



Scaling the Nuclear Ladder: Deterrence from Truman to Clinton

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In a seminal book entitled, *The Absolute Weapon*, published at the onset of the Cold War in 1946, American defence intellectual Bernard Brodie defined the essence of what came to be called nuclear deterrence—in future, the cost of retaliation in kind would be too high for any nation to contemplate the use of nuclear weapons as a traditional means of defending its foreign policy interests. Brodie concluded that the only and real value of atomic weapons lay not in their actual deployment in war, but rather in the *threat* of their deployment: ‘Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them’. In short, deterrence would be the fear of nuclear reprisal. For the next 45 years the Americans and Soviets moved, in J. Robert Oppenheimer’s famous image, like ‘two scorpions in a bottle, each capable of killing the other, but only at the risk of his own life’. In this and other ways the nuclear arms race, together with its Dr Strangelove doctrine of mutual assured destruction (MAD), became indissolubly linked with the history of the Cold War. Until that conflict was resolved the world had to keep its faith in what Winston Churchill called the ‘process of sublime irony’, whereby we ‘have reached a stage in the story where safety will be the sturdy child of terror, and survival the twin brother of annihilation’.¹ It is mainly for this reason, then, that the end of the Cold War was as welcome as it was unexpected.

As one observer recently noted, since the end of the Cold War a striking number of those who had responsibility for nuclear policy in the United States, Russia and Europe have undergone changes of heart about nuclear weapons and have come to question the Cold War strategies they once devised (Schell 1998:21). Their voices have added weight to the long-running argument over the relevance of nuclear weapons in keeping what historian John Lewis Gaddis has called ‘the long peace’ since 1945 (Mueller 1988; Gaddis 1987). During that time, what Mikhail Gorbachev termed an ‘infrastructure of fear’ was built that played a central, if not vital role in keeping that peace.

US policymakers certainly acted as though they believed that nuclear weapons were relevant. As one recent book appropriately points out, Cold War statesmen reacted differently to the bomb (Gaddis *et al.*, 1999), yet deterrence, whether implicit or explicit, has been the cornerstone of power relations since Hiroshima. The threat of nuclear annihilation has underpinned many a diplomatic face-off and has shaped the way in which the political world has developed in the second half of the twentieth century. In the Cold War conflict each side sought to beat the other to the next rung of the nuclear ladder in order to gain leverage to pursue its political ambitions, but the history of deterrence revealed Churchill’s prediction to

* An earlier version of this paper was delivered in May 1999 at the Australian Defence College, Canberra.
¹ Winston Churchill to the House of Commons, 1 March 1955 (quoted in Lapp 1969:61).

be remarkably prescient. Many of the worst moments of the Cold War came when one or other of the powers undertook to break the shackles of the 'process of sublime irony'. Conversely, peace was perhaps best served when policymakers accepted the irony of the situation, however uncomfortable that may have been. Accordingly, in many respects, the story of nuclear deterrence has been dominated by a struggle between those who succumbed to the instinctive quest for superiority and those who argued that superiority was unnecessary, even anathema, to a stable deterrent system.

In the post-Cold War world nuclear weapons continue to play a significant, if less overt role. As President Bill Clinton's first Secretary of Defense, Les Aspin, put it: 'The Cold War is over, the Soviet Union is no more. But the post-Cold War world is decidedly not post-nuclear'.² Indeed, the United States has been forced to face up to new challenges, one of the most important of which is the potential use of its own experiences against itself. The challenge of deterrence, as Aspin spelled it out on another occasion, is that:

During the Cold War, our principal adversary had conventional forces in Europe that were numerically superior. For us, nuclear weapons were the equaliser. The threat to use them was present and was used to compensate for our smaller numbers of conventional forces. Today, nuclear weapons can still be the equaliser against superior conventional forces. But today it is the United States that has unmatched conventional military power, and it is our potential adversaries who may attain nuclear weapons.

Chillingly, Aspin concluded, 'We're the ones who could wind up being the equilibisee'.³ In short, the United States may now be looking at the other end of a doctrine that served it so well for so many years. Consequently, America's own practice of deterrence since 1945 remains important.

Moreover, the challenge to American military forces in the post-Cold War world is that they need to maintain their flexibility; as then President-elect Bill Clinton put it in January 1993, 'We will resolve constantly to deter, sometimes to fight and always to win'. In essence, this general maxim has not fundamentally changed since the Cold War; but in practice much has indeed changed. Economic and diplomatic pressures have regained considerable currency in relations between states; nevertheless, nuclear weapons remain important. The purpose of this essay is to provide an historical survey of the way in which American administrations have practised (as opposed to theorised) nuclear deterrence, for the history of the use of deterrence since Hiroshima reveals much pertinent to defence policy today. In a paradoxical way, while the chances of strategic nuclear war have diminished, the threat of small-scale or single use of nuclear weapons—at least so far as American defence planners see it—has increased. Stemming from the break-up of the former USSR and also the efforts of regional powers to acquire nuclear weapons, this prospect confronts US defence planning with a complex challenge. While the nuclear nightmare may well have ended, the role that nuclear weapons might conceivably play in international diplomacy has not, largely because a large nuclear arsenal is not a necessary precondition for deterrence; in contrast to the situation at the onset of the Cold War, a degree of deterrence clearly works below the threshold of global annihilation. Moreover, the record of non-use has cast limitations on US options to respond to such a threat. The result is that the United States must look to counter nuclear threats with its preponderance of conventional forces, a situation that raises its own strategic questions. But the evolution of US implementation of deterrence during the Cold War remains instructive and relevant. For that deterrent was not, as was and still is commonly assumed, always aimed primarily at averting a strategic exchange. Rather, the primary focus of US nuclear doctrines was often in deterring threats to its national interests, whether they came

² Les Aspin, November 1993.

³ Aspin, 7 December 1993.

in the form of conventional or nuclear threats. In essence, although American policymakers theorised about deterring Soviet nuclear strikes, more often they sought ways to use their strategic arsenal to serve more limited objectives. Consequently, the demise of the bipolar world has done little, if anything, to diminish the relevance of nuclear deterrence, and with the uncertain future of the Comprehensive Test Ban Treaty, the prospects for arms build-ups in the Middle East and Indian subcontinent are unsettling. For these reasons a survey of the history of deterrence and 'nuclear learning' (Nye 1987) of American policymakers is a valuable exercise.

Manufacturing the deterrent

The inability to agree on means to control atomic energy in the immediate post-World War II period was a symptom of the suspicion and mistrust engendered by the beginning of the Cold War; yet given this increasingly belligerent relationship, it is surprising in retrospect how slowly the United States moved to articulate a coherent strategic policy linking military planning to foreign policy objectives. Having formally adopted the concept of the 'containment' of Soviet Communism in late November 1948, most policymakers within the Truman administration simply assumed—or perhaps 'hoped' is a better word—that the American atomic monopoly would somehow intimidate the Soviets from breaches of the peace for fear of precipitating an all-out war. In their view, the broad function of the atomic bomb was simply to deter aggressive Soviet designs. But the effect that the American atomic monopoly exerted on Joseph Stalin's strategy remains questionable. It became clear that for all the efforts in so-called 'atomic diplomacy', a deterrent would have to be carefully 'manufactured' or declared by US policymakers. Hiroshima and Nagasaki had been a start, but on their own they were far from enough to deter Joseph Stalin (Holloway 1994:258–63; Zubok and Pleshakov 1996:40–3; Gaddis 1997:85–112).

