN resolutions and boycott the 2017 negotiations. Despite the heavy pressure brought to bear on NATO's members and partners, it proved impossible for NATO's nuclear-armed States to make the opposition unanimous.[365] Several Partners for Peace and one NATO member that currently participates in nuclear sharing policies and practices (the Netherlands) joined the negotiations. In the case of the Netherlands, the government was instructed by a parliamentary majority to participate.[366] They did so fairly constructively, and helped to strengthen the outcome. Though the

362 Dhanapala 2010.

363 Johnson 1995 and 2000.

364 Johnson 2009.

365 Acheson 2021.

366 Selma van Oostwaard (2016), 'The Netherlands should actively negotiate an international nuclear weapons ban treaty', PAX, 18 May 2016. https://nonukes.nl/netherlands-actively-negotiate-international-nuclear-weapons-ban-treaty/

Dutch diplomats opposed consensus on adopting the final text and called for a vote, in retrospect even that turned out to be beneficial for the TPNW's credibility, as the numbers demonstrated the strength and diversity of the 122 governments that voted in favour. Several NATO diplomats have since said that they think it would have been better if they had been allowed to participate in the multilateral negotiations instead of boycotting.[367]



NATO HQ in Brussels (NATO)

A report by former NATO lawyer Steven Hill for Chatham House was timed to coincide with the TPNW's entry into force in January 2021. He describes the main US-NATO talking points against the new treaty, that alleged for example that the TPNW is 'incompatible' with NATO and 'undermines' the NPT, does not 'adequately' address 'security conditions' and lacks detail in its verification provisions.[368] Some of these unsubstantiated arguments have been addressed in Chapter 1. They are relevant to mention here, because they are being forensically challenged by a growing number of legal and political analyses published in a variety of NATO Member and partner States. Quoting a senior US adviser, Brad Roberts, who in 2018 wrote, 'the TPNW should be left in limbo as a protest vote for those with nothing to lose', Hill acknowledges that this strategy has not played out: 'Regardless of the tenacity with which NATO maintains its opposition to the TPNW, the reality is that the treaty will now be here to stay.'[369]

Hill notes that NATO's foundational agreement, the North Atlantic Treaty, does not mention nuclear deterrence or any specific weapons, but was formulated 'in general terms' to fulfil the [Article 5] 'fundamental collective defence pact at the heart of the Alliance.'[370] In this regard, the North Atlantic Treaty and TPNW share an important and practical legal approach – adaptability. NATO has persisted for over fifty years because its founding text set out core principles and objectives without going into the levels of definition, technical and implementation practicalities that soon go out of date and become obstacles to further progress and relevance.[371] Through intention as well as necessity, the NPT and now the TPNW are both imbued with built-in adaptability.[372]

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367 Richard Lennane and Tim Wright (2021), A Non-nuclear Alliance: why NATO Members Should Join the UN Ban on Nuclear Weapons, ICAN, June 2021. https://www.icanw.org/report_why_nato_members_should_join_the_un_nuclear_weapon_ban

368 Steven Hill (2021), NATO and the Treaty on the Prohibition of Nuclear Weapons, Chatham House, January 2021. https://www.chathamhouse.org/2021/01/nato-and-treaty-prohibition-nuclear-weapons

369 Hill 2021, p 4, in which he quotes from Brad Roberts (2018), Ban the Bomb? or Bomb the Ban? Next Steps on the Ban Treaty, European Leadership Network Global Security Policy Brief, March 2018.

370 Hill 2021.

371 North Atlantic Treaty, which entered into force on 24 August 1949.

372 On the importance of treaty adaptability, see Johnson 2018.

The description of NATO as a 'nuclear alliance' appeared in 2010. This 'deliberate embedding of nuclear weapons in the alliance's identity'[373] should be understood as a political act driven mainly by US, French and British officials who were anxious about President Obama's support for nuclear disarmament and also, perhaps, the significance of two new paragraphs in the outcome document of the 2010 NPT Review Conference.[374] In their different ways, Obama and the 2010 NPT Conference had put the risks and impacts of nuclear weapons use in the spotlight, along with the 'peace and security of a world without nuclear weapons'[375] and the necessity of negotiating a framework or comprehensive treaty to ban and eliminate nuclear weapons.[376]

As support for the Ban Treaty grew in the decade since then, NATO members were increasingly pressured to demonstrate 'loyalty and unity' by supporting the expansion of nuclear capabilities in NATO and boycotting HINW meetings and the UN negotiations.[377] These pressures fly in the face of NATO's mission, as stated in the North Atlantic Treaty, which commits members to safeguarding 'democracy, individual liberty, and the rule of law.'[378] Moreover, NATO's resilience and Alliance members' security interests were in the past strengthened by the ability of members to adopt different policies regarding their practical and operational involvement with NATO's nuclear weapons and planning.

Hill's conclusion that NATO and nuclear ban supporters could engage more constructively 'to advance the common goal of nuclear disarmament'[379] will be welcomed by States Parties to the TPNW, which include security partners New Zealand, Kazakhstan, Thailand, and the Philippines, as well as EU members Austria, Ireland and Malta. New Zealand, which weathered punitive actions from the United States, UK and France against its 'nuclear free seas' and pro CTBT policies in the 1980s, joined with Ireland, Brazil, Mexico, Egypt, Sweden and South Africa in forming the 1998 New Agenda Coalition that developed the Thirteen Steps for nuclear disarmament that were adopted by the NPT in 2000.[380] New Zealand, like several other New Agenda Coalition leaders, played an important role in negotiating the TPNW. Despite becoming an early State Party to the TPNW, New Zealand continues to be a member of the US-led Five Eyes intelligence alliance (which also includes the UK, Australia and Canada), and important security ally in the Pacific.

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373 Lennane and Wright 2021 p 7.

374 Rebecca Johnson (2010), 'Assessing the 2010 NPT Review Conference', The Bulletin of the Atomic Scientists, vol. 66 no. 4, July-August 2010.

375 Barack Obama, President of the United States of America, Speech at Hradcany Square, Prague, 5 April, 2009.

376 Conclusions and Recommendations for Follow-on Actions, Final Document of the 2010 NPT Review Conference, May 28, 2010, available at http://www.reachingcriticalwill.org/legal/npt/revcon2010/FinalDocument.pdf.

377 Lennane and Wright 2021 p 7.

378 1949 North Atlantic Treaty text.

379 Hill 2021.

380 Johnson 2000.

No legal barriers

From 2018 onwards, analyses of the legal and political implications of joining the TPNW have been published in NATO countries and Australia and Japan, which also have 'nuclear alliance' relationships with the United States, as well as Switzerland and Sweden, which have NATO partner status. In one of the first, the Norwegian Academy of International Law (NAIL) noted that Norway had a 'historic policy of not accepting nuclear-armed vessels into its waters during peacetime.' Nonetheless, 'Norway was, over time, able to use the Alliance's consultation mechanisms to make its position understood' without provoking penalties from other Allies.

the TPNW is compatible with the NPT, the North Atlantic Treaty and other international agreements by which Norway is bound

France has always had an anomalous relationship with NATO, especially over nuclear policies and planning. France historically refused to participate in NATO's Nuclear Planning Group, and even today moves back and forwards, sometimes closer and other times at more of a distance.[381] Others, including Iceland, Greece and Spain, have pulled out of hosting US nuclear weapons, but still remain important Alliance members. As argued by ICAN, which referenced earlier legal analyses from NAIL, Harvard and others, many NATO members have also joined treaties such as the 1997 Mine Ban Convention and 2008 Cluster Munitions Convention that 'comprehensively outlaw certain weapons that remain in use in other NATO States' without this causing 'any fundamental strategic or operational problem for the alliance.'[382] NATO adapts where necessary because its leaders pragmatically accept that collective defence requires democratic flexibility to keep countries within the Alliance. Nuclear weapons are much less important for most if not all NATO members than the broader security issues on which these States cooperate.

In 2018, Ine Eriksen Søreide, then foreign minister of Norway, declared: 'There is no legal obligation barring Norway from signing or ratifying the [TPNW].' This confirmed the analysis from NAIL in their report from the same year: 'The TPNW is compatible with the NPT, the North Atlantic Treaty and other international agreements by which Norway is bound. However, Norwegian accession to the TPNW would prohibit Norway from assisting, encouraging or inducing its allies to develop, possess or use nuclear weapons. To comply with the TPNW, Norway would have to distance itself from any alliance documents endorsing the potential use of such weapons.'[383]

381 https://www.diplomatie.gouv.fr/en/french-foreign-policy/security-disarmament-and-non-proliferation/our-alliances-and-cooperations/france-and-nato/

382 Lennane and Wright 2021 p 7.

383 Gro Nystuen, Kjolv Egeland and Torbjørn Graff Hugo (2018), 'The TPNW: Setting the Record Straight', Norwegian Academy of International Law (NAIL), http://intlaw.no/wp-content/uploads/2018/10/TPNW-Setting-the-record-straight-Oct-2018-WEB.pdf

The 2020 edition of the Nuclear Ban Monitor explained in more detail: 'States Parties to the TPNW can remain in alliances and military cooperation arrangements with nuclear-armed States, and can continue to execute all operations, exercises, and other military activities together with them in so far as they do not involve nuclear weapons. Participation in 'nuclear burden-sharing' and other nuclear-related military activities... would need to be discontinued.'[384]

Support growing for the TPNW in NATO States

Following recent elections in Norway, a new government coalition led by Prime Minister Jonas Gahr Støre made clear its intention to participate as an observer in the TPNW's First Meeting of States Parties in 2022. As noted by ICAN, 'the move by Norway breaks the hard line against the TPNW that NATO had sought to exert on its member States, and opens the doors for others in the alliance to follow suit.'[385]

In 2020, as the TPNW moved closer to entering into legal force, an open letter from 56 former presidents, prime ministers, foreign ministers and defence ministers from 20 NATO member States and US nuclear umbrella allies Japan and South Korea, showed that the tides are turning against NATO's policy of hostility towards the nuclear ban treaty. The signatories, which included two former NATO heads, Javier Solana and Willy Claes (and also the former UN Secretary-General Ban Ki-moon), urged current leaders to join the Treaty. Referring to 'bellicose rhetoric and poor judgment of leaders', and concerns about the return of 'a new nuclear arms race', the letter argues: 'A race for disarmament is urgently needed. It is time to bring the era of reliance on nuclear weapons to a permanent end.' Warning that 'sooner or later our luck will run out', the letter concludes: 'The nuclear weapon ban treaty provides the foundation for a more secure world, free from this ultimate menace. We must embrace it now, and work to bring others on board.[386]

After Norway's decision to attend and observe the TPNW's first meeting of States Parties in Vienna, Germany's new coalition government promised to do the same. The announcement on 25 November by the new governing coalition comprising Germany's Social Democrats, Greens and the Free Democratic Party 'shows the new German government hopes to play a leading role in promoting nuclear disarmament and aspires to free the country of nuclear weapons', according to Kyodo News. The Japanese government is also coming under pressure to attend the TPNW meeting from its own civil society, including survivors and descendants of the Hiroshima and Nagasaki atomic bombs. As noted by Kyodo News, the moves by Norway and Germany 'could have a major impact on other NATO member

384 Nuclear Weapons Ban Monitor, Norwegian People's Aid, 2020.

385 Norway first NATO state to participate at the MSP, https://www.icanw.org/norway_msp_observer, accessed 2 November 2021.

386 Open Letter in support of the Treaty on the Prohibition of Nuclear Weapons, 21 September 2020, https://d3n8a8pro7vhmx.cloudfront.net/ican/pages/1712/attachments/original/1600645499/TPNW_Open_Letter_-_English.pdf

countries.'[387] Sweden, Switzerland and Finland, which are NATO partners but not members, have also indicated that they will participate in 1MSP as observers.

