1. NUCLEAR DISARMAMENT

§1.1 Overview

1.1 As the world in 2012 marked fifty years since the Cuban missile crisis, there were still almost 18,000 nuclear warheads distributed among nine nuclear-armed states. About 94 per cent of these are in Russian and US arsenals. There are many fewer nuclear weapons today than during the Cold War, and the risk of a deliberate nuclear war being started between the United States and Russia may well be negligible. Yet, paradoxically, the overall risks of nuclear war have grown – as more countries in more unstable regions have acquired these deadly weapons, terrorists continue to seek them, and as command and control systems in even the most sophisticated nuclear-armed states remain vulnerable not only to system and human error but, increasingly, to cyber attack. Even a "limited" regional nuclear war would have catastrophic global consequences.

1.2 While the need for total nuclear disarmament is more urgent than ever, its achievement remains little or no closer, both among the nuclear-weapon states (NWS) as defined in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), viz. China, France, Russia, the United Kingdom and the United States, and the other four nuclear-armed states outside the NPT, viz. India, Israel, Pakistan and North Korea. There has been some small progress in reducing the overall US and Russian nuclear weapons stockpiles and the number of deployed strategic weapons, and in improving transparency among some NWS. But there has been only minimal progress in shifting nuclear doctrine, and no progress in either taking weapons off high-alert launch status, or in addressing the issues of ballistic missile defence and conventional arms imbalances, differences over which are presently seriously inhibiting further disarmament movement. And, despite the efforts of many dedicated non-governmental organizations and research centres, the cause of nuclear disarmament has achieved very little of the civil society traction needed to put governments under serious political pressure.
1.3 **Objectives and General Strategy.** Derived from the language of the NPT itself, NPT Review Conference outcomes, and the recommendations of blue-ribbon international panels like the International Commission on Nuclear Non-proliferation and Disarmament (ICNND), these might be described as:

> Rapid movement towards a major overall reduction in the global stockpile of all types of nuclear weapons;

> Such reduction to be accompanied, and assisted, by moves to further delegitimize nuclear weapons, reduce their role and significance in military doctrine and strategy, and dramatically curtail their operational deployment;

> The major reduction of nuclear weapons stockpiles to be followed as soon as possible thereafter by their complete elimination; and

> The disarmament process throughout to be irreversible, verifiable, and transparent.

1.4 Such progress as there has been on specific issues – on reducing weapons numbers, curtailing their operational deployment, reducing their doctrinal salience, and on achieving acceptance of the principles of irreversibility, verifiability and transparency – is summarized in the following paragraphs and discussed in detail in the remaining sections of this chapter. As to the overall picture, progress in winning acceptance in practice from the nuclear-armed states for a two-phase objective – rapid major reduction followed by complete elimination – can be described as non-existent.

1.5 While nuclear disarmament continues to be very strongly supported by the overwhelming majority of non-nuclear-armed states, it remains for every nuclear-armed state at best an open-ended, incremental process, with broad and indeterminate links to global and regional stability. There is no appetite for a multilateral nuclear disarmament process and no disposition on the part of the NWS to discuss nuclear disarmament timelines. All nine nuclear-armed states have long-term nuclear-weapons system modernization programs under development and in progress. Based on current arsenals, deployments and force postures, and on planned expansions, upgrades and modernization, every nuclear-armed state is committed to the indefinite retention of significant nuclear-weapon capability.

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*Overall Evaluation of Acceptance of Disarmament Objectives and Strategy: No Progress.* Nuclear-armed states pay at best lip-service to the ultimate elimination of nuclear weapons, and none has committed to any “minimization objective,” nor to any specific timetable for their major reduction – let alone abolition. On the evidence of the size of their weapons arsenals, fissile material stocks, force modernization plans, stated doctrine and known deployment practices, all nine nuclear-armed states foresee indefinite retention of nuclear weapons and a continuing role for them in their security policies.
1.6 **Disarmament Principles.** Of the five NWS, only the United States publishes official figures on aggregate warhead numbers (most recently in September 2009). Consistent with the new Strategic Arms Reduction Treaty (New START) provisions, both Russia and the United States declare the number of deployed strategic warheads and deployed and non-deployed launchers captured by the treaty; but Russia does not release data on the overall size of its arsenal or the number of non-strategic weapons. France and the United Kingdom have provided information on stockpile ceilings. China and the non-NPT nuclear-armed states provide no information on the size and composition of their nuclear weapons inventories. Only the United States has provided figures for warhead dismantlement (most recently in May 2010).

1.7 The NWS have established a semi-regular habit of meeting to discuss nuclear weapons issues, giving particular attention to issues of “transparency, mutual confidence and verification,” and have given at least initial consideration to a standard disarmament reporting form. While four of the five NWS (China is the exception) have taken steps in recent years to reduce the size of their nuclear arsenals, only the United States and Russia have international (in their case, bilateral) verification measures in place.

**Overall Evaluation of Disarmament Principles:** Some Progress. Some NWS provide more information about their nuclear weapons than others, but none paints a full picture. The NWS are talking about improving transparency and have reaffirmed their commitment to report against 2010 NPT Review Conference disarmament objectives to the 2014 NPT PrepCom.

1.8 **Reduced Numbers of Nuclear Weapons.** The overall global stockpile in 2012 is assessed in this report as just under 18,000. This compares very favourably with the figure for 2009 given in the ICNND report of over 23,000, but unfortunately it is not possible to conclude that stockpile numbers in fact declined by some 5,000 weapons during the period in question. While there has been a continuing reduction in US and Russian stockpiles under the older bilateral START and SORT (Strategic Offensive Reductions) treaties, and some additional unilateral reductions by both these powers, reductions by other nuclear-armed states have either been very modest (in the case of France and the United Kingdom), non-existent, or negative (in the sense that stocks have increased).

1.9 Most of the apparent overall downsizing can be explained by better information and research methodology with, in the 2009 ICNND report, the Russian figures in particular likely to have been significantly overstated. The better news, although it does not affect the size of the total stockpile of existing weapons, is that the New START Treaty will bring about a significant reduction in the number of strategic weapons actually deployed by the United States and Russia, and many weapons previously identified as held in reserve by both countries are now more accurately to be counted as “awaiting dismantlement.”
1.10 Russia and the United States will find it hard to reach agreement on further cuts while divisions, particularly over ballistic missile defence, remain. China, too, believes “global” missile defence to be detrimental to the strategic balance and to prospects for nuclear disarmament. It seems that the more confident the United States becomes of the superiority of its conventional weapons, and of the efficiency of its anti-missile systems, the more reluctant Russia and China are likely to be to negotiate serious nuclear arms reductions.

1.11 France has met the objective set in 2008 to reduce by one-third its nuclear deterrent’s airborne component, and the United Kingdom expects its planned reduction in nuclear warhead numbers to have been completed by 2015. But the nuclear arsenals of India, Pakistan and China meanwhile continue to grow, albeit modestly in terms of absolute numbers, and North Korea has also made clear its intention to expand, not dismantle, its small nuclear weapons stockpile.

**Overall Evaluation of Nuclear Arms Reductions:** Some Progress. The global stockpile stands at nearly 18,000 nuclear weapons: while nearly half of these are earmarked for dismantlement, there is currently little prospect of major further reduction. Significant cuts in Russian and US stockpiles, mainly under previous treaty obligations, have continued, but no agreement on further cuts is likely while divisions over missile defence and conventional weapons remain. France has met the limited disarmament objective it set itself in 2008 and the United Kingdom could complete planned reductions in warhead numbers ahead of schedule. But elsewhere – in China, India, and Pakistan – nuclear arsenals are growing.

1.12 **Nuclear Doctrine.** There have been no significant publicly declared shifts in nuclear doctrine since the 2010 NPT Review Conference. In its 2010 Nuclear Posture Review (NPR) the United States took some modest steps toward advancing the undertaking given by President Barack Obama in Prague in April 2009 to “reduce the role of nuclear weapons in [US] national security strategy”: while “not prepared at the present time to adopt a universal policy that deterring nuclear attack is the sole purpose of nuclear weapons...[the United States] will work to establish conditions under which such a policy could be safely adopted.” Obama subsequently asked the Pentagon to lead an interagency review to develop alternative constructs of deterrence and stability, with accompanying force sizes and postures. But in the opposite direction, India and Pakistan seem to be broadening their mix of nuclear weapon platforms and expanding the doctrinal role of nuclear weapons in their security strategies.

1.13 Of the five NWS, only China is publicly committed to no first use of nuclear weapons. Of the other nuclear-armed states, only India has made a similar commitment. NATO, at its Chicago Summit in May 2012, again affirmed its commitment to extended deterrence by declaring that “the strategic nuclear forces of the Alliance, particularly those of the United States” are the “supreme guarantee” of its security. Negative security assurances – not to use or threaten nuclear weapons against non-nuclear-armed states – remain unequivocal and unconditional again only in the case of China.
Overall Evaluation of Nuclear Doctrine: **Minimal Progress.** There have been no significant publicly declared shifts in nuclear doctrine in recent years, although US doctrine has given some acknowledgement to President Obama’s 2009 undertaking to “reduce the role of nuclear weapons in national security strategy” and an interagency review is examining revised constructs of deterrence and stability. India and Pakistan are, if anything, expanding the role of nuclear weapons in their respective national security strategies.

1.14 **Nuclear Force Posture.** While the New START treaty will bring significant reductions in the number of strategic weapons deployed by Russia and the United States, no risk-reducing changes have occurred in the deployment by either of non-strategic weapons. Such changes as have occurred or been foreshadowed in the disposition of their warheads by other nuclear-armed states, including a gradual shift towards land-mobile and sea-based weapons, appear to have been aimed at enhancing their survivability in the face of attack. This raises issues of attenuated command and control and adds to the risks of accidental and unauthorized use. China is close to establishing a stable nuclear triad and India too is firmly on this path. The United States and Russia, alone among the nuclear-armed states, continue to keep most of their deployed intercontinental ballistic missiles (ICBMs), and in the case of the United States a majority of their submarine-launched ballistic missiles (SLBMs), on very high alert – meaning a dangerously short launch-decision time requirement of just a few minutes for about 1,000 warheads in each case.

Overall Evaluation of Nuclear Force Posture: **Minimal Progress.** Apart from the reductions in deployed US and Russian strategic weapons under New START, the only significant changes in deployment practice elsewhere have been aimed at enhancing the survivability of nuclear weapons in case of attack. No progress has been made in reducing the dangerously high launch-alert states of large numbers of US and Russian weapons.

1.15 **Parallel Security Issues.** Russia has taken strong exception to the planned deployment of US ballistic missile defence to Europe, interpreting it as a threat to its deterrent capability. Tensions are also rising in US relations with China over ballistic missile defence in Asia. The development of new US conventional systems, in particular long-range precision-strike weapons, has also been complicating the environment for nuclear disarmament talks. There is little sign of any movement on new conventional arms control measures or, despite some efforts for example by the European Union and the UN Group of Governmental Experts to try to break the deadlock, on regulating weapons in space to prevent its militarization.
1.16 **Mobilizing Political Will.** The global strategic environment has deteriorated since 2010; Russia has reacted strongly to planned US missile defence deployments in Europe; Russia and the United States have both stepped back from earlier signs of willingness to return to conventional arms control talks; US-China security relations have similarly cooled, with implications both for strategic nuclear disarmament and prospects for non-proliferation and disarmament in North Korea; nuclear weapons arsenals are growing in Asia; proliferation pressures are increasing; and the risk of accident or miscalculation leading to a nuclear exchange is undiminished. Nuclear-armed states are not ready to negotiate a nuclear weapons convention and believe that, without them, negotiations would be meaningless. An annual resolution calling for the negotiation of such a convention is nonetheless supported by some two-thirds of the UN membership.

1.17 This said, nuclear disarmament and the possibility of nuclear war are not currently prominent public issues anywhere. Governments are under no real pressure to respond to expressions of popular concern because truly popular concern barely exists. Despite the efforts of many dedicated non-governmental organizations and research centres, the cause of nuclear disarmament has achieved very little traction. But the recent new focus on the indescribably horrific consequences of a nuclear detonation, with strong advocacy from a number of states in the UN General Assembly First (Disarmament) Committee and elsewhere, may show the way forward.

**Overall Evaluation of Mobilizing Political Will:** Minimal progress. Work done to promote nuclear disarmament has had little impact outside specialist disarmament and non-proliferation circles. The UN Secretary-General’s welcome calls to prioritize nuclear arms control and disarmament have so far fallen largely on deaf ears. Civil society organizations, however dedicated and active, have achieved little of the traction needed to put relevant governments under serious political pressure. But the recent new emphasis on the catastrophic humanitarian consequences of nuclear weapons may show the way forward.
§1.2 Objectives and General Strategy

1.18 The NPT, which was signed in 1968 and entered into force on 5 March 1970, contains the only global treaty-level commitment to nuclear disarmament. Article VI requires each of the parties to the treaty to undertake “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.” The formulation is weak and the link to “general and complete disarmament” unhelpful and unrealistic, but it would be a mistake to underestimate the contemporary normative force of Article VI and the expectations of the international community, which have been clarified and strengthened in subsequent reaffirmations.

1.19 The 1995 NPT Review and Extension Conference made clear, for example, that the five NPT NWS bore the primary responsibility for nuclear disarmament and that they were expected to take “systematic and progressive steps” to this end;¹ while the International Court of Justice (ICJ), in its July 1996 advisory opinion on the question concerning the legality of the threat or use of nuclear weapons concluded, inter alia, that there “exists an obligation to pursue in good faith and to bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control” (emphasis added).²

1.20 The eighth NPT Review Conference (May 2010), buoyed particularly by positive US re-engagement in multilateral disarmament diplomacy, reaffirmed the largely unrealized aspirations of previous years. The NWS promised to accelerate “concrete progress on the steps leading to nuclear disarmament” and, to this end, were called upon “to promptly engage” with a view to rapidly moving towards an overall reduction in the global stockpile of all types of nuclear weapons; further diminishing the role and significance of nuclear weapons in military doctrine and strategy; reducing the operational status of nuclear weapons in ways that promote international stability and security; and further enhancing transparency and mutual confidence.

1.21 The 2010 NPT Review Conference took place against the backdrop of a major speech in Prague in April 2009 in which newly-elected President Obama pledged the United States “to seek the peace and security of a world without nuclear weapons” and to “reduce the role of nuclear weapons in [its] national security strategy.” He promised, and delivered, a new Strategic Arms Reduction Treaty (New START) with the Russians; and foreshadowed further cuts in nuclear arsenals which, he hoped, would include all the NWS. He also undertook “immediately and aggressively” to pursue US ratification of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and to support the negotiation of a fissile material cut-off treaty (FMCT).³ Later in the year, President Obama chaired a United Nations Security Council session which unanimously adopted US-sponsored

². Summaries of Judgments, Advisory Opinions and Orders of the International Court of Justice, Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion of 8 July 1996. The added emphasis indicates how the ICJ opinion interpreted and strengthened the article VI obligation.
³. Remarks by President Barack Obama, Hradcany Square, Prague, 5 April 2009; www.whitehouse.gov.
Resolution 1887 “to create the conditions for a world without nuclear weapons” (S/RES/1887, 24 September 2009).

1.22 Over the years, a number of international commissions have drawn very similar conclusions about the all-encompassing nature of the threat posed by nuclear weapons, their dubious utility, and the steps needed to get rid of them. The ICNND report, published shortly before the 2010 NPT Review Conference, introduced a number of new, including time-bound, elements to the nuclear disarmament agenda. It argued for the delegitimization of the role of nuclear weapons and for a two-phase approach to their elimination, recommending that “minimization” be achieved between 2012 and 2025, and “elimination” as soon as possible thereafter. The ICNND took the view that, given the myriad of difficult political, security and technical verification and enforcement issues that remained to be resolved before any state would be prepared to give up its last nuclear weapons, it would not be credible, and might well be counterproductive, to identify now a specific target date for abolition.

1.23 The ICNND’s “minimization point,” to be achieved by 2025 at the latest, would be characterized by:

- Low numbers: a global total of no more than 2,000 nuclear warheads, with the United States and Russia reducing to a total of 500 nuclear weapons each, and with at least no increase (and desirably significant reductions) in the arsenals of the other nuclear-armed states;
- Agreed doctrine: every nuclear-armed state committed to no first use of nuclear weapons (on the basis that their sole remaining purpose is to deter the use of nuclear weapons by others); and
- Credible force postures: verifiable deployments and alert status reflecting that doctrine.

1.24 The ICNND Report emphasized the need to incorporate all the nuclear-armed states, not just the NPT nuclear-weapon states, in a fully inclusive nuclear disarmament process. It called on the NWS to reaffirm their unequivocal commitment to nuclear disarmament (which they did, at the 2010 NPT Review Conference), and for the non-NPT nuclear-armed states to accept similar undertakings towards the eventual total elimination of their nuclear arsenals, and the universal and binding nature of the norms against testing, acquisition and use or threat of use of nuclear weapons other than for defence against nuclear attack. It also encouraged all nuclear-armed states to accept and announce as soon as possible a diminishing role for nuclear weapons in their security policies and to make appropriate preparations for a multilateral disarmament process.

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1.25 In 2009 the worldwide campaign organization, Global Zero, launched a four-phase Action Plan, much more ambitious than ICNND’s, setting 2023 as the target date for negotiating a legally binding international agreement, signed by all nuclear-capable countries, that would lead to the phased, verified and proportionate reduction of all nuclear arsenals, with complete dismantlement of all the world’s nuclear weapons to be achieved by 2030. Part of the plan is for the United States and Russia to negotiate bilaterally to achieve reductions of their stockpiles to 1,000 weapons each by 2018 and, in a wider multilateral context, to achieve further reductions to 500 each by 2021.

1.26 The credibility of the argument of both ICNND and Global Zero that a massive reduction in global arsenals can be achieved by the early 2020s (however long it might take thereafter to get to zero) has been reinforced recently by a study done for Global Zero by a panel under the leadership of retired US General James Cartwright, the former Vice Chairman of the Joint Chiefs of Staff, and including Senator Chuck Hagel. This recommends a dramatic drawdown over one decade of US and Russian nuclear forces to 900 total nuclear weapons (including both strategic and non-strategic) each, divided equally between deployed (450) and held in reserve on de-alerted status (450). For the United States, the total would consist of 360 strategic missile warheads deployed on ten ballistic missile submarines and 360 held in reserve; plus 18 B52 bombers armed with 90 deployed gravity bombs and 90 held in reserve. All US land-based ICBMs would be completely dismantled. Stocks in reserve could be regenerated to launch readiness within 24–72 hours for offensive strikes. The alternative deterrence construct would thus require a robust command, control, communications and early warning system that can withstand the shock of the initial strike and manage the transition to regenerated nuclear forces.

1.27 The Cartwright study argues that once the two major nuclear powers had reduced their arsenals to these levels, China could be drawn into the negotiations followed by the other nuclear-armed states. Dialogue with China could begin with information sharing on numbers, types and locations of nuclear stocks as laying the groundwork for drawing Beijing into the formal arms control talks. With each new entrant into the multilateral arms control negotiations, it would become progressively more difficult for the remainder to stay outside the process.

1.28 The study describes bilateral drawdown by the United States and Russia to 900 weapons each as being wholly consistent with the maintenance of a full deterrence – and extended deterrence – posture, and as being desirable and possible for five reasons:

> Mutual nuclear deterrence is no longer a cornerstone of the bilateral US–Russia relationship;

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Nuclear weapons are irrelevant to a broad range of contemporary threats – rogue and failed states, terrorism, organized crime and drug trafficking, conflict and environmental refugees, climate change and the like;

Only deep reductions in the nuclear arsenals to the levels of the other nuclear-armed states will remedy a basic deficiency in the framework of nuclear arms talks, namely the exclusion of the rest;

At a time of economic stagnation and in a fiscally constrained environment, it seems irrational to spend in excess of $1 trillion per decade on producing and maintaining nuclear weapons (Table 1.1) and mitigating their health and environmental consequences; and

The launch-ready nuclear postures of Russia and the United States are very high-risk (see §1.6 below).\(^{10}\)

### Table 1.1 Military and Nuclear Weapons Expenditures

**US $ bn, 2010 exchange rates**

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<td>687</td>
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<td>Pakistan</td>
<td>7.9</td>
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<td>2.2</td>
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<td>North Korea</td>
<td>8.8</td>
<td>0.5</td>
<td>0.7</td>
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<td><strong>Total</strong></td>
<td><strong>1052-1085</strong></td>
<td><strong>67.0</strong></td>
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Core costs refer to researching, developing, testing, operating, maintaining and upgrading the nuclear arsenal (weapons and delivery vehicles) and the nuclear command-control-communications and early warning infrastructure. Full costs add unpaid/deferred health and environmental costs, missile defences assigned to defend against nuclear weapons, and nuclear threat reduction and incident management. Air defences, anti-submarine warfare and nuclear weapons-related intelligence and surveillance expenses are not included.