The reason was that the atomic bomb was still considered by many essentially in tactical, rather than strategic terms. As David Rosenberg and others have pointed out, the American atomic stockpile was surprisingly small until the 1950s (Rosenberg 1982). Through espionage, Stalin knew this, and therefore appears to have dismissed the strategic value of the atomic bomb in the early post-war years since it was clear that one or two atomic bombs could not win a war for the United States; he had, after all, recently demonstrated that he was willing to sacrifice millions of men in the pursuit of victory. At the same time, however, Stalin devoted massive resources to the development of a Soviet bomb. In the early post-war years the US atomic stockpile was limited; but it had the potential to grow. Then, Stalin seemed to reason, it might become a strategic asset, but until that time the deterrent value of the atomic bomb remained limited (Holloway 1994:258–63; Zubok and Pleshakov 1996:40–3; Gaddis 1997:85–112). Moreover, the United States possessed little in the way of coherent nuclear strategy. In the pre-missile age, while the Strategic Air Command (SAC) formed the crux of American nuclear strategy, the effects of the post-World War II demobilisation seriously depleted the resources available to the Joint Chiefs of Staff for war planning. For many, most vocally Secretary of Defense James V. Forrestal, the demobilisation had gone too far.

When Stalin blockaded Berlin in mid-1948, it seemed to provide the tangible proof that was hitherto lacking from the warnings of Forrestal and others that, not only did the Soviets have a conflict of interests with the United States, but they were willing to act upon those interests. In response, Truman made a remarkable commitment to maintain the presence in Berlin, although he had little idea how he would accomplish this. With the airlift never considered more than a delaying tactic, the key appeared to lie in the American nuclear monopoly, yet the post-war demobilisation had seriously depleted the practicable options available to the President to exploit that advantage. The blockade, therefore, catalysed a

review of the defence posture of the United States beginning with nuclear strategy. Forrestal and the Joint Chiefs of Staff used the blockade in their efforts to thwart Truman's tight defence budgets, seizing the opportunity to argue that relying on a perception of strength was not enough; it had to be backed up by tangible military capabilities. At the height of the Berlin blockade, frustrated by Truman's reluctance to commit to 'whether or not we are to use the A-bomb in war', Forrestal took it upon himself to authorise the Joint Chiefs to base their war planning on the assumption that nuclear weapons *would* be used.⁴

Furthermore, the blockade demonstrated the inadequacies of American nuclear strategy when Washington was forced to improvise an atomic deterrent by sending B-29 'atomic' bombers to Britain and Germany. Despite efforts to inflate the significance of this deployment as 'the ultimate expression of air-power strength' (Spaatz 1948), the bitter debate then raging in Washington over the respective merits of civilian or military custody of the atomic stockpile thwarted efforts to place atomic weapons on British soil. And without the necessary infrastructure, and more particularly without having been converted to carry atomic payloads, the effectiveness of these planes in practical terms was severely limited. Moreover, an ongoing dispute over the Anglo-American consultation process—if there was even to be one—further limited the deterrence value of this deployment (Gowing 1974:310–1; Duke 1987:15–38; Leffler 1992:220–9; Forrestal 1951:451–530),⁵ and few had thought seriously about how to wage atomic war. Winston Churchill, notoriously succumbing to military bravado, suggested presenting the Soviets with an ultimatum threatening that if they did not retire from Berlin, abandon East Germany and retreat to the Polish border, US atomic bombers would raze Soviet cities. The US Commander in Germany, General Lucius D. Clay, took a similar line by telling Forrestal that he 'would not hesitate to use the atomic bomb and would hit Moscow and Leningrad first'. Nevertheless, Washington was inclined to tread lightly. As official British government policy put it, it seemed doubtful that the West could add the 'scorpion's sting' to such nuclear threats, a point that US policymakers quietly conceded. Accordingly, it remained difficult to justify talk of atomic weapons until the threat became absolute.⁶ The blockade demonstrated that a deterrent had to be manufactured and explicit; the mere existence of atomic weapons was not enough. Moreover, the United States, many feared, had made commitments that exceeded its military capabilities. In short, it appeared that fiscal restraint had led to strategic bankruptcy. Thus, the blockade was the first in a series of shocks—along with communist victories in Czechoslovakia and China, the Korean War, and the first detonation of a Soviet atomic device—that confronted US policymakers during the tumultuous period from 1948 to 1950 (Forrestal 1951:424–60; Leffler 1992:220–65).⁷

The thermonuclear revolution and strategic deterrence

This series of setbacks, amplified exponentially by the first Soviet atomic explosion in late

⁴ Forrestal's diary entry for 28 July 1948, Forrestal Diary, Seeley G. Mudd Library, Princeton University. See also Forrestal (1951).

⁵ For the limitations of US nuclear capabilities in both material and strategy terms during this period, see Williamson and Rearden (1993:49–100) and Rosenberg (1982).

⁶ Churchill cited in Douglas to Lovett, 17 April 1948, *Foreign Relations of the United States* (hereafter *FRUS*) 1948, 2:895–6. Clay cited in Forrestal diary entry, 13 November 1948, Diary, Forrestal Papers, Mudd Library. For British concerns expressed to the US officials, *FRUS* 1948, 2:890, 899, 896–7, 899–900.

⁷ On early American nuclear strategy, see Williamson and Rearden (1993), Gaddis (1982:89–126), Trachtenberg (1999:66–91; 1991:100–52), Rosenberg (1979:62–87; 1983:3–71; 1982:25–30), Freedman (1981), Kaplan (1983), Herken (1980b) and Ross (1988).

August 1949, jolted the administration to invest enormous resources in an effort to climb the next rung of the nuclear ladder and attain an increasingly elusive level of nuclear superiority. The result was development of fusion technology that manifested itself in the thermonuclear or hydrogen bomb. A vigorous debate took place during the winter of 1949–50 centred on whether such a weapon was needed, the morality of its manufacture, and the impact its development would have on relations with Moscow. Eventually reaching a quite bitter temper, the debate split not only the policymakers but also the atomic scientists themselves. In January 1950, Truman received a delegation headed by Dean Acheson, now Secretary of State, which advocated development of the hydrogen bomb. After a meeting lasting only 7 minutes the President decided to press ahead with the research, despite the fact that no scientist could provide evidence that it was in the realm of the definitely attainable (Hewlett and Duncan 1990; York 1976; Quester 1973:69; Schilling 1961:24–6; Rosenberg 1979:62–87).

