



House of Commons Defence Committee

The Future of the UK's Strategic Nuclear Deterrent: the Strategic Context

Eighth Report of Session 2005–06

Report, together with formal minutes, oral and written evidence

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The Defence Committee

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Summary

Decisions on the future of the UK's strategic nuclear deterrent are likely to be required during the course of the current Parliament. The Government has promised a free and open debate on the issue before any decisions are taken. To date, it has offered no explanation of the nature of the decisions that are required. Nor has it sought to clarify the timetable within which those decisions would need to be taken and implemented. This report seeks to encourage and inform the public debate by examining the strategic context and timetable for decision-making.

Decisions on the future of the nuclear deterrent will be taken, for the first time, outside the international political and military context of the Cold War. The ending of that conflict transformed our security environment and changed our security needs.

The UK will need to examine whether nuclear deterrence remains relevant in the current strategic environment. We must take into account the nature of the threats currently facing our country and examine how those threats could evolve over the lifetime of any potential Trident successor. And we must consider whether, and in what ways, retention of a strategic nuclear deterrent capability might assist the UK in addressing those threats.

Before any decisions on the future of that deterrent are made, it will be important to address the extent to which the possession of nuclear weapons enhances the UK's international influence and status and whether such a reason adds significantly to the justification for retention of a strategic nuclear capability.

It will also be essential to decide what level of dependence upon the United States the UK is willing to accept in any possible Trident successor. We must consider the potential policy implications of any technical dependencies upon the US and the differing concepts of independence adopted by the UK and France.

We welcome the Government's promise of a full and open debate in Parliament, and in the country at large, on the future of the UK's strategic nuclear deterrent. But the Ministry of Defence has refused to participate in our inquiry. We are surprised and disappointed by this refusal.

A genuine and meaningful debate is only possible with the active participation of the Ministry of Defence (MoD). The public should know what decisions will be required, when they must be taken and implemented, and what factors are driving consideration of the issue now. We call upon the MoD to engage fully in our forthcoming inquiries into the future of the UK's strategic nuclear deterrent. We hope the MoD will make a substantive response to this report and that it will address openly the issues we have raised.

1 Introduction

Our inquiry

1. The United Kingdom's strategic nuclear deterrent is based on the Trident weapons system. Trident was introduced into service in the UK over a six year period beginning in December 1994 and has a projected life span of up to 30 years. Given the lengthy procurement process for large-scale defence equipment projects, the Government has stated that decisions on the future of the UK's strategic nuclear deterrent are likely to be required at some stage during the current Parliament, that is by May 2010 at the latest.¹
2. After the Committee's first meeting, on 21 July 2005, we announced that we had noted the extensive public interest in the future of the UK's strategic nuclear deterrent and that we would consider how best to respond to this interest. On 20 January 2006, we announced that we would conduct a series of inquiries into the future of the UK's strategic nuclear deterrent over the course of this Parliament. Our intention is to encourage and inform the public debate on the future of the deterrent and to highlight the key issues and questions to be addressed in that debate. Through our series of inquiries, we do not seek to offer prescriptive policy recommendations. Instead, we hope to foster constructive public engagement with an issue of profound national and international significance.
3. Our first inquiry has focused on the strategic context and timetable for decision-making. We have considered the nature of the UK's current strategic nuclear deterrent and how it compares with those of the other established nuclear powers. We have looked at the threats which the UK's strategic nuclear deterrent is currently intended to combat and how this context might change over the next two decades. We have examined what other states and organisations could develop nuclear weapons capabilities in the 2025 to 2050 timeframe, and how this might affect the strategic context in which decisions on the UK deterrent will be made. And we have sought to clarify the timetable within which these decisions will have to be taken and implemented.
4. We took oral evidence at Westminster from representatives of defence think tanks, universities, campaign and lobbying groups, technical experts and representatives of the defence industry. We received a very large body of written submissions from a wide range of interested parties and experts, including universities, Non-Governmental Organisations (NGOs), defence contractors, trade unions, and religious groups, as well as from individual members of the public.² We had informal discussions on the future of the strategic nuclear deterrent with members of the US Administration and US Congress during a visit to Washington DC in May 2006. We are grateful to all those who provided oral and written evidence to our inquiry. We also appreciate the assistance provided by our specialist advisers: Mr Paul Beaver, Professor Michael Clarke, Rear Admiral Richard Cobbold, Professor David Kirkpatrick, Air Vice Marshal Professor Tony Mason and Brigadier Austin Thorp.

¹ Ministry of Defence, *Delivering Security in a Changing World: Defence White Paper*, December 2003, Cm 6041-I, p 9

² A list of those who provided oral and written evidence is on pp 42–45

The engagement of the Ministry of Defence

5. The Prime Minister and the Secretary of State for Defence have both stated that no decisions on the future of the UK's strategic nuclear deterrent have yet been taken and have each promised an open debate in Parliament, and in the country, on any potential Trident successor. In June 2005, the Prime Minister told the House of Commons that the Government "will listen to Honourable Members before making any decisions on replacing Trident".³ In September 2005, the then Secretary of State for Defence, Rt Hon Dr John Reid MP, stated that "it is not only a good thing that there will be such a discussion, it is...inevitable" and pledged, "we are not going to have a secret Chevaline-like decision taken by some of the cabinet which then proceeds without any public discussion or debate".⁴

6. In evidence to us on 1 November 2005, Dr Reid said that:

It is not absolutely essential that you have a cross party consensus but in my view that would be desirable. It is also be desirable with any such important issues that there is the maximum information and consensus across the public as well as across Parliament.⁵

7. In evidence to the Liaison Committee on 7 February 2006, the Prime Minister stated that "there will be the fullest possible Parliamentary debate". He stated that the decision on the future of the UK's strategic nuclear deterrent "is a huge decision for the country and it will probably be done in a far more open way than decisions have been taken before".⁶

8. In July 2005, we asked the Ministry of Defence (MoD) to give us by the end of September a memorandum explaining what work it and other government departments were doing to inform the decision on the future of the UK's strategic nuclear deterrent; when more precisely the decision was expected to be made; what constraints the UK was under in making this decision; what options for replacement were under consideration and what estimates had been made of their costs; and which specific elements of the nuclear deterrent would require replacing and upgrading and by what dates.⁷

9. In September 2005, the MoD responded to this request, stating that:

No decisions on any replacement for the Trident system have been taken, either in principle or detail. Whilst some decisions are likely to be necessary in the current Parliament, they are still some way off. Indeed Ministers have not yet begun to consider the range of options that might be available. Whilst work has started in Government to begin the process of preparing for future Ministerial decisions, this work by officials is still at a very early stage and no advice has been presented to Ministers. It will take a considerable time before this work generates a detailed

3 HC Deb, 29 June 2005, col 1292

4 *The Guardian*, 13 September 2005

5 Defence Committee, Minutes of Evidence, *Introductory Evidence Session with the Secretary of State for Defence*, HC 556-i, 1 November 2005, Q 5

6 Liaison Committee, *The Prime Minister: Oral and Written Evidence*, Tuesday 7 February 2006, HC 709-ii, March 2006, Ev 47

7 Ev 146

understanding of the relative costs and capabilities of different options. We shall let you have this information in due course, and will seek to be as open as possible.⁸

10. On 24 November 2005, we received a memorandum outlining some of the broad issues relating to the UK's current strategic nuclear deterrent: an assessment of the international legal constraints relating to a replacement of Trident; the expected life of the Trident system; and the investment at the Atomic Weapons Establishment.⁹ The MoD told us that it was not in a position to provide information on future deterrent systems: "Ministers have yet to begin to consider future deterrent options and it is likely to be some time before we can provide advice on the range of options that might be involved, including their costs".¹⁰ The MoD also declined to participate in an informal seminar we held on 13 December 2006 on the grounds that:

there is nothing further we could usefully say at this stage beyond the information that the Secretary of State gave to the Committee in evidence on 1 November and that which was contained in the memorandum sent to the Committee on 24 November.¹¹

11. When announcing this inquiry in January 2006, we published the MoD's memorandum on the internet in order to inform the public debate. We invited the MoD to give evidence to the inquiry, but it declined.¹² We later provided the MoD with the transcripts of the evidence received and invited it to make any comments on the evidence, or any corrections of fact. It thanked us, but said it had no comments to make.¹³

12. We welcome the Government's promise of a full and open debate in Parliament, and in the country at large, on the future of the UK's strategic nuclear deterrent. We are surprised and disappointed that the Ministry of Defence has refused to participate in our inquiry. We believe that a genuine and meaningful debate is only possible with the active participation of the MoD. We call upon the MoD to engage fully in our forthcoming inquiries into the future of the UK's strategic nuclear deterrent. We hope the MoD will make a substantive response to this report and that it will address openly the issues we have raised.

8 Ev 147

9 Defence Committee, Memorandum submitted by the Ministry of Defence, *The Future of the UK's Strategic Nuclear Deterrent*, Session 2005–06, HC 835

10 Ev 147

11 *Ibid.*

12 By email of 8 February 2006

13 By email of 10 May 2006

2 The UK's Strategic Nuclear Deterrent

Components of the UK's Strategic Nuclear Deterrent

13. The Trident weapons system is the UK's third generation strategic nuclear deterrent and was developed during the final decade of the Cold War. It was introduced into service over a six year period beginning in December 1994 and is currently the UK's sole nuclear weapons system.

14. The UK's Trident system has three key technical components: the platform; the missile; and the warhead.

The platform

15. The platform for the UK's current strategic nuclear deterrent is the Vanguard-class nuclear-powered submarine (SSBN). The UK has four of these submarines—HMS VANGUARD, HMS VICTORIOUS, HMS VIGILANT, HMS VENGEANCE. These entered service in December 1994, December 1995, June 1998 and February 2001 respectively.¹⁴

16. All four submarines were designed and built in the UK by Vickers Shipbuilding and Engineering Ltd. (VSEL), now BAE Systems, in Barrow-in-Furness, Cumbria.¹⁵

17. Each submarine weighs approximately 16,000 tonnes, is 150 metres in length, is powered by a Rolls Royce PWR2 nuclear reactor, and has 16 independently-controlled missile tubes which house the Trident II D5 missiles.¹⁶

18. Each of the Vanguard-class submarines has a projected service life of up to 30 years.¹⁷

The missile

19. The Trident II D5 submarine-launched ballistic missile (SLBM) carried on the UK's Vanguard-class submarines is a three-stage solid-fuel inertially guided rocket. Each missile is approximately 13 metres in length, nearly 2 metres in diameter, and weighs 60 tonnes. It has a range of between 6,500 kilometres and 12,000 kilometres, dependent on payload, and is accurate to within a few metres.¹⁸

20. Each missile is capable of carrying 12 warheads, which means that each Vanguard-class submarine is capable of carrying up to 192 warheads. Following the 1998 Strategic Defence Review, the number of warheads per Trident II D5 missile was limited to 3 warheads (and 48 warheads in total per submarine). Each missile has a MIRV (multiple independently-

14 Stockholm International Peace Research Institute, *SIPRI Yearbook 2000*, (Oxford 2000), p 486

15 Michael Clarke, "Does my Bomb look big in this?", *International Affairs*, vol 80, no 1, (2004), p 50

16 *Ibid.*

17 Ministry of Defence, *The Strategic Defence Review*, Cm 3999, July 1998, p 17

18 Stockholm International Peace Research Institute, *SIPRI Yearbook 2005*, (Oxford 2005) p 589

targetable re-entry vehicle) capability which enables each Trident missile to engage multiple targets simultaneously.¹⁹

21. The Trident II D5 missile was designed and manufactured in the United States by Lockheed Martin. Under the Polaris Sales Agreement (modified for Trident), the UK has title to 58 missiles. Aside from those currently deployed, the missiles are held in a communal pool at the US Strategic Weapons facility at King's Bay, Georgia, USA. Maintenance and in-service support of the missiles is undertaken at periodic intervals at King's Bay, normally after a submarine has been through refit.²⁰

The warhead

22. The nuclear warhead fitted to the tip of the Trident II D5 missile was designed and manufactured in the UK at the Atomic Weapons Establishment at Aldermaston, Berkshire. Although public information is limited, the nuclear warhead on UK's Trident II D5 missile is reported to be closely related to the American W76 warhead, a thermonuclear warhead with a yield of around 100 kilotons.²¹

23. During our visit to the United States in May 2006, we heard that the US and UK collaborated closely on nuclear weapons and that there was a rich flow of nuclear ideas between the US and the UK. We were also told that the fiftieth anniversary of the 1958 Mutual Defence Agreement, which formalised this cooperation, would be a cause for both pride and celebration.