As with the Netherlands' democratic decision to participate in the nuclear ban negotiations at the United Nations, the sky will not fall because some NATO members participate in TPNW meetings. Attending such meetings is an important way to engage and keep informed as the TPNW grows. In 2022, the States Parties will begin work in earnest on establishing the institutional, verification, compliance and enforcement agreements and mechanisms that will develop and enable the TPNW to embed nuclear disarmament norms, laws and practices, and function effectively in the future to oversee and implement the Treaty in all its aspects.

participation in 'nuclear burden-sharing' and other nuclear-related military activities would need to be discontinued

Further pressures are bearing on key NATO Members to engage constructively and join the TPNW. By the end of 2021, more than a thousand parliamentarians in NATO States have signed ICAN's 'Parliamentarians Pledge' to support the TPNW and promote its signature and ratification in their countries. Opinion polls that ask about joining the TPNW return positive support of between 75 and 89 percent in favour in most countries. A recent poll showed French people voting 67 percent in favour of joining the TPNW, followed by the UK at 59 percent. Parliaments in several NATO States, including the Netherlands, Italy and Spain, have also been calling on NATO to take a more positive approach towards the TPNW and to hold discussions on reducing nuclear reliance. A growing number of parliamentarians are also calling for more parliamentary debates on the TPNW with the aim of persuading their respective governments to sign and adhere to the Treaty.[388]

ICAN's Cities Appeal, initiated after the TPNW was opened for signature in 2017, is also increasingly successful, especially in States that have or endorse nuclear weapons, such as NATO Members. By the end of 2021, ICAN's initiative and partner organisations have led to municipal and local council motions in support of the TPNW to be adopted in over 400 cities in NATO, including New York, Washington D.C., Los Angeles (and also the State of California), Berlin, Barcelona, Toronto, Vancouver and Oslo, as well as in other countries. Paris and Lyon are among over 55 French cities that have shown formal support for the TPNW.[389] In Britain, 24 local and county councils have aligned themselves with the Treaty, including Manchester, Glasgow, Edinburgh, Leeds, Oxford, Cambridge, Norwich, Bangor (Wales), Renfrewshire, Brighton and Hove. Several of these cities lie close to roads frequently used for the convoys

387 'Germany to observe nuke ban talks in policy shift under new government', Kyodo News, 25 November 2021, https://english.kyodonews.net/news/2021/11/4e918b0a4b0f-germany-to-observe-nuke-ban-talks-in-policy-shift-under-new-govt.html

388 Lennane and Wright 2021 pp 63-73.

389 http://icanfrance.org/appel-aux-maires/villes-france-signataires/; see also 'Hidalgo contre la dissuasion nucléaire', http://icanfrance.org/paris-et-lappel-des-villes/ and letter from the Mayor of St Etienne: http://icanfrance.org/wp-content/uploads/2021/11/Lettre-du-Maire-%C3%A0-ICAN-France.pdf

of military vehicles that carry nuclear warheads between Burghfield and Coulport.[390]

The wording of the resolutions differ within municipalities and around the world, but most commit to support the TPNW and promote its purposes and objectives. Many call on their respective governments to sign and accede. It took over a year from the ICAN Cities Appeal being taken up by civil society to its adoption by the New York City Council on 9 December 2021. As a recent success, this offers a good illustration of the kind of legislation and change that such actions embody and enable. The two critical pieces of nuclear disarmament legislation passed by the New York City Council were: Resolution 976, which significantly advances the work of divestment from nuclear weapons as it calls on the NYC Comptroller to initiate divestment from all nuclear weapons producers; and INT 1621, which sets up a committee to educate the public about nuclear disarmament and to reaffirm New York City as a nuclear weapons-free zone. Spearheaded by the political vision of the bills' lead sponsor Council member Danny Dromm, together with Council members Ben Kallos and Helen Rosenthal, the initiative provides practical political tools that elected representatives and citizens will be able to use in the future.[391]

cities in nuclear-armed countries are as responsible for the safety and security of their residents as cities in nuclear free countries

Activists in many other cities around the world are engaged in persuading their city councils and institutions to adopt resolutions that not only align with the TPNW, but – like New York – support divestment from nuclear weapons production and associated commercial activities. These are not just symbolic gestures. Cities in nuclear-armed countries are as responsible for the safety and security of their residents as cities in nuclear free countries. Many cities also have investments in nuclear weapons production, maintenance, deployment and other activities that put their populations at risk of nuclear use, war, environmental contamination and climate chaos. As such initiatives take hold, Councils with pension funds and other kinds of investments are encouraged to follow up Cities Appeals and support for the TPNW with practical actions.

In the wake of the Treaty's entry into force, recent and forthcoming reports from ICAN provide details of nuclear-complicit banks, companies and institutions, along with encouragement for financial and academic institutions, cities, corporations, unions, religious groups and other responsible entities to move their money away from nuclear weapons.[392] Arguments about divesting from nuclear weapons are affecting a growing number of commercial and investment endeavours. Even when they do not overtly support the Treaty, many managers see the wisdom of avoiding potential risks and financial exposure by divesting from

390 See https://cities.icanw.org/list_of_cities. Medact, a British affiliate of IPPNW and ICAN, has brought our a useful pack with sample motions for UK Councils to support and align with the TPNW, accessible at: https://www.medact.org/2021/actions/ican-cities-appeal/

391 See: https://www.icanw.org/new_york_city_joins_ican_cities_appeal

392 Nuclear Weapons Financing Research Group, Banks, Pensions and Nuclear Weapons: Investing in Change, Churches Together in Britain and Ireland, https://ctbi.org.uk/banks-pensions-and-nuclear-weapons-investing-in-change/.

companies that are not in compliance with the TPNW's prohibitions. In response to ethical investor actions even in countries that have not signed, the TPNW's prohibitions on assisting, encouraging or inducing the production, deployment and use of nuclear weapons, are being widely disseminated. Whether to support nuclear disarmament or to avoid reputational harm and potential lawsuits, divestments from nuclear-weapon-related production and deployment activities are accelerating.[393] As noted earlier, SERCO, formerly part of the AWEML consortium managing the nuclear bomb facilities at Aldermaston and Burghfield, has now abandoned plans to compete for nuclear weapon contracts, following 'warnings from fund managers' who are increasingly paying attention to ESG (Environmental, Social and Governance) standards.[394]

In 2011, the International Red Cross and Red Crescent movement of national societies, along with the International Committee of the Red Cross (ICRC), became active supporters of the humanitarian initiatives that led to the TPNW. Following the Treaty's entry into force, these humanitarian organisations have continued to promote its universal adherence, as they do with all treaties under International Humanitarian Law. In conjunction with this, in 2018, Red Cross and Red Crescent societies urged NATO members and other States that had not participated in the TPNW negotiations, to 'adopt planning, policy, and military practices that will not undermine [the TPNW] and that will enable them to adhere to the treaty.'[395]

Opportunities to contribute positively

As discussed in earlier parts of this report, even if the UK is not yet ready to sign the TPNW, there would be mutual benefits in contributing British expertise regarding disarmament processes and verification. The obvious precedent for this is the CTBT negotiations, when the Blacknest wing of Aldermaston's research establishment engaged constructively with scientists and diplomats in Geneva-based talks and then negotiations on how best to monitor and verify the proposed ban on nuclear testing. Aldermaston scientists continued to engage positively even during years when the Conservative governments under Margaret Thatcher and John Major were opposed to the CTBT.[396]

Articles 6 and 7 (victim assistance and environmental remediation) are also important areas of work that the first and subsequent meetings of TPNW States will be taking forward from now on. This has relevance for NATO, which contains three nuclear-armed states that carried out nuclear testing in the Pacific and North Africa. The UK, which conducted nuclear testing in Australia, the Pacific Islands, and the Nevada Test Site (on land that was recognised in the Ruby Valley Treaty of 1867 as belonging to the Western band of the Shoshone Nation),

393 Perilous Profiteering 2021.

394 Ben Gartside, 'Ethical investors block bid for nuclear weapons contracts', Daily Telegraph, 7 November 2021, https://www.telegraph.co.uk/business/2021/11/06/ethical-investors-block-bid-nuclear-weapons-contracts/

395 International Red Cross and Red Crescent Movement (2018), 'Action Plan on the Non-use, Prohibition, and Elimination of Nuclear Weapons 2018-21' appended to 'Working Towards the Elimination of Nuclear Weapons: Action Plan' resolution adopted by the Council of Delegates of the International

396 Johnson 2009.

bears particular responsibilities. As discussed in Chapter 1, the UK also has moral and legal responsibilities to help defence service personnel and others who have been exposed and contaminated due to nuclear tests and weapons-related activities.[397]

In addition, since 2000, UK scientists and diplomats have taken the lead in developing programmes for verifying nuclear disarmament, sharing information and holding regular sessions on these issues at NPT, UN and other meetings. British and NATO governments have considerable experience on the institutional requirements for treaty compliance and implementation.[398] The more constructive engagement can be fostered between non-parties and the growing TPNW regime, the better it will be for international security, non-proliferation and disarmament at all levels, including the NPT, IAEA and CTBT, and national interests and security. As the TPNW develops from 2022 onwards, crucial decisions will be made about verifying and implementing nuclear disarmament. NATO and British diplomats and scientists need to be in the room so that they can contribute positively.

from 2022 onwards, crucial decisions will be made about verifying and implementing nuclear disarmament. NATO and British diplomats and scientists need to be in the room so that they can contribute positively

Reflections

- NATO has long recognised the threat that nuclear weapons and other weapons of mass destruction pose to regional and international security. Rising tensions and risks are increasing the incentives for new thinking on security and nuclear disarmament.
- There is strongly growing support for the TPNW within many NATO States and partners. Through civil society engagement with parliamentarians, local councils, defence practitioners, financial institutions and investors, pressure is mounting for NATO to take non-military security priorities more seriously and remove reliance on nuclear threats for deterrence.
- Several NATO members are engaging in strengthening non-nuclear approaches to regional and international security, thereby paving the way to signing the TPNW.
- There is no legal barrier for Britain or other NATO Members to join the TPNW.
- The TPNW will soon take steps to develop the multilateral institutions and verification systems to implement nuclear disarmament for the future. Britain could play an important role in making these as effective as possible.

397 See LABRATS International https://www.labrats.international/ British Nuclear Test Veterans Association https://www.bntva.com/ and https://www.gov.uk/government/news/new-guidance-for-british-nuclear-test-veterans

398 Lennane and Wright 2021.

- Constructive engagement with the TPNW from now on will reduce nuclear dangers and enhance British and wider European resilience for the future.

E) UK elections deliver governments committed to nuclear disarmament

Scenario

In a future election, a government and prime minister are elected with the mandate to pursue nuclear disarmament, cancel the Dreadnought-Trident programme, and dismantle and eliminate Britain's existing nuclear arsenal. Such a government might be formed by a party with manifesto commitments to join the TPNW, or a coalition of Parties that are willing to work towards nuclear disarmament through the NPT, keeping the possibility of joining the TPNW open for the future.

Analysis

In successive elections over the past forty years, opinion polls have shown compelling support for the UK to pursue multilateral nuclear disarmament. Yet politicians are still afraid of taking meaningful steps to achieve nuclear disarmament. A national poll conducted on 12-13 January 2021 by Survation, showed the following:

- 59% of public opinion in the UK want the government to sign up to the TPNW, with the data showing support from 50% of Conservative voters and 68% of Labour voters.

- 77% support a 'total ban on all nuclear weapons globally', including 71% of Conservative voters and 83% of Labour voters.

- Both these questions were supported by majorities across every demographic (age, regions and nations, education level, income bracket, 2019 GE vote, and 2016 EU referendum vote).[399]

In the 21st century the dictates of mass media (and, more recently, social media) have increased the influence of populists who gain power by manipulating culture wars and pandering to certain kinds of prejudice. With regard to nuclear weapons, even today's politicians and media seem stuck on the 'unilateral' versus 'multilateral' distinctions that stifled debates about nuclear disarmament in the 1980s. These binary divisions, which were manufactured as a political tactic by a handful of politicians led by Thatcher and her Saatchi

399 https://cnduk.org/new-poll-shows-mass-backing-for-tpnw/

public relations team, are nowadays wheeled out to block meaningful debate on nuclear options that might result in policy changes that are more conducive to rethinking security without nuclear weapons.

Short term tactics to gain and retain political power appear to be supplanting thought-through strategies and policies to improve security and lives for the majority of people in the British Isles and across the world. Over the past two decades, the so-called 'war on terror' and conduct of Brexit have shown UK politics to be broken. Poor leadership and governance are particularly dangerous where nuclear weapons are concerned.

In 2012, a Guardian editorial noted that 'Common sense demands not renewing Trident, as prime ministers admit after office, yet one government after another ends up doing it anyway.'[400] Tony Blair's memoir demonstrated how he thought about renewing Trident: 'in the final analysis I thought giving it up too big a downgrading of our status as a nation… The expense is huge, and the utility in a post-Cold War world is less in terms of deterrence, and non-existent in terms of military use… but as I said to [Gordon Brown] "imagine standing up in the House of Commons and saying I've decided to scrap it. We're not going to say that, are we?" In this instance caution, costly as it was, won the day.'[401] By Blair's own admission, what 'won the day' was not a rational or compelling security assessment but political expediency. Despite knowing in 2006 that the renewal costs of Trident would swallow up hundreds of billions of pounds, Blair's memoir suggests that neither he nor Brown were willing to exercise the necessary leadership to educate voters about the myths and military-industrial establishments that promulgate and underpin nuclear deterrence.

common sense demands not renewing Trident, as prime ministers admit after office, yet one government after another ends up doing it anyway

Since then, the UK's national political system has been exposed as dangerously outdated and unfit for purpose. The 'first past the post' system adopted in the UK long before universal suffrage was achieved in 1930 following decades of Suffragette and Suffragist campaigning, is a major structural and political factor in keeping most of UK political choices stuck in the past. This system, which is not used in Scottish elections for the Holyrood Parliament or for elections to the Senedd Cymru (Welsh parliament), favours interparty rivalries and intraparty tactics above democratic engagement, effective governance and cooperative security. Adversarial skills, honed all too often in a small number of elite schools and professions, win public and parliamentary debates by shouting over their colleagues in point-scoring competitions that do nothing to illuminate or explain the complex issues and choices facing British people in reality. These debilitating threats to democracy and good governance are inherent in the UK's current Westminster-Whitehall establishment, and constitute another important driver for Scottish aspirations to become nuclear free and independent.