While ordering the development of the so-called ‘super-bomb’, Truman also requested a reassessment of the Soviet threat in light of the USSR’s nascent atomic capability. Under the direction of Paul H. Nitze, Kennan’s successor as director of the State Department’s Policy Planning Staff, a group of State and Defense officials formulated a comprehensive statement of a national security strategy and submitted it to the President in early April 1950. Known by its designation as NSC 68 ‘United States Objectives and Programs for National Security’, the document, as one observer has noted, unmistakably sounded the tocsin (Wells 1979:116–58), although, rather than reflecting anything fundamentally new, the document merely expressed the existing mood of Washington policymakers. NSC 68 estimated that ‘within the next four years, the USSR will attain the capability of seriously damaging vital centers of the United States, provided it strikes a first blow and provided further that the blow is opposed by no more effective opposition than we now have programmed’. It warned that once the Soviet Union ‘has a sufficient atomic capability to make a surprise attack on us, nullifying our atomic superiority and creating a military situation decisively in its favour, the Kremlin might be tempted to strike swiftly and with stealth’. In these circumstances, and estimating the prospects of the international control of atomic energy as negligible, Nitze and his associates suggested that the United States had little choice but to increase its atomic and, if possible, its thermonuclear capabilities as rapidly as possible.⁸

NSC 68 also warned of the dangers of ‘piecemeal aggression’ whereby the Soviets could threaten American interests without resorting to direct military confrontation. By exploiting Washington’s unwillingness to use its atomic weapons unless directly attacked, Moscow might pose a military threat by other, more abstruse methods, which could potentially throw American defence policy into disarray. When North Korean troops marched on South Korea on 25 June 1950, at the height of the internal administration debate over NSC 68, it posed what was in many ways a novel challenge; in the words of one observer, ‘The Korean War had taught world leaders that there are more things in heaven and earth than in models’ (Aron 1983:322). The Soviet preponderance of conventional military forces, compounded by a new—albeit incipient—atomic capability posed a serious challenge for which military planners strove to account. Consequently, it provoked a comprehensive reappraisal of US national security assumptions and seemed to lend weight to the arguments for embracing NSC 68 (Karber and Combs 1998; Garthoff 1990; Siracusa 1998:61–2).

In essence, the Korean War posed a serious challenge to existing notions of deterrence by throwing the real prospect of limited war into the equation (Orme 1987:109–12; Christensen 1992:122–54). Theatre commander General Douglas MacArthur and General

⁸ On NSC 68, see Siracusa (1998), especially pages 58–63, May (1993), Leffler (1992:312–60), Gaddis (1982:89–126), Nitze (1989:82–100; 1980) and Gaddis and Nitze (1980:164–76).

Curtis LeMay, head of the Strategic Air Command, both asked that atomic weapons be employed, but Truman publicly ruled out such an option. Truman's refusal to introduce atomic weapons into the Korean theatre indicated an unwillingness to use nuclear forces to fight a local war for limited objectives, a dramatic reversal in the traditional American concept of total war. This reversal reflected in part the reality of a new phase in the nuclear age, but even if nuclear forces could not be used to fight a conventional war, they still might be used to deter one. Since 'war-by-proxy' would probably involve non-nuclear forces, Washington recognised that US strategy must be adjusted to deal with such a threat. Consequently, the Truman administration undertook an extensive conventional build-up of forces in Europe somewhat analogous to that later undertaken by the Kennedy administration. Even so, the Soviet Union retained an impressive preponderance of conventional forces employable in Europe (Kaplan 1984; Trachtenberg 1999:99; Gaddis 1982:89–126; LaFeber 1991; May 1991; Nitze 1989:117–37; Coleman 1999), and to many observers there appeared to be no limit to Moscow's intent to use it.

The atomic arsenal also received new emphasis with American science and technology engaged in producing smaller and cheaper atomic warheads that permitted the United States army to deploy thousands of tactical atomic weapons on the battlefield. Nuclear research and development was boosted by the desire of each branch of the armed services for a piece of the action. During the 1950s, the army turned its attention to intermediate-range, land-based, ballistic missiles, and the navy, first to aircraft-carrier-based atomic bombers and then to nuclear-powered and armed submarines. But the mainstays of US strategic forces continued to be the bombers of the SAC. More importantly, work was accelerated on the H-bomb project and on 31 October 1952, less than a month after the British detonated their first atomic device just off the coast of Australia, the United States detonated in the Pacific its first thermonuclear device. 'Mike' as the bomb was designated, exploded with a force 700 times greater than the bomb detonated over Hiroshima, in the process completely vaporising the small island where the test was conducted.

The explosion was the culmination of an extraordinary effort on the part of the Truman administration to maintain its ascendancy over the Soviet Union on the nuclear ladder and provided a watershed for deterrence. With the opening phases of the thermonuclear revolution now a reality, policymakers struggled to comprehend the scale of destruction of the new technology. Edward Teller had predicted in 1947 that the new weapon would be capable of devastating an area of three or four hundred square miles and that radiation could well travel much further (Teller 1947). In terms of military strategy, such a regional scale clearly changed the whole nature of the weapon, but it didn't take long to grasp that such a weapon might well transform the nature of war and peace themselves. As Churchill put it with uncharacteristic sombreness: 'The atomic bomb, with all its terror, did not carry us outside the scope of human control or manageable events in thought or action, in peace or war. But ... [with] the hydrogen bomb, the entire foundation of human affairs was revolutionised'.⁹ As another observer put it more colourfully, 'The advent of the hydrogen bomb on the international scene seemed at first like the introduction into chess of a new move that consists of kicking over the chessboard' (Moss 1968:218). While recognition of this exacerbated psychological gap between strategic weapons and victory prompted a sharpened focus of strategic thought that lasted at least for a decade and a half (Trachtenberg 1988:444), US policymakers were forced to deal with its consequences on a more immediate level. Seasoned war leader Dwight D. Eisenhower declared that with the existence of employable thermonuclear weapons, 'War no longer has any logic whatever' (Erdmann 1999). In short, thermonuclear weapons could have no other purpose than strategic deterrence and their very

⁹ Churchill (quoted in Moss 1968:5). See also Rosenberg (1999).

existence, even more so than that of atomic weapons, was largely responsible for a discernible shift in many world leaders' views on the role of nuclear weapons and war to further political objectives. Thermonuclear weapons—far more than atomic weapons had done—pushed deterrence well over the threshold to the abstract. For the first time, it seemed, weapons existed that were reasonably served by the maxim, 'I exist; therefore I deter' (Freedman 1988).