Onshore infrastructure and skills base

24. The UK's Trident system is underpinned by a range of supporting industrial and manufacturing infrastructure.

25. **The submarine basing infrastructure:** The Naval Base at Faslane, Strathclyde, is home to the UK's Trident submarine force. It has a staff of over 7,000 and is also home to conventionally-armed submarines. The nuclear warheads carried onboard the Vanguard-class SSBN submarines are stored and fitted to the UK's Trident II D5 missiles at the Royal Naval Armaments Depot at Coulport, near Faslane.

26. **The onshore submarine construction and maintenance infrastructure:** This comprises the building yard at Barrow-in-Furness, Cumbria, owned by BAE Systems, and the operational and refit and support site at Devonport, Plymouth, owed by DML (a consortium of which fifty-one per cent is owned by the US firm Halliburton). This part of the defence industrial base is characterised by its need for a highly specialised and skilled workforce and large-scale purpose-built physical infrastructure. Together, these requirements are present at all stages of the nuclear-powered submarine's life, from concept design through to operation, maintenance and disposal and carry significant levels

19 Stockholm International Peace Research Institute, *SIPRI Yearbook 2005*, (Oxford 2005) p 589

20 *Ibid.*

21 Michael Clarke, "Does my Bomb look big in this?", *International Affairs*, vol 80, no. 1, (2004) p 37

of fixed cost that have to be incurred if key capabilities are to be retained. Once lost, these capabilities are likely to be very difficult and potentially expensive to recreate.²²

27. The warhead research and manufacturing infrastructure: The UK's expertise in nuclear weapons design is concentrated at the Atomic Weapons Establishment at Aldermaston, Berkshire. AWE is a 'Government Owned Contractor Operated' (GOCO) facility. It is managed by a consortium, in which a third of the shares are held by the US firm Lockheed Martin. The role of AWE is to build, maintain and certify the existing weapons stockpile, as well as to ensure good stewardship of nuclear weapons knowledge. Prior to the MoD's current investment programme at Aldermaston (announced in July 2005), the AWE's workforce was around one-third of its peak Cold War levels. The MoD has stated that this funding is designed to ensure the UK skills base and manufacturing infrastructure in nuclear weapons is maintained until a decision on the future of the nuclear deterrent is taken.²³

The UK's nuclear posture

The UK's strategic nuclear arsenal 1952 to 1991

28. The UK first tested a nuclear device in October 1952. It deployed an operational nuclear weapons capability the following year. Initially, the UK's nuclear deterrent rested on the 10 kiloton Blue Danube free-fall bomb, carried by the V bombers of the Royal Air Force's strategic bomber force. The UK tested a thermonuclear device in 1957, and an operational thermonuclear weapon entered service in 1961.²⁴

29. In 1958 the UK and USA concluded the "Mutual Agreement for Co-operation on the Uses of Atomic Energy for Mutual Defence Purposes". The Agreement, which has long been regarded as the cornerstone of the UK's nuclear weapons programme, enables exchanges of technical information and allows the UK to draw on US warhead designs, although final responsibility for building and maintaining the warheads remains with the Atomic Weapons Establishment.

30. During the 1950s, the UK and USA were also involved in a joint project to develop the Skybolt air-launched nuclear missile, which the UK regarded as the central component of its future nuclear force. In 1962, the US Kennedy Administration cancelled the project. Later that year, the UK agreed to procure the Polaris submarine-launched missile system which entered service in the late 1960s.

31. The Polaris system comprised four Resolution-class SSBN submarines, each armed with 16 Polaris missiles. Like the current Vanguard-boats, the submarines were designed and built in the UK, albeit with initial assistance from the US in designing the nuclear propulsion system. The missiles themselves, like the current Trident II D5 missiles, were purchased from the United States. The warheads were designed and built in the UK with US collaboration. The UK subsequently developed a new version of Polaris, known as Polaris Chevaline, which could better penetrate Soviet defences.

22 Ev 143

23 HC (2005–06) 835, Annex C

24 Library Standard Note, SN/1A/3706, House of Commons Library, April 2006, p 4

32. By the final decade of the Cold War, the UK's strategic nuclear deterrent had three main elements: strategic, sub-strategic and tactical. Polaris Chevaline served in the strategic role for use against multiple targets in the adversary's homeland. The sub-strategic role for a more limited strike against individual targets on enemy territory was fulfilled by the WE 177 free-fall bomb carried by the RAF's Vulcan and Tornado aircraft. Lower yield WE 177 devices served in the tactical role for use against enemy troops and equipment on the battlefield. American tactical nuclear warheads were deployed on heavy artillery and short-range Lance missiles under a US-UK dual-key arrangement.²⁵

Reductions in the UK's strategic nuclear arsenal 1991 to 1998

33. Following the end of the Cold War and the collapse of the Soviet Union in 1991, the UK Government withdrew from service a range of nuclear weapons, including the US tactical nuclear warheads mounted on heavy artillery and the Lance system and the Royal Air Force's sub-strategic air-launched nuclear weapons (the WE 177 free-fall nuclear bombs).

34. Completed in 1998, these reductions left Trident, which replaced Polaris Chevaline in 1994, as the UK's sole nuclear weapons system. The total warhead stockpile was reduced by 20 per cent and the number of operationally available warheads fell from around 400 during the 1980s to under 300 with the result that the explosive power of the UK's nuclear deterrent fell by an estimated 40 per cent of the megatonnage available during the 1970s.²⁶

The 1998 Strategic Defence Review

35. The 1998 Strategic Defence Review (SDR) promised "a rigorous re-examination of [the UK's] deterrence requirements". It sought to define a deterrence posture based upon:

the minimum necessary to deter any threat to our vital interests... we can safely make further significant reductions from Cold War levels, both in the number of weapons and in our day-to-day operating posture.²⁷

36. As a result of the SDR, the number of operationally available warheads was reduced by one third, from around 300 to under 200, whilst the number of warheads carried on each Trident submarine was reduced by half, from 96 to 48. As a result of these reductions, the Government estimated that the explosive power of the UK's nuclear deterrent would be 70% less than that of the operationally available warheads held during the 1970s.²⁸

37. The SDR also defined the 'operating posture' of the UK's strategic nuclear deterrent, clarifying both the technical specification and policy baseline for that deterrent.

38. **A Minimum Nuclear Deterrent Force:** The SDR prescribed further limitations on the maximum number of warheads to be deployed on each of the UK's Vanguard-class submarines. Although each Trident II D5 missile is capable of carrying up to 12 warheads,

25 Library Standard Note, SN/1A/3706, House of Commons Library, April 2006, p 4

26 Ministry of Defence, *The Strategic Defence Review*, Cm 3999, July 1998, p 18

27 *Ibid.*

28 *Ibid.*

the SDR stipulated that no more than 3 warheads would be fitted to each missile.²⁹ Some missiles are believed to carry a single warhead and the warheads themselves are believed to be of variable yields. The precise number of warheads carried on patrol at any given time remains classified information.³⁰

39. The Continuous-at-Sea Deterrent Cycle (CASD): The SDR stated that the UK would maintain continuous at-sea deterrent patrols. This meant that one of the four Vanguard-class Trident submarines would continue to be on patrol at any given time. The SDR stated that the purpose of CASD was “to avoid misunderstanding or escalation if a Trident submarine were to sail during a period of crisis”.³¹ By keeping one submarine on patrol at all times, the UK avoids the risk of sending incorrect or misleading signals to a potential adversary at times of heightened alert.

40. ‘De-targeting’ and ‘State of Readiness’: The SDR stated that the Trident missiles aboard the Vanguard-class submarines would not be targeted and would normally be at several days ‘notice to fire’. However, the SDR also noted that “we will... ensure that we can restore a higher state of alert should this become necessary at any time”.³² In the course of our inquiry, we were told that targeting the missiles does not take very long. Although some sub-systems aboard the submarines, such as the navigation sub-system, might take time to reach their accuracy levels, Commodore Tim Hare, a former Director of Nuclear Policy at the MoD, told us that “political rather than technical issues” explained the extended notice-to-fire of the UK’s Trident system.³³ Dr Rebecca Johnson, of the Acronym Institute for Disarmament Diplomacy, argued that both de-targeting and the reduced state of readiness were essentially meaningless since they could be easily overridden.³⁴

41. A sub-strategic role: The SDR also defined a sub-strategic role for the Trident nuclear deterrent alongside its principal strategic function. It stated:

The credibility of deterrence also depends upon retaining an option for a limited strike that would not automatically lead to a full scale nuclear exchange. Unlike Polaris and Chevaline, Trident must also be capable of performing this ‘sub-strategic’ role.³⁵

In comparison with a strategic strike, which would involve a full-scale attack against an adversary in which all or a significant part of the available Trident force would be launched, a sub-strategic strike would involve the launch of one or a limited number of missiles against an adversary as a means of conveying a political message, warning or demonstration of resolve. Commodore Hare told us that this sub-strategic role “offers the Government of the day an extra option in the escalatory process before it goes for an all-out strategic strike which would deliver unacceptable damage to a potential adversary”.³⁶

29 Ministry of Defence, *The Strategic Defence Review*, Cm 3999, July 1998, p 19

30 *Ibid.*

31 *Ibid.*

32 *Ibid.*

33 Q 148

34 Q 6

35 Cm 3999, July 1998, p 18

36 Q 149

Although the Government has revealed little information about the precise number and yield of UK warheads, it is widely believed that Trident missiles intended for this sub-strategic role carry only a single warhead, potentially with a significantly reduced yield.

42. It is important not to confuse this sub-strategic role with a tactical role. Trident is not designed or intended to fulfil a tactical role on the battlefield.³⁷

43. During our visit to the United States, we heard that the US was considering modifying its Trident system to allow its submarines to carry conventional weapons. In early 2006, the Pentagon proposed a \$503 million Conventional Trident Modernisation Programme in order to diversify its strategic options. This programme, currently under consideration in the Congress, has generated much controversy because of concern that the launch of a conventionally-armed Trident missile could be mistaken for a nuclear attack. We know of no plans for the UK to follow the US lead in developing a conventional role for its Trident force.