Nuclear Disarmament

1.29 Derived from these various sources, CNND suggests that the overall objectives and strategy that the international community should be pursuing in relation to nuclear disarmament might realistically be described as:

> Rapid movement towards a major overall reduction in the global stockpile of all types of nuclear weapons;

> Such reduction to be accompanied, and assisted, by moves to further delegitimize nuclear weapons, reduce their role and significance in military doctrine and strategy, and dramatically curtail their operational deployment;

> The major reduction of nuclear weapons stockpiles to be followed as soon as possible thereafter by their complete elimination; and

> The disarmament process throughout to be irreversible, verifiable, and transparent.

1.30 The unhappy reality is that by the end of 2012 very little progress has been made towards realizing any of these broad objectives. The optimism and energy that marked the year leading up to the 2010 NPT Review Conference have largely evaporated. Currently there is little appetite for further US–Russian nuclear arms reduction negotiations and none for a multilateral nuclear disarmament process; no inclination to embrace no first use or sole purpose doctrine on the part of nuclear-armed states that have not already done so; no willingness on the part of Russia and the United States to lower the launch alert status of their ballistic missiles; and no sign of any agreement on issues like ballistic missile defence and perceived conventional force imbalances which are seen as inhibiting further disarmament progress.

1.31 Specific questions relating to progress, or lack of it, on disarmament principles, reducing weapons numbers, nuclear doctrine, nuclear force posture and parallel security issues like ballistic missile defence are addressed in the following sections. For present purposes, the important point is that no visible progress has been made in extracting any kind of serious practical commitment to complete disarmament, or even to any kind of “minimization” target. There has been no disposition on the part of any NWS or other nuclear-armed states to discuss nuclear disarmament timelines of any kind – either modest, like the ICNND’s and Cartwright studies, or highly ambitious, like Global Zero’s 2030 abolition target. All nuclear-armed states have long-term nuclear weapons system modernization programs under development and in progress. Based on current arsenals, deployments and force postures, and on planned expansions, upgrades and modernization, every one of them is committed to the indefinite retention of significant nuclear-weapon capability.
§1.3 Disarmament Principles

1.3.1 Irreversibility

1.32 The 2010 NPT Review Conference committed all states "to apply the principles of irreversibility, verifiability and transparency in relation to the implementation of their treaty obligations" (Action 2). The concept of "irreversible nuclear disarmament" first seems to have been used in the framework of efforts to denuclearize the Korean peninsula. However, the term entered the multilateral disarmament lexicon after it was incorporated into the 13 practical steps towards nuclear disarmament elaborated at the 2000 NPT Review Conference. While the term was used in this context, it was not defined and there does not seem to be general agreement on what it means. The recollections of participants at the 2000 NPT Review Conference suggest that the expression should probably be interpreted in a broad manner and seen as a series of measures that, taken together, can reduce the likelihood of backsliding on agreed commitments.

1.33 Irreversible nuclear disarmament is here understood to encompass warhead dismantlement, the removal from nuclear weapons programs of fissile material no longer required for military purposes, and the decommissioning and dismantling of weapon-grade fissile material production plants. Fissile material production and disposition are covered in Chapter 2, although it may be noted here that four of the five NWS have declared an end to the production of fissile material for weapons purposes; and the exception, China, is thought not to have produced such material for more than two decades. Russia, the United Kingdom and the United States have each declared some weapon-grade fissile material excess to defence requirements. Non-NPT states parties India, Pakistan and North Korea all continue to produce fissile material for nuclear weapons; and Israel may do so. France, the United Kingdom and the United States have closed and are in the process of decommissioning their fissile material production facilities. In 2008, France invited international experts to observe the dismantlement of its facilities at Marcoule and Pierrelatte.

1.34 China, France and the United Kingdom provide no information on warhead dismantlement. Russia is dismantling retired warheads but provides no details of this activity. It currently has two operating nuclear weapon assembly/dismantlement plants, at Lesnoy (formerly Sverdlovsk-45) and Trekhgorny (Zlatoust-36).

1.35 The United States dismantled 8,748 nuclear warheads over fifteen years (1994–2009). No more recent figures are currently publicly available. The US National Nuclear Security Administration (NNSA) has, however, since announced (in October 2011) the completion of dismantlement programs for the W62 warhead (August 2010) and the B53 bomb, the oldest weapon in the US arsenal. It has also dismantled a number of B61 and B83-0/1 bombs and W76-0, W80-0, W84 and W78 warheads. On 3 December 2012

it announced that it had “accomplished 112 per cent of its goal for planned stockpile dismantlements in FY 2012.”

1.3.2 Transparency

1.36 Transparency in this context refers to the willingness of a state to voluntarily expose credible information about its strategic aims, intentions, doctrines and current and prospective nuclear weapon capabilities and deployments. Transparency in relation to nuclear weapons doctrine, numbers and deployment can promote reciprocity and boost mutual confidence, and is a necessary condition for serious disarmament negotiations.

1.37 Public statements of the intent to pursue total elimination of nuclear weapons are hedged with so many caveats and qualifications as to render them meaningless in practice. Seven of the nine nuclear-armed states have at various times published statements of doctrine. None of them has said explicitly, however, when and how its nuclear weapons would be used. Of the exceptions (North Korea and Israel) little can be said. Israel shows no sign of relaxing its policy of nuclear opacity, while North Korea’s periodic warnings of nuclear annihilation would appear to signal a willingness to use nuclear weapons against its enemies.

1.38 China provides no details of the size, composition and deployment of its nuclear arsenal. It claims that, given the small size and limited capabilities of that arsenal, it needs to rely relatively far more than Russia and the United States on secrecy with respect to the survivability of its nuclear arsenal, infrastructure and national command authority. Chinese leaders and experts appear to believe that transparency is the enemy of confidence in survivability and retaliatory capability.

1.39 France has declared a stockpile ceiling of less than 300 operational nuclear warheads, with no warheads in reserve.15 The United Kingdom has gone further, announcing revised target ceilings for its stockpile and the number of operationally available warheads, including the number of warheads deployed on each submarine.

1.40 Consistent with New START Treaty provisions, Russia and the United States declare numbers of deployed strategic warheads and deployed and non-deployed launchers covered by the treaty. The United States has also published (most recently as of 30 September 2009) an aggregate figure for its nuclear weapons stockpile. Russia does not release data on the overall size of its arsenal, including warheads in reserve, or on the number of non-strategic weapons.

1.41 Neither India nor Pakistan provides details of the size, composition and deployment of its nuclear arsenal. At a recent conference at the Institute of World Economy and International Relations in Moscow, Russian experts advised India and Pakistan to do more to enhance mutual transparency and set up verification mechanisms to build on confidence-building measures already agreed to, like the commitment not to attack each

other’s civil nuclear installations. When the Indian participants responded that the Russians needed a reality check because of the prevailing levels of distrust between India and Pakistan, they were reminded that the trust divide was just as stark between Moscow and Washington when they began their nuclear arms talks in the 1970s.17

1.42 Israel does not admit to the possession of nuclear weapons. North Korea provides no details of the number, composition and deployment of its nuclear weapons.

1.43 The 2010 NPT Review Conference encouraged states parties to “submit regular reports” on implementation of the conference action plan and previous commitments (Action 20); and encouraged NWS “to agree as soon as possible on a standard reporting form and to determine appropriate reporting intervals for the purpose of voluntarily providing standard information without prejudice to national security” (Action 21). At the same time, the United Nations Secretary-General was “invited to establish a publicly-accessible repository” to include information provided by the NWS.

1.44 The ten-nation (Australia, Canada, Chile, Germany, Japan, Mexico, Netherlands, Poland, Turkey and the United Arab Emirates)18 Non-Proliferation and Disarmament Initiative (NPDI) conveyed a draft standard reporting form to the five permanent members of the UN Security Council (P5), who happen also to be the five NWS recognized as such by the NPT, prior to their meeting in Paris in July 2011. The P5 have not commented on the form (since made available to all states at the First Preparatory Committee of the 2015 NPT Review Conference in Vienna in May 2012) but have confirmed, at their most recent meeting in Washington in June 2012, that they had “considered proposals for a standard reporting form.” The P5 recognized “the importance of establishing a firm foundation for mutual confidence and further disarmament efforts, and [promised to] continue their discussions in multiple ways within the P5, with a view to reporting to the 2014 PrepCom, consistent with their commitments under Actions 5, 20, and 21 of the 2010 RevCon final document.”19

1.45 In May 2012, the International Panel on Fissile Materials (IPFM) presented a number of proposals on transparency to the First Preparatory Committee of the 2015 NPT Review Conference in Vienna. These included baseline declarations on nuclear weapons numbers and fissile material holdings by NWS to the 2014 NPT Preparatory Committee meeting and a commitment by NWS at the 2015 Review Conference “to develop information on the histories of their nuclear warhead and fissile material stockpiles, which could later provide the basis for public declarations.”20 Meanwhile, an online repository established by the UN Office for Disarmament Affairs pursuant to Action 21 remains empty.

18. Seven of the ten shelter under the US nuclear umbrella, the exceptions being Chile, Mexico and the UAE.
1.3.3 Verification

1.46 “Verification” refers to the process, established or approved in a bilateral agreement or multilateral arms control treaty, by which individual state parties or an appropriately empowered international body determine the degree to which the parties to the agreement have implemented its provisions. In the context of nuclear disarmament, it refers to the checks carried out by competent authorities using qualified personnel, technical means, or a combination of the two, to confirm that agreed commitments on numbers, stockpiles, force postures, deployments and the like have been implemented. The task can be undertaken outside the governmental or intergovernmental framework. For example, VERTIC (the Verification Research, Training and Information Centre), set up in London in 1986, is an independent non-governmental organization with the mission “to support the development, implementation and effectiveness of international agreements and related regional and national initiatives, with particular attention to issues of monitoring, review, implementation and verification.” 21

1.47 As has been noted in introducing this section, the 2010 NPT Review Conference committed all states “to apply the principles of irreversibility, verifiability and transparency in relation to the implementation of their treaty obligations” (Action 2). In addition, all states agreed on “the importance of supporting [international] cooperation... aimed at increasing confidence, improving transparency and developing efficient verification capabilities related to nuclear disarmament” (Action 19).

1.48 China has taken no steps to reduce the size of its nuclear arsenal. It has made no claims to have shifted nuclear warheads from deployed to reserve status or to have dismantled any. The question of verification therefore is not relevant.

1.49 Neither France’s nor the United Kingdom’s unilateral nuclear arms reduction measures are subject to independent verification. UK Foreign Office Minister Alistair Burt told Parliament on 9 June 2010 that the United Kingdom had “no plans to establish procedures to allow the international community to verify the UK’s nuclear warhead stockpile.” 22

1.50 The United Kingdom and Norway have however, since 2007, been conducting joint research into possible methodologies for nuclear warhead dismantlement. The UK–Norway Initiative has “focused on the joint development of effective and mutually trusted solutions to technical and procedural disarmament hurdles which will not breach our respective non-proliferation obligations under the NPT.” 23 The two countries hosted a “managed access exercise” in the United Kingdom in 2010. In December 2011, they briefed technical experts from twelve interested non-NWS on the progress of their research. And in April 2012, the United Kingdom hosted an expert-level briefing for P5 partners on lessons learned from the UK–Norway Initiative and invited their views. The two countries made a presentation on the initiative at the first meeting of the Preparatory Committee of the 2015 NPT Review Conference in Vienna in May 2012. The United

Kingdom is also cooperating with the United States on the development of disarmament verification technology, as discussed further below.

1.51 The New START Treaty between Russia and the United States incorporates a range of bilateral verification measures, including data exchanges, inspections and notifications. The United States is cooperating with the United Kingdom on the development of disarmament verification technology. Other members of the P5 were given an overview of this work at the third P5 conference in Washington in June 2012 and “agreed to consider attending a follow-up P5 briefing... to be hosted by the United States.”

1.52 In order to provide confidence that states do not retain undeclared nuclear weapons or fissile material and to facilitate future verification, the ICNND Report recommended that “nuclear archaeology” steps be taken now by the nuclear-armed states "to ensure that all relevant records are identified, secured and preserved, and relevant measurements and samples are taken” (Recommendation 48). All states have a shared interest “in ensuring that future verification is able to provide credible results.”

1.53 Since most states with nuclear weapons have stopped production of both highly enriched uranium (HEU) and plutonium, “nuclear archaeology” in this context would take the form of historical materials accountancy. Documenting the total production of HEU and/or plutonium over a few decades is a large and time-consuming effort, and the results are inevitably presented in aggregated form with significant associated uncertainties. The United States and the United Kingdom have made such efforts. The United States published the results of its historical accounting for both HEU and plutonium, while the United Kingdom has published a report on HEU.

§1.4 Reducing Weapons Numbers

1.4.1 Current Nuclear Arsenals

1.54 As the world marked fifty years since the Cuban missile crisis of October 1962, there were still almost 18,000 nuclear warheads distributed among nine nuclear-armed states. The size and distribution of the current global stockpile are shown in Table 1.2. On the one hand, as the table shows, 94 per cent of the world’s stocks of nuclear weapons are held in Russian and US arsenals. On the other hand, not shown, concerns about the growth in nuclear weapons stockpiles are focused on China, India, North Korea and Pakistan.

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25. ICNND, Eliminating Nuclear Threats, p. 171.
Table 1.2: The World’s Nuclear Arsenals (2012)

<table>
<thead>
<tr>
<th>Strategic</th>
<th>Other</th>
<th>Total by Yield</th>
<th>Range</th>
<th>Total Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployed</td>
<td>Reserve</td>
<td>Deployed</td>
<td>Reserve</td>
<td>To be Dismantled</td>
</tr>
<tr>
<td>USA</td>
<td>1722&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2450&lt;sup&gt;b&lt;/sup&gt;</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>Russia</td>
<td>1799&lt;sup&gt;d&lt;/sup&gt;</td>
<td>700&lt;sup&gt;e&lt;/sup&gt;</td>
<td>0&lt;sup&gt;f&lt;/sup&gt;</td>
<td>~860</td>
</tr>
<tr>
<td>China</td>
<td>200&lt;sup&gt;h&lt;/sup&gt;</td>
<td>40</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>France</td>
<td>300</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>UK</td>
<td>160</td>
<td>65</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Israel</td>
<td>80</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>India</td>
<td>80-100</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Pakistan</td>
<td>90-110</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>DPRK</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Totals</td>
<td>4431</td>
<td>3255</td>
<td>200</td>
<td>1160</td>
</tr>
<tr>
<td></td>
<td>-4471</td>
<td>-1340</td>
<td>-17866</td>
<td>-1693</td>
</tr>
</tbody>
</table>


Notes to Table 1.2

a. This number is based on the most recent information drawn from the exchange of data pursuant to the 2010 Russia–US Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms (New START). These warheads are fielded on 806 active ICBMs, submarine-based missiles and bombers. The number has decreased from 2,200 reported in the ICNND report of November 2009 due to the continued implementation of strategic arms reduction agreements. The United States will have to offload approximately 170 further warheads by 2018 in order to meet the New START limit.

b. The United States has a total of 2,750 warheads held in reserve. Of these, 2,450 are strategic and 300 are non-strategic. The United States possesses around 760 non-strategic nuclear warheads. This includes approximately 200 B61 gravity bombs deployed in Europe, 300 US-based bombs on reserve, and around 260 warheads for the Tomahawk Land-Attack Cruise Missile awaiting dismantlement. The total number of non-strategic warheads has been decreasing partly due to steps delineated in the 2010 NPR including the planned retirement of nuclear-armed, sea-launched cruise missiles.

c. Reductions in the US total stockpile can be attributed to obligations under bilateral arms control treaties with Russia, including the START and SORT treaties, as well as steps taken as a result of the 2010 NPR. Part of the total stockpile number includes the ongoing

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The retirement of excess W76 warheads. The US Navy is estimated to have downloaded each missile to an average of 4-5 warheads to meet a warhead ceiling mandated by SORT.

d. This number is based on the most recent information drawn from the exchange of data pursuant to New START and further represents 300 bomber weapons thought to be present at bomber bases. These warheads are deployed on 491 extended-distance delivery systems. This number has decreased from 2,800 reported in the ICNND report of November 2009 due to continued implementation of strategic arms reduction agreements.

e. There is substantial lack of data available regarding Russian strategic warheads in reserve, as well as unresolved definitional issues concerning the differentiation between warheads in reserve and warheads awaiting dismantlement. The 2009 ICNND table gave this number as 4,750 but qualified the figure as a rough approximation due to Russia's lack of transparency. The 2012 number for the strategic reserve comprises 700 strategic warheads thought to be in reserve for SSBNs and bombers. Based on SIPRI Yearbook information, many of the strategic warheads classified by the ICNND table as being in reserve are actually awaiting dismantlement, explaining the discrepancy between ICNND and SIPRI numbers in this category.

f. Previous calculations regarding the size of Russia’s non-strategic nuclear forces have been based on approximations that may have overestimated the real number owing to lack of a clear methodology. The difficulty in arriving at an accurate estimate is partly due to the fact that only the strategic forces of the United States and Russia have been subject to verification and transparency measures due to bilateral treaty obligations. The estimate used in this table is based on a report that uses a new and defined methodology for estimating the composition and size of Russia’s operational non-strategic nuclear stockpile. The methodology uses open-source information to establish “assignment rules” for nuclear-capable portions of Russia’s military and the numbers attained come forth as reliable as they match reasonably accurately official and semi-official statements. The general trend has been a decrease since the end of the Cold War, with a 50 per cent decrease in the past seven years based on the study’s methodology.

g. This number includes approximately 3,500 strategic warheads and 2,000 non-strategic warheads.

h. China is thought to be expanding its nuclear arsenal as part of a modernization program, explaining the slight increase from 2009 ICNND numbers.

i. The 2010 UK Strategic Defence Review aims to decrease the size of the British nuclear arsenal from 225 warheads to “no more than 180 by the mid 2020s.” Deployed strategic warheads will be reduced to no more than 120.

j. Israel’s policy of “nuclear opacity” makes any estimate of nuclear weapons numbers and capabilities essentially a matter of speculation.

k. Pakistan has roughly doubled its nuclear arsenal since the ICNND report. Pakistan is now the world’s fifth largest nuclear power. Several experts believe that Pakistan could double its nuclear stockpile within a decade based on increased military plutonium production capabilities.\footnote{D. Albright and P. Brannan, “Pakistan appears to be building a fourth military reactor at the Kushan site,” Institute for Science and International Security (ISIS) Report, 9 February 2011.}


1.55 The significant discrepancy in numbers between Table 1.2 (which shows a global total of just under 18,000 nuclear weapons in 2012) and its counterpart, Box 2.2 in the ICNND Report\footnote{ICNND, Eliminating Nuclear Threats, p. 20.} (which shows a figure of over 23,000 in 2009) does not mean that we can conclude that stockpile numbers in fact declined by some 5,000 weapons during the period in question. While there has been a continuing reduction in US and Russian stockpiles under the older bilateral START and SORT treaties, and some additional unilateral reductions by both these powers, reductions by other nuclear-armed states have either been very modest (in the case of France and the United Kingdom), non-existent, or negative (in the sense that stocks have increased).

1.56 Most of the apparent overall downsizing can be explained by better information and research methodology with, in the 2009 ICNND report, the Russian figures in particular likely to have been significantly overstated. The better news, although it does not affect the size of the total stockpile of existing weapons, is that the New START Treaty will bring about a significant reduction in the number of strategic weapons actually deployed by the United States and Russia, and many weapons previously identified as held in reserve by both countries are now more accurately to be counted as “awaiting dismantlement.”