Massive Retaliation and the Eisenhower administration

Taking office on the threshold of the thermonuclear revolution, President Eisenhower committed his administration at once to taking a 'New Look' at national security and to a policy of fiscal restraint. In reality, he wanted to cut the defence budget appreciably without jeopardising either America's defence or global commitments. By October 1953, a new planning document, NSC 162/2, had been approved by the President and 3 months later Eisenhower's Secretary of State, John Foster Dulles, publicly announced the birth of a new policy, what became known as Massive Retaliation, a response in large measure to the Korean War and the potential for the situation in Indochina to deteriorate similarly. Having previously called for 'a policy of boldness', Dulles explained that the United States would no longer maintain the enormous conventional forces required to sustain the capability to fight so-called 'brushfire' actions all over the world because, Dulles said, 'it is impossible to match your potential enemy at all points on a basis of man-for-man, gun-for-gun and tank-for-tank. If we try that we are going to go bust'. Rather, the United States would respond in a manner and place of its own choosing and explicitly reserve the option to respond with 'massive retaliatory force', a phrase clearly intended as a euphemism for nuclear weapons. In essence, Dulles sought 'more basic security at less cost' or 'more bang for the buck' to use Secretary of Defense Charles Wilson's phrase, in order to achieve the objective of the optimum balance between costs and security (Graebner 1986:276).¹⁰

The doctrine of Massive Retaliation provided the guiding principle of American strategy for most of the 1950s and ensured a force structure of limited conventional but sizeable nuclear forces. Since nuclear weapons were, in financial terms, more cost-effective than maintaining a large conventional capability, and grasping the essential thought that the notion of superiority in war became absurd with the advent of thermonuclear weapons, Eisenhower and Dulles reasoned that US national security was best served by placing greater emphasis on the deterrent than on the ability to wage a limited ground war in Europe or anywhere else. Moreover, the administration actively encouraged the Europeans to take responsibility for their own defence, even going so far as extending an offer to share its nuclear weapons with the Europeans that would constitute European national nuclear forces in all but name (Kelleher 1975; Trachtenberg 1999:146–200, 1991:153–68; Dockrill, 1991; Nash 1997:5–75; Dockrill 1996; Craig 1998).

Despite Dulles' reputation for brinkmanship, the Eisenhower administration rarely threatened Massive Retaliation, and although Eisenhower's apparent passivity in moments of crisis earned him many critics, the President was careful to avoid a situation where public bluster could lead to miscalculation; as he once put it, 'the easiest thing in the world is to confuse strength with bad deportment'.¹¹ Those times when he did employ explicit threats, he did so quietly and deliberately. In April 1953, using the medium of the Indian Government, he

¹⁰ *New York Times*, 13 and 17 January 1954, 14 and 17 March 1954. See also Dulles (1952).

¹¹ MemCon, Eisenhower, Herter, Congressmen John W. McCormack and Charles A. Halleck, and Bryce Harlow, 26 March 1959, box 39, DDE Diaries, Ann Whitman File, Dwight D. Eisenhower Library, Abilene, Kansas.

communicated to communist China a threat to expand the Korean War, including the use of nuclear weapons, unless a prompt truce was arranged, and although the impact of this threat on the Chinese leadership remains open to conjecture, agreement was reached soon thereafter.¹² In late 1953 and 1954, as the French position in Indochina worsened disastrously, Washington warned Beijing and Moscow that direct military intervention in support of Ho Chi Minh's Vietminh would provoke a nuclear attack on mainland China. And in March 1955 and again in 1958 Dulles publicly threatened the People's Republic of China in response to its bombardment of the offshore, Nationalist-held islands of Quemoy and Matsu. In the latter case, Soviet leader Nikita Khrushchev responded by unilaterally extending the Soviet nuclear umbrella over China. Nevertheless, the Chinese desisted in their attacks (Zhang 1999:207–9; Zubok 1993:6–7).

In each case, the effectiveness of the threat to retaliate massively remains open to debate. Prompted particularly by the ongoing crisis over Berlin—perhaps the quintessential test of deterrence in that the position could never be defended by conventional means—the moral and intellectual validity of Massive Retaliation was vigorously questioned and challenged by the national security community during the mid- and later-1950s. Massive Retaliation's critics argued that the doctrine was out of synch with reality and pointed to the Berlin problem as evidence. 'To respond to a blockade of Berlin with nuclear strategic attack would be fatally unwise', former Secretary of State Dean Acheson warned. 'To threaten this attack would be even more unwise.' Consequently, along with the growing number of Massive Retaliation's critics, he argued that the administration's range of non-nuclear options needed to be considerably widened to project greater credibility that armed conflict—particularly escalation to a nuclear exchange—could result from Soviet moves, however incremental (Schick 1971:49–51; Acheson 1959:86). Once again, the problem was not so much in deterring a strategic strike but in the ability of the United States to deter non-nuclear action.

The challenges to Massive Retaliation were also partly in response to the Soviet build-up of nuclear weapons and means of delivery. Less than a year after America, the Soviet Union detonated a hydrogen weapon of its own and proceeded to develop a range of bombers which could deliver it to targets in Europe and the mainland United States. But the long intercontinental flight distances to US targets and the need to fly over Canada, where warning and intercept installations could be based, lessened the probable penetration capabilities of the Soviet strategic bombers and led the Kremlin to examine alternatives and eventually to emphasise strategic missile development. On 3 August 1957, a Soviet intercontinental ballistic missile (ICBM) rocketed several thousand miles from its launching pad to impact in Soviet Siberia. Barely 2 months later, on 4 October, the same type of missile carried the earth's first artificial satellite. When the Soviets successfully launched Sputnik into space, it ushered in the age of missiles. The seemingly innocuous 'beep' that Sputnik emitted while orbiting the earth had thunderous reverberations throughout Western defence establishments. Keepers of the balance of terror would have something new to think about.

Such additions to the Soviet arsenal not only exposed the United States directly to massive nuclear attack for the first time, but also substantially increased the vulnerability of American strategic forces to that much-predicted surprise attack. Such vulnerability seemingly undermined the fundamental basis of the Massive Retaliation doctrine, for Moscow could now conceivably do what Washington had also threatened to do. For deterrence, this obviously had crucial implications. Since the nature of nuclear arsenals meant that the bulk of the forces were concentrated in only a few places, it became theoretically possible that a

¹² As some have pointed out, the actual role that this threat played in the final truce is open to conjecture. See for example Gaddis (1997:107–10), Zubok and Pleshakov (1996:154–5), Dingman (1988–89:81–91) and Foot (1988–89:99–112).

surprise attack in a first strike could be decisive by destroying the opponent's retaliatory forces. And since many in the Western world subscribed to the somewhat alarmist view, as defence analyst Albert Wohlstetter expressed it in an influential 1959 article, 'To deter an attack means being able to strike back in spite of it', this posed a grave problem. In his article, Wohlstetter expressed what many feared when he outlined the fragility of deterrence and warned: 'Strategic deterrence, while feasible, will be extremely difficult to achieve, and at critical junctures in the 1960s, we may not have the power to deter attack' (Wohlstetter 1959:211–34).

Despite charges levelled against a 'bomber gap' and then a 'missile gap'—both of which US intelligence soon found to be false (Penkovsky 1965; Schecter and Deriabin 1992; Hopkins 1998)—the Eisenhower administration responded to Sputnik with relative calm and moved cautiously ahead with the development and deployment of its intermediate-range ballistic missiles (IRBM) and Polaris submarine-launched ballistic missile (SLBM) programmes. Although much administration effort was expended to overcome the political problems of deploying IRBMs in Europe within striking distance of the major Soviet military industrial centres, including the difficult process of finding willing and suitable NATO hosts, by the end of the Eisenhower administration NATO was becoming increasingly thermonuclear (Nash 1997; Trachtenberg 1999:146–200). The combination of fusion technology, and more importantly the capability to effectively deliver the weapons to the target on a scale to make the first strike decisive, became the culmination of the thermonuclear revolution. As a result, deterrence assumed a new character.