44. The UK's nuclear forces are formally committed to NATO's nuclear posture.³⁸ During the Cold War they were part of the United States's Single Integrated Operational Plan which included all NATO nuclear forces, other than those of France, and provided continuous, integrated targeting for all such forces. Since UK nuclear forces were formally de-targeted, this no longer applies in the same way, but the presumption remains that UK forces would cover NATO designated targets. The right and the capacity to fire the UK's missiles independently at targets designated by the UK Government is a derogation from the default setting that the UK's nuclear forces remain at the service of NATO.

The UK's Strategic Nuclear Deterrent in a comparative international context

45. **The UK's strategic nuclear arsenal is small in comparison with the other established nuclear powers.** Its total stockpile of approximately 185 nuclear warheads represents 1.4% of the total number (13,470) in the world and only just 1.5% of the world total of strategic nuclear warheads (12,193). The United States, Russia, China, France and Israel each possess more warheads than the UK. Only India, Pakistan and North Korea have significantly fewer.³⁹

46. The USA is believed to have approximately 4,216 strategic and 680 non-strategic nuclear warheads in its active inventory, with a further 5,454 additional warheads held in reserve or in inactive stockpiles, some of which will be dismantled in the coming years. By 2012, it is estimated that the total US stockpile will number approximately 5,945 warheads. Russia is estimated to have around 16,000 intact warheads, down from around 35,000 at the end of the Soviet era in 1991. Of these 16,000, 7,360 are operational, with 3,980 being strategic warheads and 3,380 non-strategic. The remainder of the stockpile may be officially retired and awaiting disassembly, or in short- or long-term storage. Dismantlement of Russian warheads is believed to be proceeding at the rate of 1,000 to

³⁷ *Ibid.*

³⁸ Ev 133

³⁹ International Institute of Strategic Studies, *The Military Balance* 2003–2004 (Oxford 2003) p 228

2,000 a year. China is estimated to hold around 400 nuclear warheads, of which 282 are thought to be strategic warheads and 120 non-strategic. France is estimated to have 348 warheads, all of which are believed to be strategic warheads.⁴⁰

47. The UK has abandoned the concept of the nuclear triad, where weapons are deployed by air, land and sea. In contrast, the United States, Russia and China all have powerful systems in all three areas. So too does Israel. India and Pakistan have two legs of a potential triad; air-based and land-based systems. India is expected to have a full triad by around 2007–08.⁴¹

The purpose of the UK's Strategic Nuclear Deterrent

Original purpose

48. The UK's current strategic nuclear deterrent was developed in the international political and strategic context of the Cold War. Its central purpose, at the time of its procurement in the early 1980s, was to discourage aggression against the UK, its allies and its interests from the Soviet Union and the Warsaw Pact which "had both the perceived capability and assumed intention to expand into Western Europe and elsewhere".⁴² To contemporary decision-makers in the UK, the Cold War offered a compelling justification for the possession of a strategic nuclear deterrent to counter both the actual and developing Soviet military and political threat.

49. To discourage Soviet aggression, the UK's strategic nuclear deterrent had to be able to fulfil what was known as the 'Moscow criteria'—"the ability to threaten to inflict sufficient damage on Moscow and a number of other Soviet cities at any time of the day, 365 days of the year" and to be able to inflict such damage even after a surprise Soviet nuclear attack against the UK. It was assumed that the UK's nuclear deterrent could also help to compensate for the Warsaw Pact's large superiority in conventional forces.⁴³

50. Commentators have also suggested an additional rationale for the UK's strategic nuclear deterrent during the Cold War; that it was a means of influencing the foreign policy and military decision-making of its principal ally, the United States. We were told that "though retaining the ability to act, in extremis, alone, Britain's policy was to influence the ultimate guarantor of the country's political independence and physical survival".⁴⁴

Current purpose

51. The end of the Cold War and the collapse of the Soviet Union has radically altered the international political and strategic environment within which the UK's nuclear deterrent operates and has changed the nature of, and requirements for, strategic deterrence.

40 Stockholm International Peace Research Institute, *SIPRI Yearbook 2005*, (Oxford 2005) p 579

41 Michael Clarke, "Does my Bomb look big in this?", *International Affairs*, vol 80, no. 1, p 52

42 Ev 74

43 Ev 90

44 Ev 101

52. This raises the issue of what deterrence means, in practice, in the post-Cold War era. The Oxford English Dictionary defines the term deterrence as “discouragement by fear”. This is arguably what the UK’s strategic nuclear deterrent does: Trident is intended to discourage aggression by the fear of retaliation.

53. But Trident is not the UK’s only means of deterrence. Deterrence is “an extremely broad concept” and refers to “a whole range of instruments for the prevention of war, or the discouragement of aggression, some of which may not even be military”.⁴⁵ Deterrence can be exercised by a spectrum of options ranging from economic sanctions and robust diplomatic pressure to conventional military options and the threat of strategic nuclear retaliation.

54. Strategic nuclear deterrence is not intended as a means of countering all threats to the security of the UK. Rather, it is “on the right hand of the deterrence equation to be used in extremis when the survival of the nation state is at stake”.⁴⁶

55. In considering the future of the strategic nuclear deterrent, the UK will need to examine whether the concept of nuclear deterrence remains useful in the current strategic environment and in the context of the existing and emerging threats to the security of the country. We will have to consider whether those states and non-state actors posing such threats can, in reality, be deterred from instigating acts of aggression by either existing or new approaches to nuclear deterrence. We will also have to consider how the UK’s nuclear capability should be adjusted to meet new strategic realities. Trident was developed during the final decade of the Cold War, and was designed to counter the threat posed by the size and technical capabilities of the Soviet strategic nuclear arsenal: we need to consider whether the form of the UK’s current nuclear deterrent is best suited to today’s and tomorrow’s strategic challenges.

56. We believe that it is essential that, before making any decisions on the future of the strategic nuclear deterrent, the MoD should explain its understanding of the purpose and continuing relevance of nuclear deterrence now and over the lifetime of any potential Trident successor system.

⁴⁵ Q 13

⁴⁶ Q 149

3 The Strategic Nuclear Deterrent and the UK's international influence

57. Before any decisions on the future of the deterrent are made, it will be important to consider whether the possession of nuclear weapons enhances the UK's international influence and status and whether this contributes to the justification for retention of a strategic nuclear capability.

58. It has often been suggested that possession of a strategic nuclear deterrent is fundamental to the UK's international status, and that such a capability provides the UK with greater authority in international political organisations and structures, and enhanced status within Europe and in the world. It is said that it helped to maintain a political balance in Europe, that it acted as a safeguard against US disengagement from Europe, and that it provided a balance against global insecurity.⁴⁷

59. Dr Lee Willett, of the Royal United Services Institute, argued that eliminating the strategic nuclear deterrent would leave France as the only nuclear power in Europe and that, consequently, the UK could lose world status and influence, especially with the United States. We were also told that abandonment of the strategic nuclear deterrent would indicate that the UK intended to take on a different role in international affairs and occupy a different place in the world order.⁴⁸

60. In the course of our inquiry, several witnesses questioned the assumption that possession of a strategic nuclear deterrent enhances the UK's international influence. Sir Michael Quinlan, a former Permanent Under Secretary at the MoD, told us that he did not find the so-called 'seat at the top table' argument either persuasive or attractive. Although "our possession of nuclear weapons in a very general way gives us slightly greater confidence in the way we act around the world", he believed that the UK's permanent seat on the United Nations Security Council was not dependent upon, nor functionally linked to, the possession of a strategic nuclear deterrent capability. Sir Michael further suggested that:

it is rather a pity that we have the confluence between permanent membership of the Security Council and nuclear weapons status, because that does not seem to me logical, necessary or indeed politically desirable.⁴⁹

61. Other witnesses agreed with this contention. Dr Dominick Jenkins of Greenpeace told us that the UK would not lose its seat on the UN Security Council if it chose to give up its strategic nuclear deterrent.⁵⁰ Similarly, Malcolm Savidge of the Oxford Research Group, testified that the UK's membership of the Security Council "is based on our position in World War II" and that it was entirely "coincidental" that the Permanent Five became the established nuclear powers. We heard that, in discussions on the reform of the UN, there

⁴⁷ Ev 67

⁴⁸ Q 40 [Dr Willett], Ev 67

⁴⁹ Q 40 [Sir Michael Quinlan]

⁵⁰ Q 200

was no suggestion that India (a state which possesses nuclear weapons) would be favoured for permanent membership of the Security Council before Japan and Germany (neither of which possess nuclear weapons).⁵¹ Malcolm Savidge also argued that the UK gained no additional status or influence within the G8 or the EU because of its possession of nuclear weapons.⁵²

62. Others suggested that any attempt to link permanent membership of the UN Security Council to possession of nuclear weapons was potentially very dangerous. David Boucher, a former UK Permanent Representative at the UN Conference on Disarmament, told us that there was a widespread belief in the developing world that the UK possessed nuclear weapons in order to guarantee its seat on the Security Council. This erroneous perception, he said, risked fuelling further nuclear proliferation as developing nations sought to enhance their own international influence. For this reason, Mr Boucher claimed that the so-called 'seat at the top table' argument in favour of nuclear weapons was 'pernicious', reasoning that:

is it not better for us to establish that the reason we have a seat at the top table is because we are a powerful industrial nation with a great trading history and a great diplomatic history and we are a member of more international organisations than anyone else...I do not think you need to be waving the big stick in order to justify your seat at the top table.⁵³

63. Professor Colin Gray, of the University of Reading, disagreed with this contention and suggested that "it is an historical fact that members of the Security Council have been nuclear armed". He argued that "the notion that we can change that unilaterally... flies in the face of historical experience", and "to try and rewrite that would be very difficult and not very persuasive". Ultimately, in his view:

the diplomatic cost to Britain of abandoning her nuclear weapons would be very considerable and the case for Britain maintaining her position [in the world] would become very much more difficult if she does abandon her nuclear weapons.⁵⁴

64. Other witnesses took the opposing view, that far from enhancing its international influence, possession of nuclear weapons undermined the UK's prestige. Abandonment of the nuclear deterrent, they argued, would allow the UK to assume a leading role in international arms control agreements and thereby bolster the UK's long-term interests and status. Dan Plesch, of the School of Oriental and African Studies, argued that "this country would be looked on much more favourably if it did not have nuclear weapons" and "would be regarded as being much more modern".⁵⁵ Dr Kate Hudson, Director of the Campaign for Nuclear Disarmament, told us that:

there is an overwhelming demand from the vast majority of countries in the world for the nuclear weapons states to pursue their disarmament obligations, and the

⁵¹ Q 202

⁵² *Ibid.*

⁵³ Q 103

⁵⁴ Q 104

⁵⁵ Q 40 [Mr Plesch]

status and prestige which would associate with taking a step in that direction would be quite extraordinarily large.⁵⁶

65. It is clear that there is a difference of views and no clear consensus that international influence is, of itself, a reason to retain the strategic nuclear deterrent. We recommend that the MoD make clear whether the Government believes the possession of a nuclear deterrent is an important contributor to the UK's international influence.