1.57 The definitions used in this table are not universally agreed among the NWS. They are currently working on a glossary of terms intended to resolve definitional discrepancies. While Russian–US disarmament practice establishes some useful benchmarks, it should be noted that New START does not in fact define the terms “deployed” or “reserve” warhead. New START only regulates the number of warheads on deployed delivery vehicles, and warhead numbers reported by each state under the treaty reflect this practice. The term “reserve,” while not defined in New START, is most often used to refer to warheads that have been placed in long-term storage (that is, they are not located on an operational base). The term “strategic” is typically based on the range of the delivery vehicle. Again, the term is not explicitly defined in New START, but given the treaty and its predecessors address the issue of “strategic offensive arms” reductions, any nuclear delivery vehicle not meeting the range requirements encompassed by New START is typically assumed to be non-strategic or tactical. However, outside of Russia–US agreements, other states with nuclear weapons generally consider all of their nuclear forces to be strategic, regardless of the ranges of their delivery vehicles.
1.58 Of the five NPT NWS, only China’s nuclear arsenal is growing. China, however, does not publish or otherwise provide details of the size and composition of its nuclear arsenal, although it did claim in April 2004 to have the smallest arsenal among the NWS.\footnote{Ministry of Foreign Affairs of the People’s Republic of China, \textit{Fact Sheet}, 27 April 2004, www.fmprc.gov.cn.} With the United Kingdom taking steps to reduce the size of its nuclear arsenal, this is no longer the case (Table 1.2). Taking into account estimates of China’s fissile material production, the proportion of fissile material likely to have been used to make weapons, delivery vehicle numbers and other relevant factors, Hans M. Kristensen and Robert S. Norris estimate China’s total stockpile to be approximately 240 warheads.\footnote{Hans M. Kristensen and Robert S. Norris, “Chinese Nuclear Forces, 2011,” \textit{Bulletin of the Atomic Scientists}, 67:6 (November/December 2011), pp 81–87, http://bos.sagepub.com/content/67/6/81.full.pdf+html.} This figure appears to be the general consensus among non-government experts.\footnote{See for example Federation of American Scientists \textit{Status of World Nuclear Forces}, http://www.fas.org/programs/ssp/nukes/nuclearweapons/nukestatus.html, or Arms Control Association, \textit{Nuclear Weapons: Who Has What at a Glance}, http://www.aca.org/factsheets/NuclearWeaponsWhoHasWhat.} General C. Robert Kehler, commander of the US Strategic Command, responding to recent studies suggesting that China could have between 1,600 and 3,000 warheads – for example, from the Russian Academy of Science’s Institute of World Economy and International Relations (IMEMO RAN), arguing for a figure of 1,600–1,800\footnote{Victor Yesin, “China’s Nuclear Capability” in Alexei Arbatov, Vladimir Dvorkin and Sergey Oznobishchev, eds., \textit{Prospects of China’s Participation in Nuclear Arms Limitations}, (Moscow: Institute of World Economy and International Relations, Russian Academy of Sciences, 2012), pp 26–33.} – has rejected claims that the Chinese arsenal is much higher than commonly believed.\footnote{“STRATCOM Commander Rejects High Estimates for Chinese Nuclear Arsenal,” FAS Strategic Security Blog, 22 August 2012, http://www.fas.org/blog/ssp/2012/08/china-nukes.php.}

1.59 China is modernizing and expanding its nuclear weapons systems, as the Second Artillery Force continues progressively to improve its missile force structure in both nuclear and conventional configurations, and the navy to enhance its strategic deterrence and counter-attack capability.\footnote{China Defence White Paper 2010, http://www.china.org.cn/government/whitepaper/2011-03/31/content_22263885.htm.} China is reported to be working on a third generation ICBM equipped with multiple, independently targetable re-entry vehicles (MIRVs) and to be within two years of establishing a “near-continuous at-sea strategic deterrent” with the deployment of JL-2 SLBMs on JIN-class nuclear-powered ballistic missile submarines.\footnote{“China is two years from arming its submarines with nuclear weapons,” says U.S. report,” MailOnline, updated 9 November 2012.}

1.60 China’s nuclear arsenal has evolved and grown rather more slowly than was the case historically with the United States and the former Soviet Union. There is nothing to suggest that China is engaged in a “sprint to parity” with Russia or the United States and plenty of evidence to conclude that it is not. China is believed to have made between 200 and 300 warheads in total, of which about 50 were used for the 45 nuclear tests it conducted before the CTBT-related moratorium in 1996. The number estimated to be prepared for deployment is approximately 155. It has about 150 land-based missiles capable of carrying nuclear payloads, of which some 50 have a long enough range (7,000–12,000 km) to reach the continental United States. Outside analysts do not
believe that its missiles are armed with multiple warheads. Its small stock of air-deliverable nuclear weapons are not believed to have any “primary mission.”

Table 1.3: China’s Nuclear Forces (2012)

<table>
<thead>
<tr>
<th>Type</th>
<th>NATO Designation</th>
<th>Year</th>
<th>Range (km)</th>
<th>Warhead x Yield (Kt)</th>
<th>No. of Warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land-based missiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF-3A</td>
<td>CSS-2</td>
<td>1971</td>
<td>3100</td>
<td>1 x 3300</td>
<td>16</td>
</tr>
<tr>
<td>DF-4</td>
<td>CSS-3</td>
<td>1980</td>
<td>5400(+)</td>
<td>1 x 3300</td>
<td>12</td>
</tr>
<tr>
<td>DF-5A</td>
<td>CSS-4 Mod 2</td>
<td>1981</td>
<td>13000(+)</td>
<td>1 x 4000-5000</td>
<td>20</td>
</tr>
<tr>
<td>DF-21A</td>
<td>CSS-5 Mod ½</td>
<td>1991</td>
<td>2150</td>
<td>1 x 200-300</td>
<td>60</td>
</tr>
<tr>
<td>DF-31</td>
<td>CSS-10 Mod 1</td>
<td>2006</td>
<td>7200</td>
<td>1 x 200-300(?)</td>
<td>10-20</td>
</tr>
<tr>
<td>DF-31A</td>
<td>CSS-10 Mod 2</td>
<td>2007</td>
<td>11200</td>
<td>1 x 200-300(?)</td>
<td>10-20</td>
</tr>
<tr>
<td>Submarine-launched ballistic missiles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JL-1</td>
<td>CSS-NX-3</td>
<td>1986</td>
<td>1000(+)</td>
<td>1 x 200-300</td>
<td>12</td>
</tr>
<tr>
<td>JL-2</td>
<td>CSS-NX-14</td>
<td>–</td>
<td>ca. 7400</td>
<td>1 x 200-300(?)</td>
<td>36</td>
</tr>
<tr>
<td>Aircraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong-6</td>
<td>B-6</td>
<td>1965</td>
<td>3100</td>
<td>1 x bomb</td>
<td>20</td>
</tr>
<tr>
<td>Others</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1 x bomb</td>
<td>(20)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ca. 240</td>
</tr>
</tbody>
</table>

Source: SIPRI

1.61 France no longer has a ground-based missile force. Its nuclear weapons are deployed on its four submarines and aircraft. Despite recent cuts in the airborne component of France’s nuclear deterrent, its nuclear arsenal is being modernized and upgraded with the progressive introduction of longer-range missiles and new warheads.47

1.62 As noted above, while Russia declares the number of deployed strategic warheads and deployed and non-deployed launchers, it does not release data on the overall size of its arsenal or the number of non-strategic weapons. It is currently thought to have some 9,000 nuclear warheads in total, including 5,500 retired strategic and non-strategic warheads awaiting dismantlement.

1.63 Russia is committed to reducing the size of its deployed strategic weapons arsenal in accordance with the provisions of the New START agreement, but is also modernizing its strategic nuclear forces. The National Security Strategy of the Russian Federation to 2020, adopted in May 2009, states that "Russia will undertake all necessary efforts, with minimum expenditure, to maintain parity with the United States of America in the area of strategic offensive arms." In an article published in August 2010, Foreign Minister Sergey Lavrov said that "as long as nuclear weapons exist, Russia's national security must be strengthened by phasing in modern, more effective and reliable types of strategic offensive weapons in conditions of coordinated and planned reduction of their aggregate amount." And in February 2011, First Deputy Minister of Defence Vladimir Popovkin told journalists that Russia would spend some US $70 billion on its strategic nuclear forces over the next ten years.

Table 1.4: France’s Nuclear Forces (2012)

<table>
<thead>
<tr>
<th>Type</th>
<th>No. Deployed</th>
<th>Year Deployed</th>
<th>Range (km)</th>
<th>Warhead x Yield (Kt)</th>
<th>Warheads in stockpile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land-based aircraft</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirage 2000N</td>
<td>20</td>
<td>1988</td>
<td>2750</td>
<td>1 x 300</td>
<td>20</td>
</tr>
<tr>
<td>Rafale F3</td>
<td>20</td>
<td>2010-2011</td>
<td>2000</td>
<td>1 x 300</td>
<td>20</td>
</tr>
<tr>
<td><strong>Carrier-based aircraft</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rafale MK3</td>
<td>10</td>
<td>2010-2011</td>
<td>2000</td>
<td>1 x 300</td>
<td>10</td>
</tr>
<tr>
<td><strong>Submarine-launched ballistic missiles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M45</td>
<td>32</td>
<td>1996</td>
<td>6000</td>
<td>4-6 x 100</td>
<td>160</td>
</tr>
<tr>
<td>M51.1</td>
<td>16</td>
<td>2010-2011</td>
<td>6000</td>
<td>4-6 x 100</td>
<td>80</td>
</tr>
<tr>
<td>M51.2</td>
<td>0</td>
<td>-2015</td>
<td>6000</td>
<td>4-6 x TNO</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
</tr>
</tbody>
</table>

Note: TNO = Tête Nucléaire Océanique (Oceanic Nuclear Warhead)
Source: SIPRI

### Table 1.5: Russia’s Nuclear Forces (2012)

<table>
<thead>
<tr>
<th>Type</th>
<th>NATO Designation</th>
<th>Year Deployed</th>
<th>Range (km)</th>
<th>Warhead x Yield (Kt)</th>
<th>Warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic offensive weapons</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bombers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TU-95MS6</td>
<td>Bear-H6</td>
<td>1981</td>
<td>6500-10500</td>
<td>6 x AS-15A ALCMs, bombs</td>
<td>168</td>
</tr>
<tr>
<td>TU-95MS16</td>
<td>Bear-H16</td>
<td>1981</td>
<td>6500-10500</td>
<td>6 x AS-15A ALCMs, bombs</td>
<td>496</td>
</tr>
<tr>
<td>TU-160</td>
<td>Blackjack</td>
<td>1987</td>
<td>10500-13200</td>
<td>12 x AS-15B ALCMs or AS-16 SRAMS, bombs</td>
<td>156</td>
</tr>
<tr>
<td><strong>ICBMs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS-18</td>
<td>Satan</td>
<td>1979</td>
<td>11000-15000</td>
<td>10 x 500-750</td>
<td>500</td>
</tr>
<tr>
<td>SS-19</td>
<td>Stiletto</td>
<td>1980</td>
<td>10000</td>
<td>6 x 500-750</td>
<td>288</td>
</tr>
<tr>
<td>SS-25</td>
<td>Sickle</td>
<td>1985</td>
<td>10500</td>
<td>1 x 550</td>
<td>135</td>
</tr>
<tr>
<td>SS-27</td>
<td>Topol-M</td>
<td>1997</td>
<td>10500</td>
<td>1 x 550</td>
<td>164</td>
</tr>
<tr>
<td>SS-N-1B</td>
<td>Stingray</td>
<td>1978</td>
<td>6500</td>
<td>3 x 200</td>
<td>144</td>
</tr>
<tr>
<td>SS-N-23</td>
<td>Skiff</td>
<td>1986</td>
<td>9000</td>
<td>4 x 100</td>
<td>384</td>
</tr>
<tr>
<td>SS-N-32</td>
<td>– (2012)</td>
<td>–</td>
<td>–</td>
<td>6 x 100</td>
<td>(192)</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ca. 2430</td>
</tr>
<tr>
<td><strong>Non-strategic and defensive forces</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ABMs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SH-11/SH-08</td>
<td>Gorgon/Gazelle</td>
<td>1989/86</td>
<td>1 x 1000/10</td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>SA-10</td>
<td>Grumble</td>
<td>1980</td>
<td>1 x low</td>
<td></td>
<td>340</td>
</tr>
<tr>
<td>SSC-1B</td>
<td>Reduct</td>
<td>1973</td>
<td>1 x 500</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Bombers and Attack aircraft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backfire/ Fencer/ Fullback</td>
<td></td>
<td></td>
<td></td>
<td>ASM, bombs</td>
<td>730</td>
</tr>
<tr>
<td><strong>Ground-based</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS-21 Scarab</td>
<td></td>
<td></td>
<td>1 x low</td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>SS-26 Stone</td>
<td></td>
<td></td>
<td>1 x low</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td><strong>Naval</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>660</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ca. 2000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4430</td>
</tr>
</tbody>
</table>

Note: This table includes the latest available disaggregated specific data for Russian nuclear forces. The lower figure for Russian deployed strategic forces in Table 1.2 is based on more recent aggregate New START data, which does not include information on specific force elements. The significantly lower number attached to Russian non-strategic nuclear weapons in Table 1.2 is a product of new and more accurate methodologies used to calculate the figure.

Source: SIPRI
1.64 Russia is retiring some of its older land-based missiles and replacing them with SS-27s and its variants, including the road-mobile RS-24 Yars, which is equipped with MIRVs. It is reported to be developing a new ICBM with the capacity to overcome ballistic missile defences, though current projected deployment dates (2016/2018) may be unrealistic.51

1.65 Russia is also modernizing its nuclear submarine fleet and SLBMs. The first of eight fourth-generation Borei class nuclear submarines entered active service at the beginning of 2013.52 The submarines will carry up to sixteen new Bulava missiles which “can transport 10 independently targeted nuclear warheads over distances approaching 5,000 miles.”53 Russia is reported to have plans to develop a fifth-generation nuclear submarine and to have started research and development work on a new strategic bomber.54

1.66 The United Kingdom’s relatively small nuclear arsenal consists entirely of sea-launched Trident missiles deployed on Vanguard-class submarines. The existing fleet of four Vanguard-class submarines is due for replacement in the 2020s. The ruling Conservative Party favours a “like-for-like” nuclear modernization plan as the most viable way of maintaining what it sees as the required capability for continuous at-sea deterrence. Its Liberal Democratic coalition partner has, however, demanded a fresh assessment of the alternatives that could possibly include fewer new Vanguard-class submarines, or no new submarines and a switch from Trident ballistic missiles to nuclear-capable cruise missiles. In the meantime, senior military commanders are reported to have private doubts about the wisdom of investing in a replacement for the Trident submarines at the cost of cutbacks in other areas that would adversely affect the operational combat capability of British armed forces.55 While a final decision on the shape of Britain’s future nuclear deterrent will now not be taken until after the next general election in 2016, the government has already placed some GBP 4 billion worth of orders for design and development of new submarines.56

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>No. Deployed</th>
<th>Year Deployed</th>
<th>Range (km)</th>
<th>Warhead x Yield (Kt)</th>
<th>Warheads in Stockpile</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLBMs</td>
<td>D-5 Trident II</td>
<td>48</td>
<td>1994</td>
<td>&gt;7400</td>
<td>1-3 x 100</td>
<td>225</td>
</tr>
</tbody>
</table>

Source: SIPRI

1.67 The United Kingdom is also modernizing its nuclear weapons complex. This includes a new facility for manufacturing uranium components for weapons at Aldermaston and a new warhead assembly/disassembly plant at Burghfield. Both plants are expected to enter into service between 2016 and 2020.57

1.68 As of 30 September 2009 (the most recent publicly available figures), the United States’ aggregate nuclear weapons stockpile (deployed and non-deployed, strategic and non-strategic nuclear weapons) comprised 5,113 warheads.58 Under New START Treaty provisions, the United States declares deployed strategic warhead and deployed and non-deployed launcher numbers biannually (see Section 1.4.3).

1.69 The April 2010 NPR Report confirmed that the United States would maintain its nuclear triad of ICBMs, SLBMs and heavy bombers. The US long-term nuclear modernization program currently includes twelve new nuclear-powered ballistic missile submarines, a new air-launched stand-off nuclear missile, and eventual replacement of the Minuteman III ICBM and B-52H strategic bomber.59 The F-35 Joint Strike Fighter will also be made nuclear-capable.60

1.70 As the BASIC Trident Commission reminds us, it is important to remember that "planned reductions in deployed and Treaty-counted U.S. forces are... taking place in the context of an extensive Obama administration commitment to maintain and modernize the U.S. nuclear force and its supporting infrastructure for the long-term."61 In 2010, senior US officials told hearings of the US Senate Foreign Relations Committee on the New START Treaty that "Over the next decade, the United States will invest well over $100 billion in nuclear delivery systems to sustain existing capabilities and modernize some strategic systems. U.S. nuclear weapons will also undergo extensive life extension programs in the coming years to ensure their safety, security and effectiveness."62

1.71 The rapidly escalating costs of these programs are, however, sharply at odds with US efforts to rein in public spending. The life-extension program for the air-delivered B61 nuclear bomb is now expected to cost some US $10.4 billion, more than two-and-a-half times the original estimate. Around 200 of these nuclear weapons in Europe are to be maintained and upgraded "despite the fact that no military commander can be found anywhere who would actually reach for them, in any scenario."63 Critics have attributed the massive cost overrun to "an overly ambitious refurbishment project" which involves redesigning most of the bomb's major components and "for all practical purposes building new [bombs] from scratch."64 Cost estimates for a new plutonium laboratory,
Table 1.7: US Nuclear Forces (2012)

<table>
<thead>
<tr>
<th>Type</th>
<th>Designation</th>
<th>No. Deployed</th>
<th>Year Deployed</th>
<th>Range</th>
<th>Warhead x Yield (KT)</th>
<th>No. of Warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Forces</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bombers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-52H Stratofortress</td>
<td>9 3/44</td>
<td>1961</td>
<td>16000</td>
<td>ALCM/A CM 5-150</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>B-2 Spirit</td>
<td>2 0/16</td>
<td>1994</td>
<td>11000</td>
<td>Bombs</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>ICBMs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LGM-30g Minuteman III</td>
<td></td>
<td>1979</td>
<td>13000</td>
<td>1-3 W78 x 335</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Mk-12A 200</td>
<td></td>
<td>1979</td>
<td>13000</td>
<td>1-3 W78 x 335</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Mk-21/SERV 250</td>
<td></td>
<td>2006</td>
<td>-</td>
<td>1 W87 x 300</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>SSBNs/SLBMs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UGM-133A Trident II (D-5)</td>
<td></td>
<td>1992</td>
<td>&gt;7400</td>
<td>4W76 x 100</td>
<td>468</td>
<td></td>
</tr>
<tr>
<td>Mk-4 n.a. 1992</td>
<td></td>
<td>1992</td>
<td>&gt;7400</td>
<td>4W76 x 100</td>
<td>468</td>
<td></td>
</tr>
<tr>
<td>Mk-4A 2008</td>
<td></td>
<td>-</td>
<td>-</td>
<td>4W76 x 100</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Mk-5 n.a. 1990</td>
<td></td>
<td>1990</td>
<td>&gt;7400</td>
<td>4 W88 x 455</td>
<td>384</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1952</td>
</tr>
<tr>
<td>Non-Strategic Forces</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B61-3, -4, -10 bombs</td>
<td>n.a. 1979</td>
<td>n.a.</td>
<td>3-170</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomahawk SLCM</td>
<td></td>
<td>1984</td>
<td>2500</td>
<td>1 x5-150</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Reserve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2800</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ca. 5000</td>
</tr>
</tbody>
</table>

Note: This table includes the latest available disaggregated specific data for US nuclear forces. The lower figure for US deployed strategic forces in Table 1:2 is based on more recent aggregate New START data, which does not include information on specific force elements.

Source: SIPRI
the Chemistry and Metallurgy Research Replacement facility at Los Alamos, needed to meet an anticipated annual requirement for between 50 and 80 new plutonium pits for nuclear warheads, are reported to have increased tenfold, from US $600 million to US $6 billion. The administration had intended to delay construction as a cost-cutting measure but has since approved defence authorization legislation which includes a requirement for the new facility to be fully operational by the end of 2026 – and caps expenditure on the project at US $3.7 billion. And a new multi-billion dollar Uranium Processing Facility at the Y-12 Nuclear Security Complex in Oak Ridge, Tennessee, has had to be redesigned after it was recognized that current plans could not have accommodated the equipment needed.

India’s nuclear arsenal is growing. It is currently estimated to possess some 80-100 warheads for delivery by missiles and aircraft.

### Table 1.8: India’s Nuclear Forces (2012)

<table>
<thead>
<tr>
<th>Type</th>
<th>Range (km)</th>
<th>Payload (kg)</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ballistic Missiles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Land-based)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prithvi I/II</td>
<td>150/250</td>
<td>800/500</td>
<td>Weapons system entered service in 1994.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prithvi I has nuclear capability and Prithvi II is also believed to do so. Approx. fewer than 50 launchers deployed.</td>
</tr>
<tr>
<td>Agni I</td>
<td>700</td>
<td>1000</td>
<td>Entered service in 2004</td>
</tr>
<tr>
<td>Agni III</td>
<td>3000</td>
<td>1500</td>
<td>Operational since 2011.</td>
</tr>
<tr>
<td>Agni IV</td>
<td>&gt;3000</td>
<td>1000</td>
<td>Under development.</td>
</tr>
<tr>
<td>Agni V</td>
<td>&gt;5000</td>
<td>1000</td>
<td>Under development.</td>
</tr>
<tr>
<td><strong>Ballistic Missiles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Sea-based)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dhanush</td>
<td>350</td>
<td>500</td>
<td>Under development.</td>
</tr>
<tr>
<td>K-15</td>
<td>700</td>
<td>500-600</td>
<td>Under development.</td>
</tr>
<tr>
<td>K-4</td>
<td>3500</td>
<td>1000</td>
<td>Under development.</td>
</tr>
<tr>
<td><strong>Aircraft</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirage 2000H Vajra</td>
<td>1850</td>
<td>6300</td>
<td>Aircraft is capable of delivering nuclear gravity bombs.</td>
</tr>
</tbody>
</table>

Source: SIPRI

64. (cont) The life extension program, which the administration says is needed “to provide nuclear extended deterrence to NATO allies and to continue a gravity bomb capability on the B-2 stealth bomber,” is expected to see the consolidation, in the B61-12, of four current versions of the weapon. Hans M. Kristensen, “B61 Nuclear Bomb Costs Escalating,” http://www.fas.org/blog/ssp/2012/05/b61cost.php.


1.73 *Pakistan’s* nuclear arsenal is growing. It is currently estimated to have some 90-110 warheads for delivery by missiles and aircraft. Estimates of the number of weapons in *Pakistan’s* nuclear arsenal are based on fissile material stockpile stock estimates and evidence of nuclear weapons design.