Kennedy and Flexible Response

Surrounded as he was by critics of Massive Retaliation and veterans of the Truman administration, President John F. Kennedy came to embrace a larger defence formula known as 'Flexible Response'. Arguing that Massive Retaliation had led to diminishing returns due both to quantitative and qualitative improvements on both sides of the Iron Curtain—in a way a kind of nuclear inflation—Kennedy administration officials held that a greater range of retaliatory options was required to bolster the credibility of the nuclear deterrent. Seizing upon an argument popularised by General Maxwell D. Taylor in his 1960 book *The Uncertain Trumpet*, the Kennedy administration charged that a heavy reliance on nuclear weapons to prevent conflict was not serving American interests well (Taylor 1960; 1972:204–15). In short, Massive Retaliation lacked credibility.

Accordingly, the alternative proposed by the Kennedy administration, although short on specifics, was designed as the antithesis of Massive Retaliation. Preoccupied with the prospects of miscalculation and perennially sensing crisis, Kennedy expressed his fears in an address to the United Nations in September 1961 in the wake of the Berlin Wall crisis: 'Every man, woman, and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident or miscalculation or by madness'.¹³ While Kennedy used this to call publicly for disarmament, privately he directed his administration to undertake an intense program to build up its military forces, both nuclear and conventional. In large measure, this revived the 'positions of strength' pursued by Truman and Acheson a decade earlier. Arguing that the Laos, Berlin and Quemoy-Matsu situations had come dangerously close to deterrence failures, the incoming administration sought ways to bolster the credibility of the deterrent, to provide at least some hope of controlling escalation, as well as to appear more 'responsible'. However, the new deterrent posture paradoxically implied a reduction of a kind in the importance of nuclear

¹³ Public Papers: Kennedy: 1961.

weapons; and this was certainly how many of America's allies interpreted it. Under the Flexible Response formula, the primary function of America's strategic force was, simply, to deter the opponent's first use of his own, but as several European leaders repeatedly pointed out, most of the challenges the Western world faced in both Europe and Asia were sub-nuclear. To meet these challenges below the nuclear threshold, the administration would call upon non-nuclear forces to resist by active defence what could not be prevented with strategic deterrence, thus providing the rationale for an increase and upgrading of American conventional armed forces to permit the President to respond 'flexibly' and therefore more plausibly.

However reasonable Flexible Response appeared to Washington, many Europeans saw things differently. Although several Western European leaders had initially argued against Massive Retaliation, partly on the basis that it could potentially turn Central and Western Europe into a nuclear battleground, they now resisted Flexible Response. Much to Kennedy's frustration, while he was arguing that Flexible Response *added* to the credibility of the deterrent, German Chancellor Konrad Adenauer and French President Charles de Gaulle argued that it *detracted* from that credibility. They remained outwardly unconvinced that Flexible Response demonstrated anything other than an attempt by the United States to distance itself from the chances of nuclear war in the defence of Western Europe, insisting that for all Massive Retaliation's flaws, it was better than denouncing the effectiveness of strategic weapons. The Kennedy administration's apparent anticipation of the failure of deterrence, was viewed by Adenauer and de Gaulle as an invitation to the communist world to act. Nevertheless, the US administration put the objections of its European allies down to misunderstanding rather than any fundamental flaw in the strategy and proceeded apace with the development of its conventional forces (Stromseth 1988; Sagan 1987:22–51).¹⁴

The first practical test of Flexible Response came in the summer of 1961 when Khrushchev revived the Berlin crisis by renewing his ultimatum to sign a peace treaty with the German Democratic Republic (GDR) and thereby unilaterally revoke the Western powers' rights of access to their outpost in West Berlin. In response Kennedy called for a rapid and large mobilisation of conventional forces at home and abroad in order, in his words, 'to have a wider choice than humiliation or all-out nuclear action'. Nevertheless, Khrushchev managed to sidestep the issue with the decidedly sub-nuclear move of constructing a wall isolating West Berlin from both the eastern sector of the city and the GDR. A month later he again raised the pressure by breaking an 8-month informal moratorium on testing, prompting Kennedy to follow suit soon after.¹⁵

Despite both this renewed emphasis on conventional forces and the public recognition by Kennedy and his Secretary of Defense, Robert McNamara, that the United States had had all along a preponderance of strategic power on the scale of a four-to-one superiority in long-range strategic weapons, the expansion in America's missile program was not slowed, a development that many thoughtful analysts came to regret. During the early 1960s, the first generation US ICBMs became fully operational and work was begun on the second generation of missiles. When taken with the IRBM forces in Europe first deployed during the Eisenhower administration this made for a formidable US missile arsenal.

As events in October 1962 demonstrated, however, the Soviets could find ways to use nuclear weapons to threaten US interests without necessarily provoking either a conventional

¹⁴ For a particularly revealing meeting between Kennedy and Eisenhower on 10 September 1962 on the subject of the relative US—Western European responsibilities for the deterrent, see Tape #21, Presidential Recordings, Presidential Office Files, John F. Kennedy Library, Boston, Massachusetts.

¹⁵ For Kennedy's call on 25 July 1961 for the build-up of conventional forces in Europe, see *Public Papers: Kennedy: 1961*, pp. 442–44.

or nuclear war (Trachtenberg 1991:235–60).¹⁶ In what appeared to the Joint Chiefs to be a transparent effort to redress American nuclear superiority, Khrushchev sent medium and intermediate-range ballistic missiles to communist Cuba during the northern autumn of 1962. Consequent to their detection by US intelligence in mid-October, Kennedy decided to draw the proverbial apocalyptic line. While basing his decision on maintaining the credibility of the deterrent in other parts of the world—especially Berlin—Kennedy and his top advisers who had convened in what became known as the ExComm (Executive Committee of the National Security Council) struggled with how to draw that line without provoking automatic escalation to nuclear war. As Kennedy saw it, any action that implied too slim a margin of control over the escalation process left him only with ‘a hell of an alternative’ (May and Zelikow 1998:176) of firing nuclear weapons. Consequently, he opted for a response that he felt best retained his freedom of action.

Since the deterrent had clearly failed in several key respects—Khrushchev had sent the missiles to Cuba despite the President’s blunt warnings during September—nuclear war appeared a very real possibility. Behind closed doors, senior Washington officials braced for such a prospect, yet struggled to devise a way in which it might be avoided while keeping US interests intact. On 22 October 1962, the White House dramatically announced a naval quarantine around Cuba through which no strategic weapons would be allowed to pass, placed US nuclear forces on alert and advised that a Cuba-based attack against any Western hemisphere target would be considered an attack against the United States requiring a ‘full retaliatory response upon the Soviet Union’. Through a series of Kennedy–Khrushchev exchanges known informally as the ‘pen-pal series’, as well as secret meetings between Robert Kennedy and Soviet Ambassador to the United States Anatoly Dobrynin, the crisis was defused through a settlement in which the offending missiles would be removed back to Soviet territory in exchange firstly for a US pledge not to invade Cuba, and secondly for a secret undertaking to remove obsolete American IRBMs in Turkey (Nash 1997; Dobrynin 1995:86–9; Bundy 1985:213–7).