4 The independence of the UK's Strategic Nuclear Deterrent

66. The public debate over the future of the UK's strategic nuclear deterrent should address:

- the independence of the UK's current system; and
- the operational and diplomatic impact of any potential dependency on the United States of any future UK nuclear deterrent.

67. We heard a range of conflicting opinions about the degree to which the UK's current strategic nuclear deterrent represented an independent system.

Potential dependencies on the United States

68. Some witnesses to our inquiry questioned whether the UK's nuclear deterrent was genuinely independent. Witnesses pointed to a range of technical and operational dependencies of the UK's Trident system upon the United States and suggested that such dependencies fundamentally detracted from the UK's independence at a international political and diplomatic level.

69. **The warhead:** Greenpeace told us that the UK warhead fitted to the Trident II D5 missile is a direct copy of the US W76 warhead; that the arming, fusing and firing system used by the UK was designed by the US Sandia Laboratory and was "almost certainly procured from the USA"; that the neutron generator used on UK warheads was manufactured in the USA and was acquired "off the shelf"; and that the re-entry body shell, which contains the warhead, was purchased by the UK from the United States.⁵⁷

70. **The missile:** Dan Plesch, of the School of Oriental and African Studies, told us that the Trident II D5 missile was designed and manufactured entirely in the United States; that the UK did not own its Trident missiles in any meaningful sense, that they were, in effect, leased from the United States and held in a communal pool at the US Strategic Weapons facility and were not identifiably British; that servicing of the missiles was conducted exclusively by the United States at King's Bay, Georgia; and that the Mark 6 guidance system used on the UK's Trident missiles was designed and made in the United States by Charles Stark Draper Laboratories.⁵⁸

71. **The platform:** Dominick Jenkins, of Greenpeace, told us that although the UK's Vanguard-class SSBN submarines were designed and built in the UK, many aspects of the design "are copied from US submarines and many components are bought from the USA"; that in order to assure the accuracy of the missiles, the exact position of the UK's submarines had to be precisely determined, that this was achieved by relying on two US-systems, GPS and ESGN, and that the US "has the ability to deny access to GPS at any time,

⁵⁷ Ev 88

⁵⁸ Ev 51, 89

rendering that form of navigation and targeting useless if the UK were to launch without US approval"; that targeting software was based upon US designs, that weather and geodetic data, which help ensure the accuracy of the missile, was supplied by the US Navy, and that "all the hardware and software used by the [fire control] system is US-produced", with the hardware manufactured by General Dynamics Defense Systems.⁵⁹

72. The onshore and warhead infrastructure: Dan Plesch told us that Devonport dockyard, which serviced and repaired the UK's Vanguard-class submarines, was managed by DML, a consortium which was part owned by the US firm Halliburton, and that the Atomic Weapons Establishment at Aldermaston was managed by a consortium part owned by the US firm Lockheed Martin.⁶⁰ He also claimed that the A-90 plant used at the Atomic Weapons Establishment (AWE), Aldermaston, to manufacture warheads was a direct copy of the T-55 plutonium processing plant at Los Alamos and that the UK used the US nuclear testing site in the Nevada desert for sub-critical nuclear tests to ensure that the system continued to work effectively.⁶¹

73. Some of our witnesses felt that such technical dependencies upon the United States compromised the UK's independence of policy and diplomatic decision-making and that, as a consequence, several of the UK's continental allies regard the UK as "a vassal state".⁶²

74. Dan Plesch argued that the current US-sourced Trident system failed what might be termed "the 1940 requirement" (an ability to be used in situations of extreme national emergency when the UK was alone and isolated) and that the UK would, in practice, not be able to use its nuclear deterrent in circumstances in which the US was either neutral or actively opposed to UK policy, or where the US was an adversary. Mr Plesch asserted that although such circumstances are highly unlikely "this is precisely the test that an independent force must pass to be worth the expenditure of financial and political capital". He also stated that "any US sourced successor to Trident will be subject to similar dependence".⁶³

75. Professor Colin Gray accepted the UK's dependence on the United States, but claimed that he was not concerned by it:

Britain's nuclear deterrent since the 1960s... has been thoroughly dependent upon the co-operation and indeed the willingness of the United States to sell us or loan us the most vital equipment... the independence of the deterrent is obviously highly questionable... I am not the least troubled by the American connection, but for anyone who wishes to question the true independence of the British nuclear deterrent I would concede that it is... a hostage to American goodwill... the dependency is critical and will continue.⁶⁴

59 Ev 88-89

60 Ev 89

61 Ev 51

62 Q 42

63 Ev 51

64 Q 106

Operational independence

76. Other witnesses took the view that, in an operational sense, the UK's nuclear deterrent is independent.

77. **The warhead:** Commodore Tim Hare, a former Director of Nuclear Policy at the MoD, told us that although the US had long shared its warhead designs with the UK, and that the British warhead closely resembled the American W76 design, the UK retained the design authority on its Trident warhead. Commodore Hare also told us that whilst AWE Aldermaston was managed by a consortium which included Lockheed Martin, it was nevertheless owned by the MoD.⁶⁵

78. **The missile:** Dr Lee Willett, of RUSI, stated that the Trident II D5 missile was “a totally self-contained package” which had “an inertial guidance system that takes it to a point in space, and then the ballistic trajectory then takes it to the latitudinal and longitudinal point on the target” and that “[i]t does not.... rely on external guidance systems such as American satellites”.⁶⁶

79. **The platform:** We heard that the Vanguard-class submarines were designed and built entirely in the UK and that the UK retained design authority on the boats.

80. It is important to distinguish between two different types of independence: independence of acquisition and independence of operation. We heard that independence of acquisition is what the French have opted for at a significantly higher cost to the defence budget. Independence of operation is an alternative concept of independence and it is this which the UK has opted for at a lower price.

81. Sir Michael Quinlan told us that the UK's decision to choose independence of operation meant that “in the last resort, when the chips are down and we are scared, worried to the extreme, we can press the button and launch the missiles whether the Americans say so or not”.⁶⁷ He argued that the decision to fire is an independent, sovereign decision. The United States “can neither dictate that the [UK's] force be used if HMG does not so wish, nor [can it] apply any veto—legal or physical—if HMG were to decide upon [its] use”.⁶⁸

82. Commodore Hare told us that “operationally the system is completely independent of the United States. Any decision to launch missiles is a sovereign decision taken by the UK and does not involve anybody else”. He told us that the United States does not have a “technical golden key” which can prevent the UK from using the system.⁶⁹

83. The potential disadvantage of the UK decision to forego independence of acquisition is that “if, over a very long period, we became deeply estranged from the Americans and they decide to rat on their agreements, we would be in... great difficulty”.⁷⁰ Commodore Hare

⁶⁵ Q 185

⁶⁶ Q 15

⁶⁷ Q 49 [Sir Michael Quinlan]

⁶⁸ Ev 65

⁶⁹ Q 152

⁷⁰ Q 49 [Sir Michael Quinlan]

told us that such a risk was, in reality, “very low” and that, ultimately, “one must balance that risk against the enormous cost benefits that we have in procuring an American system to house in our submarines. That should not be underestimated”.⁷¹

84. We call upon the MoD to clarify the technical dependencies of the UK's Trident system upon the United States and to respond to the argument that the UK's nuclear deterrent is not truly independent. In weighing the importance of maintaining independence, attention needs to be paid to the differing concepts of independence adopted by the UK and France.

5 Current and future threats

85. The public debate about the future of the UK's strategic nuclear deterrent must take into account:

- the nature of the threats facing the UK;
- how those threats could evolve over the lifetime of any potential Trident successor system; and
- in what ways retention of a strategic nuclear deterrent might assist the UK in addressing those threats.

The current threat

86. Dr Kate Hudson, of the Campaign for Nuclear Deterrent, told us that “we currently face no nuclear threat, and there is no imminent danger of such a threat emerging”.⁷² Dr Jeremy Stocker, of the Centre for Disarmament and International Security Studies, told us that, with the removal of the Soviet threat, “Britain’s security is today assured to a degree probably unprecedented in its history, despite current concerns over terrorism”.⁷³ On that basis, Professor William Walker, of St. Andrew’s University, argued that:

it would be hard to justify the retention of a nuclear force on strategic military grounds alone. Among the eight or nine nuclear armed states, with the possible exception of France, the UK arguably has least cause for concern about future military attack from a well armed foe. This situation seems likely to continue, given the UK’s geographical position on the safe fringe of a relatively stable continent.⁷⁴

87. This view, shared by several witnesses to our inquiry, echoes the conclusions of the Strategic Defence Review, which stated that “there is today no direct military threat to the United Kingdom or Western Europe. Nor do we foresee the re-emergence of such a threat”.⁷⁵

88. The most pressing threat currently facing the UK is that of international terrorism. Witnesses to our inquiry overwhelmingly argued that the strategic nuclear deterrent could serve no useful or practical purpose in countering this kind of threat.

89. Dan Plesch argued that the notion of using nuclear weapons against terrorists was “entirely unrealistic”.⁷⁶ Sir Michael Quinlan, a former Permanent Under Secretary at the MoD, told us that “I myself do not believe that the terrorist case plays any large part in whatever case there is for staying in this business”.⁷⁷

72 Ev 56

73 Ev 101

74 Ev 133

75 Ministry of Defence, *The Strategic Defence Review*, Cm 3999, July 1998, p 17

76 Q 32 [Mr Plesch]

77 Q 34

90. Michael Codner, of RUSI, argued that the only conceivable role for the UK's strategic nuclear deterrent in dealing with terrorism would be in deterring states from sponsoring and harbouring terrorists; "there is clearly an option...for nuclear deterrence against a state which is clearly giving [such] support".⁷⁸ Dr Lee Willett, of RUSI, agreed that "it would be very hard for a non-state actor to develop its own nuclear weapons capability. It would have to get it from somewhere, and that somewhere would have to be a state".⁷⁹ Professor Gray, of the University of Reading, too saw a role for the nuclear deterrent in this situation; "terrorists require support, and, to the degree that they require state support, the states that support them are capable of being deterred".⁸⁰

91. Professor Gregory, of the University of Bradford, told us that he had "not seen any credible analysis where anyone in France or here or in the United States has come up with a way of using nuclear weapons to deter terrorists directly". Nuclear weapons, he argued, were essentially about states; "the analysis I have seen is about deterring state sponsors of terrorism—assuming you can make that jump".⁸¹

92. Professor Gray disagreed and suggested that, in addition to their utility as a deterrence against state sponsors of terrorism, nuclear weapons could be used against terrorists themselves. He argued:

I certainly would not want terrorists and those who support them to say they can use weapons of mass destruction against Britain and we will do our best with conventional weapons to bring the roof down on their heads. I would like them to know that they are messing with a nuclear power.⁸²

In arguing this case, Professor Gray appeared to be a lone voice. Other witnesses to our inquiry did not share his analysis.