400 The Guardian editorial, 29 October 2012.

401 Tony Blair (2010), A Journey, Random House, 2010, p 636.

Other structural and systemic factors include: reliance on (and pandering to) wealthy funders and large corporations, unions and individuals, especially when they have military-industrial connections or ties; patronage and influence peddling over merit and diversity; out-dated types of leadership (in Whitehall as well as Westminster). In parliament and, sadly, much of the English media, oversimplified rhetoric (meant to be entertaining, perhaps, and often sounding aggressive) drowns out thoughtful questions and arguments relating to complex issues. Parliamentary committees may engage in investigative, analytical discussions and cooperative approaches to solve political, economic, security and social problems, but the hard-working MPs that do this work are heard from far less than the ambitious egotists who become (or collude to uphold) populist ministers, with little regard for inconvenient truths or national and international security.

History demonstrates that the leaders that feel most insecure domestically are the ones most likely to increase the rhetoric and roles they attach to weapons of mass destruction. As noted by the US author of 'Command and Control', Eric Schlosser, in 2013, 'Nuclear weapons have gained allure as a symbol of power and a source of national pride. They also pose a grave threat to any country that possesses them.'[402] The Conservative and Labour Parties would do well to remember this.

nuclear weapons have gained allure as a symbol of power and a source of national pride. They also pose a grave threat to any country that possesses them

UK politics keeps getting stuck in the past, not just the 1980s, but in myths about 'our' wars. In the aftermath of the 'Little Boy' and 'Fat Man' atomic bombs that flattened Hiroshima and Nagasaki, the Labour Party's Foreign Secretary, Ernest Bevin, was applauded for (reportedly) declaring, 'We've got to have this thing [the nuclear bomb] over here, whatever it costs. We've got to have the bloody Union Jack on top of it.'[403] Ever since, UK governments have gone along with Bevin's sentiments, amplified over the years by post-imperial loss of standing, obsessive reliance on past victories and nationalist-colonialist tropes of 'plucky little Britain' punching above its weight and ruling the seas.[404] As the Guardian recently noted, irrespective of how the world has changed, 'with the bomb, the sole test remains the bloody Union Jack.'[405] Few politicians seem sufficiently brave or determined to carry forward legislation that might upset big arms manufacturers like BAE Systems, despite long-standing concerns about corruption, negative impacts on British security, and the 'unintended consequences' of providing weapons to known violators of human rights.[406]

402 Eric Schlosser (2013), Command and Control, Allen Lane, 2013, p 481.

403 Peter Riddell, 'Nuclear arms will keep Union Jack' Sunday Times, 15 March 2006. https://www.thetimes.co.uk/article/nuclear-arms-will-keep-union-jack-zw2c55z99ps

404 Paul Rogers, 'Britain's Military: Costs of Failure, Symbols of Vanity', openDemocracy, 26 January 2018, https://www.opendemocracy.net/en/britains-military-costs-of-failure-symbols-of-vanity/

405 The Guardian editorial, 29 October 2012. https://www.theguardian.com/commentisfree/2012/oct/29/trident-renewal-philip-hammond

406 See, for example, https://caat.org.uk/data/companies/bae-systems/

Whatever the costs to British people and international security, political rivalry and business as usual continue to be the Westminster Parliament's default policy, unless they are shocked out of their complacency, as happened after Covid-19 filled the hospitals and morgues. The Palace of Westminster is an awe inspiring building redolent of Britain's past. The historically adversarial architecture of its chambers and systems are unfit for collective decision-making, democratic relations, and the governance purposes and objectives we urgently need in the 21st century. There are reasons why these structures and systems are failing to enable the decisions and leaders that we need.



COP26 demo at BAE Systems Glasgow (R.Johnson)

To survive to the end of this century, British people and our elected representatives need to rethink our security needs and transform our governance systems, institutions and expectations. There are many good ideas around for rethinking how we do effective and sustainable politics and economics as well as security. A modest but useful start would be to replace the first-past-the-post system with proportional representation and construct a purpose-built modern parliament, with electronic voting and enough space to accommodate all elected parliamentarians Most effective parliaments favour debating chambers in the round, where elected representatives can speak to (rather than at) each other, with desks for computers and notes. The Palace of Westminster is both beautiful and horrifying. It would best serve the nation from now on as a fascinating and instructive tourist attraction.

Much more, of course, needs to be changed and updated. We cannot hang around waiting or we may be dead before we get participatory democracy to work for us. In parallel with tackling climate destruction, pandemics, poverty and nuclear threats, we have to revive Britain's democratic potential, make our political systems fit for purpose, and move beyond the sclerotic institutions and mindsets that have imprisoned us for far too long.

Reflections

- The first duty of government is to protect and safeguard the lives of its citizens.
- It should be obvious to everyone by now that British politics is badly broken, and the UK's electoral system, Westminster Parliament and Whitehall establishment need fundamental reform to become fit for purpose once more.
- Nuclear disarmament is a vote winner in Scotland, where over many years courageous politicians, civil society campaigners, academics and cross-party initiatives have taken the lead in questioning the assumptions, examining the evidence and reframing understanding about nuclear dangers and security options.

- Preventing nuclear war, tackling climate destruction and future resilience in the face of Covid and future pandemics require an overhaul of our democracy and priorities, especially relating to our health and education systems, international relations and security priorities.

- Joining the TPNW would enhance British security and prestige, showing multilateral disarmament in action; constructive engagement with this UN Treaty would enable British skills and jobs to contribute more effectively to preventing nuclear proliferation, use and war.

What these scenarios indicate

We cannot afford to sit back and hope that a nuclear disaster will shock the nuclear-armed leaders to get rid of nuclear weapons. As demonstrated over seven decades by peace and disarmament movements from CND and Greenham to Aldermaston Women's Peace Camp(aign), Scottish CND, Faslane 365 and ICAN partners, raising public awareness, disrupting military-industrial business as usual, and shocking leaders through real stories, protests and information, can bring about positive security changes and disarmament without having to undergo a catastrophic disaster directly. These are the best strategies and tactics to build pressure on the nuclear-armed and complicit States, and change conditions to encourage and enable them to pursue disarmament and join the TPNW.

The scenarios are not meant to be comprehensive and are certainly not mutually exclusive. It is hoped that they stimulate thinking about the intertwining ways in which real world events could change Britain's political structures and attitudes, thereby opening a larger space for rethinking British security without nuclear weapons.

This report has discussed NATO in relation to the disarmament responsibilities of NATO allies. In this context, we have reflected debates in NATO States without diving into broader concerns about NATO per se, though concerns are raised about its expanding military-industrial projects and roles for regional and international peace and security. It is, however, worth reflecting that when the Cold War ended, NATO's leadership had a golden opportunity to work with Russia on rethinking and rebuilding European security. Although the seismic shifts that turned the tide on decades of mutually driven nuclear arms racing in the 1980s were heralded by civil society uprisings on all sides, purveyors of MIBA groupthink that dominated analyses on East-West relations meant that both NATO and the Soviet Union were taken by surprise.

Socio-economic factors, as well as security fears and disarmament demands, led to the INF Treaty, which served as a geo-strategic game-changer. But instead of seizing the positive opportunities to enhance international security, NATO's military-industrial establishments sought to shore up future profits and avoid a 'peace dividend' that would focus on alleviating poverty and increasing resources for health, education and other important humanitarian

security needs.[407] Predictably these profit-driven policy choices led to further wars and greater international insecurity.

Just as the 1994 United Nations Framework Convention on Climate Change (UNFCCC) was beginning to alert the world to the dangers of greenhouse gas emissions and global heating, NATO's retrogressive military policies have squandered the best opportunities in a generation for rethinking global security needs, and restructuring relations and priorities accordingly. The consequence of those venal, short-sighted decisions have proved far reaching for human security, illustrated not only in recent wars, but also governmental failures to bring nations together much earlier to tackle climate destruction, the Covid pandemic and undertake collective action to shape all our economies and security policies to tackle these challenges effectively. We are now being told to brace for a new cold war with a resurgent China as well and an even more nuclear-dependent militarist-authoritarian leader in Moscow. The thin silver lining is that with the overwhelming social, economic and security challenges faced by Chinese and Russian leaders now, devoting money and reliance on nuclear weapons make even less sense than in the 1980s.

In an ideal world, the best and likeliest routes to nuclear disarmament would be through education about national security and economic priorities, nuclear weapons risks and dangers, and the wisdom of contributing to international efforts to enforce the TPNW and ban and eliminate all nuclear weapons. In the real world of current UK politics, this country is unlikely to take the lead unless elements of the other scenarios add pressure and information to bring policy-makers and decision-takers on board. The renewed determination of the Scottish government and majority of Scotland's people to make their country both independent and nuclear free could be the shock that drives the UK towards joining the TPNW and making virtue out of necessity.

When government leaders take concrete steps towards cancelling Trident and signing the TPNW, we should expect to see them frame these decisions in terms of the need to reduce the dangers from all nuclear weapons in an uncertain world, along with concerns about safety and cyber security. Depending on how they choose to spin it, they may refer to the costs of the Trident programme, opportunity costs and the wisdom of redirecting resources to climate and other security priorities. If other nuclear-armed or NATO countries have already joined the TPNW, there may be an opportunity to extol the virtues of providing more effective defence and deterrence approaches without nuclear weapons.

The next chapter gives a brief overview of timelines and considerations for a British nuclear disarmament roadmap, drawing heavily on the ground-breaking 2012 study Disarming Trident by the late John Ainslie of Scottish CND.[408] It is hoped that this will stimulate further and more detailed studies into the practicalities of eliminating UK nuclear weapons, fulfilling Article VI of the NPT and acceding to the TPNW.

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407 Joanna Spear 1997, 'Bigger NATO, bigger sales', World Today 53:11, OUP 1997.

408 John Ainslie (2012), Disarming Trident, Scottish CND, 2012 passim. John died in 2016, before the TPNW was concluded, but his work on British nuclear disarmament lives on: https://www.theguardian.com/environment/2016/nov/02/john-ainslie-obituary

4. ROADMAP AND TIMELINES FOR UK NUCLEAR DISARMAMENT

The writing is on the wall for the UK's nuclear weapons. The questions are how, when, and whether these WMD are eliminated in time to avoid catastrophe. Taking into account the UK's current levels of technical expertise and existing legal obligations, ten years would be more than enough time to achieve full nuclear disarmament. Accomplishing legacy issues such as safe, secure disposition and disposal of radioactive and toxic materials will take longer – a good reason to stop adding to this problem by manufacturing further nuclear warheads and submarines. The TPNW, having entered into force, provides the essential legal authority and provisions for nuclear disarmament. This Treaty will prove increasingly important as the UK and other currently nuclear-dependent governments come to terms with the new security realities driven by Covid and climate destruction.

The Treaty also offers important incentives for the countries that get on board sooner rather than later. Having manufactured and disassembled nuclear weapons for over sixty years, Britain has the knowledge, experience and skills to contribute to the Treaty's development, especially the institutional and verification mechanisms that will support and oversee nuclear disarmament, compliance and implementation for everyone.

We have entered a new era dominated by the international challenges of cooperating to deal with Covid, climate chaos and saving our shared planetary home. Nuclear weapons are part of the problems we face, and cannot contribute to the solutions we need. This section briefly considers what a practical roadmap for British nuclear disarmament would entail.

Preparing for nuclear disarmament

Whichever scenario or combination of scenarios brings about the political decision-making necessary for Britain to get rid of nuclear weapons, preparations and consultations will need to be undertaken. If the decisions are made in London, it is likely that the Whitehall-Westminster establishment will be in discussions with NATO allies well before making the policy changes public. Since UK governments have been busy signing all manner of contracts to keep making and deploying nuclear weapons, they will also need to extricate themselves and perhaps make new agreements to cover the changed relationships. Some if not all relevant institutions and companies could be helped to diversify and adapt their roles to support nuclear disarmament.

Early engagement with relevant unions, local authorities and other stakeholders will be essential, with the aim of developing appropriate plans for transitioning the jobs and responsibilities of the current workforce from nuclear enabling to nuclear free. Since

accession to the TPNW is on the cards, if not yet in British policies, companies and unions that may be affected would be well advised to start consulting and preparing from now. Leaving it to the last minute, as British governments tend to do, will increase the financial costs and cause more disruption and distress to those whose jobs will be affected.