A significant result of the missile crisis was to bolster the credibility of the deterrent on both sides. The crisis had demonstrated that the brink was real and that from there the outbreak of war was but a short misstep. Kennedy, whose insistence at the height of the missile crisis in clarifying and re-clarifying launch authority procedures exasperated the Pentagon (May and Zelikow 1998:222–3), clearly held little faith in the chain of command from President to field commander, and he worried even more at the potential fallibility of the dual-key launch arrangements. Having repeatedly warned against miscalculation on the part of the Soviets, Kennedy now recognised the full implications of miscalculation on the part of his own commanders; but on the other side of the coin, the peaceful resolution of the crisis imbued a sense of hope that the decision-making logic upon which deterrence was inherently based did, in fact, operate in times of crisis.

The Cuban missile crisis had two other major yet contradictory effects. First, it provided renewed momentum for arms control as policymakers of both East and West recognised that they might not be so lucky next time. But secondly, while contributing momentum towards arms control, the missile crisis also provided an impetus to yet another round in the arms race. Khrushchev’s critics in the Soviet Union—and there were certainly many in the post-missile crisis period—not unreasonably concluded from their Cuban experience that nuclear superiority would continue to provide the critical edge in political leverage in future

¹⁶ Recent revelations from the so-called ‘Kennedy tapes’ and from Russian and Cuban archives have revitalised the debate on this much-scrutinised fortnight of crisis. For a small selection of the literature at the forefront of the debate, see May and Zelikow (1998) and Allison and Zelikow (1999).

diplomatic bargaining and resolved to increase the Soviet strategic arsenal both qualitatively and quantitatively, seeking, one might imagine, 'more rubble for the rouble'. During the mid- and late-1960s, the USSR not only expanded its total military outlays but also substantially expanded the proportion of its defence expenditures allocated to offensive and defensive strategic weapons. Accordingly, a succession of new ICBMs entered the Soviet Strategic Rocket Forces. By 1970, the Soviet Union had surpassed the United States in numbers and sheer explosive power of operational ICBMs, although the Americans retained the technological edge.

In contrast to the Soviet build-up, the administration of Lyndon B. Johnson decreased its proportionate expenditure on nuclear forces and levelled off the number of deployed ICBMs and SLBMs. McNamara, still Secretary of Defense but regretting the weapons acceleration of the early Kennedy years, determined upon sufficiency rather than superiority as the proper American objective. Defining 'sufficiency' as the ability to emerge from a Soviet surprise attack with enough forces to devastate the USSR in a second-strike, McNamara saw it as a generally stabilising factor which guaranteed mutual deterrence but avoided the need for superfluous weapons (Mandelbaum 1979; McNamara 1968). Having overseen some of the most dangerous moments of the Cold War during the Kennedy presidency and having struggled to balance military budgets while faced with massive increases in conventional capabilities, McNamara worked assiduously during the remaining 1960s to develop a cost-effective yet flexible nuclear force structure to maintain this second-strike or retaliatory capability. For the components of this strategic offensive force, known as the Triad, McNamara called upon missile, air and naval strategic forces. In addition, forward-based air force and navy forces retained the capability to strike the USSR with tactical nuclear weapons, but all this was essentially useless as the United States slid down the slippery slope in Vietnam.

Coming to terms with MAD

With the prospect of increases in nuclear arsenals seemingly at will, the effectiveness of deterrence—and implicitly the continuation of the peace—became increasingly threatened. Washington recognised that without some form of control over this bilateral process its nuclear arsenal could become worthless as a deterrence effect. The situation could conceivably arise where the nuclear arsenal simply out-scaled deterrence. Accordingly, greater effort was placed on controlling the arms race with some results in the late 1960s including, most significantly, the Nuclear Non-Proliferation Treaty (NPT).¹⁷ As important as this movement towards controlling nuclear arms was, its initial progress in real terms was limited.

Ironically, given his reputation as a hard-liner, it required Republican President Richard M. Nixon to renew bilateral efforts to limit the strategic arms race. In only his first year in office Nixon agreed to resume talks with Moscow, and in November 1969 the Strategic Arms Limitation Talks (SALT) commenced in Helsinki. The task of furthering arms limitation was further complicated by two new technological developments, the anti-ballistic missile (ABM) and the multiple independently targetable re-entry vehicle (MIRV). These two developments were closely related for one was the counter to the other. The ABM system, in particular, an early version of which the Soviets began to deploy around Moscow in the late 1960s, promised a defence against missile attack, threatening to neutralise the second-strike capacity of the United States. In short, the new technology appeared to offer meaning once again to notions of nuclear superiority. Consequently, the United States followed the Soviet lead. In

¹⁷ The significance of the Non-Proliferation Treaty was however diminished by the refusal of such powers as France, China, and India to sign (Craig-Smith 1999).

order to overpower the ABM defence, the United States developed the MIRVed missile, which was able to carry aloft multiple warheads which could then be released in flight to come down separately against one or more targets. Pentagon efforts to operationalise MIRV technology increased by more than four-fold the number of re-entry vehicles in the arsenal of the US strategic forces, easily providing the capability of overcoming the Soviets' first-generation ABM system. As well as countering the ABM, MIRV technology, which the USSR had also begun to implement in the early 1970s, served to heighten the threat of counterforce: that is, the ability to strike directly at the enemy's nuclear forces. This proved, theoretically, a dangerously destabilising influence by offering hope that a pre-emptive first strike might destroy the bulk of the opponent's strategic forces (Terrieff 1995).¹⁸

In the short term, such a prospect underscored the crucial importance of the submarine arm of the American Triad and also led logically to efforts to develop hardened missile silos and a mobile land-based system. In the long term, however, it once again revealed the unique pitfalls in pursuing superiority in nuclear weapons. As Churchill had foreshadowed in 1955, the paradox of the nuclear age was that safety did not lie in superiority; it lay in a balance of terror. Ironically, mutual vulnerability held the best hope of mutual survival. As the Nixon administration began to recognise this, it became the central precept of the MAD doctrine. By guaranteeing the possibility of retaliation in kind, it appeared that deterrence was given its best hope of working.

Even the most significant of the arms control measures successfully pursued by the Nixon administration, the Strategic Arms Limitation Talks (SALT), was designed to preserve what had become the central principle of deterrence: mutual vulnerability. But in the shadow of both Vietnam and the Watergate scandal, the Nixon and Ford administrations lost much of their momentum towards nuclear issues. Nevertheless, the advent of US-USSR strategic parity provided new challenges to Flexible Response that needed to be addressed. Consequently, Secretary of Defense James R. Schlesinger supervised a comprehensive review of the US defence posture that culminated in the Schlesinger Doctrine. Designed primarily to balance Warsaw Pact capabilities, in essence it was a refined version of Flexible Response in that it sought to retaliate with forces commensurate to the threat and to add more control over the escalation process. The key to this was enhancing the usability of tactical nuclear weapons in order to be capable of employing nuclear options at various levels of conflict. Accordingly, the Schlesinger Doctrine provided a balanced, three-part force structure: conventional forces to deter and defend against conventional attacks; tactical nuclear weapons to counter tactical weapons; and strategic forces to counter strategic threats. In this way, a limited nuclear war came a step closer to being possible.