93. Dr Bruno Tertrais, of the Paris-based Foundation for Strategic Research, argued that the nuclear deterrent was only of "partial relevance" in dealing with terrorism:

Most of the defence and fight against international terrorism has nothing to do with Western nuclear deterrence, British, French, American or otherwise. This would be relevant only in the extreme scenario where a state deliberately sponsored a terrorist group and asked it to act on its behalf. If one of our Governments had incontrovertible evidence that a terrorist act was being sponsored by another state's Government and that it would be of such magnitude that it could enter the realm of our vital interests in such a case there would be a role for nuclear deterrence.⁸³

94. Malcolm Savidge, of the Oxford Research Group, contested the notion that nuclear deterrence could be even partially relevant in dealing with terrorism, arguing that:

⁷⁸ Q 32 [Mr Codner]

⁷⁹ Q 32 [Dr Willett]

⁸⁰ Q 97

⁸¹ Q 96

⁸² Q 98

⁸³ Q 194 [Dr Tertrais]

it would be the fanatical, absolutist organisations like Aum Shinrikyo or al-Qaeda which would have the objective of nuclear terrorism. It is, surely, very unlikely that they would be sufficiently closely identified with a particular state that it would be meaningful to try to use nuclear deterrence. Even with the identification that one had with, say, al-Qaeda and the state of Afghanistan, there was never a thought of nuking Kabul...I find that an improbable scenario.⁸⁴

95. Witnesses to our inquiry did not believe that the UK currently faced a direct or impending military threat from any of the established nuclear weapons states, including Russia, China, India, Pakistan, Israel, North Korea, or, of course, from France or the United States.

Future threats

96. There are difficulties inherent in anticipating future threats to the security of the UK. It is not possible to predict accurately the nature of the future strategic international environment and to identify with any certainty the threats the UK is likely to face.

97. In considering the future of the strategic nuclear deterrent, Michael Codner told us that “we have to look into the longer term and to a very cloudy future, and one in which things could change very substantially”.⁸⁵ “No prudent statesman,” we heard, “would assume the indefinite continuation of [the current relatively benevolent] condition”. Dr Lee Willett told us that recent history is “littered with strategic shocks, things that we had not expected”. The point about the nuclear deterrent, Dr Willett stressed, is that it “is there as a hedge, just-in-case capability, should threats that require such a response come to pass”.⁸⁶ Professor Colin Gray concurred with this analysis, emphasising that “the future is deeply uncertain.... There are no experts on the unknowable future. The first rule of statecraft is prudence, do not take avoidable risks”.⁸⁷ He continued, “in 2006, we can no more predict the strategic history of the 21st Century, than our predecessors in 1906 could predict what the 20th Century would bring”.⁸⁸

98. Professor Gray argued that that although Russia did not, at present, pose a direct military threat to the security of the UK, its future political direction was deeply uncertain. Russia, he argued, accords top priority in its defence policy to modernising its nuclear weapons and has the lowest threshold for nuclear use of any country’s nuclear doctrine. He further argued that Russia was deeply dissatisfied with its current situation, that it has unsatisfactory relations on most of its borders, that it was not reconciled to the loss of the Baltics, to the loss of the Ukraine or to what had occurred in the Caucuses. NATO was also pushing against its boundaries, which Russian policymakers intently disliked. On this basis, Professor Gray argued that “the notion that Russia was.... yesterday’s problem is.... an

⁸⁴ Q 194 [Mr Savidge]

⁸⁵ Q 9 [Mr Codner]

⁸⁶ Q 18 [Dr Willett]

⁸⁷ Ev 81

⁸⁸ *Ibid.*

unjustifiably optimistic assumption".⁸⁹ Other witnesses, however, believed that Professor Gray's view was unduly pessimistic.

99. Professor Simpson, of the University of Southampton, asserted that China did not, at present, represent a serious military threat to the security of the UK and was unlikely to do so in the future. Its main capability was short-range missiles which were aimed primarily at Taiwan. Simpson pointed out that China had never engaged in an arms race with any other nation and that it was not driven to acquire additional nuclear weapons because of specific concerns about other states; "they seem to want a capability but do not want to go beyond that".⁹⁰

100. We were told that, in future, there could be several additional nuclear powers, and that the nuclear Non-Proliferation Treaty was currently under enormous pressure. David Boucher, a former Head of the UK Delegation to the UN Disarmament Conference, told us that "confidence in [the] treaty is flagging":

If the Non-Proliferation Treaty were to break down, and if Iran develops a nuclear weapon, I think it is difficult at this stage to be precise about which countries might follow suit but there is a danger that you would see several countries considering the nuclear option.... there are at least 15, perhaps more, countries in the world that could develop a nuclear weapon quite rapidly if they were to take the decision to do so.⁹¹

101. The future of the Non-Proliferation Treaty is likely to have a significant impact on the course of nuclear proliferation in the coming decades. If the authority of the Treaty does not recover, there is a danger that a number of states could develop a nuclear weapons capability in a relatively short timeframe. It could be argued that UK decisions on the future of its Trident deterrent could affect the authority of the Treaty. Witnesses to our inquiry have questioned the legality of replacing the Trident system under the terms of Article 6 of the Non-Proliferation Treaty. We have not sought to address these concerns in this first report, which focuses on the strategic context and timetable for decision-making.

102. Sir Michael Quinlan told us that, ultimately, the strategic nuclear deterrent was an insurance policy against the unknowable future. In considering the value of any insurance policy, he argued, one had to undertake a cost-benefit analysis. It would be possible, he believed, to design and build a nuclear deterrent which was capable of countering most conceivable threats to the security of the UK, but it would come at a significant price. A lower level of insurance would protect against a narrower range of threats for a lower price. According to Sir Michael, when looking at future threats, policymakers would have to weigh the likely threats against the available resources:

Life does not come with 100 per cent certainties in either direction, but insurance policies are related to things that may or may not happen. The hard question is: how much is it worth? I am not an absolutist on this question at all. I would want to know how much it is going to cost.

⁸⁹ Q 73

⁹⁰ Q 72

⁹¹ Q 75

103. We call upon the MoD to consider publicly the threats the UK faces today and how those threats may evolve in the future. Such a threat assessment will shape any decision on the future of the UK's strategic nuclear deterrent. We accept that future threats are unknowable, but, clearly, a world in which nuclear proliferation had taken hold would create deep uncertainties in international relations. For this reason, the UK may wish to retain a strategic nuclear capability as a guard against the unknown. If the MoD believes in the value of the nuclear deterrent as an insurance policy, rather than in response to any specific threat, we believe it is important to say clearly that is the reason for needing the deterrent.

6 The substance and timing of UK decisions

The nature of the decisions facing the UK

104. The Government has stated that decisions on the future of the UK's strategic nuclear deterrent will be required during the course of the current Parliament. To date, it has offered no explanation of the nature of those decisions. If there is to be a meaningful debate on the future of the UK's strategic nuclear deterrent, the public should know what decisions will be required, when they must be taken and implemented, and what factors are driving consideration of the issue now.

105. In the broadest terms, we heard that there are four key types of decisions facing the UK in considering the future of its strategic nuclear deterrent:

- Retention versus abolition;
- Service life extension;
- Future capability; and
- Further investment in current capability.⁹²

Retention versus abolition

106. A fundamental political decision needs to be made on whether or not the UK should retain a strategic nuclear deterrent. There is no clear point at which this decision has to be made and there is a risk that – by taking a series of decisions to keep options open – we could find that we have in practice taken the decision to keep the deterrent. Conversely, if we do not keep those options open, we could find we are left without a deterrent. In our view, the UK should make a clear decision on whether to retain the strategic nuclear deterrent. It is important that a decision of this magnitude is not taken by default. It should be made only after a full public debate. It must not be made by the Government in secret.

107. A decision on the future of the strategic nuclear deterrent is not required imminently and there is an argument for leaving it as long as possible so that the latest strategic threat can be assessed. On the other hand, we should not embark on very substantial investment in a Trident replacement system without having come to a clear decision that we want to replace it. In practice, this means that the fundamental decision will need to be made at least before a Main Gate decision on procuring a replacement to the Trident submarine.⁹³

Service life extension

108. A broad capability decision will be required on what form any successor nuclear deterrent system should take, if retention of a strategic nuclear deterrent capability is

⁹² Ev 67

⁹³ Main Gate is the approval point between the Assessment Phase and the Demonstration and Manufacture Phases

considered necessary for national security. One option for the UK is to embark on a programme of extending the service life of the current Vanguard class SSBN submarines. The United States is currently engaged in such a programme for its Ohio-class Trident submarines.

109. Commodore Hare told us that service life extension is only a short term solution for the UK's future capability. The hulls of the UK boats, he argued, could only be extended for approximately five years. After that, the safety of the boats would become an issue and the cost of addressing such safety concerns would likely be too high to warrant a more extensive programme of upgrades.⁹⁴

110. A service life extension programme would allow the UK to postpone decisions on whether to replace Trident until around 2010, on the basis that a service life extension programme would add an additional five years to the existing system and that procurement of a Trident replacement would take approximately 14 years. By this time, it is possible that the strategic environment might be clearer. But it is likely to be an expensive process. Such an expensive option should not be used only as a means of deferring a decision on the future of the UK's strategic nuclear deterrent.

Future capability

111. In the longer-term, the UK will have to decide whether to continue with a submarine-based system, or opt for a ship-based system, an air-based system, or a land-based system as the foundation of its strategic nuclear deterrent capability or a combination of the three.

112. We heard that a final decision on future capability would be required only at the Main Gate stage of investment, though we also heard that many options would be dispensed with at the Initial Gate stage.

Further investment in current capability

113. A series of decisions are required on how best to preserve the submarine construction skills base, and the nuclear warhead skills base, until conclusive decisions on both future capability and retention versus abolition are required. Some of these decisions are already being taken. The MoD's new investment programme at Aldermaston, announced in July 2005, is expressly intended to maintain infrastructure and preserve the UK skills base.

114. In December 2005, the MoD published the Defence Industrial Strategy, which emphasised the importance of driving down and controlling costs of the nuclear submarine programme to keep open options prior to a decision being taken, but did not include further details.⁹⁵

115. It is important that the Government continue to invest in the UK infrastructure and skills base until a decision on whether to retain or abolish the nuclear deterrent is made. Unless this investment is forthcoming, the Government is likely to find that its

94 Q 170 [Commodore Hare]

95 Ministry of Defence, *The Defence Industrial Strategy*, December 2005, Cm 6697, p 76

options will be constrained and that certain choices for the future of the UK's nuclear deterrent will no longer be available.

The timetable for decision-making

116. The timing of decisions on the future of the UK's strategic nuclear deterrent is dictated by the time involved in extending, upgrading or replacing the three distinct components of the current Trident system: the warhead, the missile and the platform.