<table>
<thead>
<tr>
<th>Table 1.9: Pakistan’s Nuclear Forces (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td><strong>Ballistic Missiles (Land-based)</strong></td>
</tr>
<tr>
<td>Abdali (Hatf-2)</td>
</tr>
<tr>
<td>Ghaznavi (Hatf-3)</td>
</tr>
<tr>
<td>Shaheen I (Hatf-4)</td>
</tr>
<tr>
<td>Shaheen II (Hatf-6)</td>
</tr>
<tr>
<td>Ghauri I (Hatf-5)</td>
</tr>
<tr>
<td>Nasr (Hatf-9)</td>
</tr>
<tr>
<td><strong>Cruise missiles</strong></td>
</tr>
<tr>
<td>Babur (Hatf-7)</td>
</tr>
<tr>
<td>Ra’ad (Hatf-8)</td>
</tr>
<tr>
<td><strong>Aircraft</strong></td>
</tr>
<tr>
<td>F-16A/B</td>
</tr>
<tr>
<td>Mirage III/V</td>
</tr>
</tbody>
</table>

1.74 *Israel’s* policy of “nuclear ambiguity” or “nuclear opacity” makes any estimate of nuclear weapons numbers and capabilities essentially a matter of speculation. It is, however, thought to have an arsenal of some 80 nuclear weapons (50 for delivery by ballistic missiles and 30 non-strategic nuclear weapons).  

---


1.75 North Korea may have enough fissile material for between 4 and 12 nuclear warheads, depending on warhead yield and design. On such information as is available, it may also have some 50 KN-02 short-range ballistic missiles (SRBMs) with an approximate range of 100-120 km; developed an intermediate-range ballistic missile (IRBM), Musadan, with a range of 2,500-3,000 km; and have up to ten Taepodong-1 medium-range ballistic missiles (MRBMs), range 1,500-2,500 km, and some operational Taepodong-2 ICBMs.72

1.4.2 Unilateral Measures

1.76 As noted above, such reductions as have occurred in US and Russian nuclear weapon stockpiles have resulted from a combination of bilateral commitments and unilateral decisions. The only other reductions known to have occurred have been in France and the United Kingdom, in each case as a result of unilateral decision rather than any treaty process. At the First Meeting of the Preparatory Committee of the 2015 NPT Review Conference (Vienna, April–May 2012), France’s Head of Delegation confirmed that his country had met the objective set by the French President in 2008 to reduce its deterrent’s airborne component (that is, missiles and nuclear warheads) by one-third. “All in all, in the last 15 years, we have cut the number of nuclear warheads by half and... announced the ceiling of nuclear warheads in our possession, which now number less than 300.”73

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73. General Debate Statement by the Head of the French Delegation at the First Meeting of the Preparatory Committee of the 2015 NPT Review Conference (Vienna, 30 April–11 May 2012).
1.77 The United Kingdom has announced reductions in the size of its arsenal since the 2010 NPT Review Conference. The 2010 Strategic Defence and Security Review concluded that the UK’s minimum credible deterrence needs could be met with fewer nuclear weapons. As a consequence, the United Kingdom announced that by the mid-2020s, it would:

> Reduce the number of warheads on each of its submarines from 48 to 40;
> Reduce the requirement for operationally available warheads to no more than 120;
> Reduce the number of launch tubes on each submarine, from 12 to 8; and
> Reduce its overall nuclear weapons stockpile to no more than 180.

1.78 The United Kingdom has since confirmed that the projected changes have already been implemented with respect to at least one submarine, and that it expects the reduction in operationally available warhead numbers to have been completed by 2015.74

### Table 1.11: French Increases/Decreases of Nuclear Arsenal

<table>
<thead>
<tr>
<th>Date</th>
<th>Increases/Decreases</th>
<th>Number of Warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000–2005</td>
<td>-25.00%</td>
<td>-116</td>
</tr>
<tr>
<td>2005–2010</td>
<td>-13.79%</td>
<td>-48</td>
</tr>
<tr>
<td>2010–2012</td>
<td>0.00%</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: SIPRI

### Table 1.12: British Increases/Decreases of Nuclear Arsenal

<table>
<thead>
<tr>
<th>Date</th>
<th>Increases/Decreases</th>
<th>Number of Warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995–2000</td>
<td>9.95%</td>
<td>42</td>
</tr>
<tr>
<td>2000–2005</td>
<td>-25.00%</td>
<td>-116</td>
</tr>
<tr>
<td>2005–2010</td>
<td>-35.34%</td>
<td>-123</td>
</tr>
<tr>
<td>2010–2012</td>
<td>0.00%</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: SIPRI

1.4.3 Bilateral Processes

1.79 The 2010 NPT Review Conference saw Russia and the United States “commit to seek the early entry into force and full implementation of New START.” They were also encouraged “to continue discussions on follow-on measures in order to achieve deeper reductions in their nuclear arsenals” (Action 4).

1.80 The New START Treaty entered into force on 6 February 2011, after ratification by the United States on 22 December 2010 and by Russia on 25 January 2011. The treaty

Nuclear Disarmament

Nuclear Disarmament

33

commits the two countries to establish new limits on deployed strategic offensive nuclear weapons by 2018. For warheads, these are 74 per cent lower than the limit of the 1991 START Treaty and 30 per cent lower than the deployed strategic warhead limit of the 2002 Moscow Treaty. For deployed ICBMs, SLBMs and nuclear-capable heavy bombers, the limits are less than half the corresponding strategic nuclear delivery vehicle limit of the 1991 START Treaty. The aggregate limits established by the treaty are 1,550 deployed strategic warheads (with each deployed nuclear-capable heavy bomber counting as just one warhead toward the limit) and a combined (deployed and non-deployed) limit of 800 strategic nuclear delivery vehicles (ICBMs, SLBMs, bombers), of which no more than 700 may be deployed. Each party is permitted to determine its own strategic force structure within these limits.

1.81 The treaty’s verification regime provides for up to 18 on-site inspections per year, data exchanges (through a common database) and notifications (numbers, locations and technical specifications of weapons systems and facilities subject to the treaty), non-interference with national technical means of verification, and an annual exchange of telemetric information (missile performance measurements) for up to five ICBM and SLBM launches per year.

1.82 The treaty also establishes a compliance and implementation body – the Bilateral Consultative Commission – that meets at least twice a year. The commission has so far met four times since the treaty’s entry into force: in March–April 2011, October–November 2011, January–February 2012, and September 2012. The two countries conducted the maximum allowable number of inspections (18 each) for a twelve month period between April 2011 and February 2012. They each conducted a further 15 inspections in the period to December 2012, and have exchanged in excess of 3,400 notifications since entry into force.

1.83 By December 2012, Russia and the United States had exchanged data on aggregate numbers of strategic arms subject to the treaty on four occasions. Figures were made publicly available online. Between February 2011 and September 2012, Russia reduced its deployed warhead numbers by 38 (from 1537 to 1499); the United States by 78 (from 1800 to 1722). Over the same period, the number of Russian strategic nuclear delivery vehicles fell by 30 (from 521 to 491); and that of the United States by 76 (from 882 to 806).

1.84 The Senate, in its resolution consenting to US ratification of New START, said that the United States should seek, within a year (that is, by February 2012), to initiate new negotiations with Russia to address tactical nuclear weapons stockpile disparities “and to secure and reduce tactical nuclear weapons in a verifiable manner.” President Obama told the Senate in March 2011 that he would try to do this. Russia’s Deputy Foreign Minister Sergei Ryabkov has said publicly that Russia is open to discussing further reductions in tactical nuclear weapons inventories, although Russia’s “non-strategic nuclear potential” was now “no more than 25 per cent of that of the USSR in 1991.”

78. The United States similarly claims to have reduced the number of its non-strategic nuclear warheads by 90 per cent.
a first step, others should follow Russia’s example by returning tactical nuclear weapons to the territory of the possessor states, dismantling the infrastructure for their rapid deployment overseas and renouncing “nuclear sharing.” On 27 December 2011, acting US Under Secretary of State for Arms Control and International Security Rose Gottemoeller conceded, in remarks to RIA Novosti, that the two sides were not yet ready to embark on new negotiations.

On 27 December 2011, acting US Under Secretary of State for Arms Control and International Security Rose Gottemoeller conceded, in remarks to RIA Novosti, that the two sides were not yet ready to embark on new negotiations.

1.85 Differences over missile defence also stand firmly in the way of progress on further nuclear arms reductions for the moment. In a written address to a meeting of International Physicians for the Prevention of Nuclear War in Hiroshima, President Vladimir Putin said that, while Russia is open to the idea of additional cuts in Russian and US nuclear arsenals, this will only be possible “if all factors affecting international security and strategic stability are taken into account.” Inhibiting factors include “the unilateral and totally unlimited deployment of a global U.S. missile defense system,” the possible weaponization of space, and conventional arms imbalances in Europe.

1.86 On 21 June 2012, US Assistant Secretary of Defense for Global Strategic Affairs Madelyn R. Creedon told the Senate Committee on Foreign Relations that the US

<table>
<thead>
<tr>
<th>Type</th>
<th>Russia</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of weapons after 7 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deployed ICBMs, SLBMs, and bombers</td>
<td>700</td>
<td>700</td>
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<tr>
<td>Warheads on deployed ICBMs, deployed SLBMs, deployed and heavy bombers</td>
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<tr>
<td>Deployed and non-deployed ICBM launchers, SLBM launchers and heavy bombers</td>
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<th>Reductions as of 2012</th>
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<td>Deployed warheads</td>
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<td>Strategic delivery vehicles</td>
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<th>Inspections and Notifications as of 2012</th>
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<tr>
<td>Notifications exchanged</td>
<td>3436</td>
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</table>

Source: SIPRI
“experience so far demonstrates that the New START’s verification regime works and will help push open the door to new and more complicated verification techniques in the future.” The only complaint so far has come from the United States which accused Russia of a treaty violation in the course of a Russian military exercise on 19 June 2012, when two Tu-95MS Bear H bombers armed with cruise missiles flew into the 200-mile air defence zone near Alaska, prompting US and Canadian jet fighters to intercept them.

### 1.4.4 Multilateral Processes

1.87 **Conference on Disarmament.** The world’s only standing multilateral disarmament negotiating forum is the Conference on Disarmament (CD) based in Geneva. It has been unable to agree and implement any program of work since the conclusion of nuclear-test-ban treaty negotiations in 1996. There has been protracted disagreement over the priority to be given to core issues: nuclear disarmament, a fissile material production ban, preventing an arms race in outer space, and assurances of immunity from nuclear attack for non-NWS. With Pakistan having in recent years taken the lead in blocking the adoption of a program of work because of its unshakeable opposition to fissile material cut-off treaty negotiations, the CD remains essentially moribund and in no position to “establish a subsidiary body to deal with nuclear disarmament.” The impasse in the CD, its eroding credibility, and efforts to get it back to work are discussed in the next chapter (§2.10).

1.88 **Permanent Five/NWS.** While China advocates “the complete prohibition and thorough destruction of nuclear weapons,” and has until now taken steps consistent with this position (for example, its unconditional no first use and negative security assurance declarations), it has taken no steps in support of any initiative in nuclear disarmament, believing this to be the particular responsibility of the two most heavily armed NWS. As such, China believes that Russia and the United States “should further drastically reduce their nuclear arsenals in a verifiable, irreversible and legally-binding manner, so as to create the necessary conditions for the complete elimination of nuclear weapons.”

1.89 Russia’s Deputy Foreign Minister Sergei Ryabkov assured a July 2011 meeting of the European Leadership Network (ELN) in Berlin that his country was fully committed to the goal of a nuclear-weapon-free world. Multilateralizing nuclear disarmament would require a supporting legal framework “closely reproducing the intricate system of rules, definitions, proceedings and mutual obligations that has been created bilaterally by Russia and the United States.” Progress towards the goal would require the involvement of all nuclear-armed states, non-deployment of “strategic offensive arms in non-nuclear configuration,” and the “cessation of conventional capabilities’ development coupled with efforts to resolve other international issues, including regional conflicts.” Russia also wanted to see agreement reached on a global treaty prohibiting intermediate and shorter range missiles.

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The United Kingdom sees nuclear disarmament as an incremental, benchmarked and truly multilateral process based on nuclear non-proliferation, growing trust and confidence among states (including confidence in the efficacy of safeguards and verification techniques), and other "tangible steps towards a safer and more stable world where countries with nuclear weapons feel able to relinquish them" – but, apart from its verification work with Norway, discussed above, has not been visible in operationalizing this approach.

1.91 In the case of the United States, the 2010 NPR report described as "very demanding" the conditions that would "ultimately permit the United States and others to give up their nuclear weapons without risking greater international instability and insecurity." Among them were "success in halting the proliferation of nuclear weapons, much greater transparency into the programs and capabilities of key countries of concern, verification methods and technologies capable of detecting violations of disarmament obligations, enforcement measures strong enough to deter such violations, and ultimately the resolution of regional disputes that can motivate rival states to acquire and maintain nuclear weapons."

1.92 In a carefully worded statement delivered by the United States to the First Meeting of the Preparatory Committee of the 2015 NPT Review Conference on 3 May 2012, the P5 jointly reaffirmed their "enduring commitment" to the fulfilment of their obligations under Article VI of the NPT and to the Action Plan adopted at the eighth review conference in 2010. They attributed the success of the 2010 Review Conference to "the international community’s shared commitment to seeking a safer world for all and to creating the conditions for a world without nuclear weapons... in a way that promotes international stability, peace and security; based on the principle of undiminished security for all; and underlining the vital importance of non-proliferation for achieving this goal" (emphases added). The statement notes, with a degree of satisfaction that would be hard for even some of the P5’s closest friends to share, "the unprecedented progress and efforts made by the nuclear-weapon states in nuclear arms reduction, disarmament, confidence-building and transparency."

1.93 The statement describes the dialogue process begun in September 2009 at the London Conference on Confidence Building Measures towards Nuclear Disarmament. A second meeting was held in Paris in July 2011 to discuss implementation of the 2010 NPT Review Conference Action Plan. In Paris, the P5 agreed to establish a working group under the direction of China to compile a glossary of terms to facilitate future engagement on nuclear disarmament issues. After more than forty years of the NPT, and some twenty years after the end of the Cold War, this would seem at best to be a modest achievement.

1.94 The P5 met for the third time in Washington in June 2012 where they continued their discussions on "transparency, mutual confidence, and verification, and considered
proposals for a standard reporting form." They also shared views on how best to
"discourage abuse of the NPT withdrawal provision" (Article X) and discussed "concrete
proposals for strengthening IAEA safeguards, including through promoting the universal
adoption of the Additional Protocol." They reiterated their commitment to "promote and
ensure the swift entry into force of the CTBT and its universalization" (without
mentioning the conspicuous absence of China and the United States from the ranks of
Annex 2 States that have ratified the treaty). They discussed ways to advance FMCT
negotiations and "exchanged perspectives on ways to break the current impasse in the
CD, including by continuing their efforts with other relevant partners to promote such
negotiations within the CD" (and, by implication, nowhere else). They agreed to hold a
fourth conference "in the context of" the next NPT Preparatory Committee meeting
(Geneva, April 2013).\footnote{Third P5 Conference: Implementing the NPT, Press Release, Newsroom America Feeds, 29 June 2012.}

1.4.5 North Korea

1.95 The situation in North Korea requires separate discussion, because it has only very
recently joined the ranks of the nuclear-armed states,\footnote{While the ICNND in its 2009 report, paragraph 2.15, took the view that it was then premature to describe North Korea as having finally withdrawn from the NPT, it is now difficult to argue otherwise. Discussion of its status now belongs, accordingly, in a chapter on disarmament, not non-proliferation.} possesses a much smaller
nuclear arsenal than the other eight, and remains the subject of intense diplomatic
efforts aimed at dismantling its nuclear weapons program. North Korea effectively
confirmed its withdrawal from the NPT in January 2003\footnote{A state party has the right to withdraw from the NPT if it decides that "extraordinary events, related to the subject
matter of [the] Treaty, have jeopardized the supreme interests of its country" (Article X). North Korea announced its withdrawal from the NPT on 12 March 1993 but then suspended it on 11 June 1993, the day before the decision would have taken effect. In January 2003, North Korea ended the suspension, which for all practical purposes meant withdrawal with immediate effect. Christer Ahlstrom, "Withdrawal from arms control treaties," SIPRI Yearbook 2004: Armaments, Disarmament and International Security (Oxford: Oxford University Press, 2004), pp. 763–77.} – the only country so far to
have done so – after being accused of operating a clandestine uranium enrichment
program. North Korea cited the "grave" threat to its security and sovereignty posed by
the US "tyrannical nuclear crushing policy toward the DPRK" (Democratic People's
Republic of Korea).\footnote{Korean Central News Agency (KCNA), 22 January 2003.} This led also to the collapse of the 1994 US–DPRK Agreed
Framework which had facilitated the suspension of an earlier notice of withdrawal and

1.96 In September 2005, at the fourth round of Six Party Talks (between North Korea,
South Korea, Japan, China, Russia and the United States) began in 2003 with the aim of
denuclearizing the Korean Peninsula, North Korea, in return for security assurances and
the promise of economic cooperation, "committed to abandoning all nuclear weapons
and existing nuclear programs" and to returning to the NPT and IAEA safeguards.\footnote{Joint Statement of the Fourth Round of the Six-Party Talks, Beijing, 19 September 2005; http://www.fmprc.gov.cn/eng/ tjsxw/t1212707.htm.} A
year later, North Korea tested its first nuclear explosive device. This prompted UN
Security Council resolution 1718 (14 October 2006) demanding North Korea “abandon
all nuclear weapons and existing nuclear programs” and “return immediately to the Six
Party Talks without preconditions.\footnote{S/RES/1718 (14 October 2006).} The resolution imposed sanctions, including a weapons import-export ban, on North Korea.

1.97 In 2007, the six parties reached agreement on a plan to implement the 2005 Joint Statement,\footnote{Joint Statement of the Fourth Round of the Six-Party Talks, Beijing, 19 September 2005.} but the agreement did not hold. In 2009, North Korea tested a second nuclear explosive device and announced its permanent withdrawal from the Six Party Talks.\footnote{KCNA report on one more successful underground nuclear test,” 25 May 2009, http://www.kcna.co.jp/item/2009/200905/jw325/20090526-1205.html.} UN Security Council resolution 1874 (12 June 2009) condemned the test “in the strongest terms” and demanded that “the DPRK not conduct any further nuclear test or any launch using ballistic missile technology.”\footnote{http://www.un.org/News/Press/docs/2009/sc9679.doc.htm.} The resolution strengthened the compulsory international sanctions imposed three years earlier. The Panel of Experts established pursuant to resolution 1874 reported in 2012 that North Korea continued actively to violate Security Council resolutions 1718 and 1874. The Panel found that North Korea was using elaborate techniques to evade Security Council sanctions and the vigilance of UN member states.\footnote{http://www.un.org/ga/search/view_doc.asp?symbol=S/2012/422}

1.98 North Korea revealed the presence of a uranium enrichment facility at Yongbyon in 2010.\footnote{In November 2010, North Korea showed a visiting delegation of US scientists a new uranium enrichment facility, located in a former fuel-rod fabrication building at Yongbyon. The scientists were told that the facility contained 2,000 centrifuges in six cascades; that it was built between April 2009 and November 2010; and that it was producing uranium with an average enrichment level of 3.5 per cent for a civilian light-water reactor program. S.S. Hecker, “What I found in North Korea,” Foreign Affairs, 9 December 2010, p. 4; http://www.foreignaffairs.com/articles/67023/siegfried-s-hecker/what-i-found-in-north-korea.} It is developing a progressively more extensive range of ballistic missile capabilities. North Korea has close links with Iran and Syria and is a major proliferator of ballistic missile and other weapons of mass destruction (WMD)-related systems and technology. A February 2012 deal that would have had North Korea suspend uranium enrichment and nuclear weapon and long-range missile tests, and the United States send nutrition aid, collapsed in April 2012 in the face of Pyongyang’s determination to proceed with a long-range rocket launch.

1.99 The April launch was a failure. But there was no reason to believe that North Korea would abandon its quest for nuclear and ballistic missile capabilities that it sees as critical to the maintenance of its international standing and national security, and as contributing to the domestic credibility and cohesion of the regime. And so it proved. North Korea successfully launched a long-range rocket on 12 December 2012 that drew a condemnation from the UN Security Council president for constituting a clear violation of its resolutions. The United States which, along with South Korea, Japan and others regards the launch as a disguised ballistic missile test forbidden by previous Security Council resolutions, warned of unspecified consequences.\footnote{Some anti-nuclear activists asked why North Korea was singled out for worldwide condemnations while tests by India (Agni), Pakistan (Nodong-derived Ghauri) and the United States (Minuteman III) over the preceding weeks in November and December were hardly mentioned by anyone.} South Korean military officials said that the test would make them speed up plans for a comprehensive missile defence system.\footnote{Kim Eun-jung, "Seoul says N. Korea’s satellite circling Earth ‘normally’,” Yonhap News Agency, 13 December 2012, http://english.yonhapnews.co.kr/national/2012/12/13/13/63/0301000000AEN20121213005153315EHTML.} A satellite aboard the rocket was also successfully put into orbit,
despite some initial reports doubting this. Japanese experts were impressed by the precision of the rocket technology and by the fact that the test was planned for and executed during adverse winter conditions.\textsuperscript{105}

1.100 North Korea’s nuclear and missile programs are a source of instability and tension in a region vital to global security and economic prosperity. Its nuclear weapons and ballistic missile programs weigh on nuclear disarmament efforts and will have to be dismantled as reductions elsewhere in nuclear weapon numbers proceed.