Jimmy Carter came to office pledging to pursue arms control with renewed vigour, but the times—and more importantly Congress—were against him. Moreover, when the Soviets invaded Afghanistan in December 1979 to shore up a puppet regime, Carter was forced to concede publicly that he had misjudged Soviet intentions (Dobrynin 1995:413–54). He reacted fiercely by deferring Senate consideration of SALT II and proposing a record-high peacetime military budget that was almost a 15 per cent increase over that of the previous year. More than half of this was earmarked for personnel and preparedness costs, with the rest scheduled for military force modernisation projects, including research on laser guns for space warfare.

With the atmosphere of crisis thus heightened, the administration of Ronald Reagan swept into office in January 1981 committed to the notion of restoring America's presumed

¹⁸ For the complicated web of issues then facing the foreign policy and defence establishments, see Nelson (1995:91–118).

margin of safety (superiority), in the process closing the nation's 'window of vulnerability', the potential for the USSR in the near future to neutralise the US ICBM force with enough in reserve to cause the President to pause in launching the doomsday reply (Snow 1981). The President's advisers remained persuaded beyond peradventure of doubt that the Soviet Union constituted a direct threat of military action of unprecedented proportions. Consequently, Reagan proceeded apace with the development of the B-1 bomber and the MX missile. More controversially, he also authorised serious development of the neutron bomb, an enhanced radiation weapon designed as the quintessential anti-personnel weapon that left non-living matter relatively untouched.

Subsequently, Reagan moved towards ambitious arms reduction agreements with the Soviets, but any stability in deterrence promised by START was seriously undermined by the paradox in Reagan's nuclear policy. On the one hand, the administration was pursuing significant arms control measures. On the other hand, however, Reagan was fanning a fully-fledged war scare that was manifesting itself in an escalation of the arms race. Two weeks after denouncing the Soviet Union as the 'evil empire' in March 1983, Reagan announced his intention to pursue an ambitious space-based anti-missile system, known formally as the Strategic Defense Initiative (SDI) but more informally as 'Star Wars' after the popular science-fiction movie series. Based largely on the ideas of the so-called 'father of the H-bomb', Edward Teller, SDI was designed to provide an impenetrable shield to cope with upwards of 5000 incoming missiles. But from the beginning the program was hampered by more than philosophical qualms. There was vigorous debate among scientists and other experts on whether such an idea was even possible, a debate not unlike that which had been provoked by President Truman's decision to develop the H-bomb over 30 years earlier. Nevertheless, recognising the tremendous pressure it would place on the Soviet Union along with the chance for opening a significant technological lead, Reagan proceeded with the program at the same time as pursuing the first meaningful reductions in nuclear forces.

Dismantling the 'Infrastructure of Fear'

By the end of the decade the process of reducing the American and Soviet nuclear arsenals had made limited headway; but it had begun. In November 1989 the Berlin Wall crumbled, triggering the process towards German reunification and the disintegration of the Soviet bloc (Garthoff 1994; Zelikow and Rice 1995; Gaddis 1992). In the midst of this political turmoil, in July 1991 the arms reduction process begun by Reagan 9 years earlier finally resulted in a treaty. When George Bush entered office in 1988 he had hoped—and from all predictions with justification—to wrap up the START treaty, which was then largely complete, and then move onto more ambitious efforts, but agreement was not to be reached so easily. This was partly due to technical disputes, but the negotiations also fell victim to political factors such as a surge in the military's influence in the Kremlin and the Bush administration's efforts to reduce its military commitment to Europe by concluding the Conventional Forces in Europe (CFE) Treaty (Dean and Forsberg 1992:76–121). The process was further complicated by a global shift in priorities. The new, ostensibly cooperative superpower relationship created a paradox: while arms control treaties appeared easier to negotiate, they also appeared less urgent. Consequently, by the time that START was being finalised, arms control was no longer the centrepiece of East–West relations. Rather, attention was being diverted to other so-called 'transnational problems' such as human rights and drug trafficking.

At the same time, defence analysts were forced to take a new look at the very foundations of deterrence in the light of the tremendous changes provoked by the end of the Cold War. Instinctively, the end of the Cold War and the fracturing of the USSR were seen by many US strategic planners as a blessing, largely because it would diminish the size of an attack the United States could potentially face. But if, as a result of arms reductions and the collapse

of the communist bloc, nuclear annihilation somehow seemed more distant on an instinctive level, defence analysts were quick to point out that the political disintegration of the arch-enemy posed its own new nuclear dangers. This was largely because, along with the end of the Cold War, came the collapse of Churchill's 'process of sublime irony'. The balance that deterrence depended upon was now a severe imbalance. Moreover, the effectiveness of command and control over many of those nuclear weapons already in existence became cause for serious concern (Bush and Scowcroft 1998:542–7; Arbatov 1998:83–134).

With the signature of START the traditional ambiguity which had served the nuclear deterrent—albeit uncomfortably—was rejected. As Gorbachev described it, this was nothing less than a revolution in strategic thinking; no longer should the deterrent to war be the threat of war. 'Our next goal', he said, 'is to make full use of this breakthrough to make disarmament an irreversible process ... Normal human thinking will have to replace the kind of militarised political thinking that has taken root in the minds of mind' and that 'doctrines of war-fighting must be abandoned in favour of concepts of preventing war'. START, he claimed, was an important part of a process of 'dismantling the infrastructure of fear that has ruled the world'.¹⁹

Dismantling that infrastructure, however, revealed new challenges to maintaining the peace. That infrastructure of deterrence had, after all, been carefully built in a sporadic yet intense process over the preceding four and a half decades in order to guarantee the peace. The result, the 'long peace' in one observer's words, had thrived and perhaps even depended on that infrastructure; dismantling it would be no easy task. Even START, the much-promised light at the end of the tunnel, appeared dated as soon as it was signed due to its long gestation period. Accordingly, in the wake of START, Washington and Moscow engaged in a show of one-upmanship that one White House official referred to as 'a nuclear poker game, with world safety as the jackpot'. Relying on a growing sense of White House–Kremlin cooperation, the Bush administration devised a proposal to combine negotiable bilateral elements with sweeping unilateral moves. While still quietly pushing ahead with a modified SDI program, Bush challenged the Russians 'to go down this road with us', asserting that 'an unparalleled opportunity' existed for further arms reductions (Bush and Scowcroft 1998:544–7). Secretary of Defense Dick Cheney hailed the Bush administration's initiative as one that would 'fundamentally change the nuclear landscape in the world'. Similarly, Chairman of the Joint Chiefs of Staff General Colin Powell lauded the move that would pave the way for both East and West 'to step down the thermonuclear ladder after some 40 years'.²⁰

When Bill Clinton assumed the presidency, he expected to focus his attention on that part of governance with which his political career had been most concerned, namely domestic policy. It was not long, however, before he was forced to face up to the reality that US military power was shrinking at the same time that US commitments were growing; and indeed, he found that he was initially able to capitalise on the absence of a consensus as to the scale of weapons reductions to further his domestic economic programs (Bowen and Dunn 1996:61). But as the defence forces began to look beyond containment it became readily apparent that the threats to US security had not faded away—they had changed. Rather than giving way to a time of peace and stability as many had hoped, the end of the Cold War paved the way for instability and the surfacing of regional issues that had long been suppressed during the Cold War and introduced other, non-traditional threats (Trulock

¹⁹ Gorbachev's comments at the signing of the START Treaty, 31 July 1991, Moscow, Associated Press. See also Gorbachev (1996:423–5).