Starting with the Lucas Plan[409] in the 1970s, CND, academics and trades unions have undertaken transition studies, so there is already a lot of research and groundwork that the government can draw on, update and make specific for the relevant industries and jobs. Some of these studies contain outline blueprints for employment and economic diversification at the UK's main nuclear weapons sites in the event of cancellation of Trident, notably Faslane,[410] Barrow[411] and the AWE Aldermaston and Burghfield nuclear bomb factories.[412]



Faslane nuclear submarine base (D.Cullen)

These proposals all emphasise the need for long-term planning and early action. If jobs are lost because of government failure to heed these plans and research resources, it will not be the TPNW or disarmament advocates that are to blame. Disarming Trident will save lives, jobs and billions of pounds in the long run, but may involve some up-front costs in the short term. The government will need to identify and quantify what will be entailed for decommissioning, economic conversion, ending existing contracts, taking on new commitments, and the management of nuclear waste and legacy problems that have accrued from nearly 80 years of nuclear weapons production, testing and deployment.[413]

Decisions to commit

As TPNW Meetings of States Parties start work on developing the legal, technical and institutional capabilities the Treaty needs to oversee and assist States to undertake nuclear disarmament safely and securely, it should not be forgotten that Britain already has legal

409 http://lucasplan.org.uk/story-of-the-lucas-plan/

410 Scottish CND and Scottish TUC, Cancelling Trident: The economic and employment consequences for Scotland, 2007. http://worldofstuart.excellentcontent.com/repository/STUC-CND-Trident-Report.pdf

411 NET 2012, Trident Alternatives Review and the Future of Barrow, Nuclear Education Trust, December 2012, http://www.nuclearedu cationtrust.org/sites/default/files/Barrow%20NET%20report%20volume%201%20131212.pdf

412 NIS 2016, AWE, Britain's Nuclear Weapons Factory: Past, Present, and possibilities for the Future, June 2016, Nuclear Information Service www.nuclearinfo.org/wp-content/uploads/2020/09/AWE-Past-Present-Future-Report-2016.pdf

413 The author is very grateful to Peter Burt and David Cullen, as well as colleagues in CND and Scottish CND, for sharing their thoughts on these transition challenges.

disarmament obligations under the NPT. To begin with, perhaps by way of testing the waters before joining the TPNW, the Westminster-Whitehall establishment may consider it prudent to take some concrete nuclear disarmament steps in conformity with Britain's existing obligations, especially Articles I, II and VI of the NPT.

As discussed previously, the TPNW provides two legal pathways for acceding States to comply with their disarmament obligations, summarised as 'join and destroy' and 'destroy and join.' The key difference is whether a state decides to begin the process of decommissioning its nuclear weapons systems before or after taking public decisions to sign and accede to the TPNW. The former is based on South Africa's experience of quietly destroying its nuclear bombs and production capabilities before joining the NPT in 1992. By choosing to disarm in its own way and time, South Africa was not obliged to receive IAEA inspections until its government felt ready to make its declarations of ceasing to be nuclear-armed. For national security reasons, the South African 'destroy and join' option might suit some nuclear-armed States. Israel is often cited in this regard.[414]



US 76 'Trident' warhead being removed from container (DoD/file)

UK governments have the option of emulating South Africa's process of getting rid of nuclear weapons or signing the TPNW upfront and then engaging with its States Parties and processes; or an 'Organisation for the Prohibition of Nuclear Weapons', if one has been established by that time. In the event of Scottish independence, the SNP and Scottish Greens have policies to join the TPNW and remove all nuclear weapons from Scotland's territories as soon as possible after becoming legally independent. Assuming that the UK hasn't already joined the TPNW by the time Scotland becomes legally independent, Holyrood and Westminster-Whitehall will need to consult on how – and how fast – the UK's nuclear weapons can be removed and the bases and facilities made compliant with the TPNW. Most if not all such domestic negotiations should be carried out during the transition period leading up to Scotland becoming legally independent.

414 See Middle East Treaty Organisation (METO), https://www.wmd-free.me/home/about/

As things currently stand, with Scotland hosting the MoD's warhead storage and submarine deployment facilities, if either the Scottish government or the UK signs the TPNW the immediate removal of all nuclear weapons from operational deployment would need to be achieved quickly. This means recalling nuclear-armed submarines from patrol, removing the warheads from the US Trident missiles (using the equipment already installed at Coulport), and either sending the unarmed missiles back to the US Naval base at Kings Bay, or notifying the US Government that all US nuclear capable missiles must be taken back.[415]

Disarming Trident: phases and timelines Decision to commit

John Ainslie argued that the 'Phase 1' immediate steps should include removing launch keys and triggers and disabling the missiles by removing the guidance and flight control systems. In view of the potential for cyber attacks, such operational steps will ensure greater safety as the submarines travel back to port to be disarmed. In reality, the MoD should institute these practical measures now. The risks of cyber attacks and other insecurities that could arise from human or computer problems mean that taking these practical, operational steps should really be considered now, as they would at least reduce some of the dangers and keep the weapons safe from operational interference while the submarines are at sea.

Phase 2 steps, which Ainslie and others assessed as achievable within ten weeks, would include: halting new nuclear weapons production; ending patrols by Vanguard submarines; removing warheads from submarines and disabling use possibilities. The warheads would need to be stored at the purpose-built facilities of RNAD Coulport, pending transfer to the UK's AWE facilities at Burghfield and Aldermaston. It should then be expected that the Trident missiles would be returned to their owners in the United States.

In 2012, Ainslie argued that three 'Limited Life Components', which he identified as the Arming, Fuzing and Firing (AF&F) System, the gas transfer system, and the neutron generator, could be removed from UK warheads at Coulport, to reduce risks. Removing these components would effectively disable the warheads. Even if fired, the disabled warheads would have considerably reduced yield and effect.[416] Ainslie had also floated the idea that Coulport might be used for dismantling Trident missiles and destroying their components on behalf of both the United States and UK, but it is doubtful that this would be feasible with Coulport's present facilities, and unlikely that the US government would agree even if the UK government made such a proposal.

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415 Ending nuclear deployments is an obligation on States Parties, but in accordance with the VCLT, governments are required not to do anything to undermine the treaties they sign, even if they have not yet ratified or fully acceded.

416 John Ainslie (2012), Disarming Trident, Scottish CND, 2012.

Actions to Disarm British Nuclear Weapons

STEPS	ACTIONS
Phase 1	End operational deployment of submarines
Phase 2	Remove keys and triggers
Phase 3	Disable missiles
Phase 4	Remove warheads from submarines
Phase 5	Remove missiles from submarines
Phase 6	Disable nuclear warheads and remove 'limited life components' from Scotland
Phase 7	Remove nuclear warheads from Scotland
Phase 8	Dismantle nuclear warheads at AWE Burghfield

Source: Disarming Trident[417]

Ainslie estimated that disassembly rates for WE-177 and Chevaline warheads was around 20-40 per year. He speculated that with commitment to nuclear disarmament and appropriate resources this could rise to 50-60 warheads a year, though this may be considered somewhat optimistic. Capacities at AWE Burghfield are the limiting factor, but this may change when the Mensa facility opens, though this is several years behind schedule, which has shifted from 2017 to 2023.[418] Assuming 180-240 warheads in Coulport, six warheads per convoy might take 30-40 convoys travelling from Coulport to Burghfield. Unlike the current nuclear convoys, these would need to be one-way nuclear warhead transports.[419] Consultations between the Westminster-Whitehall establishment and Scottish government will be necessary to ensure the highest standards of safety and security as these transitional disarmament activities will still pose safety and environmental concerns. Nonetheless, these steps need to be accomplished. If the political urgency is recognised, the one-way nuclear convoys that transfer warheads and Limited Life Components to Burghfield could practically complete the critical disarmament and warhead destruction requirements in three years, and undoubtedly within a ten year deadline.

417 John Ainslie 2012.

418 Tom Plant, 'Britain's nuclear projects – less bang and more whimper' RUSI Royal United Services Institute, 22 January 2020. https://www.rusi.org/explore-our-research/publications/commentary/britains-nuclear-projects-less-bang-and-more-whimper

419 On recent UK nuclear warhead convoys, see David Mackenzie and Jane Tallents (2017), 'Unready Scotland: The critical gap in our response to the transport of nuclear weapons', Nukewatch Scotland, June 2017. https://www.nuclearinfo.org/wp-content/uploads/2020/09/Unready-Scotland.pdf ; Nukewatch (2021), UK nuclear warhead numbers and the Integrated Review, a technical note, April 2021; and Rob Edwards (2016), Nukes of Hazard; ICAN, 2016.

Dismantling a British nuclear warhead would entail the following steps:

- Prepare the assembly/disassembly cells for disassembly
- Inspect warhead
- Remove reentry vehicle (RV) shroud
- Cut and disconnect detonator cables
- Remove firing set and neutron gas generator (if not removed at Coulport)
- Cut open and remove radiation case
- Remove primary
- Remove secondary
- Prepare for removal of high explosives (primary)
- Remove high explosives (primary)
- Package plutonium pit (primary)
- Dismantle secondary

SOURCE: Disarming Trident[420]

Complying with TPNW obligations and requirements

Most of these transition steps can be taken prior to signing the TPNW. Joining the Treaty early, however, would make it easier for British governments to call on and benefit from the TPNW's growing international expertise and resources.

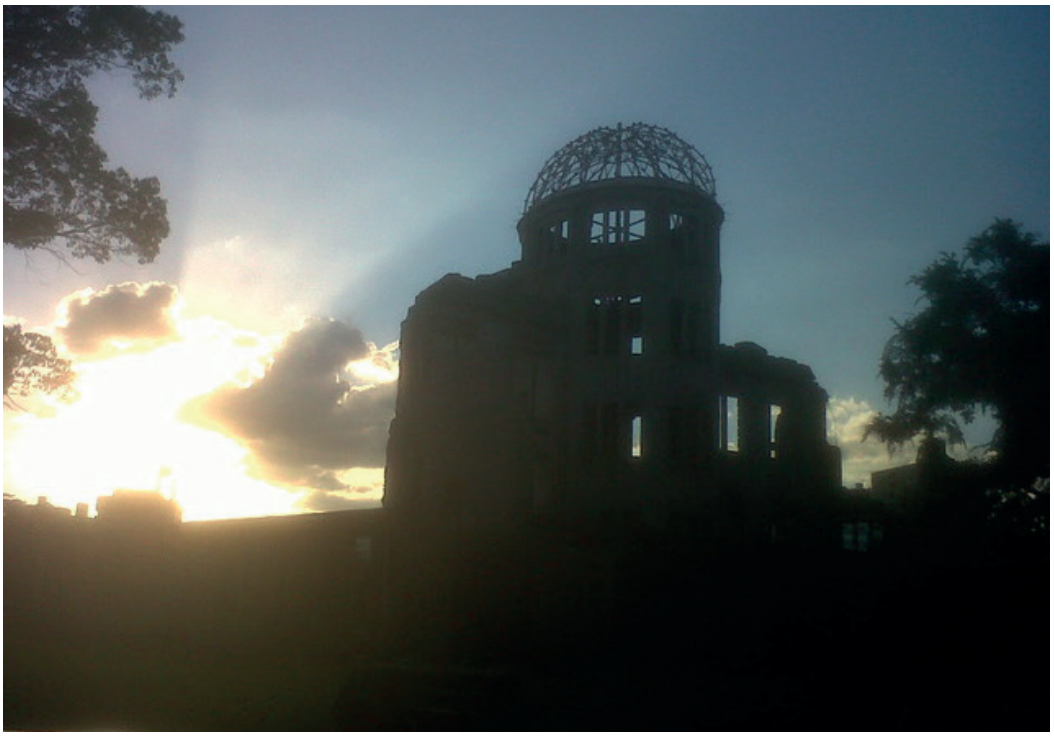
Within 30 days of Scotland and/or the UK acceding to the TPNW the relevant government will be required to submit to the UN Secretary-General a declaration that clarifies whether it has ever 'owned, possessed or controlled nuclear weapons'. Under the 'destroy and join' option, this declaration would need to state whether the State acceding to the Treaty has removed or eliminated the nuclear weapons on its territory, and also whether it has eliminated or irreversibly converted relevant nuclear-weapons-related facilities. The second option (join and destroy) allows a state to sign and then negotiate with States Parties and the treaty's designated 'competent authority' to establish the steps and timelines for removing, decommissioning and eliminating any nuclear weapons, facilities or programmes they own or host. If Scotland has transferred all UK weapons to the UK's AWE facilities at Burghfield and Aldermaston, it is expected that this would be enough for the Scottish declaration to affirm this and the decommissioning, closure or repurposing of nuclear weapons-related facilities.