1.101 Its nuclear weapons are claimed by North Korea to be a hedge against attack particularly by the United States. In March 2010, a North Korean spokesman, commenting on joint military exercises between US and South Korean forces, promised that "those who seek to bring down the system in the DPRK... [would] fall victim to the unprecedented nuclear strikes of the invincible army."\textsuperscript{106} North Korea also sees a nuclear weapons capability as a means of maximizing positive outcomes from negotiations with its adversaries.

1.102 A successful negotiated reversal of North Korea’s nuclear program would reinforce the view that nuclear arms reductions can be made safely, "based on the principle of increased and undiminished security for all."\textsuperscript{107} North Korea has repeatedly violated its international non-proliferation obligations, undermining confidence in the NPT and associated safeguards arrangements and thus also in the integrity of the nuclear disarmament–non-proliferation bargain. The international community must be confident that states cannot walk away from their non-proliferation commitments with impunity. In 2003, the Security Council failed to live up to its responsibilities in this regard when it took no action in response to North Korea’s withdrawal from the NPT. Developments to that point, and certainly since, have provided ample evidence that North Korea’s withdrawal from the NPT posed a threat to international peace and security. This was subsequently recognized in Security Council sanctions resolutions 1718 and 1874.

1.103 Resumption of the Six-Party Talks – or at least some further process leading to a multilaterally negotiated set of agreements, involving the key players in and around the Korean peninsula – still offers the best hope of pursuing a comprehensive, negotiated resolution of the North Korea nuclear issue. The situation should not be allowed to drift. However reluctantly, key players may need again to consider an initiative to bring North Korea back to the negotiating table. North Korea must realize that its nuclear weapons program has detracted from, rather than enhanced, its international standing and national security; and that isolation and eventual economic collapse pose a far more real threat to the regime than external attack. Recognizing that the international community is dealing with a disarmament problem created by a former, but not current, NPT state party, the objective must be either North Korea’s return to the NPT as a non-nuclear-weapon state and resumption of, and full compliance with, its IAEA safeguards.


\textsuperscript{106} KENA report, 26 March 2010.

\textsuperscript{107} A much-used phrase in this context. See, for example, 2010 NPT Review Conference, \textit{Conclusions and recommendations for follow-on actions I} (Nuclear Disarmament) A (Principles and Objectives) ii.
obligations; or else, at the very least, getting North Korea to sign up to NPT-equivalent export, transfer and assistance disciplines through parallel agreements.

§1.5 Nuclear Doctrine

1.104 Reducing the role and salience of nuclear weapons in the national security strategies of the nuclear-armed states is a crucial step on any road to nuclear disarmament. This has been recognized in the prominence given to this subject in NPT Review Conference discussions, every major commission and panel report, and indeed in President Obama’s pathbreaking 2009 Prague speech, when he said that “To put an end to Cold War thinking we will reduce the role of nuclear weapons in our national security strategy and urge others to do the same.” Unhappily, however, this recognition has been matched by very few, if any, significant moves in this direction by the nuclear-armed states.

1.105 Taken at face value, China’s stated nuclear doctrine goes further than the other nuclear-armed states in limiting the role of nuclear weapons. Its weapons, declared doctrine and force posture and deployment patterns are said to be designed neither to coerce others nor to fight a nuclear war with the expectation of winning, but to counter any attempt at nuclear blackmail. According to Li Bin, director of the Arms Control Program in Tsinghua University’s Department of International Relations, China “chooses to keep a small, off-alert nuclear force” as a means of “countering nuclear coercion” but does not consider nuclear weapons to have any real military utility.108 Its 2010 Defence White Paper says that China “has always exercised the utmost restraint in the development of nuclear weapons” and will continue to “limit its nuclear capabilities to the minimum level required for national security.” China, at least as far as its declared doctrine is concerned, remains firmly committed to no-first-use of nuclear weapons “at any time and in any circumstances” and has made an “unequivocal commitment” not to use or threaten to use nuclear weapons against non-NWS and nuclear-weapon-free zones: that is, it would not use its nuclear weapons even in the extreme circumstances of its very survival being at stake under conventional attack. China wants the NWS to conclude treaties on mutual no-first-use of nuclear weapons and to provide unconditional treaty-based negative security assurances to non-NWS.109 All that said, questions are being asked about the extent to which China’s intense nuclear force modernization may be indicative of a likely future hardening of its nuclear doctrine. While debate within China on nuclear doctrine, including no first use, is not new,110 China’s lack of transparency will continue to make it difficult to assess whether evolving force structures and postures do in fact accord with published statements of doctrine.

1.106 President Nicolas Sarkozy gave a clear exposition of France’s nuclear doctrine in a speech in Cherbourg in March 2008. He emphasized France’s strong attachment to its nuclear deterrent. While nuclear weapons would only be used “in extreme circumstances of legitimate defence,” their role was not simply to protect France against nuclear attack

but from "any aggression against [its] vital interests emanating from a State – wherever it may come from and whatever form it may take." France’s nuclear deterrent was "quite simply the nation’s life insurance policy." The 2008 French White Paper on defence and national security similarly describes nuclear deterrence as "the ultimate guarantee of the security and independence of France."

1.107 Russia reserves the right to use nuclear weapons in response to a WMD attack on it or its allies or if the country was under conventional attack and its very existence was under threat. According to the most recent version of military doctrine, published in February 2010, Russia’s nuclear weapons are intended to prevent military conflict and, as such, have a potential role to play in regional and large-scale conflicts involving not only nuclear or other WMD but also conventional weapons. Whereas, however, the previous (2000) version of the doctrine envisaged a resort to nuclear weapons “in situations critical for [the] national security” of Russia, the 2010 version foresees their use only in circumstances where “the very existence of Russia is under threat.”

1.108 Then-Prime Minister Vladimir Putin published an article in February 2012 in which he described Russia’s “robust nuclear deterrent” as a counterweight to US strength and a contribution to international stability. He ruled out any concessions on tactical nuclear weapons. Russia’s armed forces were in fact “preparing additional stronger weapons.” Final nuclear disarmament would only be possible when Russia had “exceptionally accurate non-nuclear systems of similar effectiveness” (to those under development in the United States).

1.109 The United Kingdom states that it will only consider using nuclear weapons “in extreme circumstances of self-defence, including the defence of [its] NATO Allies” but remains “deliberately ambiguous about precisely when, how and at what scale [it] would contemplate their use.” The United Kingdom is committed to the long-term goal of a world without nuclear weapons, but not while large arsenals of nuclear weapons remain and there is any risk of nuclear proliferation. Until then, “only a credible nuclear capability can provide the necessary ultimate guarantee [of] national security. The UK Government is therefore committed to maintaining a minimum national nuclear deterrent, and to proceeding with the renewal of Trident and the submarine replacement program.”

1.110 In the United States, the Obama administration has shown in multiple ways that it is acutely conscious of the significance of nuclear doctrine in setting the scene for serious movement towards disarmament, but so far its achievements in this respect have been

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114. “Strong Russian Nuclear Force Deters Conflict, Putin Says,” Global Security Newswire, 27 February 2012. This last statement is hard to reconcile with his deputy foreign minister’s proposed prohibition of “strategic offensive arms in non-nuclear configuration.” Putin’s comments are, however, broadly consistent with current Russian military doctrine which “assigns high-precision [apparently, conventional] weapons to the mission of strategic deterrence.” Sokov, The New 2010 Russian Military Doctrine.
116. General Statement by UK Head of Delegation at the 2012 Preparatory Committee of the 2015 NPT Review Conference, Vienna, 30 April 2012. A final decision on the shape of Britain’s future nuclear deterrent will not, however, be taken until after the next general election in 2016.
more rhetorical than real. The April 2010 NPR Report recognized that, with “the growth of unrivalled U.S. conventional military capabilities, major improvements in missile defenses, and the easing of Cold War rivalries,” there was now an opportunity and the need to better align US nuclear doctrine with contemporary national security priorities: preventing nuclear terrorism and nuclear proliferation. Furthermore, by “reducing the role and numbers of U.S. nuclear weapons – and thereby demonstrating that we are meeting our NPT Article VI obligation to make progress toward nuclear disarmament – we can put ourselves in a much stronger position to persuade our NPT partners to join with us in adopting the measures needed to reinvigorate the non-proliferation regime and secure nuclear materials worldwide against theft or seizure by terrorist groups.”

1.111 The NPR affirmed that the primary function of US nuclear weapons was to deter nuclear attack on the United States, its allies and partners. Although nuclear weapons would continue to have a role in deterring non-nuclear attacks (conventional, biological and chemical), this role had diminished and would continue to do so. While the United States was “not prepared at the present time to adopt a universal policy that deterring nuclear attack is the sole purpose of nuclear weapons,... [it] will work to establish conditions under which such a policy could be safely adopted.” The United States would now only consider the use of nuclear weapons “in extreme circumstances to defend the vital interests of the United States or its allies and partners.” Henceforth, non-nuclear systems could be expected to make an increasingly significant contribution to US deterrence and reassurance goals.

1.112 In February 2011, the Department of Defense published a new National Military Strategy which affirmed “the fundamental role” of US nuclear weapons in a nuclear-armed world. It promised nonetheless to support “the President’s vision” by reducing “the role and numbers of nuclear weapons, while maintaining a safe, secure, and effective strategic deterrent.” US nuclear forces would “continue to support strategic stability through maintenance of an assured second-strike capability,” and the United States would “retain sufficient nuclear force structure to hedge against unexpected geopolitical change, technological problems, and operational vulnerabilities.”

1.113 New strategic guidance published by the White House and the Department of Defense in January 2012 under the heading “Sustaining U.S. Global Leadership: Priorities for 21st Century Defense” similarly commits the United States to “field nuclear forces that can under any circumstances confront an adversary with the prospect of unacceptable damage, both to deter potential adversaries and to assure U.S. allies and other security partners that they can count on America’s security commitments.” But, taking its cue from the NPR and the previous year’s National Military Strategy, it too suggests that the United States may be able to achieve its deterrence goals “with a

120. Nuclear Posture Review, April 2010, p. 16.
smaller nuclear force, which would reduce the number of nuclear weapons in our inventory as well as their role in U.S. national security strategy.” 122

1.114 President Obama reinforced this message at the second Nuclear Security Summit in Seoul in March 2012 when he said that, after New START, the United States would still have more nuclear weapons than it needs and that it was “now conducting the follow-on analysis called for in the NPR to set goals for future nuclear reductions in line with strategic requirements.” The NPR meanwhile had ruled out development of “new U.S. nuclear warheads and new missions and capabilities for existing warheads.” 123

1.115 India first conducted what it called a “peaceful nuclear explosion” on 18 May 1974. It confirmed its nuclear-armed status almost twenty-five years later with five tests over the period 11–13 May 1998. India’s declared aim is to “pursue a doctrine of credible minimum nuclear deterrence.” It will not be the first to use nuclear weapons but would “respond with punitive retaliation should deterrence fail.” India has pledged not to use nuclear weapons against non-aligned non-NWS. 124 It has, however, reserved the right to use nuclear weapons in response to biological or chemical weapons attack. 125

1.116 India’s National Security Advisory Board published its draft report on nuclear doctrine in 1999, and it was officially adopted by the cabinet on 4 January 2003. Kanti Bajpai divides India’s analysts into three camps: rejectionists; maximalists; and pragmatists, who accept that nuclear weapons have both a security (deterrence and prevention of nuclear coercion) and political (global prestige) role to play in India’s defence and foreign policy. 126 The stated doctrine of credible minimum deterrence reflects the triumph of the pragmatists. While “credibility” is defined by retaliatory capability, command-control-communications survivability, and political will on the part of the national command authority, “minimum” defines size, cost, posture, doctrine and use. 127

1.117 Former External Affairs Minister S. M. Krishna has described nuclear weapons as integral to India’s national security and said that they would “remain so, pending non-discriminatory and global nuclear disarmament.” 128 National Security Adviser Shivshankar Menon believes that India’s possession of nuclear weapons has, “empirically speaking, deterred others from attempting nuclear coercion or blackmail against India.” India’s nuclear weapons are not meant, however, to counter the superior armed strength of others or for use in theatre-level conflict. 129 India’s primary objective nonetheless is to strengthen its strategic deterrent against China. With respect to Pakistan, the Indian establishment continues to believe, as said openly by Defence Minister George Fernandes...

in 2002, that India can survive a nuclear attack but Pakistan cannot. India explicitly rejects the distinction between nuclear and non-nuclear-weapon states established by the NPT and has made it very clear that it will not join the NPT as a non-NWS.

1.118 Pakistan, which has had a nuclear weapons program since the early 1970s, followed India's nuclear weapons tests with six of its own on 28 and 30 May 1998. Pakistan's nuclear doctrine is similarly based on the principle of "credible minimum deterrence," with resort to nuclear weapons envisaged only in response to an existential threat which need not be the result of an attack by any category of WMD (biological, chemical or nuclear weapons). Pakistan's nuclear doctrine is India-specific, although, particularly after the US raid on Abbotabad in May 2011 that killed Osama bin Laden and in light of continuing strong differences of opinion on regional security issues, the expansion and modernization of Pakistan's nuclear arsenal may also now be driven partly by fears of a US raid to capture or secure its nuclear forces.

1.119 The development of tactical nuclear weapons as a counter to India's superiority in conventional arms, and to compensate for its lack of strategic depth, would seem to leave open the possibility of first use of nuclear weapons against India, particularly in the case of invasion. While battlefield nuclear weapons may be thought to give Pakistan the chance of denying "victory" to India in a nuclear war by inflicting particularly severe damage, they would also expose Pakistan to a very high risk of nuclear retaliation and, if used against Indian forces inside Pakistan, to the certainty of partial irradiation of the homeland. Deployment of battlefield nuclear weapons requires the delegation of command and control to military units in the field. This increases the risks of miscalculation, accident, theft, and infiltration by militant groups.

1.120 Pakistan is the only one of the nine nuclear-armed states where nuclear weapons were developed by the military, are essentially under military control, and the decision to use them will be made by the military rather than civilian leadership. Pakistan for this purpose is not a unitary actor and this poses a "particular challenge for deterrence stability in the context of a disunity in the chain of command between top Pakistani authorities and actors who may commit violence against India... of a scale that could lead to inter-state war with potential to escalate to potential use of nuclear weapons." For so long as Pakistan is unable or unwilling to take effective preventive action to stop extremists based on its territory from planning and launching attacks on India, the latter's presumption of state-jihadists collusion will remain powerfully operative.

1.121 Israel does not admit to the possession of nuclear weapons. It has maintained a policy of "nuclear ambiguity" or "nuclear opacity" since the 1960s when Prime Minister

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Levi Eshkol declared that Israel would “not be the first to introduce nuclear weapons to the Middle East”\textsuperscript{135} – nor the second, add some Israeli wags. The policy has served Israel well, providing “the benefits of existential deterrence at a very low political cost” without directly opposing US non-proliferation objectives.\textsuperscript{136} In the absence of a declared nuclear-weapons capability, the circumstances in which Israel might be prepared to use such weapons have not been publicly documented, although prior to the first Gulf War, in response to Iraqi missile threats, Prime Minister Yitzhak Shamir warned of Israel’s “very strong deterrent capability” and Defence Minister Moshe Dayan referred, none too subtly, to Israeli weapons “which the world does not yet know about.”\textsuperscript{137} It would thus seem reasonable to assume that Israel sees an undeclared but barely disguised nuclear-weapons capability as compensating for its small size and population, lack of strategic depth, and as an appropriate response to the multiplicity of existential threats confronting it in its region.

1.5.1 No First Use

1.122 The ICNND Report recommended that, pending the elimination of nuclear weapons, every nuclear-armed state “make an unequivocal ‘no first use’ declaration, committing itself to not using nuclear weapons either preventively or pre-emptively against any possible nuclear adversary” (Recommendation 49); and that, until this is done, they should “at least accept the principle that the sole purpose of possessing nuclear weapons... is to deter others from using such weapons” against them or their allies (Recommendation 50).

1.123 Of the five NWS, only China is publicly committed to no first use of nuclear weapons. Of the other nuclear-armed states, only India has made a similar commitment. China’s commitment to no first use dates back to the 1960s. China holds that all NWS “should abandon any nuclear deterrence policy based on first use of nuclear weapons” and “conclude a treaty on no first use of nuclear weapons against each other,” pending the prohibition and elimination of nuclear weapons.\textsuperscript{138}

1.124 The 2010 NPR was the first comprehensive reassessment of US nuclear weapons policy in a decade (the previous NPR was in 2001). This makes no reference to no first use but does take a very small step in the direction of “sole purpose” when it says that, as already noted above, while the United States is “not prepared at the present time to adopt a universal policy that deterring nuclear attack is the sole purpose of nuclear weapons,... [it] will work to establish conditions under which such a policy could be safely adopted.”\textsuperscript{139} The NPR failed to reassess existing nuclear weapons deployment and targeting policies, and President Obama subsequently asked the Pentagon to lead an interagency review to develop alternative constructs of deterrence and stability with accompanying force sizes and postures. Decisions on any new nuclear policy guidance and force levels have not yet been announced.

\textsuperscript{135} Noam Sheizaf, “Clear and Present Danger,” Haaretz, 21 March 2012.
\textsuperscript{136} http://www.nti.org/country-profiles/Israel/nuclear/.
\textsuperscript{137} http://www.nti.org/country-profiles/Israel/nuclear/.
\textsuperscript{138} China Defence White Paper 2010.
\textsuperscript{139} Nuclear Posture Review, April 2010, p. viii.
1.5.2 Extended Nuclear Deterrence

1.125 “Extended nuclear deterrence” refers to the role of nuclear weapons of the NWS in protecting allies from external attack.\textsuperscript{140} While it applies to the Russian nuclear umbrella extended to allies in the Commonwealth of Independent States (former Soviet republics), the concept has particular force with respect to the network of US alliances in Europe, the Middle East and the Asia-Pacific. In this context, Russia appears in practice to envisage a possible resort to nuclear weapons only in response to a WMD attack on its allies.\textsuperscript{141} For the United States, while the primary function of US nuclear weapons is seen as deterring nuclear attack,\textsuperscript{142} as already indicated it has not yet excluded the possibility of a nuclear response to non-nuclear threat contingencies.

1.126 NATO. Many believe that NATO has a responsibility to provide leadership on the alliance’s nuclear policy and on the NATO–Russia relationship. Instead, NATO is “pursuing an enhanced nuclear capability in Europe that can neither be afforded nor makes strategic sense in current or likely future circumstances.”\textsuperscript{143} Under current NATO nuclear-sharing arrangements, there are understood to be a total of some 200 American B-61 tactical nuclear weapons on bases in five European countries (Belgium, Germany, Italy, Netherlands and Turkey), all of them non-NWS signatories to the NPT.

1.127 NATO’s Strategic Concept, adopted at the Lisbon Summit in November 2010, commits NATO to “the goal of creating the conditions for a world without nuclear weapons – but reconfirms that, as long as there are nuclear weapons in the world, NATO will remain a nuclear Alliance.” However, unlike its predecessors, which called for the indefinite preservation of nuclear deployments in Europe, the 2010 Strategic Concept does not exclude a possible end to nuclear-sharing arrangements. The new formulation – “Deterrence, based on an appropriate mix of nuclear and conventional capabilities, remains a core element of our overall strategy” – does not call for nuclear weapons to be in Europe indefinitely or indeed at all. It does, however, clearly identify “the strategic nuclear forces of the Alliance, particularly those of the United States,” as “the supreme guarantee” of NATO’s security.\textsuperscript{144}

1.128 The Lisbon Summit mandated a review of NATO’s “overall posture in deterring and defending against the full range of threats to the Alliance” which, in the shape of the Deterrence and Defence Posture Review (DDPR), was adopted by the NATO Summit in Chicago on 20 May 2012. The DDPR describes, in standard terms, the alliance’s resolve “to seek a safer world for all and to create the conditions for a world without nuclear weapons in accordance with the goals of the NPT.” Rather more significantly, though, it also describes nuclear weapons as “a core component of NATO’s overall capabilities for deterrence and defence” and affirms that the review has demonstrated “the Alliance’s nuclear force posture currently meets the criteria for an effective deterrence and defence.
posture.” The DDPR simply repeats the Lisbon Strategic Concept document when it says that “the supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States” and goes on to observe that “the independent strategic nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies.”