²⁰ Colin Powell's comments at the downgrading of alert status of the SAC, 28 September 1991, Washington, UPI.

1991:19–39). For the immediate future Clinton pressed ahead with the arms control agenda he had inherited, specifically the recently-signed START II Treaty that took the nuclear arsenals to approximately a third of their size at the height of the Cold War and eliminated the most potent remaining first-strike weapons, the MIRVed ICBMs. But START II was held for political ransom in the United States by Chairman of the Senate Foreign Relations Committee Jesse Helms and by the Russian Parliament, which concluded that the treaty was one of the few major diplomatic levers it had available.

Nevertheless, the Clinton administration pressed ahead with its efforts to align nuclear policy with new circumstances. In late 1993 it announced a new use of the term ‘deterrence’. Rather than deterring only the *use* of nuclear weapons, the United States now turned its attention to deterring the *acquisition* of atomic technology and materials. A wide-ranging and thorough ‘Bottom Up Review’ conducted by the Pentagon during 1993 identified four key threats to US national security. Foremost among them was the increased threat of proliferation of nuclear weapons and other weapons of mass destruction (WMD). By employing significant military and economic disincentives the administration hoped to neutralise some of the chief threats to stability such as North Korea, Iraq, Libya, and the new Commonwealth of Independent States (CIS) who emerged with ex-Soviet warheads on their soil. Yet there remained impediments: any number of other smaller states might acquire at least one bomb, and the India–Pakistan rivalry threatened to trigger a full-blown arms race in Asia.

But the central thrust of US nuclear policy was guarding against a resurgent Russia. Boris Yeltsin’s token gesture of re-targeting Russian ICBMs away from American cities brought small comfort to the Pentagon which continued to regard Russia as the primary potential threat to US interests, although this was now complicated by threats brought about by the consequences of the Russian political and economic upheaval rather than necessarily a direct military threat. Yeltsin’s market reforms were weak from the outset, and the Pentagon looked to the military threat posed by a governmental collapse, which seemed entirely possible in the wake of the 1991 Soviet coup. In such a situation, command and control measures over the Russian nuclear stockpile would be thrown into chaos. And, of course, there was the perennial fear that hard-line communist forces could regain control in Moscow and would presumably target ‘US imperialism’ with a vengeance. Even less appealing was the prospect that one CIS state might fire it against another CIS state. As one *New York Times* columnist put it only partly in jest, ‘if one of the dissident republics got control of an ICBM, it might more likely fire it at the Kremlin than the United States’.²¹ But the primary threat emanating from the situation in the former Soviet Union was identified by the Pentagon as being the threat of weapons proliferation. Whether a cash-strapped military complex might look to liquidate its assets or the compromising of security measures allowed theft, the threat to US interests was acute (Bowen and Dunn 1996:115–46).

In an effort to counter these threats, the United States developed a new nuclear doctrine, announcing in September 1994 that it was formally replacing the MAD doctrine with a policy of Mutual Assured Safety (MAS), aimed primarily at Russia. This served a dual purpose: firstly, to provide leadership for continuing reductions in nuclear weapons; and secondly, to provide a hedge against a reversal of the reform process in Russia. Although it remained unlikely that Russia’s weak economy could rebuild a conventional force of the magnitude that it had sustained during the Cold War, US defence planners reasoned with much justification that it would be considerably less time-consuming and less expensive for any radical elements that might seize power in the Kremlin to reverse its existing nuclear weapons policy and rebuild warheads. Certainly the technology, experience and infrastructure

²¹ *New York Times*, 29 August 1991.

were there. But through MAS, Washington sought to make such a process more difficult—or, ideally impossible—by making Russia's nuclear inferiority irreversible.

In November 1997, Clinton issued a Presidential Decision Directive describing in general terms the purposes of US nuclear weapons and providing broad guidance for developing operational plans, the first such presidential directive on the actual employment of nuclear weapons since the Carter administration. It was notable in that Washington finally abandoned the Cold War tenet that it must be prepared to fight a protracted nuclear war. The directive also noted that nuclear weapons played a smaller role in the US security posture than at any other point during the second half of the twentieth century, but that they were still a vital part of US efforts to hedge against an uncertain future. For those who believed that deterrence was a thing of the past, Clinton's directive served as a sharp reminder that things had not changed that much. In words still ringing from the height of the Cold War, Clinton declared:

Deterrence is predicated on ensuring that potential adversaries accept that any use of nuclear weapons against the United States or its allies would not succeed. ... A wide range of nuclear retaliatory options are required to ensure that the United States is not left with an all-or-nothing response. ... The United States will retain sufficient ambiguity of use that an adversary could never be sure that the United States would not launch a counter-attack before the adversary's weapons arrive.

At the same time, Secretary of Defense William Cohen wondered aloud whether a smaller nuclear force made it a more attractive target and deliberately cultivated the ambiguity upon which deterrence rested.²²

What appears on the surface to be reactionary military thought is largely a result of the wide recognition in US defence circles that guarding against potential threats is often much harder than against visible threats, partly because it is difficult to justify publicly. But it is also more difficult because, as William Kaufman pointed out over 40 years ago, 'we must know specifically who the opponent is in order to make our policy meaningful to him' (Kaufman 1956:18). For this reason, the fundamental issue of identifying the threat necessarily continues to consume a considerable component of US defence efforts. Thus the situation at the beginning of the twenty-first century poses a difficult challenge for those who must manage the world's largest and most technologically advanced nuclear arsenal. In the fractured post-Cold War world new political and military environments exist that, at least on the surface, appear to render traditional deterrence theory obsolete. The integrity of the nuclear deterrent is no longer based on a retaliation of massive proportions, and nuclear weapons are designated primarily, if not exclusively, for retaliating against a nuclear attack. Moreover, the US strategic arsenal is no longer on hair-trigger. That much has changed, but if nuclear weapons cannot ever be completely eliminated, as one suspects, then 54 years of experimentation in deterrence should not be ignored. As Brodie predicted in 1946, the primary role of nuclear weapons remains deterrence, not use, and for all its shortcomings, the strategic doctrine of the nuclear age has so far contributed to the overall peace. The challenge now is to apply the experiences garnered to maintaining the integrity of the deterrent, even in the face of others who might potentially employ some of what has been learned already in the nuclear age, and to do this without taking another step up the nuclear ladder.

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²² *New York Times*, 7 December 1997; *Washington Post*, 14 December 1997; Rosenfeld (1997).

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