420 John Ainslie 2012.

When the UK accedes to the TPNW, it will be required to commit to and comply with the overall 'deadline' for destruction of nuclear weapons and explosive devices that will be determined by States Parties in 1MSP. If the arsenal destruction deadline is 10 years, as currently under discussion, this should not prove difficult for any UK government to meet, as AWE Burghfield and Aldermaston have more than enough expertise and practice to achieve this deadline. It should not be necessary to say, but the government is responsible also to ensure that the processes of disarmament are accomplished as safely and securely as possible, without further endangering the environment, workforce or people living close by.

As well as becoming safer and more secure nationally, Britain has a great deal to offer international security by joining the TPNW. Greater opportunities for training and jobs in disarmament and verification will open up as the Atomic Weapons Establishment's workforce and skills, developed over sixty years of making and deploying nuclear weapons, are redirected into getting rid of nuclear weapons as safely and securely as possible. One only has to look at the key jobs accorded to British scientists, technicians, engineers, systems analysts, planners, administrators, diplomats and others as a result of UK participation in the OPCW and CTBTO.

In order to benefit, Britain needs to start participating in TPNW Meetings of States Parties and engage more effectively with the governments and organisations that from 2022 onwards will be building up the institutions and systems for TPNW compliance, implementation and verification.



Hiroshima bomb dome with 'peace dove' emerging (R.Johnson)

CONCLUSIONS AND RECOMMENDATIONS

In 2022 and for the foreseeable future, Britain faces many challenges to our security and wellbeing. In all conceivable scenarios we would all be safer and better off if we did not have nuclear weapons. If the UK had not become a nuclear weapon possessor before 1967, it is unlikely, even unthinkable, that British governments would now argue that we should acquire and deploy these catastrophic weapons of mass annihilation. They undermine our national and human security at all levels.

UK governments must now deal with the dangerous and toxic legacy of more than seven decades of nuclear production, testing and deployments. The Vanguard-Trident system is an accident waiting to happen, and it makes no sense to spend billions more on nuclear-powered Dreadnought submarines to carry an enhanced Trident system into the future. Carrying on nuclear business as usual is not an option any more. Between Covid and climate destruction, the UK urgently needs a better-informed public conversation about what security means in the 21st century, and how we should prioritise our resources.

It is foolish, as well as dangerous to keep paying over £8,000 per minute ($6.2 billion in 2020, as discussed in chapter 3, equivalent to £480,000 per hour of public funds) to make and maintain nuclear weapons. Even people who subscribe to deterrence theories recognise that there is no security purpose or moral justification in threatening to launch UK nuclear weapons after nuclear attacks (that Trident was supposed to deter) have occurred. And using nuclear weapons when deterrence has failed would senseless. Nuclear weapons are not suitable for deterrence in the 21st century. They do not protect or defend us. British people and leaders have got to wake up to this reality.

Nuclear weapons pose catastrophic threats and dangers to human life and survival. They affect our human rights to health, food, clean water and sustainable environments. They threaten the safety of our families and homes. To the extent that deterrence signalling may be a useful defence strategy, the UK already has diverse non-nuclear tools that are more useful and less risky than nuclear weapons. Think about the worst case scenarios when deterrence doesn't work as hoped. If non-nuclear deterrence fails, the worst outcomes might be war and occupation by hostile forces. These would no doubt be appalling and frightening, as political-military occupations and wars in many countries over the twentieth and twenty-first centuries attest. Nonetheless, such situations, however oppressive, are survivable for many people. Life goes on. People can raise families, adapt and keep going. There are many ways to resist colonisation and authoritarian political regimes, no matter how vile and coercive they are. With courage, resistance and time, all wars and occupations come to an end. Different political relations can emerge: if enough people take responsibility, changes can be made that enable greater democracy and rights, better governance, more

respect, freedom and security – if not for us personally, then hopefully for the next generation and their descendants.

By contrast, if Britain relies on deploying nuclear weapons for deterring another nuclear-armed state and that deterrent relationship fails, the fact of having nuclear weapons in these islands means that we all face greater risks of nuclear attack. The Prime Minister and Chief of Defence Staff will be in bunkers, facing 'last resort' decisions. Do they order a submarine Captain to launch Trident or not? They may not be able to contact the nuclear armed submarine at sea. The Captain then has to decide whether to launch UK nuclear weapons. Launching Trident first would be mass murder and a crime against humanity. Launching nuclear weapons in response to a nuclear strike would be a futile and potentially escalatory act of revenge; and also mass murder and crimes against humanity. In Britain's name, perhaps, but not in the interests of anyone's security.

If deterrence has already failed, refraining from firing Trident would be the more appropriate and humane decision, but that just points to the suicidal dangers of equipping the UK with nuclear weapons that are considered a threat to other nuclear-armed countries. Why, then, are UK governments squandering any of our hard-earned taxes to maintain and upgrade nuclear weaponry that cannot – must not – be used even in extreme circumstances? When nuclear deterrence fails, the risks of nuclear war escalate and the chances of survival fall precipitously.

As shown in this report, the UN Treaty on the Prohibition of Nuclear Weapons was brought into force as a disarmament treaty under International Humanitarian Law. That means that it applies at all times, from wars and armed conflicts to 'cold wars' and peacetime situations. Even before some States sign, many of the TPNW's provisions can be used to constrain and reduce nuclear weapons and programmes. Importantly, many TPNW provisions also apply to non-state actors, from companies and investors to terrorists and traffickers.

Driven by the growing national, regional and global security concerns of a large majority of UN and NPT members, the TPNW's primary purpose is to prevent nuclear war and accelerate the total elimination of the world's remaining 13,000 nuclear weapons. It has other humanitarian objectives, such as preventing nuclear accidents, use, blackmail and terrorism, and assisting survivors and remediating environments harmed by nuclear activities. As well as banning a wide range of activities that enable the use, production, possession and deployment of all nuclear armaments, the TPNW provides pathways for each nuclear-armed state to eliminate its weapons and associated capabilities in ways that are as responsible and safe as possible. Eliminating the arsenals can be undertaken unilaterally, bilaterally (with a strategic rival perhaps, as might be necessary for India and Pakistan, Russia and the United States, or even Britain and France), or plurilaterally (in conjunction with other States, perhaps regionally). Alternatively, a government that is facing domestic and national pressures can sign or otherwise communicate its desire to get rid of its nuclear arsenal, and implement this decision in accordance with a practical and verifiable timeline agreed with TPNW states parties and designated competent authorities.

As well as the legal obligations on States that join the Treaty, the TPNW's prohibitions and provisions are set to provide a more effective disarmament toolbox for people all over the world – in both the nuclear-armed and nuclear-free countries – to exert financial, political, normative, municipal and practical pressures for ending nuclear programmes, and removing and eliminating the weapons. Undertaking these commitments would go a long way towards

preventing further risks and nuclear accidents. As the TPNW is progressively implemented around the world, nuclear weapons will become further stigmatised. Their assumed value for exerting power, status and deterrence will plummet. Political and economic costs will rise for authoritarian leaders as well as democracies, as seen during the 1980s. Over time, these pressures will open up further incentives and opportunities for nuclear-armed states to comply and adhere.

The people who make nuclear weapons may be best placed to understand the technical requirements for dismantling and destroying them. As a former nuclear-armed State, South Africa's role during the TPNW negotiations was very helpful in establishing its workable, adaptable principles, pathways and requirements for disarmament and verification. From the INF Treaty in 1987 until recently, major nuclear armed states – not just Russia and the United States but also France and the UK – dismantled and destroyed approximately 50,000 nuclear weapons. For political reasons that progress in reducing nuclear arsenals has stalled. Several of the nuclear-armed states are now taking forward plans to upgrade and enhance their nuclear weapons, bringing the risks of nuclear war, use and terror too close for comfort.

Cities are the major targets for nuclear weapons. This report shows how a growing number of municipal authorities across the UK (notably England as well as Scotland and Wales) are adopting council motions in support of the TPNW. Our study also pays attention to the fact that the 'United Kingdom' that signed the NPT comprises four countries – England, Scotland, Wales and Northern Ireland. As chapter 3 explains, recent opinion polls show growing public majorities in favour of signing the TPNW and also complying fully with the NPT's Article VI. Depending on polling conditions and questions, these majorities for UK nuclear disarmament appear highest in Scotland, which bears the brunt of nuclear deployments. Though smaller than in Scotland, it is also clear that a majority of people in Wales, Northern Ireland and England also want the UK to adhere to the TPNW and to comply more fully with the NPT and its long-standing obligations.

Parliamentarians elected to the Scottish Parliament and Welsh Senedd, as well as the London Assembly and various mayors and councillors, are also signing up to ICAN's parliamentary pledge, Cities Appeals or associated statements under the auspices of Mayors for Peace, nuclear free local authorities or disarmament campaigns such as CND.

Whether the Westminster-Whitehall establishments like it or not, the TPNW exists and will grow. They and other nuclear weapon perpetrators and enablers in the military, industrial, bureaucratic and academic establishments may try to belittle or ignore this Treaty; but like the facts and evidence about nuclear dangers and humanitarian consequences that led to the TPNW, these are matters of fact that have to be addressed in this real and uncertain world. The TPNW was legitimately and multilaterally negotiated and brought into international law, and provides a coherent multilateral framework for all nuclear-armed states to move back from the nuclear brink and change their planet-threatening nuclear policies.

This study concludes that all governments, whether NPT States Parties or not, would gain security, status and support if they take urgent steps to get rid of nuclear weapons and comply with the TPNW and relevant provisions of the NPT, UN Sustainable Development Goals (SDG) and International Humanitarian Law.

Recommendations

The recommendations in this section focus on the UK but can be adapted to apply to other States.

1) All nuclear weapons should be de-alerted, and the UK and other nuclear-armed governments must pledge not to use nuclear weapons under any circumstances. They need to take urgent steps to eliminate their nuclear arsenals and join and implement the UN Treaty on the Prohibition of Nuclear Weapons (TPNW), while also complying fully with NPT disarmament and nonproliferation commitments. All governments should attend the TPNW meetings of states parties and contribute to preventing nuclear use and war.

As a Depositary as well as State Party to the NPT, British governments have existing legal responsibilities to comply with and implement the NPT's essential disarmament and non-proliferation obligations and provisions in good faith. Complying with the NPT necessitates that the government should cancel plans for a new Dreadnought-Trident nuclear weapons system and accomplish the nuclear disarmament steps that they agreed to in the 1995, 2000 and 2010 NPT Review Conferences.

This also means the government must rethink the proposals in the 2021 Integrated Review of Security, Defence, Development and Foreign Policy and halt proliferation steps that increase nuclear weapons and the circumstances in which the UK might use them. To comply with existing obligations under the NPT, the UK needs to reinstate its commitments to transparency and reduce its nuclear arsenal towards zero. This means abandoning any policies or options for increasing nuclear warheads, no matter what the pretext. Responsibility for holding the UK accountable and complying with the NPT rests on British and Scottish governments and people, and also on other NPT States.

2) Taking into account the security and economic costs of retaining nuclear weapons, the Westminster and Scottish Parliaments should undertake separate parliamentary investigations with relevant expert and civil society inputs, to determine what would be entailed in pursuing nuclear disarmament and joining the TPNW.

These studies should take into account the entry into force of the TPNW, Britain's existing legal obligations under the NPT, and today's security, development, environmental and economic priorities. They should be undertaken separately, and both should involve cross party engagement from elected representatives as well as participation by defence service personnel, civilians, and indigenous and local communities that have been harmed or affected by nuclear activities. The studies should call on the expertise of people with nuclear disarmament, safety, dismantlement, decommissioning, waste disposal and verification knowledge and skills. There needs to be input from security and defence practitioners, trades unions and community representatives associated with relevant jobs, diversification, alternative energy and economic opportunities and the environment, etc. These studies should pay due attention to the TPNW's provisions and relevant UN Security Council resolutions with regard to engaging the knowledge and experience of women in these areas

and recognising also the disproportionate biological harm ionizing radiation and nuclear-related activities inflict on women and girls.

3) The UK should declassify archives, studies and documentation on Britain's nuclear weapons testing and production programmes, including any that relate to accidents, environmental or health impacts arising from nuclear programmes or activities.

The UK has long extolled the importance of transparency for accountability and NPT compliance, but conceals considerable amounts of relevant information on British nuclear activities and problems from the late 1940s to the present. As journalists, scholars and civil society organisations such as CND, LABRATS (Legacy of the Atomic Bomb, Recognition for Atomic Test Survivors, which is led by defence service veterans) and the Nuclear Information Service, have had legitimate freedom of information requests denied when they ask for documents relating to nuclear weapons and testing, production issues, costs, accidents etc. The excuses tend to cite 'costs' or 'national security'. When today's governments conceal nuclear-related information which is in the public interest and would not compromise national security, we have to ask whether this is for political or face-saving reasons. Other documents from thirty or more years ago are routinely declassified, but this is not always the case with archive materials on military, industrial and bureaucratic issues. Questions arise as to whether such documents conceal egregious mistakes, corruption or other matters that it would be in the public interest to know now and be able to address.