117. The UK's strategic nuclear deterrent "is a system of systems", including the warhead, the missile, the submarine, and the supporting infrastructure. Extending, upgrading or replacing these components represent the timeline challenges which are driving the current debate on the future of the UK's nuclear deterrent.⁹⁶

The warhead

118. The UK's current nuclear warhead, based on the American W76 design, which is fitted to the Trident II D5 missile, was introduced into service with the Trident system in 1994. It is widely expected to remain in service until the mid-to-late 2020s. The MoD itself has stated that:

An extensive research programme to assure the safety and effectiveness of the warhead stockpile, coupled with the additional investment at AWE [Atomic Weapons Establishment] Aldermaston announced on 19 July 2005, gives a high level of confidence that the current warhead design can, if required, be maintained in service to at least into the 2020s, with some relatively minor upgrading and refurbishment required during the first half of the next decade.⁹⁷

119. The MoD's new investment programme at the Atomic Weapons Establishment amounts to an additional £350 million per annum over the next three years. This programme indicates that the Government is already examining the research, capability and stockpile issues relating to the nuclear warhead. It does not necessarily mean that the MoD has already decided to continue with a strategic nuclear deterrent programme. The MoD itself has explained the purpose of the Aldermaston investment as necessary to keep its options open for the future:

This additional investment at AWE is required to sustain the existing warhead stockpile in-service irrespective of decisions on any successor warhead. The investment will sustain core skills and facilities that could also be used in future to develop a successor but no decisions have yet been made either in principle or practice on this issue.⁹⁸

120. During our visit to the United States in May 2006, we heard that the US had embarked on a Reliable Replacement Warhead programme (RRW), aimed at modernising the US strategic nuclear arsenal and improving the reliability, performance, longevity and safety of

⁹⁶ Ev 69

⁹⁷ HC (2005–06) 835, Annex B, para 2(a)

⁹⁸ *Ibid.*, Annex C, para 13

US nuclear weapons. Managed by the National Nuclear Security Administration at the Department of Energy, the programme represents a shift in design philosophy for the American strategic stockpile. During the Cold War, the priority in US warhead design was on limiting the weight and size of the warhead for improved delivery while maximising its yield. Given the change in the strategic environment since the end of the Cold War, we were told that such considerations were no longer paramount and that the focus was now on making the warheads more straightforward and cost-effective to manufacture and maintain. We heard that the RRW programme was in its early stages, that two designs were in preparation, that one of the two designs would be selected in late 2006, and that the new warhead was expected to enter service in the 2010 to 2015 timeframe. The UK's MoD has not announced a similar programme for its Trident warheads. However, the new investment programme at Aldermaston addresses similar issues of reliability, performance, longevity and safety of the UK's existing warheads.

121. Given the new investment at Aldermaston, and the widespread expectation that a new warhead will not be required until well into the 2020s, the timelines for manufacturing a replacement warhead is not a key driver of the current debate.

The missile

122. The current Trident II D5 missile entered service with the rest of the UK's Trident system in 1994 and had a planned life of around 25 years. The UK has title to 58 such missiles which are held in a communal pool at King's Bay, Georgia.

123. In 2002, the United States Navy awarded Lockheed Martin a contract for the Trident II D5 missile Service Life Extension Programme (SLEP). Under the contract, it is expected that around 300 missiles will be upgraded to the D5(A) version by 2020 and that these upgraded missiles will remain in service until 2042. According to Jane's Missiles and Rockets, the Trident II D5 Service Life Extension Programme is not envisaged as "a major design, but would involve the replacement of specific components, especially those that are dependent on older technologies which in many cases are no longer being manufactured".⁹⁹ The United States has also launched a service life extension for the Mk4 re-entry vehicle, which carries the nuclear warheads, in order to support Trident operations until 2042. The UK Government has yet to decide whether or not to participate in this service life extension programme. We were told that it would be relatively easy for the UK to participate in the Trident II D5(A) life extension programme on the same basis as it participates in current arrangements.

124. Since the Trident II D5 missile will be in service in the United States until 2042, this component of the system is not a key driver of the current debate.

125. During our visit to the United States in May 2006, we were told that the US was unlikely to make decisions on the future of its strategic nuclear deterrent before the middle of the next decade at the earliest. The US Service Life Extension Programme implies that American decisions may be made even later. Assuming the same 14 year procurement timeframe, the US might, in fact, not need to make decisions on the future of its deterrent

99 'US navy to extend life of Trident force,' *Jane's Missiles and Rockets*, 1 September 2000

until the mid-2020s. The disjunction between the US and UK timeframes poses difficulties for the UK. In making a decision on the potential replacement of the current system, the UK will need to make sure it does not opt for a system to which the US is only committed until 2042. As the experience of Polaris Chevaline in the 1970s indicated, maintaining a system which is not in service in the US carries significant cost implications.

The platform

126. The platform is generally regarded as the crucial factor driving the current debate on the future of the UK's strategic nuclear deterrent.

127. In evidence to us, Dr Lee Willett stated that “one of the key points in this whole timeline debate is the issue of the submarine. The submarine is the big platform, the big question in the replacement debate”.¹⁰⁰ Dr Willett’s judgement, that the submarine was the critical factor in driving the current consideration of the future of the UK’s strategic nuclear deterrent, was widely shared amongst the witnesses to our inquiry.

128. The UK’s Vanguard-class SSBN Trident submarines were introduced into service over a six year period beginning in December 1994. They were procured with a designed operational life of 25 years. On this basis, they would start to be withdrawn from service from late in the next decade; HMS VANGUARD, HMS VICTORIOUS, HMS VIGILANT and HMS VENGEANCE, which entered service in December 1994, December 1995, June 1998 and February 2001 respectively can be expected to be withdrawn in 2019, 2020, 2023 and 2026.¹⁰¹

129. In order to maintain the Continuous-at-Sea Deterrent cycle (CASD), the MoD has stated that the Royal Navy must maintain a minimum fleet of four SSBN submarines. This means that in 2019, when HMS VANGUARD is likely to leave service, CASD can still be maintained. It is the withdrawal of HMS VICTORIOUS, a year later, that will affect the ability of the Royal Navy to maintain CASD.

130. If the MoD believes that the UK should retain the Continuous-at-Sea Deterrent cycle, it must either extend the life of the Vanguard-class submarine or procure a new platform to be in service by 2020. In the light of the reduced threat we currently face, an alternative possibility would be to retain a deterrent, but not continuously at sea.

131. The MoD has stated that it may be possible to extend the service life of the current Vanguard-class fleet:

A series of studies have considered whether it would be practical and cost effective to continue to operate the submarines beyond the original design intent. We now believe that, if required, this would be possible, albeit with gradually increasing cost and some increasing risk of reduced availability, perhaps out to the mid-2020s.¹⁰²

¹⁰⁰ Q 53 [Dr Willett]

¹⁰¹ HC (2005–06) 835, Annex B, para 2(c)

¹⁰² *Ibid.*

132. The MoD has not stated exactly what a Service Life Extension Programme (SLEP) for the Vanguard-class submarine would involve. In evidence to us, Dr Lee Willett stated that the key factor limiting the life of the submarine is the durability of the hull and of the reactor. He also told us that the UK has a very stringent set of safety measures which limit the life of the reactor to 25 years.¹⁰³ Commodore Tim Hare told us that “to renew that safety justification is a non-trivial activity...it can be done, but...not for much more than five or six years”.¹⁰⁴ Peter Whitehouse, of Devonport Management Ltd, argued that:

In terms of the life of the nuclear steam raising plant, [the projected life span] is an inherent function of the design features, metallurgy and duty cycle when the system is in use. Once the Vanguard-class has had its series of first refits the fuel life is not an issue because the fuel will be good for another 20 to 25 years. Within the MoD experience has been that the older classes of submarine have become less and less available and reliable because of reactor system issues in a third commission; in other words, beyond the 20-year point. One key issue is the extent to which the Vanguard-class reactor plant, which is a totally new generation plant, has inherently the same design features and issues that could cause problems and a loss of availability towards the end of a second commission.¹⁰⁵

133. Mr Whitehouse also told us that in a second refit of the Vanguard-class submarines “major systems within the non-nuclear components of the submarine itself would have to undergo major overhaul”.¹⁰⁶ He stated that this kind of refit could be carried out from the middle of the next decade, from around 2015.¹⁰⁷

134. The United States has already approved a service life extension programme of its Trident submarines, the Ohio-class SSBN. As a result of this programme, the American boats are expected to remain in service until 2042, the same date as the life extended Trident II D5(A) missile.

135. The decision of the US to extend the service life of its Trident boats raises the possibility of the UK embarking on a similar programme. This could offer the UK an opportunity to maintain the Continuous-at-Sea deterrent cycle in the short term.

136. In the longer term, the possession of a strategic nuclear deterrent will depend upon the procurement of a new platform. This is expected to require a significant lead-time. The procurement time for the Vanguard-class submarine, from the point of initial decision to the in-service date, was 14 years. The procurement timeframe might be less in a new generation of submarines but it might be prudent to assume a 14 year norm. On this assumption, an initial decision point for a potential successor SSBN submarine would be 2010, if the Vanguard-class underwent a limited refit.

¹⁰³ Q 61

¹⁰⁴ Q 170 [Commodore Hare]

¹⁰⁵ *Ibid.*

¹⁰⁶ Q 170 [Mr Whitehouse]

¹⁰⁷ *Ibid.*

Onshore infrastructure and skills base

137. Peter Whitehouse told us that retention of the onshore infrastructure and skills base was a key consideration in the debate over the future of the UK's strategic nuclear deterrent. He argued that unless further investment is made to sustain the onshore infrastructure and skills base in the UK, at Devonport, Barrow-in-Furness and Aldermaston they would be lost and would be difficult, perhaps impossible, to reconstitute. He stated that until the Government makes a decision on the future of the UK's strategic nuclear deterrent, it must continue to invest in these facilities so that it retains the full spectrum of choices on what to do post-Trident. If this investment is not forthcoming, he argued, the Government is likely to find that certain options are no longer available.

138. **We believe that the maintenance of onshore infrastructure and the domestic UK skills base is an issue of paramount importance in considering the future of the UK's nuclear deterrent. We have decided that this will be the focus of the next in our series of inquiries into the future of the strategic nuclear deterrent. In that inquiry we will also address the linkage between the Government's Defence Industrial Strategy and the decision on retention, replacement, or abolition of the UK's Trident system.**

7 Conclusion

139. The UK currently faces a range of decisions on the future of its strategic nuclear deterrent. We must decide:

- Whether we want to retain a strategic nuclear deterrent;
- Whether we should extend the service life of our current Trident nuclear deterrent in the short-term;
- If we decide we want to retain a strategic nuclear capability, what form our deterrent should take after Trident: whether we should continue with a submarine-based system or opt for a ship-based, air-based or land based deterrent;

140. The timeframe for decision-making is likely to take the following form:

- 2006–2007: investment is needed in order to sustain the UK's industrial and basing infrastructure and specialist skills base until a decision on the future of the nuclear deterrent is made. In the absence of this investment, the range of options open to the UK will be reduced.
- 2007–2010: We will have to decide whether or not to begin a Service Life Extension Programme for the current Trident system. This will have a knock-on effect on the rest of the timetable. If we do not extend the life of the Trident submarines and we want to maintain a continuous-at-sea deterrent, decisions on their successor will need to be made very swiftly. If we are prepared to abandon the continuous-at-sea deterrent, we will have a few more years.
- 2010–2014: If we decide to retain a strategic nuclear deterrent and opt to extend the life of the Trident submarines, initial concept work and investment will be needed at this stage to narrow down the options for potential successor platforms.
- 2014: At this point, we will need to make a binding decision about whether we want to retain a strategic nuclear deterrent. If we do, this is the stage at which final decisions will be required on the exact form of the future platform and the bulk of the investment commitment will be made.
- 2020: Without extending the life of the current Trident submarines, a successor platform would have to be in-service by this date.
- 2025: This is the date by which a new platform must be in-service if the UK is to retain its Continuous-at-Sea Deterrent cycle, if we opt for a service-life extension programme for the current Trident system.