1.129 Because it includes three of the world’s five NWS (France, the United Kingdom and the United States) and eight of the fourteen states that have nuclear weapons on their territory (Belgium, France, Germany, Italy, Netherlands, Turkey, the United Kingdom and the United States), NATO “has a responsibility to be the change it wants to see in the world, not just to advocate for that change on the part of others.” Instead, having committed to President Obama’s goal in Prague in April 2009 of creating the conditions for a world without nuclear weapons, at the Lisbon summit in 2010, NATO ignored the commitment in making its own nuclear policy. For example, it has chosen to modernize and enhance its tactical nuclear weapons in Europe, not just to maintain the current capability. The DDPR disappointed those who had hoped that it might provide an opportunity to soften NATO’s nuclear deterrence posture, for example by declaring “that the central purpose of nuclear weapons was to discourage a similar attack” or by responding positively to calls “for the immediate reduction, withdrawal, or consolidation” of US tactical nuclear weapons in Europe. Instead, Allies simply acknowledged “the importance of the independent and unilateral negative security assurances offered by the United States, the United Kingdom and France” and, “while seeking to create the conditions and considering options for further reductions of non-strategic nuclear weapons assigned to NATO,” promised to “ensure that all components of NATO’s nuclear deterrent remain safe, secure, and effective for as long as NATO remains a nuclear alliance.”

1.130 The DDPR emphasized that, since the end of the Cold War, NATO had “dramatically reduced the number, types, and readiness of nuclear weapons stationed in Europe and its reliance on nuclear weapons in NATO strategy.” Against this background, it was ready to consider “further reducing its requirement for non-strategic nuclear weapons assigned to the Alliance in the context of reciprocal steps by Russia, taking into account the greater Russian stockpiles of non-strategic nuclear weapons stationed in the Euro-Atlantic area.”

1.131 Nuclear-sharing is a Cold War relic originally intended to offset the Soviet Union’s conventional weapons superiority and a means of involving NATO non-NWS in the potential nuclear defence of Europe. At the peak in 1971, there were 7,300 US tactical nuclear weapons in Europe. Nuclear-sharing is of little relevance to today’s Europe.

146. Browne and Kearns, “NATO, Russia, and the Nuclear Disarmament Agenda,” p. 5.
and is not a prerequisite for US extended nuclear deterrence (cf. Japan and South Korea). To many, the DDPR was an opportunity missed “to make a comprehensive, coherent and balanced assessment of the mix of capabilities required by the Alliance in the years ahead” and “to spell out the potential contribution that arms control and disarmament could make to reducing nuclear risks in Europe and more widely.”

1.132 Asia Pacific. In the Asia Pacific, extended nuclear deterrence is understood in the context of the reliance by a number of US allies (especially Japan and South Korea) on US nuclear capability, not only to deter possible nuclear attack, but also to deter or respond to threats from biological and chemical weapons, and indeed overwhelming conventional forces, deployed against them. The particular significance of the US commitment here is seen as lying in its very strong incentive for Japan and South Korea not to acquire a deterrent nuclear capability of their own, although the strong anti-nuclear sentiment in Japan in particular acts as a very powerful disincentive for any government to go down that path.

1.133 Extended nuclear deterrence nonetheless appears in practice to have operated more as an expression of closeness between the United States and its allies rather than as a concrete security measure. To the extent that there is a diminished role for nuclear weapons, and emphasis on conventional military capabilities, envisaged in current US strategic guidance, this should have little impact on the substance of US security relationships with Japan and South Korea. As ever, these relationships will rest upon non-nuclear defence and security cooperation.

1.134 The limitations of extended nuclear deterrence are those of nuclear deterrence generally. As already noted, the United States has stated that it would only consider using nuclear weapons in extreme circumstances. Washington is also acutely conscious that the use of nuclear weapons to defend an ally against a nuclear-armed adversary would risk nuclear retaliation against the United States. It is thus hardly surprising that, while the United States has firm security commitments to countries in North Asia, these do not include specific commitments to use nuclear weapons in their defence.

1.135 Within Japan and South Korea there is a range of views on the value of extended nuclear deterrence. Leaving aside its dubious utility, there is no reason why stable deterrence cannot be maintained as nuclear weapon numbers are reduced. As Japan’s Foreign Minister Katsuya Okada said in a December 2009 letter to US Secretaries Hillary Clinton and Robert Gates, “While the Japanese Government places trust and importance on your government’s extended deterrence, this does not mean that the Japanese Government demands a policy of your government which conflicts with the goal of a world without nuclear weapons.” It remains to be seen, however, whether Okada’s more conservative successors will maintain this perspective.

1.5.3 Negative Security Assurances (NSAs)

1.136 A negative security assurance in this context is one given by a nuclear-armed state that it will not threaten or use nuclear weapons against non-nuclear-armed states. At the 2010 NPT Review Conference, all states agreed that the CD should “immediately begin discussion of effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons” (Action 7). The ICNND Report called on all nuclear-armed states to provide “new and unequivocal negative security assurances... supported by binding Security Council resolution” to all non-NWS (Recommendation 53).

1.137 Understandably, and particularly since the NPT’s entry into force in March 1970, states which have pledged not to acquire nuclear weapons have been keen to secure from the treaty’s five recognized NWS firm assurances that nuclear weapons will not be used against them. Assurances were provided, individually by each of the five NWS, at the first special session of the UN General Assembly devoted to disarmament (May–June 1978) and reaffirmed in the lead-up to the NPT Review and Extension Conference in 1995 as part of efforts to win support for the treaty’s indefinite extension.155

1.138 Of the NWS, only China has given an unconditional undertaking not to use or threaten to use nuclear weapons against non-nuclear-armed states. Of the non-NPT nuclear-armed states, only Pakistan has given a like undertaking. China and Pakistan are the only two nuclear-armed states to support the idea of transforming this undertaking into a legally binding international instrument. There has been no substantive discussion of this, or any other disarmament issue, in the CD since 2009 (ICNND report) and 2010 (NPT Review Conference).

1.139 Four of the five NWS (France, Russia, the United Kingdom and the United States) have undertaken not to use nuclear weapons against NPT non-NWS except in the case of an invasion or any other attack on the state concerned, its territory, its armed forces or other troops, its allies or on a state towards which it has a security commitment, carried out or sustained by such a non-NWS in association or alliance with a NWS.156

1.140 Two NWS, the United Kingdom and the United States, have qualified their assurances by specifying that beneficiaries must be in compliance with their obligations under the NPT. Most recently, in its April 2010 NPR, the United States said that it would not “use or threaten to use nuclear weapons against non-nuclear-weapon States that are party to the NPT and in compliance with their nuclear non-proliferation obligations.” The United States nonetheless reserved “the right to make any adjustment in the assurance that may be warranted by the evolution and proliferation of the biological weapons threat and U.S. capacities to counter that threat.”157

1.141 For countries not covered by this assurance (other nuclear-armed states, and states deemed by Washington not to be in compliance with their nuclear non-proliferation


obligations), there remains "a narrow range of contingencies in which US nuclear weapons may still play a role in deterring a conventional or CBW attack against the United States or its allies and partners." The United States is thus, as already noted, not ready to make a "sole purpose" affirmation (that "deterring nuclear attack is the sole purpose of nuclear weapons"), but "will work to establish conditions under which such a policy could be safely adopted."\footnote{158. Nuclear Posture Review Report, p. viii.}

1.142 The UK’s 2010 Strategic Defence and Security Review similarly provides an assurance that "the UK will not use or threaten to use nuclear weapons against non-nuclear-weapon States parties to the NPT," noting that the assurance "would not apply to any State in material breach of [its] non-proliferation obligations." It also reserves the right to review this assurance if "the future threat, development and proliferation of [other weapons of mass destruction, for example chemical and biological] make it necessary."\footnote{159. Securing Britain in an Age of Uncertainty, pp. 37–38.}

1.143 China has adopted a different approach. Its April 1995 declaration opened with an undertaking "not to be the first to use nuclear weapons at any time or under any circumstances" and went on to promise that China would not "use or threaten to use nuclear weapons against non-nuclear-weapon States or nuclear-weapon-free zones at any time or under any circumstances" (emphasis added). China urged all NWS to follow its lead by providing both first-use declarations and unqualified NSAs, incorporating nuclear-weapon-free zones (NWFZs); and concluded by calling for "the early conclusion of an international convention on no first use of nuclear weapons as well as an international legal instrument assuring the non-nuclear-weapon States and nuclear-weapon-free zones against the use or threat of use of nuclear weapons."\footnote{160. UN Security Council document S/1995/265 of 6 April 1995.} China’s unequivocal NSA is reaffirmed in its most recent National Defence White Paper.

1.144 Of the five NWS, all but China oppose the idea of a legally binding international instrument on NSAs and routinely abstain on a UN General Assembly resolution promoting the “Conclusion of effective international arrangements to assure non-nuclear-weapon States against the use or threat of use of nuclear weapons.”\footnote{161. In 2011, A/RES/66/26 was adopted 119-0-56.}

1.145 Pakistan has given an "unconditional pledge not to use or threaten to use nuclear weapons against states not possessing nuclear weapons" and is "ready to transform this pledge into a legally binding international instrument."\footnote{162. http://www.reachingcriticalwill.org/images/documents/Disarmament-fora/cd/2012/statements/part2/12June_ Pakistan.pdf.}

1.146 India’s position is less clear. The Indian National Security Advisory Board’s 1999 Draft Report on Nuclear Doctrine says that India “will not resort to the use or threat of use of nuclear weapons against states which do not possess nuclear weapons, or are not aligned with nuclear weapon powers.”\footnote{163. Draft Report of National Security Advisory Board on Nuclear Doctrine, http://wwwfas.org/muke/guide/india/doctrine/990817-indnucl.htm#disarm.}
§1.6 Nuclear Force Posture

1.147 "Trust, but verify," US President Ronald Reagan famously said about arms control agreements with the Cold War enemy the Soviet Union. Whatever the declared policy, statements on nuclear doctrine reducing the role of nuclear weapons have credibility only if backed by appropriate nuclear force postures, that is, arrangements for the deployment of nuclear arsenals, and the launch alert status of those weapons, which are consistent with the stated doctrine.

1.6.1 Weapons Deployment

1.148 Only Russia and the United States currently maintain a nuclear triad of land, air and sea-based nuclear weapons. Their deployed strategic offensive weapons – to be significantly reduced in number under present New START obligations, as discussed above, but still constituting formidable arsenals – include ICBMs, SLBMs and gravity bombs. Russia appears to be making changes to the deployment patterns of land-based strategic forces to increase their survivability. The road-mobile single warhead Topol-M and a new road-mobile multiple warhead missile, the Yars, will be the backbone of the Russian strategic rocket forces in the coming decades. Both Russia and the United States also have inventories of "tactical" or "non-strategic" weapons. The United States currently deploys some 200 B-61 bombs at bases in five NATO countries. "Russia's non-strategic nuclear warheads are normally kept in central storage.”164 US and Russian nuclear missiles are de-targeted. Re-targeting can be accomplished quickly, but a missile launched accidentally will land in an area of open ocean and an additional decision from the command authority is required prior to an authorized launch.

1.149 China provides no details of its nuclear arsenal. China is believed to have a small stock of air-deliverable nuclear weapons but depends heavily on land-based missiles. It is actively modernizing its land-based ballistic missiles by replacing ageing liquid-fuelled, silo-based missiles with newer solid-fuelled, road-mobile models to increase the survivability and strengthen the retaliatory capabilities of its nuclear forces.165 Beijing is also believed to be within two years of establishing a "credible sea-based nuclear capability." According to the US Department of Defense, two of China's newly developed Jin-class SSBNs appear to be in service. A third boat is believed to be under construction. The associated JL-2 SLBM, however, has faced technical delays and is expected to become operational within two years.166 While the development of a sea-based component of China's nuclear arsenal would significantly increase the survivability of its nuclear forces, it remains unclear how many Jin-class SSBNs China plans to build and what strategy it envisions for its future sea-based nuclear forces.167 China's nuclear doctrine stipulates that "in peacetime the nuclear missile weapons of the Second Artillery Force are not aimed at any country."168 Its stockpile is not thought to be fully deployed.

1.150 France’s nuclear weapons are deployed on its four ballistic missile submarines and a mix of land- and carrier-based aircraft. At any given time, at least one submarine is at sea, providing continuous deterrence. In December 2012, France denied that it was contemplating a change to its nuclear force posture such that it would no longer have a sea-borne deterrent 365 days in the year. This would happen if its fleet of submarines was reduced from four to three as a cost-cutting measure. A Defence White Paper for 2014–2019 is to be released in January 2013. A related speculation is that air-deliverable nuclear weapons on Mirage 2000 and Rafale jets would also be jettisoned.\(^{169}\)

1.151 The United Kingdom has only sea-launched Trident missiles deployed on four Vanguard-class submarines, one of which is always at sea. Over the next several years, the number of warheads on each submarine is to be reduced from 48 to 40. Missiles are de-targeted. The Vanguard-class submarines are due for replacement in the 2020s. While both the ruling Conservative and opposition Labour parties support the maintenance of a nuclear deterrent, a final decision on the configuration of the United Kingdom’s future nuclear forces will not be taken until after the next general election in 2016. In the meantime, as mentioned earlier in this chapter, the Conservatives’ Liberal Democratic coalition partner has demanded a fresh assessment of possible alternatives to Trident.

1.152 Neither India nor Pakistan provides details of its nuclear arsenal. India and Pakistan are working to create survivable nuclear forces based on a mix of different launch platforms. Indian plans to deploy nuclear weapons at sea are based on the development of a ballistic missile launched from a nuclear-powered submarine. Both elements are in the development testing phase and the capability may be deployed in coming years. Pakistani plans are not thought to be as far advanced. Both India and Pakistan have developed road-mobile nuclear-capable ballistic missiles. Their stockpiles are not thought to be fully deployed.

### 1.6.2 Launch Alert Status

1.153 In the middle of a nuclear crisis, if strategic doctrine and operational plans require a very quick decision on strategic force employment, the possibility grows of miscalculation or a decision based on the wrong information by the national command authority. This is why the issue of launch alert status has been of great interest to successive NPT review conferences and international commissions alike. Both the 2010 NPT Review Conference (Action 5) and the ICNND Report emphasized the need for reducing the operational status of nuclear weapons systems as a confidence-building measure. ICNND urged changes to the deployment of nuclear weapons which, while allowing them to survive a potentially disarming first strike, nonetheless ensures that they are not “instantly useable” (Recommendation 55). Weapons should be taken off “launch-on-warning alert” as soon as possible (Recommendation 56).

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1.154 Terms like “hair trigger” and “launch-on-warning” may be criticized as technically inaccurate in that they imply automaticity. There are rigorous technical and procedural safeguards that require human agency: the decision has to be made to launch the nuclear weapons. But this does not negate the fact that thousands of Russian and US nuclear weapons are maintained on a “ready alert” or “day-to-day alert” status. The problem and the solution thus concern issues of nuclear doctrine and deployment. Regrettably, there have been no declared or assumed reductions in operational status since the 2010 NPT Review Conference.

1.155 Historically, alert levels of nuclear weapons systems have varied with changes in the overall security environment, the deployment patterns of the adversary, fiscal elasticity, and political pressures. At present, Russia and the United States keep about 1,000 warheads each on high alert, with the posture dictated by the approximately 30-minute flight time of a putative enemy missile. According to the Cartwright study for Global Zero already referred to, US early warning teams will have up to three minutes to determine that indications of an incoming nuclear attack are real and report to the president; the president would have a maximum of twelve minutes to decide whether to retaliate in kind or risk decapitation of nuclear command and control capacity and decimation of US nuclear forces; missile launch crews in underground command posts and submarines would have two and twelve minutes respectively to take the missiles out of their silos and tubes and launch them on their 30 minutes (or less) flight path to enemy targets.\(^{170}\)

1.156 Some steps have been taken by the United States and Russia to address the potential risks arising in circumstances where there is only a short time available to reach a decision to launch nuclear weapons. The two countries operate Nuclear Risk Reduction Centres, initially designed and launched as a single government-to-government communications link, intended to provide a reliable channel of communication in times of crisis: this includes the direct communication line established in 1963 between Washington and Moscow to help reduce the risk of nuclear exchange precipitated by accident or mistake. (Similar lines exist between India and Pakistan and the United States and China.) But for all this, and despite the many calls that have been made by many commissions, experts and campaign groups for change – and see further the discussion of the case for de-alerting discussed below – there has been no movement on increasing launch decision times. As the ICNND report put it, “So long as the logic of mutual deterrence prevails in the minds and behaviour of U.S. and Russian decision-makers...it has to be acknowledged that, for all the evident need to do so urgently, stepping back quickly from this precipice is going to prove rather more difficult than would appear at first sight.”\(^{171}\)

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1.157 *Russia’s* deployed ICBMs are at launch-on-warning (“ready to launch if it appears that another state has initiated a nuclear strike against Russia”). Sea- and air-based nuclear weapons are at lower levels of readiness. “Gravity bombs are not continuously deployed on heavy bombers and Russian SSBNs are not on continuous at-sea patrol.”

Increasing the mobility of ICBMs, and increasing the number of prepared and presurveyed places from which they can be launched, could help increase the time available for reaching a decision to launch. Russia is also said to be implementing measures to reduce the risk posed by advanced conventional weapons to missiles prior to launch, including electronic counter-measures and decoys. But it remains extremely nervous about its overall vulnerability to superior US conventional capability. As the ICNND Report points out, whatever the unlikelihood may now be of war between them, Moscow sees mutual de-alerting of ICBMS, the principal launch-on-warning force, as making US missiles essentially invulnerable.

1.158 *The United States* has combined a launch posture that safeguards against unauthorized launch of ICBMs with procedures that allow for rapid re-targeting and launch of strategic forces after a valid order is received from the national command authority. Little is known about the launch status of US submarine forces at sea, but it obviously would be impractical in the extreme for these to be without the ability to launch warheads without having to return to shore. Strategic submarines on combat patrol maintain a radio silence to help avoid detection, but could receive and carry out a launch order before enemy anti-submarine warfare assets could engage. In case of loss of communication with the national command authority, it is believed that the commanding officer performs a list of checks to indicate whether the command authority has been destroyed. If the indicators are positive, the commanding officer has sealed orders that explain the specific course of action to follow.

1.159 The April 2010 NPR included a statement that the United States would continue to seek ways to maximize the time available to the president to consider whether to authorize the use of nuclear weapons. But the NPR did not change the alert status of US nuclear forces, summarized as “heavy bombers off full-time alert, nearly all ICBMs on alert, and a significant number of SSBNs at sea at any given time.”

Most US deployed ICBMs are at launch-on-warning. Eight or nine SSBNs are at sea at any given time, with up to five SSBNs on “hard alert.” In 2010 the United States revealed that all of its ICBMs are in so-called “open ocean target” mode, so that if there was an inadvertent launch the missile would land in the middle of one of the large oceans.

1.160 US officials contest the view that current launch status is “dangerously high,” arguing that a prudent balance has been struck between the survivability of nuclear forces and the capacity to implement a legal order from the proper command authority.

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174. Testimony of James Miller to the Hearing on Implementation of the New Strategic Arms Reduction Treaty (START) and Plans for Future Reductions in Nuclear Warheads and Delivery Vehicles, before the Subcommittee on Strategic Forces of the House of Representative Armed Services Committee, 4 May 2011.
Modifying launch status to prolong the time taken to implement a lawful order would, according to officials, carry the risk of creating a “window” of time that an adversary might exploit to try and neutralize US strategic forces. US military representatives have also argued that re-alerting weapons in a crisis could trigger escalation by causing an adversary to conclude that a first strike was imminent – although it should be noted that US nuclear strategy already includes scenarios for increasing alert levels in a crisis.

1.161 The US Department of Defense is completing a review of the current deterrence strategy, including a nuclear targeting review, which may result in new presidential guidance. However, unlike the nuclear posture review process, there are not expected to be any unclassified documents to inform public debate or the international community.

1.162 In France, one SSBN is always at sea on deterrent patrol. In the United Kingdom, at any given time, one SSBN is at sea on deterrent patrol and at several days’ “notice to fire.” China’s nuclear force posture would appear to be consistent with its stated view of the limited utility of nuclear weapons and the declared doctrine of using nuclear weapons solely to deter a nuclear attack and prevent any nuclear blackmail. China is believed to keep its nuclear weapons on low alert, with warheads separated from missiles and fuel. It is worth noting that under New START counting rules, this would reduce China’s nuclear weapons stockpile to zero.177

1.163 India and Pakistan also keep warheads separate from delivery systems. Published sources agree that India has decided against a strategy that requires launch-on-warning and has structured its nuclear forces accordingly. India’s nuclear arsenal is said to be dispersed in different locations, with warheads separated from delivery systems. Different organizations have custody of weapons and delivery systems in peacetime.178 Pakistan’s nuclear weapons are believed to be kept on low alert. Missiles may not be mated with warheads under normal conditions and the two may be stored at different locations, though this is unclear. The suggestion that warheads were kept in disassembled form was denied by a former official from the weapons establishment.179 Information on Israeli practices is not available.

1.164 The differences between Russia, the United States, France and the United Kingdom on the one hand, and the remaining nuclear-armed states on the other, may be ascribed to differences in doctrine (China), absence of early warning systems (India, Pakistan) or considerations of control and safety (India, Pakistan). Keeping nuclear weapons on high alert is not required for any political roles – of coercion and bargaining – seen for them by some weapons possessors.