4) The UK should recognise the rights of indigenous and local peoples, civilians and service personnel whose health and environments have been affected by British nuclear weapons testing, production and ongoing related activities, and ensure full cooperation and assistance to address and mitigate such impacts and provide redress, support and environmental remediation.

The UK conducted 21 'atmospheric' nuclear explosive tests that contaminated parts of Australia and Pacific islands, including Monte Bello and Kirimati. Seven major nuclear test explosions were conducted on the Aboriginal lands of Maralinga in South Australia. In addition, Maralinga was used from 1955-63 for 'secret' activities, described as 'minor' or 'safety' tests. These included exploding warheads below levels of criticality to mimic nuclear accidents that might occur while transporting warheads. The Maralinga tests caused a wide dispersal of plutonium and other radioactive and toxic materials, which heavily contaminated land, water and communities in Maralinga.

The Nevada Test Site was forcibly taken for US nuclear-military activities, in violation of the treaty-protected rights, health, environment and sovereignty of the Western Band of the Shoshone Nation and their Newe Segobia lands. From 1952 to 1991, US governments conducted around 900 atmospheric and underground nuclear tests there, with a further 24 underground tests carried out for British nuclear weapons from 1961 to 1991. The impacts from atmospheric testing particularly devasted local communities across Nevada and Utah, spreading to parts of California, Idaho, North and South Dakota and Canada, depending on winds and weather conditions. The US Government is now trying to turn Yucca Mountain, a sacred place belonging to the Western Shoshone people, into a nuclear waste depositary.

The UK has existing responsibilities to uphold the rights of indigenous people, women, children and service personnel. Articles 6 and 7 of the TPNW underline these rights and responsibilities with regard to to survivors of nuclear testing and use. This makes recommendation takes into account that even before UK governments sign the TPNW, they are bound by relevant humanitarian and environmental provisions in various UN Security Council resolutions, the CTBT, international law and the SDGs.

5) Encourage the UK and Scottish governments, mayors, and members of parliaments and regional assemblies to support the TPNW and participate in the first and future meetings of TPNW States Parties, which they can do as observers.

Austria's Ambassador Alexander Kmentt is the designated Chair of the first meeting of TPNW States Parties, which is scheduled to take place in 2022 in Vienna (Covid willing). Once dates and modalities are decided, applications to attend will be opened. In accordance with UN rules, the UK can apply to attend as an Observer even if it is not yet ready to sign. Prior to independence, an application from the Scottish government to attend as a State Observer may not meet UN conditions to be formally accepted. However, members of the Scottish Parliament (and Senedd Cymru and regional Assemblies) can apply indvidually, and should be encouraged to attend the meetings of TPNW states parties as civil society and parliamentary observers.

6) Encourage cities, towns and counties to align themselves with the TPNW, and work with local authorities, banks and private investors to move funds away from nuclear weapons and towards sustainable security needs, such as climate and environmental protections, health and education.

As well as applying to UN governments, the TPNW text provides great opportunities for civil society, elected representatives in Westminster, the Scottish government, the European Union, and a range of municipal assemblies and bodies to have influence in moving the UK and associated governments away from nuclear weapons and towards non-nuclear security priorities such as climate justice, health resources and protecting the oceans and other shared environments for the coming century and beyond.

Faithleaders, doctors, unions and ethical investors in Britain and many other countries, are building on TPNW-related initiatives to deter public, private and commercial investors from putting money into nuclear weapons. Initiatives such as Don't Bank on the Bomb and the Nuclear Weapons Financing Research Group are proving successful, and serve also to encourage banks, companies and investors to comply with Environmental, Social and Governance (ESG) standards and prioritise sustainable security needs, climate justice, health and cleaner environments. This report contains further information and references on what more can be done.

7) A working group should be convened in Scotland (under Scottish government or independent auspices) comprising people drawn from civic society with relevant experience on nuclear, safety, security, legal, technical, humanitarian, campaign, employment, monitoring and verification issues, to develop a programme of action to achieve all possible compliance with the TPNW.

As discussed in chapter 3, a Scottish Government Working Group was established in 2008-09 with the title 'A Scotland without nuclear weapons'. Chaired by Bruce Crawford MSP, it included members of the Scottish Parliament, trades unions, academics, nuclear specialists, religious and civic leaders, and activists. Due to the political and legal constraints prevailing at that time, this working group was quite limited in what it could do.

In light of the TPNW, we propose the establishment of a working group with the clear remit to draw up a detailed workplan for enabling Scotland to comply with the TPNW's prohibitions and provisions as far as possible.



Hiroshima students and hibakusha appeal to international leaders (Hidankyo/Peace Boat, 2009)

TEXT ON THE TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS

Pursuant to paragraph 8 of General Assembly resolution 71/258 of 23 December 2016, on a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination, the following Treaty on the Prohibition of Nuclear Weapons (TPNW) was adopted on 7 July 2017, at the United Nations in New York, A/CONF.229/2017/8. The Treaty, having met its entry-into-force requirements, entered into international legal force on 22 January 2021. This is the verbatim text.

The States Parties to this Treaty,

Determined to contribute to the realization of the purposes and principles of the Charter of the United Nations,

Deeply concerned about the catastrophic humanitarian consequences that would result from any use of nuclear weapons, and recognizing the consequent need to completely eliminate such weapons, which remains the only way to guarantee that nuclear weapons are never used again under any circumstances,

Mindful of the risks posed by the continued existence of nuclear weapons, including from any nuclear-weapon detonation by accident, miscalculation or design, and emphasizing that these risks concern the security of all humanity, and that all States share the responsibility to prevent any use of nuclear weapons,

Cognizant that the catastrophic consequences of nuclear weapons cannot be adequately addressed, transcend national borders, pose grave implications for human survival, the environment, socioeconomic development, the global economy, food security and the health of current and future generations, and have a disproportionate impact on women and girls, including as a result of ionizing radiation,

Acknowledging the ethical imperatives for nuclear disarmament and the urgency of achieving and maintaining a nuclear-weapon-free world, which is a global public good of the highest order, serving both national and collective security interests,

Mindful of the unacceptable suffering of and harm caused to the victims of the use of nuclear weapons (hibakusha), as well as of those affected by the testing of nuclear weapons,

Recognizing the disproportionate impact of nuclear-weapon activities on indigenous peoples,

Reaffirming the need for all States at all times to comply with applicable international law, including international humanitarian law and international human rights law,

Basing themselves on the principles and rules of international humanitarian law, in particular the principle that the right of parties to an armed conflict to choose methods or means of warfare is not unlimited, the rule of distinction, the prohibition against indiscriminate attacks, the rules on proportionality and precautions in attack, the prohibition on the use of weapons of a nature to cause superfluous injury or unnecessary suffering, and the rules for the protection of the natural environment,

Considering that any use of nuclear weapons would be contrary to the rules of international law applicable in armed conflict, in particular the principles and rules of international humanitarian law,

Reaffirming that any use of nuclear weapons would also be abhorrent to the principles of humanity and the dictates of public conscience,

Recalling that, in accordance with the Charter of the United Nations, States must refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State, or in any other manner inconsistent with the Purposes of the United Nations, and that the establishment and maintenance of international peace and security are to be promoted with the least diversion for armaments of the world's human and economic resources,

Recalling also the first resolution of the General Assembly of the United Nations, adopted on 24 January 1946, and subsequent resolutions which call for the elimination of nuclear weapons,

Concerned by the slow pace of nuclear disarmament, the continued reliance on nuclear weapons in military and security concepts, doctrines and policies, and the waste of economic and human resources on programmes for the production, maintenance and modernization of nuclear weapons,

Recognizing that a legally binding prohibition of nuclear weapons constitutes an important contribution towards the achievement and maintenance of a world free of nuclear weapons, including the irreversible, verifiable and transparent elimination of nuclear weapons, and determined to act towards that end,

Determined to act with a view to achieving effective progress towards general and complete disarmament under strict and effective international control,

Reaffirming that there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control,

Reaffirming also that the full and effective implementation of the Treaty on the Non-Proliferation of Nuclear Weapons, which serves as the cornerstone of the nuclear disarmament and non-proliferation regime, has a vital role to play in promoting international peace and security,

Recognizing the vital importance of the Comprehensive Nuclear-Test-Ban Treaty and its verification regime as a core element of the nuclear disarmament and non- proliferation regime,

Reaffirming the conviction that the establishment of the internationally recognized nuclear-weapon-free zones on the basis of arrangements freely arrived at among the States of the region concerned enhances global and regional peace and security, strengthens the nuclear non-proliferation regime and contributes towards realizing the objective of nuclear disarmament,

Emphasizing that nothing in this Treaty shall be interpreted as affecting the inalienable right of its States Parties to develop research, production and use of nuclear energy for peaceful purposes without discrimination,

Recognizing that the equal, full and effective participation of both women and men is an essential factor for the promotion and attainment of sustainable peace and security, and committed to supporting and strengthening the effective participation of women in nuclear disarmament,

Recognizing also the importance of peace and disarmament education in all its aspects and of raising awareness of the risks and consequences of nuclear weapons for current and future generations, and committed to the dissemination of the principles and norms of this Treaty,

Stressing the role of public conscience in the furthering of the principles of humanity as evidenced by the call for the total elimination of nuclear weapons, and recognizing the efforts to that end undertaken by the United Nations, the International Red Cross and Red Crescent Movement, other international and regional organizations, non-governmental organizations, religious leaders, parliamentarians, academics and the hibakusha,

Have agreed as follows:

Article 1. Prohibitions

1. Each State Party undertakes never under any circumstances to:

(a) Develop, test, produce, manufacture, otherwise acquire, possess or stockpile nuclear weapons or other nuclear explosive devices;

(b) Transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly or indirectly;

(c) Receive the transfer of or control over nuclear weapons or other nuclear explosive devices directly or indirectly;

(d) Use or threaten to use nuclear weapons or other nuclear explosive devices;

(e) Assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty;

(f) Seek or receive any assistance, in any way, from anyone to engage in any activity prohibited to a State Party under this Treaty;

(g) Allow any stationing, installation or deployment of any nuclear weapons or other nuclear explosive devices in its territory or at any place under its jurisdiction or control.

Article 2. Declarations

1. Each State Party shall submit to the Secretary-General of the United Nations, not later than 30 days after this Treaty enters into force for that State Party, a declaration in which it shall:

(a) Declare whether it owned, possessed or controlled nuclear weapons or nuclear explosive devices and eliminated its nuclear-weapon programme, including the elimination or irreversible conversion of all nuclear-weapons-related facilities, prior to the entry into force of this Treaty for that State Party;

(b) Notwithstanding Article 1 (a), declare whether it owns, possesses or controls any nuclear weapons or other nuclear explosive devices;

(c) Notwithstanding Article 1 (g), declare whether there are any nuclear weapons or other nuclear explosive devices in its territory or in any place under its jurisdiction or control that are owned, possessed or controlled by another State.

2. The Secretary-General of the United Nations shall transmit all such declarations received to the States Parties.

Article 3. Safeguards

1. Each State Party to which Article 4, paragraph 1 or 2, does not apply shall, at a minimum, maintain its International Atomic Energy Agency safeguards obligations in force at the time of entry into force of this Treaty, without prejudice to any additional relevant instruments that it may adopt in the future.

2. Each State Party to which Article 4, paragraph 1 or 2, does not apply that has not yet done so shall conclude with the International Atomic Energy Agency and bring into force a comprehensive safeguards agreement (INFCIRC/153 (Corrected)). Negotiation of such agreement shall commence within 180 days from the entry into force of this Treaty for that State Party. The agreement shall enter into force no later than 18 months from the entry into force of this Treaty for that State Party. Each State Party shall thereafter maintain such obligations, without prejudice to any additional relevant instruments that it may adopt in the future.

Article 4. Towards the total elimination of nuclear weapons

1. Each State Party that after 7 July 2017 owned, possessed or controlled nuclear weapons or other nuclear explosive devices and eliminated its nuclear-weapon programme, including the elimination or irreversible conversion of all nuclear-weapons-related facilities, prior to the entry into force of this Treaty for it, shall cooperate with the competent international

authority designated pursuant to paragraph 6 of this Article for the purpose of verifying the irreversible elimination of its nuclear-weapon programme. The competent international authority shall report to the States Parties. Such a State Party shall conclude a safeguards agreement with the International Atomic Energy Agency sufficient to provide credible assurance of the non-diversion of declared nuclear material from peaceful nuclear activities and of the absence of undeclared nuclear material or activities in that State Party as a whole. Negotiation of such agreement shall commence within 180 days from the entry into force of this Treaty for that State Party. The agreement shall enter into force no later than 18 months from the entry into force of this Treaty for that State Party. That State Party shall thereafter, at a minimum, maintain these safeguards obligations, without prejudice to any additional relevant instruments that it may adopt in the future.