Conclusions and recommendations

1. We welcome the Government's promise of a full and open debate in Parliament, and in the country at large, on the future of the UK's strategic nuclear deterrent. We are surprised and disappointed that the Ministry of Defence has refused to participate in our inquiry. We believe that a genuine and meaningful debate is only possible with the active participation of the MoD. We call upon the MoD to engage fully in our forthcoming inquiries into the future of the UK's strategic nuclear deterrent. We hope the MoD will make a substantive response to this report and that it will address openly the issues we have raised. (Paragraph 12)
2. The UK's strategic nuclear arsenal is small in comparison with the other established nuclear powers. (Paragraph 45)
3. In considering the future of the strategic nuclear deterrent, the UK will need to examine whether the concept of nuclear deterrence remains useful in the current strategic environment and in the context of the existing and emerging threats to the security of the country. We will have to consider whether those states and non-state actors posing such threats can, in reality, be deterred from instigating acts of aggression by either existing or new approaches to nuclear deterrence. We will also have to consider how the UK's nuclear capability should be adjusted to meet new strategic realities. Trident was developed during the final decade of the Cold War, and was designed to counter the threat posed by the size and technical capabilities of the Soviet strategic nuclear arsenal: we need to consider whether the form of the UK's current nuclear deterrent is best suited to today's and tomorrow's strategic challenges. (Paragraph 55)
4. We believe that it is essential that, before making any decisions on the future of the strategic nuclear deterrent, the MoD should explain its understanding of the purpose and continuing relevance of nuclear deterrence now and over the lifetime of any potential Trident successor system. (Paragraph 56)
5. Before any decisions on the future of the deterrent are made, it will be important to consider whether the possession of nuclear weapons enhances the UK's international influence and status and whether this contributes to the justification for retention of a strategic nuclear capability. (Paragraph 57)
6. It is clear that there is a difference of views and no clear consensus that international influence is, of itself, a reason to retain the strategic nuclear deterrent. We recommend that the MoD make clear whether the Government believes the possession of a nuclear deterrent is an important contributor to the UK's international influence. (Paragraph 65)
7. The public debate over the future of the UK's strategic nuclear deterrent should address:
 - the independence of the UK's current system; and

- the operational and diplomatic impact of any potential dependency on the United States of any future UK nuclear deterrent. (Paragraph 66)
- 8.** It is important to distinguish between two different types of independence: independence of acquisition and independence of operation. We heard that independence of acquisition is what the French have opted for at a significantly higher cost to the defence budget. Independence of operation is an alternative concept of independence and it is this which the UK has opted for at a lower price. (Paragraph 80)
- 9.** We call upon the MoD to clarify the technical dependencies of the UK's Trident system upon the United States and to respond to the argument that the UK's nuclear deterrent is not truly independent. In weighing the importance of maintaining independence, attention needs to be paid to the differing concepts of independence adopted by the UK and France. (Paragraph 84)
- 10.** The public debate about the future of the UK's strategic nuclear deterrent must take into account:
- the nature of the threats facing the UK;
 - how those threats could evolve over the lifetime of any potential Trident successor system; and
 - in what ways retention of a strategic nuclear deterrent might assist the UK in addressing those threats. (Paragraph 85)
- 11.** The most pressing threat currently facing the UK is that of international terrorism. Witnesses to our inquiry overwhelmingly argued that the strategic nuclear deterrent could serve no useful or practical purpose in countering this kind of threat. (Paragraph 88)
- 12.** Witnesses to our inquiry did not believe that the UK currently faced a direct or impending military threat from any of the established nuclear weapons states, including Russia, China, India, Pakistan, Israel, North Korea, or, of course, from France or the United States. (Paragraph 95)
- 13.** There are difficulties inherent in anticipating future threats to the security of the UK. It is not possible to predict accurately the nature of the future strategic international environment and to identify with any certainty the threats the UK is likely to face. (Paragraph 96)
- 14.** We call upon the MoD to consider publicly the threats the UK faces today and how those threats may evolve in the future. Such a threat assessment will shape any decision on the future of the UK's strategic nuclear deterrent. We accept that future threats are unknowable, but, clearly, a world in which nuclear proliferation had taken hold would create deep uncertainties in international relations. For this reason, the UK may wish to retain a strategic nuclear capability as a guard against the unknown. If the MoD believes in the value of the nuclear deterrent as an insurance policy, rather than in response to any specific threat, we believe it is important to say clearly that is the reason for needing the deterrent. (Paragraph 103)

15. The Government has stated that decisions on the future of the UK's strategic nuclear deterrent will be required during the course of the current Parliament. To date, it has offered no explanation of the nature of those decisions. If there is to be a meaningful debate on the future of the UK's strategic nuclear deterrent, the public should know what decisions will be required, when they must be taken and implemented, and what factors are driving consideration of the issue now. (Paragraph 104)
16. A fundamental political decision needs to be made on whether or not the UK should retain a strategic nuclear deterrent. There is no clear point at which this decision has to be made and there is a risk that – by taking a series of decisions to keep options open – we could find that we have in practice taken the decision to keep the deterrent. Conversely, if we do not keep those options open, we could find we are left without a deterrent. In our view, the UK should make a clear decision on whether to retain the strategic nuclear deterrent. It is important that a decision of this magnitude is not taken by default. It should be made only after a full public debate. It must not be made by the Government in secret. (Paragraph 106)
17. A service life extension programme would allow the UK to postpone decisions on whether to replace Trident until around 2010, on the basis that a service life extension programme would add an additional five years to the existing system and that procurement of a Trident replacement would take approximately 14 years. By this time, it is possible that the strategic environment might be clearer. But it is likely to be an expensive process. Such an expensive option should not be used only as a means of deferring a decision on the future of the UK's strategic nuclear deterrent. (Paragraph 110)
18. It is important that the Government continue to invest in the UK infrastructure and skills base until a decision on whether to retain or abolish the nuclear deterrent is made. Unless this investment is forthcoming, the Government is likely to find that its options will be constrained and that certain choices for the future of the UK's nuclear deterrent will no longer be available. (Paragraph 115)
19. Given the new investment at Aldermaston, and the widespread expectation that a new warhead will not be required until well into the 2020s, the timelines for manufacturing a replacement warhead is not a key driver of the current debate. (Paragraph 121)
20. Since the Trident II D5 missile will be in service in the United States until 2042, this component of the system is not a key driver of the current debate. (Paragraph 124)
21. The platform is generally regarded as the crucial factor driving the current debate on the future of the UK's strategic nuclear deterrent. (Paragraph 126)
22. If the MoD believes that the UK should retain the Continuous-at-Sea Deterrent cycle, it must either extend the life of the Vanguard-class submarine or procure a new platform to be in service by 2020. In the light of the reduced threat we currently face, an alternative possibility would be to retain a deterrent, but not continuously at sea. (Paragraph 130)

23. We believe that the maintenance of onshore infrastructure and the domestic UK skills base is an issue of paramount importance in considering the future of the UK's nuclear deterrent. We have decided that this will be the focus of the next in our series of inquiries into the future of the strategic nuclear deterrent. In that inquiry we will also address the linkage between the Government's Defence Industrial Strategy and the decision on retention, replacement, or abolition of the UK's Trident system. (Paragraph 138)

List of abbreviations

AWE	Atomic Weapons Establishment, Aldermaston, Berkshire
CASD	Continuous-at-Sea Deterrent cycle
GOCO	Government-Owned Contractor-Operated
MIRV	Multiple Independently Targetable Re-entry Vehicle
MoD	Ministry of Defence
NATO	North Atlantic Treaty Organisation
NGO	Non-Governmental Organisation
PWR2	Pressurised Water Reactor (Nuclear)
RUSI	Royal United Services Institute
SDR	Strategic Defence Review
SLBM	Submarine-Launched Ballistic Missile
SLEP	Service Life Extension Programme
SSN	Sub-Surface Nuclear (Nuclear-powered, conventionally-armed attack submarine)
SSBN	Sub-Surface Ballistic Nuclear (Nuclear-powered, ballistic missile submarine)

Formal minutes

The following Declarations of Interest were made at the Committee's meeting on Tuesday 28 March 2006:

Linda Gilroy declared a non-pecuniary interest as constituency Member for Devonport Management Ltd.

Mr David S Borrow declared a non-pecuniary interest insofar as he was undertaking an Industry and Parliament Trust placement with Thales UK.

Tuesday 20 June 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David Crausby

Robert Key

Linda Gilroy

Willie Rennie

Mr Dai Havard

The Future of the UK's Strategic Nuclear Deterrent: The Strategic Context

The Committee considered this matter.

Draft Report (The Future of the UK's Strategic Nuclear Deterrent: The Strategic Context), proposed by the Chairman, brought up and read.

Ordered, That the Chairman's draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 138 read and agreed to.

Annexes [Summary and List of Abbreviations] agreed to.

Resolved, That the Report be the Eighth Report of the Committee to the House.

Several papers were ordered to be appended to the Minutes of Evidence.

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

Several papers were ordered to be reported to the House.

Ordered, That the provisions of Standing Order No. 134 (select committee (reports)) be applied to the Report.

Ordered, That the Chairman do make the report to the House.

[Adjourned till Tuesday 27 June at Ten o'clock.]

List of witnesses

Tuesday 14 March 2006

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Mr Michael Codner, Director of Military Sciences, Royal United Services Institute, **Dr Lee Willett**, Head of Military Capabilities Programme, Military Sciences Department, Royal United Services Institute, **Dr Rebecca Johnson**, Executive Director, Acronym Institute for Disarmament Diplomacy, **Mr Dan Plesch**, Research Associate, Centre for International Studies and Diplomacy, School of Oriental and African Studies, University of London and **Sir Michael Quinlan**, Consulting Senior Fellow, International Institute of Strategic Studies

Ev 1

Tuesday 21 March 2006

Mr David Boucher, University of Southampton, **Professor Colin S Gray**, University of Reading, **Professor Shaun Gregory**, University of Bradford, and **Professor John Simpson**, University of Southampton

Ev 19

Tuesday 28 March 2006

Mr Peter Whitehouse, Corporate Development Director, Devonport Management Limited, and **Commodore (Rtd) Tim Hare**

Ev 34

Dr Andrew Dorman, King's College London, **Dr Dominick Jenkins**, Greenpeace UK, **Mr Malcolm Savidge**, Oxford Research Group, and **Dr Bruno Tertrais**, Foundation for Strategic Research (Paris)

Ev 42

List of written evidence

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5	Dr Lee Willett, Royal United Services Institute	Ev 66
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9	Dr Bruno Tertrais	Ev 82
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29	Peter Whitehouse	Ev 141
30	Religious Society of Friends (Quakers)	Ev 143
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32	Letter from the Clerk of the Committee to HCDC Liaison Officer, MoD	Ev 146
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List of unprinted written evidence

Additional papers have been received from the following and have been reported to the House but to save printing costs they have not been printed and copies have been placed in the House of Commons library where they may be inspected by members. Other copies are in the Record Office, House of Lords and are available to the public for inspection. Requests for inspection should be addressed to the Record Office, House of Lords, London SW1 (Tel 020 7219 3074). Hours of inspection are from 9:30am to 5:00pm on Mondays to Fridays.