1.165 **The Case for De-alerting.** A nuclear-armed state acquires credible first-strike capability against a nuclear rival when it can launch a nuclear attack without fear of reprisal. Taking nuclear warheads and weapons systems off high alert can deepen the stability of nuclear deterrence so that nuclear-armed rivals will not attack each other

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regardless of any rise in tension between them. The security environment of the 21st century is starkly different from the Cold War period, but the nuclear force posture is still trapped in the old paradigm with some 2000 nuclear warheads kept at high readiness to be launched en masse before the apprehended arrival of incoming enemy missiles.

1.166 Like nuclear terrorism, the launch of nuclear weapons on high alert by mistake, miscalculation or through a malfunction is low probability but high impact. In the tense environment of nuclear decision-making, high alert weapons carry a fourfold risk of unnecessary nuclear war:

* Accidental launch (technical failure caused by malfunction);
* Authority to launch being usurped by a subordinate official or by terrorists (custody failure leading to rogue launch). Unauthorized use is judged to be the least likely of these contingencies, although the risk increases in the middle of a crisis dispersion of nuclear weapons and in the case of countries like Pakistan whose organizational and technical safeguards may be brittle rather than robust;
* Misinterpretation of incoming warning data (information failure leading to miscalculation);
* Premature and ill-judged response to an actual attack (miscalculation caused by decision-making failure in a crisis).

1.167 Conversely, anything that lengthens the decision-making fuse – such that there is a significant extension of the timeline from the first report of an incoming threat to a decision to use a nuclear weapon and then the actual launch of the weapon – can only add to the existing tight margins of security from nuclear weapons.

1.168 Non-NWS have forcefully argued that lowering of the operational status of nuclear weapons would both reduce the risk of accidental or unintended nuclear war and provide a much-needed practical boost for disarmament and non-proliferation. A resolution on decreasing the operational readiness of nuclear weapon systems, first submitted in 2007 by Chile, New Zealand, Nigeria, Sweden and Switzerland (later joined by Malaysia), and adopted annually by the UN General Assembly by over two-thirds majority, typically has only France, Russia, the United Kingdom and the United States voting against it. The four have usually argued that the resolution seeks to address a problem that does not exist because of physical locks, technical safeguards, and procedures that require the US or Russian president to decide to launch missiles and transmit authorization codes to launch crews who confirm authenticity before taking action.

1.169 Opponents of de-alerting also argue that high alert levels have not been a bar to Russia and the United States building a good strategic relationship. Conversely, nuclear risk reduction narrowly conceived could potentially undermine the overarching objective of strategic stability and equal security. Crisis stability is reduced when a potential enemy, who has cheated by either failing to de-alert fully or by secretly re-alerting, has an incentive to launch an attack during a tense standoff before “re-alerting” has been completed. Therefore irreversible deep cuts are better than reducing

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1.170 This is a questionable claim. A group of American and Russian experts has conducted simulations to show that strategic stability is enhanced by taking nuclear weapons off high alert.\(^{181}\) They point out that current nuclear postures call for massive re-alerting to mobilize two-thirds of nuclear arsenals rapidly during a Russia–US confrontation. Their model would suppress such re-alerting impulses by partitioning de-alerted weapons into a First and Second Echelon. The First Echelon consists of equal numbers of high-yield, single-warhead, silo-based ICBM launchers that can be quickly generated in hours to launch-ready status, which in themselves can survive in sufficient numbers to satisfy the requirements of deterrence. Their primary role is peacetime nuclear deterrence. The Second Echelon consists of deeply de-alerted but more diverse nuclear forces of road-mobile and sea-based systems with both single and multiple warheads that require weeks or months to become launch-ready. But they are invulnerable to enemy attack once re-alerted. The numbers are equal on each side in the Second Echelon, but the types of weapons are not symmetric.

1.171 The model shows that no advantage is gained by any re-alerting of either First or Second Echelon forces to launch a surprise attack. The conclusion holds even if Russia and the United States have cut their nuclear arsenals to 500-1,000 warheads each: 100 cities of the attacker would still be hit by the victim’s retaliatory forces, causing unthinkable devastation.\(^{182}\)

1.172 "De-alerting has to be seen not only as a technical fix but also as a strategic step in deemphasizing the military role of nuclear weapons, in other words moving to retaliatory strike postures and doctrines instead of legacy preemptive or ‘launch-on-warning’ postures."\(^{183}\) Current alert levels are full of inherent risks and are out of sync with improved political relations between Russia and the United States. De-alerting, by moving to retaliatory strike postures, is a strategic step in downgrading the military role of nuclear weapons. It is also a necessary step in transforming relations between nuclear adversaries from one of strategic confrontation to strategic collaboration. It confirms the now generally assumed status of nuclear weapons as weapons of last resort.

1.173 There is also a moral hazard argument. Nuclear weapons are believed to confer certain security benefits. This requires that nuclear rivals be convinced that states possessing nuclear weapons will use them as a last resort if under attack. The most effective way to instil such belief in nuclear rivals is by having a sufficient number of the

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182. However, these calculations can be upset by developments in strategic missile defence.

weapons in a state of high operational readiness. But this means that Russia and the United States cannot convince others that nuclear weapons now, in the post-Cold War era, are in fact playing a reduced role in their national security strategies. In turn this makes it more difficult to convince non-NWS that national security goals can be fully met without nuclear weapons. On the contrary, indefinite reliance on nuclear weapons on short-notice alert can legitimize the nuclear ambitions of others. There is thus a non-proliferation as well as a disarmament and crisis stability argument for de-alerting. And reducing alert status is a confidence-building measure not just among NWS, but also between them and non-NWS, a point forcefully made by the latter at the 2010 NPT Review Conference.

1.174 The reality is that whether the alarm about an incoming nuclear attack turns out to be genuine or false matters not at all. For in the real world, the sole purpose of nuclear weapons can only be deterrence, neither defence nor retaliation. There is no conceivable circumstance in which either Russia or the United States could launch massive nuclear strikes against the other without committing nuclear suicide itself. Even if all fixed site weapons and missiles could be destroyed in a surprise attack – regardless of how many nuclear weapons the enemy has on high alert – Russia would have more than enough mobile ICBMs and the United States would have more than enough sea and air-launched weapons to destroy the other. To this extent the debate over alert status is esoteric and surreal rather than grounded in reality.

§1.7 Parallel Security Issues

1.7.1 Ballistic Missile Defence

1.175 While the US withdrawal in 2002 from the 1972 Anti-Ballistic Missile (ABM) Treaty did not derail either the 2002 Strategic Offensive Reductions Treaty or New START, the shadow of US abrogation will continue to hover over future nuclear disarmament efforts. The ABM Treaty helped to contain the nuclear weapons competition between the United States and Russia by limiting the deployment of systems capable of destroying incoming ballistic missiles, thereby preserving the perceived deterrent value of each side’s strategic nuclear forces that rely on guaranteed second-strike retaliatory capability. Russia reacted strongly to planned US missile defence deployments in Europe which it believes could eventually undermine its own nuclear deterrent capability. The resulting distrust is inhibiting US–Russia and NATO–Russia cooperation on nuclear and wider international issues.

1.176 The ICNND believed that “severe limits” should be set on strategic ballistic missile defences which “now constitute a serious impediment to both bilateral and multilateral nuclear disarmament negotiations” (Recommendation 61). Missile defence has been revisited frequently, both bilaterally (US–Russia) and in the context of NATO–Russia relations, since the ICNND report (2009) and the eighth NPT review conference (2010).

1.177 The irony of the entire elaborate, protracted and intense debate on ballistic missile defence is that it proceeds on the assumption that the defence systems in question will
actually work in the real world, and be capable of destroying all, or the overwhelming majority, of hostile incoming missiles. As recent high-level US scientific assessments have shown – by the Defense Science Board Task Force on Science and Technology Issues of Early Intercept Missile Defense Feasibility, and the National Research Council of the National Academy of Sciences on Making Sense of Missile Defense – these programs may well be complete technological dead-ends. But such is the confidence of most US policymakers in the country’s own capability, and the extent to which that perception is shared by others, that the debate goes on.

1.178 Evolving US strategic doctrine assigns a progressively larger role to non-nuclear systems, including missile defence. Plans for extending missile defence to cover Europe, with geographical mission creep to the Middle East and Asia-Pacific, are criticized for promising a false sense of security to the United States and its allies while provoking a false sense of insecurity among Russia and China. False in both cases, because the deployment of the sophisticated sea and land based interceptors may not work. Cancelling the plan could save $8 billion per year, and make Moscow more open to cooperation on other international issues in Europe, the Middle East and Asia.

1.179 The US approach to missile defence cooperation with friends and allies has changed in important ways. Whereas the Clinton Administration focused on the defence of the continental United States, George W. Bush integrated elements of cooperation with states in Europe, outside the framework of multilateral institutions, including NATO. The Obama Administration kept the cooperative element of the Bush approach, but brought it into a multilateral framework. Missile defence was integrated into NATO at the Lisbon summit in 2010. NATO now has missile defence as a collective mission, based on indivisibility of protection. The terms of bilateral cooperation agreements with Poland and the Czech Republic were changed when the European Phased Adaptive Approach (EPAA) was announced in 2009 “based on an assessment of the Iranian missile threat, and a commitment to deploy technology that is proven, cost-effective, and adaptable to an evolving security environment.”

1.180 The main drivers for missile defence are the incremental improvements in range and accuracy of missiles close to Europe (and Asia), but there are also internal alliance dynamics to be considered, in particular relations between European allies and the United States. Cooperation with Russia on “strategic” missile defence has been an issue in bilateral relations with the United States since the 1960s, but could not really be an issue for NATO because the alliance was only active in theatre missile defence programs and had no strategic missile defence plans of its own prior to 2010. As soon as NATO had a program, it made the discussion of cooperation with Russia an important part of it.

1.181 The issue of strategic missile defence has been addressed in the bilateral US–Russia context in many forums, unofficial as well as official. However, the positions of the two sides cannot currently be reconciled. Russia seeks "clear legal guarantees... verifiable under mutually approved technical criteria" that the system will not be directed against Russia's nuclear forces, and has threatened military retaliation if differences remain unresolved.\(^\text{187}\) Options under consideration include deployment of nuclear-capable short-range missiles in the Kaliningrad enclave and a ramping up of the Collective Security Treaty Organization created after the fall of the Soviet Union.\(^\text{188}\) The United States maintains that Russian objections are valid neither on political nor military-technical grounds.

1.182 The possibility of cooperation on theatre missile defence has been a part of NATO–Russia documents since 1997, but has not led to any meaningful joint projects. NATO and Russia held a fifth theatre missile defence computer-assisted exercise in Germany from 26–30 March 2012.

1.183 Russia has suspended discussion of missile defence cooperation pending (i) provision by NATO of clear and verifiable assurances that its missile defence systems will be directed against the risks that are being generated outside the Euro–Atlantic region; (ii) clarification of President Obama’s comment to then-President Dmitry Medvedev that the United States could be more flexible on missile defence after his re-election; and (iii) clarity on the consequences of the US budget decision on sequestration and its implications for defence spending – missile defence programs may be cut or modified unilaterally by the United States as part of that package.

1.184 Current plans for implementing the EPAA are (relatively) low cost and straightforward, and they are scalable (it is possible to increase or decrease the force packages in a fairly flexible way depending on the threat). The EPAA is based mainly on the Aegis architecture developed for the Asian context in cooperation with Japan. US force deployments will not take place until systems are ready and will be tailored to the threat (of emerging missile forces, not the strategic forces of Russia).

1.185 US–Russia/NATO–Russia technical discussions are also at an impasse. Each side’s proposed approach to cooperation is currently unacceptable to the other. Russia proposes a sectoral approach, with NATO and Russia each taking responsibility for agreed airspace. This would mean that NATO is partly defended by Russian systems, which is not acceptable to the alliance. NATO suggests connecting sensor communication networks so that Russia and NATO can receive information from each other to supplement their respective national technical means. This would mean that information from Russian radars would supplement information gathered by the alliance but not replace it. There would be no mutual dependence. This is not acceptable to Russia because it places no restrictions on the scope or development of US/NATO missile defence systems.

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1.186 The United States emphasizes that reducing the threat will lead to changes in the plans for deployment of missile defences. However, cooperation with Russia on missile proliferation has been limited. Browne and Kearns suggest that NATO and Russia could create joint cooperation centres for pooling and sharing data from satellites and radar in real time; NATO should specify the maximum number of interceptors to be deployed in Phase IV of the EPAA; and Russia and the United States should increase transparency and warning and decision times in order to reduce fears of a short-warning nuclear or conventional attack.189

1.187 If the purpose of the missile defence scheme truly is threats from a third party like Iran, then a solution may be feasible. The two sides need to find a system that offers protection against third-party missile strikes, assuages Russia's concerns about undermining the credibility of its deterrent capability, and does not compromise the principle of sovereign control of national assets. Dmitri Trenin and James Collins propose a scheme for cooperative missile defence which could provide the platform to transform the semi-adversarial relationship that needs to be carefully managed into a collaborative strategic partnership. In turn, this could be the prelude to a genuine Euro-Atlantic security community in which war becomes unthinkable for the solution of political conflicts.190 The two sides' information assets would be integrated, providing for real-time sharing and exchange of data on third-country missile activity. Operational protocols would permit and mandate each side to intercept and destroy missiles overflying its territory to hit targets in the other side. Subject to sensitive material being screened out first, both sides would create jointly staffed cooperation centres for pooling and sharing information, satellite data and radar operations.

1.188 Such arrangements would facilitate the integration of data, the painting of a comprehensive picture of potential dangers, and the coordination of responses to the missile threats. A positive externality would be that each side would acquire a deeper understanding of the other's national security strategy and nuclear doctrines. And the experience of joint missile defence could prove valuable in shaping both Russian and US relations with China and attenuating China's concerns about missile defence systems in the Asia-Pacific.

1.189 The arguments made by Russia also apply to the Chinese assessment of missile defence, its relationship to strategic stability and implications for arms reduction. China has long opposed the general concept of strategic missile defence systems and views US cooperation with Japan on Aegis-based theatre ballistic missile defence in the Asia-Pacific region with growing concern. In its latest biennial defence white paper, released in March 2011, Beijing reiterated that:

> China maintains that the global missile defense program will be detrimental to international strategic balance and stability, will undermine international and regional security, and will have a negative impact on the process of nuclear disarmament. China holds that no state should deploy overseas missile defense systems that have strategic missile defense capabilities or potential, or engage in any such international collaboration.191

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1.190 China has much smaller and less modern nuclear forces than Russia. Whereas Russia has nuclear forces that would survive under any scenario, China is still at a fairly early stage of creating a mobile missile force with intercontinental range and a submarine-launched ballistic missile capability. China is concerned that its current nuclear forces might be neutralized by a combination of preemption and missile defences. While Beijing conducted its own missile defence test in early 2010, there are no indications that China has decided to develop its own national missile defence system.

1.191 China responded firmly to March 2012 comments by US Assistant Secretary of Defense Creedon that the United States was discussing cooperative missile defence with Australia, Japan and South Korea. A senior foreign ministry official said that a missile defence system in the Asia-Pacific region would have “negative effects on global and regional strategic stability, and go against the security needs of the countries in the Asia-Pacific region.” China subsequently warned that US missile defence activities could force China to “modernize its nuclear arsenal…. Beijing will have to improve its capabilities of survival, penetration… otherwise it is very difficult for us to maintain the credibility of nuclear deterrence.”

1.192 If the United States proceeds to expand its missile defence system in the Asia-Pacific to include Australia and South Korea, China is very likely to accelerate the expansion of its own nuclear and ballistic missile programs and possibly adopt a somewhat more robust nuclear deterrence doctrine. Such a response would be inevitable, and more marked, if the US missile defence plans were ever to encompass Taiwan.

### 1.7.2 Weapons in Space

1.193 There are a number of dimensions to the issue of space weapons: ground-based weapons that attack targets in space; space-based weapons that attack targets in space; and space-based weapons that attack targets on the ground. Many of the issues involved are caught up in the missile defence debate. In addition, space-based assets have become an increasingly important component of military missions such as surveillance, early warning, target acquisition, guidance and communications. The ability to degrade or destroy such assets can have a significant impact on military capability; equally, the capacity to hold such assets at risk can have a significant deterrent effect.

1.194 The ICNND Report called for strong support to be given to attempts to prevent the weaponization of space at the CD in Geneva (Recommendation 63). However, differences among the P5 and the enduring stalemate in the CD over the adoption of a work program continue to prevent any progress on the development of an international legally-binding instrument for the prevention of an arms race in outer space (PAROS).

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The discussions on PAROS have focused on a Chinese–Russian draft text of a Treaty on the Prevention of the Placement of Weapons in Outer Space, and the Threat or Use of Force against Outer Space Objects (PPWT). A number of countries, but principally the United States, find the text unacceptable because it does not define a space weapon or suggest how such a weapon might be defined; identifies a need for, but includes no detail on the approach to be taken to, verification and compliance; and does not address the destruction of space-based assets using ground-based systems. The United States and several of its allies are not willing to proceed on the basis of the current draft and are not inclined to produce their own, while China and Russia have not tabled any more detailed document.

Given the deadlock in the CD, other processes have been initiated to try and move the discussion of space security issues forward. The European Union (EU) developed a draft Code of Conduct for Outer Space Activities in 2008, which was published in revised form in 2010. In January 2012, Secretary of State Clinton announced that the United States would initiate consultations and negotiations with other spacefaring nations to develop an International Code of Conduct for Outer Space Activities. The United States did not endorse the draft Code of Conduct developed by the EU, but referred to it as a useful foundation and constructive starting point for developing a consensus on an international code.

A UN Group of Governmental Experts on Transparency and Confidence-building Measures in Outer Space Activities was established by the secretary-general in 2011 in response to General Assembly Resolution 63/68. The group’s objectives are “to improve international cooperation and reduce the risks of misunderstanding and communicaton in outer space activities,” and to reach agreement on “conclusions and recommendations on transparency and confidence-building measures that can help ensure strategic stability in the space domain.” Russia and China were strong supporters of General Assembly Resolution 63/68. The United States abstained on the resolution, objecting to its mention of the draft PPWT, but has since publicly declared its support for the process. The Group of Governmental Experts is expected to complete its work and issue a final report with recommendations in July 2013.

Other international efforts, such as the UN Committee on the Peaceful Uses of Outer Space Long-term Sustainability of Space Activities Working Group, focus essentially on civil space issues.

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196. Chow, “Group of Governmental Experts on TCBMs in Outer Space Activities.” The issues – military vs. civilian – are not, however, always easy to compartmentalize. For example, one of the major issues on the civilian side is debris mitigation, but the shooting down of satellites with ballistic missiles has been a significant recent cause of debris.
1.7.3 Biological and Chemical Weapons

1.199 The ICNND Report, although focused on nuclear weapons, recognized that concerns about other weapons of mass destruction (WMD) impacted on the nuclear debate, and called for strong efforts to be made to promote universalization of the Biological (BWC) and Chemical (CWC) Weapons Conventions; and for the development of “more effective ways of defending against potential biological attacks, including – for all its difficulties – building a workable [Biological Weapons] Convention verification regime” (Recommendation 64). Progress on the biological weapons front, in particular, has been slow.

1.200 Parties to the BWC continue to lament the absence of a verification mechanism. Agreement on such a mechanism is no closer; however, with the United States remaining firmly of the view that effective BWC verification is impossible. Meanwhile, fear of a biological weapons strike exercises a conservative influence on nuclear doctrine, including, though not exclusively, in the case of the United States which has reserved “the right to make any adjustment [to its NSA] that may be warranted by the evolution and proliferation of the biological weapons threat and U.S. capacities to counter that threat.”

1.201 Chemical weapons do not pose a threat of the magnitude of other categories of WMD (nuclear and biological), although their possible use, as has been seen recently in situations of regime breakdown and civil war (Libya and Syria), still arouses strong international concern. The CWC has achieved near universality with 188 states parties representing about 98 per cent of the worldwide chemical industry. While Russian and US failure to meet the final extended deadline (29 April 2012) for destruction of chemical weapons stocks was unhelpful (though expected and finally accommodated by other states parties), the focus of activity for the CWC’s implementing agency, the Organization for the Prohibition of Chemical Weapons (OPCW), is nonetheless moving progressively from monitoring and verification of CW destruction schedules to non-proliferation. Vigorous implementation, particularly of the CWC’s inspection provisions, will be essential for the treaty’s future effectiveness, given the globalization of industrial chemical production, the emergence of new technologies and chemical compounds suitable for CW applications, and the relative ease with which some existing facilities could be converted or returned to the production of CW or CW precursors.

1.7.4 Conventional Weapons

1.202 The ICNND Report argued that “the issue of conventional arms imbalances... between the nuclear-armed states, and in particular the relative scale of U.S. capability, needs to be seriously addressed if it is not to become a significant impediment to future bilateral and multilateral nuclear disarmament negotiations.” It recommended revisiting matters covered in the Treaty on Conventional Armed Forces in Europe (CFE) “establishing comprehensive limits on key categories of conventional military equipment...”

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in Europe (from the Atlantic to the Urals) and mandating the destruction of excess weaponry;”\textsuperscript{189} and believed that “the development of more cooperative approaches to conflict prevention and resolution may well prove more productive in this context than focusing entirely on arms limitation measures” (Recommendation 65).