2. Notwithstanding Article 1 (a), each State Party that owns, possesses or controls nuclear weapons or other nuclear explosive devices shall immediately remove them from operational status, and destroy them as soon as possible but not later than a deadline to be determined by the first meeting of States Parties, in accordance with a legally binding, time-bound plan for the verified and irreversible elimination of that State Party's nuclear-weapon programme, including the elimination or irreversible conversion of all nuclear-weapons-related facilities. The State Party, no later than 60 days after the entry into force of this Treaty for that State Party, shall submit this plan to the States Parties or to a competent international authority designated by the States Parties. The plan shall then be negotiated with the competent international authority, which shall submit it to the subsequent meeting of States Parties or review conference, whichever comes first, for approval in accordance with its rules of procedure.

3. A State Party to which paragraph 2 above applies shall conclude a safeguards agreement with the International Atomic Energy Agency sufficient to provide credible assurance of the non-diversion of declared nuclear material from peaceful nuclear activities and of the absence of undeclared nuclear material or activities in the State as a whole. Negotiation of such agreement shall commence no later than the date upon which implementation of the plan referred to in paragraph 2 is completed. The agreement shall enter into force no later than 18 months after the date of initiation of negotiations. That State Party shall thereafter, at a minimum, maintain these safeguards obligations, without prejudice to any additional relevant instruments that it may adopt in the future. Following the entry into force of the agreement referred to in this paragraph, the State Party shall submit to the Secretary-General of the United Nations a final declaration that it has fulfilled its obligations under this Article.

4. Notwithstanding Article 1 (b) and (g), each State Party that has any nuclear weapons or other nuclear explosive devices in its territory or in any place under its jurisdiction or control that are owned, possessed or controlled by another State shall ensure the prompt removal of such weapons, as soon as possible but not later than a deadline to be determined by the first meeting of States Parties. Upon the removal of such weapons or other explosive devices, that State Party shall submit to the Secretary-General of the United Nations a declaration that it has fulfilled its obligations under this Article.

5. Each State Party to which this Article applies shall submit a report to each meeting of States Parties and each review conference on the progress made towards the implementation of its obligations under this Article, until such time as they are fulfilled.

6. The States Parties shall designate a competent international authority or authorities to negotiate and verify the irreversible elimination of nuclear-weapons programmes, including the elimination or irreversible conversion of all nuclear-weapons-related facilities in accordance with paragraphs 1, 2 and 3 of this Article. In the event that such a designation has not been made prior to the entry into force of this Treaty for a State Party to which paragraph 1 or 2 of this Article applies, the Secretary-General of the United Nations shall convene an extraordinary meeting of States Parties to take any decisions that may be required.

Article 5. National implementation

1. Each State Party shall adopt the necessary measures to implement its obligations under this Treaty.

2. Each State Party shall take all appropriate legal, administrative and other measures, including the imposition of penal sanctions, to prevent and suppress any activity prohibited to a State Party under this Treaty undertaken by persons or on territory under its jurisdiction or control.

Article 6. Victim assistance and environmental remediation

1. Each State Party shall, with respect to individuals under its jurisdiction who are affected by the use or testing of nuclear weapons, in accordance with applicable international humanitarian and human rights law, adequately provide age- and gender- sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support, as well as provide for their social and economic inclusion.

2. Each State Party, with respect to areas under its jurisdiction or control contaminated as a result of activities related to the testing or use of nuclear weapons or other nuclear explosive devices, shall take necessary and appropriate measures towards the environmental remediation of areas so contaminated.

3. The obligations under paragraphs 1 and 2 above shall be without prejudice to the duties and obligations of any other States under international law or bilateral agreements.

Article 7. International cooperation and assistance

1. Each State Party shall cooperate with other States Parties to facilitate the implementation of this Treaty.

2. In fulfilling its obligations under this Treaty, each State Party shall have the right to seek and receive assistance, where feasible, from other States Parties.

3. Each State Party in a position to do so shall provide technical, material and financial assistance to States Parties affected by nuclear-weapons use or testing, to further the implementation of this Treaty.

4. Each State Party in a position to do so shall provide assistance for the victims of the use or testing of nuclear weapons or other nuclear explosive devices.

5. Assistance under this Article may be provided, inter alia, through the United Nations system, international, regional or national organizations or institutions, nongovernmental organizations or institutions, the International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, or national Red Cross and Red Crescent Societies, or on a bilateral basis.

6. Without prejudice to any other duty or obligation that it may have under international law, a State Party that has used or tested nuclear weapons or any other nuclear explosive devices shall have a responsibility to provide adequate assistance to affected States Parties, for the purpose of victim assistance and environmental remediation.

Article 8. Meeting of States Parties

1. The States Parties shall meet regularly in order to consider and, where necessary, take decisions in respect of any matter with regard to the application or implementation of this Treaty, in accordance with its relevant provisions, and on further measures for nuclear disarmament, including:

(a) The implementation and status of this Treaty;

(b) Measures for the verified, time-bound and irreversible elimination of nuclear-weapon programmes, including additional protocols to this Treaty;

(c) Any other matters pursuant to and consistent with the provisions of this Treaty.

2. The first meeting of States Parties shall be convened by the Secretary-General of the United Nations within one year of the entry into force of this Treaty. Further meetings of States Parties shall be convened by the Secretary-General of the United Nations on a biennial basis, unless otherwise agreed by the States Parties. The meeting of States Parties shall adopt its rules of procedure at its first session. Pending their adoption, the rules of procedure of the United Nations conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination, shall apply.

3. Extraordinary meetings of States Parties shall be convened, as may be deemed necessary, by the Secretary-General of the United Nations, at the written request of any State Party provided that this request is supported by at least one third of the States Parties.

4. After a period of five years following the entry into force of this Treaty, the Secretary-General of the United Nations shall convene a conference to review the operation of the Treaty and the progress in achieving the purposes of the Treaty. The Secretary-General of the United Nations shall convene further review conferences at intervals of six years with the same objective, unless otherwise agreed by the States Parties.

5. States not party to this Treaty, as well as the relevant entities of the United Nations system, other relevant international organizations or institutions, regional organizations, the International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies and relevant non-governmental organizations, shall be invited to attend the meetings of States Parties and the review conferences as observers.

Article 9. Costs

1. The costs of the meetings of States Parties, the review conferences and the extraordinary meetings of States Parties shall be borne by the States Parties and States not party to this Treaty participating therein as observers, in accordance with the United Nations scale of assessment adjusted appropriately.

2. The costs incurred by the Secretary-General of the United Nations in the circulation of declarations under Article 2, reports under Article 4 and proposed amendments under Article 10 of this Treaty shall be borne by the States Parties in accordance with the United Nations scale of assessment adjusted appropriately.

3. The cost related to the implementation of verification measures required under Article 4 as well as the costs related to the destruction of nuclear weapons or other nuclear explosive devices, and the elimination of nuclear-weapon programmes, including the elimination or conversion of all nuclear-weapons-related facilities, should be borne by the States Parties to which they apply.

Article 10. Amendments

1. At any time after the entry into force of this Treaty, any State Party may propose amendments to the Treaty. The text of a proposed amendment shall be communicated to the Secretary-General of the United Nations, who shall circulate it to all States Parties and shall seek their views on whether to consider the proposal. If a majority of the States Parties notify the Secretary-General of the United Nations no later than 90 days after its circulation that they support further consideration of the proposal, the proposal shall be considered at the next meeting of States Parties or review conference, whichever comes first.

2. A meeting of States Parties or a review conference may agree upon amendments which shall be adopted by a positive vote of a majority of two thirds of the States Parties. The Depositary shall communicate any adopted amendment to all States Parties.

3. The amendment shall enter into force for each State Party that deposits its instrument of ratification or acceptance of the amendment 90 days following the deposit of such instruments of ratification or acceptance by a majority of the States Parties at the time of adoption. Thereafter, it shall enter into force for any other State Party 90 days following the deposit of its instrument of ratification or acceptance of the amendment.

Article 11. Settlement of disputes

1. When a dispute arises between two or more States Parties relating to the interpretation or application of this Treaty, the parties concerned shall consult together with a view to the settlement of the dispute by negotiation or by other peaceful means of the parties' choice in accordance with Article 33 of the Charter of the United Nations.

2. The meeting of States Parties may contribute to the settlement of the dispute, including by offering its good offices, calling upon the States Parties concerned to start the settlement procedure of their choice and recommending a time limit for any agreed procedure, in accordance with the relevant provisions of this Treaty and the Charter of the United Nations.

Article 12. Universality

Each State Party shall encourage States not party to this Treaty to sign, ratify, accept, approve or accede to the Treaty, with the goal of universal adherence of all States to the Treaty.

Article 13. Signature

This Treaty shall be open for signature to all States at United Nations Headquarters in New York as from 20 September 2017.

Article 14. Ratification, acceptance, approval or accession

This Treaty shall be subject to ratification, acceptance or approval by signatory States. The Treaty shall be open for accession.

Article 15. Entry into force

1. This Treaty shall enter into force 90 days after the fiftieth instrument of ratification, acceptance, approval or accession has been deposited.

2. For any State that deposits its instrument of ratification, acceptance, approval or accession after the date of the deposit of the fiftieth instrument of ratification, acceptance, approval or accession, this Treaty shall enter into force 90 days after the date on which that State has deposited its instrument of ratification, acceptance, approval or accession.

Article 16. Reservations

The Articles of this Treaty shall not be subject to reservations.

Article 17. Duration and withdrawal

1. This Treaty shall be of unlimited duration.

2. Each State Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of the Treaty have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to the Depositary. Such notice shall include a statement of the extraordinary events that it regards as having jeopardized its supreme interests.

3. Such withdrawal shall only take effect 12 months after the date of the receipt of the notification of withdrawal by the Depositary. If, however, on the expiry of that 12- month period, the withdrawing State Party is a party to an armed conflict, the State Party shall continue to be bound by the obligations of this Treaty and of any additional protocols until it is no longer party to an armed conflict.

Article 18. Relationship with other agreements

The implementation of this Treaty shall not prejudice obligations undertaken by States Parties with regard to existing international agreements, to which they are party, where those obligations are consistent with the Treaty.

Article 19. Depositary

The Secretary-General of the United Nations is hereby designated as the Depositary of this Treaty.

Article 20. Authentic texts

The Arabic, Chinese, English, French, Russian and Spanish texts of this Treaty shall be equally authentic.

DONE at New York, this seventh day of July, two thousand and seventeen.

ACRONYMS AND GLOSSARY

AWE - Atomic Weapons Establishment, which comprises two warhead research and production sites – Aldermaston (formerly Atomic Weapons Research Establishment, AWRE) and Burghfield (formerly Royal Ordnance Factory, ROF) co-located in Berkshire, and smaller sites such as the Blacknest verification facility.
AWEML – AWE Management Limited, the private consortium that ran AWE from 2000-2021, which comprised Lockheed Martin, Serco and Jacobs Engineering.
BAE Systems – Arms manufacturer whose maritime-submarine division is responsible for building the UK's Astute and Dreadnought submarines in Barrow, Cumbria.
BTWC – 1972 Biological and Toxin Weapons Convention (BTWC)
CASD – Continuous At Sea Deterrence, meaning having one of the UK's nuclear-armed submarines on patrol at all times.
CCW – 1980 Convention on Certain Conventional Weapons, sometimes abbreviated to CCWC.
CD – Conference on Disarmament (based in Geneva).
CMC – 2008 Cluster Munitions Convention.
CND – Campaign for Nuclear Disarmament.
CTBT – 1996 Comprehensive Nuclear-Test-Ban Treaty.
CTBTO – Comprehensive Nuclear-Test-Ban Treaty Organisation (Prepatatory Commission) based in Vienna.
CWC – 1993 Chemical Weapons Convention. See also OPCW.
D5 – Trident II D5 ballistic missile used by current US and UK nuclear-armed submarines
DNSR – Defence Nuclear Safety Regulator, the MoD's internal nuclear safety regulator.
Dreadnought – the class name given in 2016 to successor submarines to carry UK nuclear weapons if not eliminated before the Vanguard class submarines are retired. Two Dreadnought submarines are in the early stages of production by BAE Systems in Barrow, Cumbria, with two more planned.
DNO – Defence Nuclear Organisation, an internal agency of the MOD that oversees the Defence Nuclear Enterprise.
FM(C)T – Fissile Materials Treaty (FMT) or Fissile Materials Cut-off Treaty (FMCT), sometimes abbreviated as fissban, referring to various diplomatic initiatives and unsuccessful efforts to achieve a separate treaty to end the production and stockpiling of fissile materials that can be used for nuclear weapons.
GICHD – Geneva International Centre for Humanitarian Demining.
Hibakusha – the japanese word used for survivors of the 1945 atomic bombs used on Hiroshima and Nagasaki and their affected descendents. The term hibakusha is often now also used for survivors of nuclear testing, accidents and nuclear radiation releases in other countries.
HINW – Humanitarian Impacts of Nuclear Weapons, awareness-raising conferences, initiatives and statements from 2013-16, which laid the groundwork for the TPNW.
HMNB - Her Majesty's Naval Base.
HMNB Clyde near Helensburgh, Scotland, mainly comprising the Faslane homeport for the UK's submarine (SSN and SSBN) fleet and Coulport, the Royal Naval Armament Depot (RNAD) where British nuclear warheads are stored and fitted onto US Trident missiles.
HMNB Devonport, which includes the Royal Navy's nuclear repair and refuelling facility near Plymouth, Devon, with Babcock-owned dockyard facilities, where submarine deep maintenance takes place.
IAEA – International Atomic Energy Agency (based in Vienna).
ICAN – International Campaign to Abolish Nuclear Weapons (awarded the 2017 Nobel Peace Prize).
ICC – International Criminal Court.
ICJ – International Court of Justice.
ICRC - International Committee of the Red Cross, sometimes used as shorthand to include the international Red Cross and Red Crescent societies around the world, though these are institutionally separate.
IHL – International Humanitarian Law.
INF – Intermediate-range Nuclear Forces, which were banned by the 1987 INF Treaty, which bilaterally eliminated this class of nuclear weapons that included American ground-launched Cruise and Pershing missiles as well Soviet SS20s. The INF Treaty remained in force until 2019.
IPFM – International Panel on Fissile Materials.
ISU – Implementation Support Unit (used in relation to international treaties and agreements).
IR2021 – Integrated Review of Security, Defence, Development and Foreign Policy, which was published by Boris Johnson's government in March 2021.

OEWG – Open-ended Working Group, UN diplomatic parlance for a working group open to all members of the UN General Assembly (UNGA), usually set up by a UNGA resolution for discussions on a specific issue the following year. Refers in this report to the 2013 and 2016 discussions on multilateral nuclear disarmament convened pursuant to UNGA resolutions in 2012 and 2015 respectively.
OPCW – Organisation for the Prohibition of Chemical Weapons (based in The Hague).
MIBA – Acronym given to networks of military-industrial, bureaucratic and academic establishments and associated practitioners. MIBA networks became influential after 1945 to promote US national defence industries and interests, including nuclear weapons. They were funded and developed to provide greater academic and political weight to justify the US 'military-industrial complex', and from the 1950s spread pro-nuclear theories transnationally. Though MIBA networks vary with the political systems in which they are embedded, they tend towards groupthink on nuclear issues, and are especially influential in countries with disproportionately large military-industrial infrastructures and ambitions.
MBT – 1997 Mine Ban Treaty, common abbreviation for The Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, which is sometimes called the Anti-Personnel Mine Ban Convention or, informally, as the Ottawa Treaty.
MoD – Ministry of Defence (UK).
MP – Member of Westminster Parliament.
MSP – Member of the Scottish Parliament.
MSP – Meeting of States Parties (to a treaty, generic).
1MSP – First Meeting of States Parties (in this case relating to the TPNW).
NAO – National Audit Office (UK).
NATO – North Atlantic Treaty Organisation.
NII – Nuclear Installations Inspectorate (UK), predecessor organisation to the current Office for Nuclear Regulation (ONR).
NPT – 1968 Treaty on the Non-Proliferation of Nuclear Weapons.
NPT RevCon – NPT Review Conference (normally held every 5 years, starting in 1975).
NPT5 – five nuclear-armed States Parties in the NPT regime: China, France, Soviet Union/Russia, United Kingdom, United States of America. These five are also called 'nuclear-weapon states' (NWS) as defined in Article IX of the NPT as having 'manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967.'
NNWS - non-nuclear-weapon state, a term used in the NPT for any state that does not meet the definition of NWS in Article IX.
nuclear-armed state – any state that possesses nuclear weapons, of which there are currently nine: China, France, India, Israel, North Korea, Russia, Pakistan, UK and USA.
NWFZ – nuclear-weapon-free zone.
NSS – National Security Strategy.
ONR – Office For Nuclear Regulation (UK).
Polaris – Ballistic missile system used in the UK's first generation of SSBN, from 1968-1996.
PWR2 – Reactor design used in Vanguard and Astute submarines. PWR stands for Pressurised Water Reactor and 2 indicates second generation design.
PWR3 – Reactor design (third generation) intended for Dreadnought submarines.
RNAD – Royal Naval Armaments Depot (see HMNB Coulport above).
SAB – Scientific and technical advisory board.
SDSR – Strategic Defence and Security Review (referring here especially to David Cameron government's 2010 SDSR).
SDR – Strategic Defence Review (referring here especially to Tony Blair government's 1998 SDR).
SSBN – Ship Submersible Ballistic Nuclear. NATO designation for a nuclear-armed, nuclear-powered submarine.
SSN – Ship Submersible Nuclear. NATO designation for a nuclear-powered submarine.
Submarine Dismantling Project – MOD project to dispose of its out-of-service service submarines.
TPNW – 2017 Treaty on the Prohibition of Nuclear Weapons, sometimes called the Nuclear Ban Treaty.
Trident – common shorthand for the UK's nuclear weapons deployed on US-made Trident ballistic missiles which are carried on British Vanguard class submarines.
UN – United Nations
UNODA – United Nations Office for Disarmament Affairs.
Vanguard – Second generation UK nuclear-armed submarine, currently in service
W76 – A US nuclear warhead design for Trident missiles, considered to be the basis for the UK warheads that are deployed on Trident missiles carried on UK's nuclear-armed submarines.

About the author Rebecca Eleanor Johnson

In writing this report, I drew on fifty years of feminist campaigning for peace, environmental security, justice, and ending violence against women, girls and life on Earth. I studied physics, philosophy and international relations, sang in cafes in Alaska and England, travelled and taught English for two years in Japan. In 1982, nuclear weapons and threats of war led me to USAF Greenham Common, where NATO had decided to deploy 96 nuclear-armed cruise missiles.

I lived and campaigned at the Greenham Common Women's Peace Camp for five years, and also co-founded the Aldermaston Women's Peace Camp(aign), which continues to oppose Britain's nuclear bomb factories and warhead transports. When the INF Treaty was signed in 1987 I left Greenham and coordinated strategies and actions for Greenpeace International (and also Greenpeace UK) on nuclear testing, plutonium and nuclear free seas. In 1993 I drove aid trucks to help feminist war resisters and refugees in ex-Yugoslavia, and in 1994 I set up the CTBT project in Geneva that became the Acronym Institute for Disarmament Diplomacy. For years I shuttled between London, Geneva, Vienna, Brussels and New York to take forward disarmament, nonproliferation, CTBT and space security and diplomacy, while also participating in Women in Black vigils and campaigns to oppose war, militarism and the increasing levels of patriarchal violence blighting our lives. I hold a Ph.D from LSE (2004), an MA from SOAS (1982) and a B.Sc. from Bristol University (1977). I currently serve on international steering group of the International Campaign to Abolish Nuclear Weapons (ICAN), and on the International Panel on Fissile Materials (IPFM), XR Peace Council, and as CND Vice President.

In 2006, after serving as senior adviser to the International Weapons of Mass Destruction Commission, chaired by Dr. Hans Blix, I moved to Scotland to help coordinate Faslane 365, a yearlong blockade of the Faslane nuclear navy base on the Gare Loch. The testimonies and actions of thousands of civil society activists who participated in Faslane 365 inspired fresh thinking about how to achieve an international legal ban on nuclear weapons and accelerate their total elimination. After linking with ICAN's Australian founders, IPPNW, WILPF and the Japanese Peace Boat, I set up ICAN's Geneva office in 2010 and served as first president of ICAN covering Europe, Middle East and Africa (EMEA). As one of ICAN's three co-chairs, I was shocked in 2014 to be hit with an egregious lawsuit lodged in the NZ High Court by an individual who accused us of defaming him when applying ICAN's safeguarding and nonviolence policies. We defended ourselves and were not surprised to be completely vindicated in 2015 by the NZ High Court which dismissed his claims entirely. However, a heart attack and months of vilification and pressure from this man and his enablers took their toll on my health, energy and confidence. I did my best to recover and participate as fully as possible in the negotiations and in coordinating British-based campaigning for the Ban Treaty. I also served as the Green Party spokesperson on security, peace and defence issues from 2015-2021, which covered three general elections.

My writings range over fifty years, and have been published in many books, reports, Disarmament Diplomacy (1995-2009) and media, including over 50 openDemocracy articles (2009-20) on ecofeminist activism and security issues, covering also the process that led to the TPNW. Books include 'Unfinished Business' on the CTBT, and 'Trident and International Law', plus numerous analyses on nuclear diplomacy, humanitarian disarmament and security challenges. Some are referenced in this report, and most are available via www.acronym.org.uk. I will continue to resist and write about the misogyny, weaponry and patriarchal coercions that trap and harm women and girls, and undermine hopes for security, survival and peace around the world.

Appreciations and acknowledgements from the author

I dedicate this work to my wonderful friend Setsuko Thurlow, who survived the 1945 bombing of Hiroshima, and to all the hibakusha and downwinders affected by nuclear use, production and testing. It was so inspiring and powerful to hear the testimonies and presentations made by Setsuko, Sue Coleman-Haseldine, Karina Lester, Abacca Anjain-Maddison and other strong and gentle Elders from Aboriginal and Pacific nations in the United Nations. They taught us so much, and it felt so right that Setsuko accepted the 2017 Peace Prize on behalf of ICAN and all of us. I also want to pay tribute to the indomitable Dann Sisters, Corbin Harney and Bill Rosse, and to honour the Western Shoshone People who showed how to love and protect the water, desert, mountains and all living things from the destruction wreaked by British and US nuclear activities at the Nevada Test Site. I thank Ian Zabarte for continuing to campaign for Newe Segobia land rights, protection and environmental remediation, in the spirit of his ancestors. From Greenham onwards, I have been inspired by all these amazing people to keep campaigning for Life on our Mother Earth and the abolition of nuclear weapons and war.

This study enshrines the work of nonviolent peace, justice and environmental campaigners around the world, as well as committed diplomats, scientists, doctors and ICAN partners, staff, steering group and activists – too numerous to name everyone, but you know who you are. I am especially grateful to Janet Fenton, Tim Caughley and Peter Burt, who provided thought-provoking feedback and advice on the first drafts. Special thanks also to Patricia Lewis, Felicity Ruby, Dimity Hawkins, Zohl dé Ishtar, Kathleen Sullivan, Jane Gabriel, Merav Datan, Tilman Ruff, Ron and David McCoy, Elayne Whyte Gomez, Alexander Kmentt, Steffen Kongstad, John Borrie, Akira Kawasaki, Keiko Nakamura, Liz Khan, Sue Finch, Sabrina Qureshi, Pam Spees, Jody Williams, Mairead Maguire, Ann Patterson, Pauline Tangiora, Di McDonald, Arielle Denis, Angie Zelter, Lepa Mladenović, Stasa Zajović, Haya Shalom, Caroline Lucas, Baroness Jenny Jones, Zia Mian, Hans Blix, Tom Markram, Michael Spies, Ray Acheson, Pamela and Achin Vanaik.

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This study benefitted from all that I learned from my parents and seven older siblings, who somehow brought me up from accident-prone Hutterite kid in North Dakota to ecofeminist rebel (via physics, Alaska and Japan). My undying gratitude to Greenham Women past and present, Million Women Rise, Women in Black, and all who understand that humanity cannot achieve peace or security unless we recognise the importance of upholding and safeguarding the rights, security and empowerment of women and girls. Patriarchal violence and exploitation take insidious as well as obvious forms. We have to act responsibly, support survivors, and call out the perpetrators of abuse, misogyny and racism, wherever they operate. And so to Heena, with a full heart and special memories of AWE cocktail parties, MWR, rainy nights, WiB, Faslane365, Baracoa, and swimming in wild and wonderful places.

As with all my actions and publications, I take full responsibility for what I've done. But this is the place to show my deep appreciation to all who inspired and enriched my thinking, life and work. I learned from each of you, and thus gained hope, strength and courage to keep going. Thank you.

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Acronym Institute for Disarmament Diplomacy (AIDD)
info@acronym.org.uk
www.acronym.org.uk

Campaign for Nuclear Disarmament
162 Holloway Road
London N7 8DQ
0207 700 2393
www.cnduk.org

Scottish Campaign for Nuclear Disarmament
PO Box 3620, Glasgow G73 9FQ
scnd@banthebomb.org
0141 357 1529
www.banthebomb.org

Nuclear Information Service
35-39 London Street
Reading, Berkshire RG1 4PS
office@nuclearinfo.org
www.nuclearinfo.org

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