1.203 At the time of the report's release and in the period immediately afterwards (late 2009–2010), there were grounds for optimism about the prospects for renewed attention to conventional arms control in Europe. The Organization for Security Cooperation in Europe (OSCE)-led dialogue on the European security framework (the "Corfu Process") emphasized the need for renewed attention to the issue. Russia appeared to be willing to return to discussions about the future of the CFE Treaty, albeit without reversing its 2007 decision to suspend participation in the treaty. The Obama Administration emphasized its willingness to revisit the future of conventional arms control and, in their bilateral summit in 2010, Presidents Obama and Medvedev committed to strengthen and modernize conventional arms control in Europe.

1.204 In 2011 and 2012 hopes for any progress in this area faded, to the point where it is highly unlikely that the adapted CFE Treaty will ever enter into force and prospects for any meaningful negotiations on an alternative look remote. In 2011 the United States suspended its cooperation with Russia within the framework of the CFE Treaty (while continuing to meet its obligations to the other parties to the treaty). NATO allies party to the CFE Treaty, as well as Georgia and Moldova, followed the US lead. The US focal point and negotiator on conventional arms control was withdrawn. Perhaps most significantly, the United States and Russia repeatedly stated that the basic problem that CFE was intended to address had been resolved and was no longer relevant to European security.

1.205 Russia, the United States and other countries have said that they are willing to look at alternative approaches to conventional arms control, beyond CFE. It is, however, not clear how such a process could be organized. Confining the talks to NATO–Russia or to Europe would be difficult as many capabilities (and in particular those of most concern to Russia) are to be employed globally. There cannot be any Europe-wide agreement based on equal balance because the forces of the potential parties are extremely asymmetrical and uneven. Russia's aim is to incorporate into the discussion weapon types that the United States has always insisted on keeping outside arms control agreements (naval forces, missiles, unmanned aerial vehicles, space-based military assets).

1.206 Behind this is a fundamental disagreement on the problem that arms control should seek to address. While Russia's objective is to contain the global power of the United States, NATO's principal aim is to stabilize military security in specific “grey zones” around the periphery of the enlarged alliance.

1.207 The state of play on conventional arms control has important implications for nuclear arms control. Russia has argued that current US plans to develop a faster global conventional strike capability could have an impact on strategic nuclear arms control. Senior Russian officials generally refer to such weapons as “strategic offensive weapons with conventional warheads.” President Putin has said that Russia will only contemplate

\textsuperscript{189} ICNND, \textit{Eliminating Nuclear Threats}, p. 197, paragraph 18.35.
additional nuclear weapons reductions “if all factors affecting international security and strategic stability are taken into account”, and has linked final nuclear disarmament to Russia’s acquisition of “exceptionally accurate non-nuclear systems of similar effectiveness” to those now under development in the United States. The United States, meanwhile, can be expected to seek to preserve its global advantage in conventional military capability as a guarantee of continuing strategic preeminence and as a hedge against future nuclear arms reductions.

1.208 The purpose of developing a “prompt global strike” (PGS) capability is to attack difficult-to-reach but very high value targets making use of real-time intelligence. These capabilities lie far in the future and New START is unlikely to be the point of reference. However, Russia has raised the issue of whether such weapons could confuse implementation of the treaty. Existing ballistic missiles converted for this mission count against New START ceilings, but a hypersonic weapon with a conventional warhead (or a kinetic kill vehicle with no warhead at all) has no nuclear mission and would clearly fall outside New START.

1.209 Russia suggests that a conventionally armed ballistic missile could be confused with a nuclear first strike if it is launched over a polar flight path, or that it could be used in a disarming first strike. None of the weapons will be available in the near term, but there is a suggestion that the complications will be greater in conditions where Russia has reduced its nuclear weapons holdings to low numbers.

1.210 The impact of the increasingly complex and ambiguous relationship between conventional and strategic nuclear forces is also visible in other strategic dyad relationships. Ballistic missile defence, long-range conventional strike systems and space-based systems have already emerged as major complicating factors in achieving or maintaining stable deterrence relationships, and these are likely to intensify as relevant military capabilities improve over time.

1.211 China, which has relatively small nuclear forces, may feel vulnerabilities more acutely than Russia. Beijing’s concerns about maintaining a credible second-strike capability can be closely linked to advances in non-nuclear strategic weapon systems, in particular by the United States. China will continue to develop strategies and technologies to counter evolving conventional threats. Should it choose to award a nuclear role to its land-attack and air-launched cruise missiles, this would signal a shift towards a more flexible nuclear posture to deter a broader range of threats. At the same time, China is developing its own conventional medium-range ballistic missiles, which are believed to have an anti-ship capability.

1.212 In its 2010 NPR, the United States emphasized its intention to deepen the strategic dialogue with Russia and to initiate a strategic stability dialogue with China. Conventional PGS capabilities and their implications would logically be a part of such discussions. It would seem, though, that the more confident the United States becomes of the superiority of its conventional weapons and of the efficiency of its anti-missile systems, the more

reluctant Russia and China are likely to be to negotiate serious nuclear arms reductions in the absence of broader arms limitation talks.

1.213 In South Asia, Pakistan makes no secret of the fact that it sees nuclear weapons, including tactical nuclear weapons, as its principal means of offsetting India’s advantages in size, strategic depth and conventional military capability.

1.214 This creates a dilemma because, while it is obviously wrong to overlook or to undervalue the strength and persistence of these concerns, it is equally wrong to make nuclear disarmament contingent on their resolution, not least because to do so, while simultaneously maintaining the exclusive right of the NPT’s recognized NWS to possess such weapons, is to ignore present realities and to invite further proliferation. It is important to see conventional and nuclear disarmament as overlapping, rather than interdependent, security issues. To hold them hostage to each other – as the strategically weaker states, particularly, will be inclined to do – is likely to render progress on both impossible.

§1.8 Mobilizing Political Will

1.8.1 Disarmament Education

1.215 The ICNND Report drew attention to the need for “sustained campaigning... to better inform policy-makers and those who influence them about nuclear disarmament and non-proliferation issues” (Recommendation 71) and called for a “major renewed emphasis on formal education and training about nuclear disarmament and related issues in schools and universities” (Recommendation 72).

1.216 The UN General Assembly, by Resolution 57/60 of 30 December 2002, which affirmed a pressing need for disarmament and non-proliferation education and recognized the important role of civil society in promoting such education, welcomed the presentation of a UN study on disarmament and non-proliferation education and conveyed its 34 short and long-term recommendations “for implementation... by Member States, the United Nations and other international organizations, civil society, non-governmental organizations and the media.” The Secretary-General was asked to prepare biennial reports on implementation of the recommendations. Five such reports have been published to date, the latest in July 2012.

1.217 The reporting record has been poor. Since the resolution’s adoption in 2002, a total of just 37 reports have been submitted to the United Nations. Of these, Japan and Mexico have each submitted four; and New Zealand three. Six reports were submitted in 2010 (A/65/160), the lowest number to date. Nine were submitted in 2012 (A/67/138). Russia is the only NWS to have reported on its implementation of the UN study. Several countries that implement and finance projects to promote nuclear disarmament and non-proliferation education, including Norway, Sweden, and the United States, have not reported at all.202

1.218 A robust, urgent, credible and sustained global commitment to public education with a view to building broad popular support for nuclear disarmament is badly needed and, in this context, Global Zero’s efforts to build an international movement for nuclear disarmament among students in multiple countries is particularly to be welcomed.

**1.8.2 Civil Society Action**

1.219 While only governments and intergovernmental organizations can set authoritative standards, establish duly recognized international norms and negotiate treaties, civil society organizations have a crucial role to play in promoting global norms, monitoring state compliance with agreed commitments, and in reflecting community values and concerns that may not always find appropriate expression in governmental processes. Their critiques and policy prescriptions have demonstrable consequences in the governmental and intergovernmental allocation of resources and in the exercise of political, military and economic power.

1.220 In the nuclear field, International Physicians for the Prevention of Nuclear War (IPPNW) and the Pugwash Conferences on Science and World Affairs have been awarded the Nobel Peace Prize. Several regional nuclear-weapon-free zones have their origins in NGO advocacy and grassroots campaigns; and NGOs have formed coalitions to draft a universal Nuclear Weapons Convention that would prohibit nuclear weapons and to promote a range of nuclear arms control and disarmament measures, including the de-alerting of “launch on warning” ICBMs. Global Zero is currently seeking support for its own step-by-step plan to completely eliminate nuclear weapons by 2030; highly regarded think tanks and study centres such as the Carnegie Endowment for International Peace, the Monterey Institute’s James Martin Center for Nonproliferation Studies and the Nautilus Institute contribute significantly to our understanding of the challenges facing us in the nuclear non-proliferation and disarmament field; while the *Bulletin of the Atomic Scientists*, and the famous Doomsday Clock (whose hands remain set – in the group’s latest alarming judgment in January 2013 – at five minutes to midnight), provide timely information and analysis of threats to our survival and development from nuclear weapons, climate change and emerging technologies in the life sciences.

1.221 In addition, coalitions such as Parliamentarians for Nuclear Non-Proliferation and Disarmament (PNND), the International Campaign to Abolish Nuclear Weapons (ICAN), the Middle Powers Initiative (MPI) and the Women’s International League for Peace and Freedom (WILPF) use their extensive networks to support the elimination of nuclear weapons. Likewise, the Washington-based Nuclear Threat Initiative (NTI) works to reduce the global threat from WMD, including by supporting leadership networks of former senior political, diplomatic and military figures, in Europe (ELN), the Asia-Pacific (APLN) and Latin America. The Moscow-based International Luxembourg Forum on Preventing Nuclear Catastrophe is another organization focusing on senior decision-makers. All these groups are engaged in efforts to energize public opinion, and especially high-level policy makers, to take seriously the very real threat posed by nuclear weapons and to do everything possible to achieve a world in which they are contained, diminished and ultimately eliminated.
1.222 Sadly, though, it still has to be said that most of the very good work done to promote nuclear disarmament, by a wide range of highly credible and committed civil society actors, currently has little impact outside specialist disarmament and non-proliferation circles. In most countries, when asked whether they would prefer to live in a world without nuclear weapons, most people will say yes. But the very real possibility of nuclear war, whether by accident, miscalculation or design, is not presently an issue which brings large numbers of people together on a regular basis. Consequently, governments are under no real pressure to respond to expressions of popular concern because truly popular concern barely exists. Shaping and delivering the messages required to galvanize public opinion must be a priority and remains very much a work in progress.

1.223 World Public Opinion.org conducted a survey of public attitudes to nuclear weapons in 2008.\(^\text{203}\) The poll involved more than 19,000 respondents in 21 countries. Results in eight of the nine nuclear-armed states are shown below: no information was available from North Korea. Respondents were asked whether they supported the idea of an internationally negotiated ban on nuclear weapons under the terms of which countries with nuclear weapons would be required to dispose of them within a fixed timeframe and no other countries would be permitted to acquire them. The agreement would be subject to verification.

### Table 1.14: Global Public Opinion on Nuclear Abolition

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<tr>
<th>Country</th>
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<th>Strongly oppose</th>
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Source: World Public Opinion.org (December 2008)

1.224 According to the survey, the majority of populations favour the complete elimination of nuclear weapons. The elimination of nuclear arsenals is strongly supported in France (86%), China (83%), Great Britain (81%) and the United States (77%). Sixty-nine per cent of Russians, 67% of Israelis, and 62% of Indians would also support such an agreement. Only in Pakistan did less than half the respondents (46%) favour the elimination of nuclear weapons. All this indicates that the potential for strong community support is there: the problem continues to lie in effectively harnessing and mobilizing it.

1.8.3 Nuclear Weapons Convention

1.225 A model Nuclear Weapons Convention (NWC) was prepared in 1997 in response to the ICJ Advisory Opinion on the legality of nuclear weapons and updated in 2007. It brought together an impressive international consortium of lawyers, doctors and scientists and attracted the interest, involvement and support of many civil society arms control groups. It continues to enjoy the support of many NGOs, non-NWS and the United Nations General Assembly. The model NWC would prohibit the development, making, testing, transfer, use and threat of use of nuclear weapons. A fifteen-year timetable for the elimination of nuclear weapons by NWS (“nuclear-capable states” outside the NPT would be given only five years to reach the same objective) includes de-alerting, removal from deployment, dismantlement, and placement of all fissile material under international control. The model NWC’s UN sponsors have described the draft convention as “a useful tool in the exploration, development, negotiation and achievement of such an instrument or instruments.”

1.226 Some such convention will undoubtedly be necessary in the long run to embed the complete elimination of nuclear weapons in a universal treaty. The ICNND Report, while sceptical that the model convention at its present stage of evolution could, in an area as complex as this, be an effective “campaign treaty” on the model of the Ottawa and Oslo Conventions discussed below, recommended further work on “refining and developing the concepts in the model Nuclear Weapons Convention now in circulation... with the objective of having a fully-worked through draft available to inform and guide multilateral disarmament negotiations as they gain momentum” (Recommendation 73). There are many technical, legal and political hurdles to be overcome and details to be clarified before any NWC can be finalized. But the very act of beginning a deliberate and sustained conversation on the topic would compel states to take the prospect of an NWC seriously and to begin to address particularly the “hard basket” issues of verification, compliance and enforcement.

1.227 While the ICNND report saw formal negotiations now as premature, and the NPT Review Conference simply noted the UN Secretary-General’s Five-Point Proposal for Nuclear Disarmament, an annual resolution (for example, A/RES/67/64 of 3 December 2012) calling for the negotiation of a convention prohibiting the use of nuclear weapons “as an important step in a phased programme towards the complete elimination of those weapons within a specified timeframe” is supported by some two-thirds of the UN membership.

204. ICNND, Eliminating Nuclear Threats, p. 225, paragraph 20.40.
205. “General Assembly, in Wake of High-Stakes Debate in First Committee that Championed Common Positions but Fell
1.228 UN Secretary-General Ban Ki-moon, in a landmark speech in October 2008 that still serves as a rallying call for nuclear arms control and disarmament advocates, urged all NPT parties, in particular the NWS, to fulfil their treaty obligations through negotiations leading to nuclear disarmament. In the first step of his five point-plan, he suggested that they could do this either by negotiating a “nuclear-weapons convention, backed by a strong system of verification” or, only marginally less ambitiously, “by agreement on a framework of separate, mutually reinforcing instruments.” The elements of such a framework are clearly visible today. They include a CTBT in force; an FMCT negotiated, adopted and in force; legally binding NSAs; reciprocal no-first-use declarations; ratification by all nuclear-armed states of the NWFZ treaty protocols; and the commencement of transparent, progressive and irreversible multilateral nuclear disarmament negotiations.

1.229 The aspiration for a comprehensive nuclear weapons convention, embodying a workable verification and enforcement system, must not be abandoned: it is the indispensable international legal framework for achieving ultimate abolition. The question, however, remains whether it would be productive to seek the commencement of negotiations on it now, with those fundamental verification and enforcement issues unresolved and multiple geopolitical issues inhibiting any likely agreement to the process by the present nuclear-armed states.

1.230 The international community has so far banned two entire classes of weapons of mass destruction – biological and chemical weapons. It has also negotiated treaties prohibiting some categories of particularly indiscriminate and inhumane conventional weapons – mines and cluster munitions. By no means every country has signed these conventions: the biggest users and producers of cluster munitions, and those with the largest anti-personnel-mine stockpiles, are not parties to the Cluster Munitions (Oslo) or Mine Ban (Ottawa) Conventions. But the conventions nonetheless exercise strong normative force and quite directly influence the behaviour of non-states parties. The CTBT provides a very clear example of this for, although its peculiar requirement for universal ratification by Annex 2 states prior to entry-into-force could leave the treaty in perpetual limbo, the current voluntary moratorium on nuclear testing which stands as a place-holder for the treaty has enormous practical effect and makes any return to nuclear testing by states not party to the treaty a fraught and challenging calculation indeed.

1.231 A nuclear weapons convention negotiated in the absence of all the nuclear-armed states would, however, be in a class of its own. These states are firmly of the view that it is far too early to be thinking seriously about a NWC and that, without them, such a convention would be meaningless. This may not in fact be completely the case. Four

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207. Although a bilateral arrangement, it should also be recorded here that, in December 1987, the United States and the USSR signed the Treaty on the Elimination of Their Intermediate-Range and Shorter-Range Missiles (the INF Treaty). Final inspections under the treaty were conducted in May 2001.
answers suggest themselves as to the purposes such an instrument could serve:

> It would compel consideration of the full range of technical, legal and political obstacles to the negotiation and signing of the convention, including the physical infrastructure and the multilateral agreements and protocols required for verification and enforcement;

> It would demonstrate that a continuing determination on the part of the NWS to interpret Article VI as no more than aspirational and tied to at best remote general disarmament objectives was not without serious reputational cost;

> It would have a non-proliferation benefit by supporting that increasingly beleaguered leg of the NPT, although non-NWS with nuclear weapons ambitions would almost certainly not ratify it; and, perhaps most importantly

> The negotiations themselves could provoke some new thinking among all the nuclear-armed states, and possibly help stimulate serious multilateral disarmament talks among them as a step up from the first tentative confidence-building exchanges of recent years. They should also help strengthen public engagement and support for nuclear disarmament.

1.232 To achieve even these modest goals, however, a nuclear weapons convention negotiation would have to attract a significant and broadly representative level of participation by non-nuclear-armed states. Negotiation outcomes would, likewise, have to express a very broad non-nuclear-armed states consensus. The road to nuclear disarmament will always be long and obstacle-strewn, but the survival of this planet demands that we keep on trying to find ways to travel it.

### 1.8.4 The Humanitarian Dimension

1.233 The most productive way forward for both committed state and civil society actors to generate political momentum for the nuclear disarmament cause may be to emphasize the catastrophic humanitarian consequences of any use of nuclear weapons. The almost indescribable horror associated with any such use informed the very first resolution of the UN General Assembly in 1946, and has been a recurring campaign theme ever since. It was the primary motivation for the challenge to the legality of nuclear weapons mounted in the International Court of Justice by the UN General Assembly on the initiative of the World Health Organization which resulted in the 1996 advisory opinion concluding that their use was indefensible except, possibly, in self-defence when a state’s very survival was at stake. And this was in turn the major motivation for those who prepared the 1997 model nuclear weapons convention, as noted above. But it is only recently that the humanitarian dimension has resumed any prominence in high-level state discourse.

1.234 The ICNND in 2009 made the point that there was much to be said for focusing on nuclear disarmament not through the lens of traditional arms control, but rather international humanitarian law: “The argument is that nuclear disarmament is at heart a humanitarian imperative because of the grotesquely inhumane and enormous impact of nuclear weapons; that the single most important thing is to prevent their use and the
most certain way of achieving that objective is to eliminate them completely; and that
the best way of achieving that in practice – motivating like-minded governments and
civil society alike – would be negotiations conducted through a humanitarian and
human-rights focused process.”

1.235 This theme was picked up by the 2010 NPT Review Conference in its Final
Document, which expressed “deep concern at the catastrophic humanitarian
consequences of any use of nuclear weapons, and reaffirm[ed] the need for all states at
all times to comply with applicable international law, including international
humanitarian law.” In the 2012 NPT PrepCom, sixteen countries issued a “Joint
Statement on the humanitarian dimension of nuclear disarmament,” read by Ambassador
Benno Laggner of Switzerland, arguing that “it is essential that the humanitarian
consequences of nuclear weapons are thoroughly addressed.” The chairman of the
PrepCom summarized the debates on this issue as:

States parties recalled their deep concern at the catastrophic humanitarian consequences of
any use of nuclear weapons. Many States parties stressed their serious concern that in such
an event, these humanitarian consequences would be unavoidable and emergency relief
could not be provided to affected areas. They expressed their expectation that the
humanitarian consequences of any use of nuclear weapons would be addressed during the
current review cycle.

1.236 The momentum was sustained in the First (Disarmament) Committee of the UN
General Assembly when, on 22 October 2012, Ambassador Laggner read out the same
joint statement, this time on behalf of 34 countries. It stated that “the unique destructive
capacity and uncontrollable effects” of nuclear weapons mean that all the international
humanitarian law rules of distinction between combatants and civilians, proportionality
and precaution “apply fully” to nuclear weapons. So too do the prohibitions against
causing unnecessary suffering or superfluous injury and severe and long-term damage
to the environment. As long as nuclear weapons exist, they will pose a threat to the very
survival of humanity. Their “catastrophic humanitarian consequences... concern the
community of states as a whole.” Under no circumstances must they ever be used again.
“The only way to guarantee this is the total, irreversible and verifiable elimination of
nuclear weapons, under effective international control.”

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208. ICNND, Eliminating Nuclear Threats, pp. 218–19, paragraph 20.18.
209. 2010 NPT Review Conference, Conclusions and recommendations for follow-on actions I (Nuclear Disarmament) A
(Principles and Objectives) v.
http://www.psr.org/resources/joint-statement-on-the.html.
211. “Chairman’s factual summary,” (Working paper), paragraph 9; Preparatory Committee for the 2015 Review
Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Vienna, 30 April–11 May 2012; NPT/
212. “Joint Statement on the humanitarian dimension of nuclear disarmament.”