Initial memorandum from Nuclear Information Service

Lyn Brayshaw

Joyce McKay

Garry Wiles

Jane Hill

Mr and Mrs Crellin

Margot Hutchison

Paul Allard

Jenny Banks Bryer

Steven Page

Roger Kattenhorn

Mr and Mrs Rumsey

Margaret Howe

Holly Bazin

Joy Beswick

Nicholas Parsons

Initial memorandum from Campaign for Nuclear Disarmament

Vicki Lesley

Hazel Neal

Joan Waterson

Lillia Fox

Mary Radcliffe

Arianna Andreangeli

Brian Boshel

Heather Williams

Nigel Baldwin

F J Pritchard

Joanna Bazley

H S Grünewald

Mr Oliver Pescott

Ann Hillier

John Meager

Mrs Gillian Hansford

West Midlands CND

Anne Hamilton

Mitzi Bales

Sian Mycock

J G McNulty

Patricia Woodcock

Brian Rands

Tony Staunton

NukeWatch

Caroline Gilbert, Christian Campaign for Nuclear Disarmament

Brian Wicker: Pax Christi

Trevor A Rigg

Barbara Knowland

Chris and Carol Husson

Gillian Tuiberfried

Mrs Elizebeth Young

Mrs M B Boughton

World Court Project UK

Further memorandum from Oxford Research Group

Defence Committee Reports in this Parliament

Session 2005–06

First Report	Armed Forces Bill	HC 747 (<i>HC 1021</i>)
Second Report	Future Carrier and Joint Combat	HC 554 (<i>HC 926</i>)
Third Report	Delivering Front Line Capability to the RAF	HC 557 (<i>HC 1000</i>)
Fourth Report	Costs of peace-keeping in Iraq and Afghanistan: Spring Supplementary Estimate 2005–06	HC 980 (<i>HC 1136</i>)
Fifth Report	The UK deployment to Afghanistan	HC 558 (<i>HC 1211</i>)
Sixth Report	Ministry of Defence Annual Report and Accounts 2004–05	HC 822 (<i>HC 1293</i>)
Seventh Report	The Defence Industrial Strategy	HC 824

Oral evidence

Taken before the Defence Committee

on Tuesday 14 March 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David S Borrow
Mr David Crausby
Mr Mike Hancock
Mr Dai Havard
Linda Gilroy

Mr Adam Holloway
Mr Brian Jenkins
Mr Kevan Jones
Robert Key
John Smith

Witnesses: Mr Michael Codner, Director of Military Sciences, Royal United Services Institute, Dr Kate Hudson, Chair, Campaign for Nuclear Disarmament, UK, Dr Rebecca Johnson, Executive Director, Acronym Institute for Disarmament Diplomacy, Mr Dan Plesch, Senior Associate, The Foreign Policy Centre, Sir Michael Quinlan, Consulting Senior Fellow, International Institute of Strategic Studies, and Dr Lee Willett, Head of Military Capabilities Programme, Military Sciences Department, Royal United Services Institute, gave evidence.

Q1 Chairman: I would like to begin by welcoming everyone to this first evidence-taking session on the Strategic Nuclear Deterrent. I would like to set the context in which we are doing this. There will be a series of inquiries that this Committee will be doing over the lifetime of this Parliament into the Strategic Nuclear Deterrent. This is not intended to be an exhaustive coverage of everything. There will be further inquiries in due course. The first one is intended to cover the strategic context within which decisions on the future of the nuclear deterrent will be made. It is not going to be easy this morning. We have an unusually large panel, amongst which, as amongst the Committee, there will be disagreement, so I will need the assistance of both the Committee and of the panel to keep moving things on, please. We have two hours to get through a lot of very difficult and very deep questions. I am grateful to many of the witnesses and those outside the Committee for providing most helpful memoranda in advance, but I should be particularly grateful if members of the Committee and members of the panel could be as short as possible. Please do not feel that it is necessary to answer each question. Certainly do not feel it is necessary to answer simply in order to agree with something that has been said before. If you feel a gloss needs to be added, I will try to get you in but we need to move on very rapidly through a lot of difficult questions. I would like to begin, if I may, by welcoming the witnesses very much to the evidence session. I am most grateful to you for coming. I wonder whether I could begin by going into the factual background in relation to the purpose of the deterrent, how the Ministry of Defence might explain it, and some of the technical details of it. I would like, Sir Michael, to begin with you. Could you possibly explain to us what the purpose of the UK's existing nuclear strategic deterrent is, what is the rationale behind it and how would the Ministry of Defence explain its purpose?

Sir Michael Quinlan: I should stress, of course, that I retired from the Ministry of Defence 14 years ago. I do not now speak for them in any way. The broad

rationale was that the strategic nuclear capability was part of the total capability which we possessed primarily for the prevention of war, and it was designed to convey to any potential adversary that attack on us, especially if it were persisted in beyond the levels with which our conventional forces could cope, might in the extreme bring down upon them nuclear action. That is the essence of what we were trying to convey by the possession of these things. The context originally, at the time when the present force was ordered, was that of the Cold War. It has now of course changed. The essential concept is as I describe, I believe, still.

Q2 Chairman: Was it aimed at particular players or was it a general deterrent?

Sir Michael Quinlan: At that time, it was clearly directed to a Soviet Union whose power was very large, which was forward-deployed in Europe, and whose ideology and attitudes were such that we thought we could not entirely trust them not to have disagreeable designs to our detriment. That is no longer the case. It seems to me that, to the extent that there is a case now, it is a case, like that for most of our armed forces, simply addressed "to whom it may concern".

Chairman: I will move on to the status of the Trident programme.

Q3 Mr Crausby: Could I begin by asking you to summarise the technical capabilities of Trident and set out for us, and indeed for the record, how the system operates.

Dr Willett: As is stated in the public record, we have four Vanguard-class Trident submarines. They have the potential to carry 16 Trident D5 ballistic missiles per boat, although, as the MoD have stated in the Defence Review papers, it is not necessarily the case that all boats go to sea with their maximum outload of missiles all the time, and each missile has a set number of warheads, UK-designed and built

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warheads. The point about the warheads, of course, is that the numbers are classified, both in terms of the numbers in the inventory and the numbers that are allocated per missile, but the UK MoD has stated on some occasions in the past that some boats go to sea with some missiles that have single warheads, others that have more, but no precise details of the numbers. Of course, there is some public debate about what the yield of the warheads is as well, and the warheads are regarded as having a variable yield, but the precise nature, once again, according to my records, is classified.

Q4 Mr Crasby: The 1998 Strategic Defence Review described Trident as a “credible minimum deterrent.” Is that accurate? Is it a credible minimum deterrent? **Dr Willett:** The key point about this debate we are having today, and I think you have started it in the right way, is to start by asking the question why we need it. That is the point: is it credible? Why do we need it? What are the threats? Is it credible in deterring those threats? The issue about deterrence is that, obviously, you need to understand who your adversaries are and what you need to hold at risk with those potential adversaries to deter them. There are those who argue that, in the current climate, there are no obvious threats, but the point is, we have to look at what the next 50 years will hold, and in terms of credibility, it is more an issue really of we just do not know what the future will hold. This system is there as a deterrent to high-end threats to the survivability of the nation. You make the point about the force levels and the minimum deterrent. One might argue that, with the world changing as it is, perhaps in the debate about replacing Trident, we could at least consider the possibility that the UK might wish to reduce what it has deployed in its inventory, whether that be numbers of warheads or numbers of missiles, while still retaining what is a credible and flexible capability.

Chairman: Dr Willett, you have said that this is the right way to begin the debate, and I want to pick up that point. This Committee will not, of course, be making any decisions about the strategic nuclear deterrent. What we will be doing is informing the debate. We will not be coming to any conclusions as to whether we should or should not replace the strategic nuclear deterrent. We consider that we are the right people to inform and begin and help with that debate, so I am most grateful to you for bringing that point out.

Q5 John Smith: I have a supplementary on the technical status of Trident. Are we right to believe that, in the absence of an obvious threat, the Trident system is currently one, de-targeted, and two, its standard of readiness has been greatly reduced?

Dr Willett: That is correct. That is stated in the Strategic Defence Review and subsequent government documentation, that the missiles are de-targeted and that the readiness of the boats has been reduced to a matter of days rather than the hours that it was previously.

Q6 John Smith: What are the implications of that, if any?

Dr Willett: The point, I think, is that we stepped away from the targeting of what was then the obvious threat, the Soviet Union, and what we have now is the boats at sea, in the continuous-at-sea deterrent cycle, still ready to be able to do what they have to do if needed, but we still have boats at a certain notice to fire, and the ability to work up that capability in the light of the likely lead times we may have on any perceptions of potential threats. So the flexibility to be able to react is still there.

Sir Michael Quinlan: They were held during the Cold War at 15 minutes’ readiness to fire, because they were our last resort insurance against the hypothesis, remote though it might seem, of a bolt from the blue by an immensely powerful superpower. That hypothesis no longer has to be seriously entertained, and therefore they are held in a much more relaxed condition, which, of course, if we got into a serious crisis, could be raised again.

Dr Johnson: I just want to make a clarification that both the de-targeting and the reduced notice to fire are operational. In terms of the mechanics of the Trident fleet, when the submarine goes out, it would in fact mechanically be able to be fired at any time. So we are not talking about de-alerting. The warheads are on the missiles and the decision both to re-target and to greatly shorten the notice to fire could be made simply by both political decision and computer operation, and the estimates are that that could be made in 10–15 minutes.

Q7 Mr Hancock: Can I ask a question about the change over the last 10 years of the missile’s capability and its ability to be re-directed from a blanket target like the Soviet Union to a more specific target, and the reduction in the actual capability of individual warheads being reduced to an extent that they become a useful tool if they were deployed in being more of a specifically targeted weapon. Is there any evidence to support the view that Trident has aged well, in the sense that it is a vehicle that can be changed to suit the change in the world’s situation, or is it still the same weapon it was 15 years ago?

Mr Plesch: From its own perspective, the Government has made various changes—successive governments—in terms of developing what they call a sub-strategic weapon with a smaller warhead, and both in the SDR and in the New Chapter there are discussions for the use of the weapon in circumstances other than retaliation if this country were destroyed, which I think is the public understanding and rationale for the weapon. If I might make one other point concerning the future of the credibility, I think the public understanding is that we have this if ever again we faced 1940. There is, I think, a strong sense in this country, going back almost to Trafalgar and the Armada, in our culture that we have to have something for that contingency. My real concern is that people do not understand that if we were in a situation—albeit this is highly unlikely and highly undesirable—as in 1940, where the United States was neutral, or in 1956, when the United States had a very

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contrary position, then the United States would have every ability, in the short and particularly in the longer term, to prevent the system from being used because of our relationship.

Q8 Chairman: That is your 1940 test in your memorandum.

Mr Plesch: Yes, and I think that is a very severe problem when we look at the 50-year rationale, because if the basic rationale is if something nasty turns up, we need it, the nastiest thing that can turn up for this country is to fall out with the United States in some unforeseen manner.

Q9 Mr Jones: Can I now turn to the threat? Sir Michael made it quite clear what Trident was procured for in terms of the Cold War threat, and clearly that threat is not there now. Can I ask you to comment in terms of what you perceive as the actual threat that Trident deters now?

Mr Codner: I think that is a very difficult question. Clearly, there is the potential for emergent nuclear powers which may be hostile to the United Kingdom to develop the capability. At present, there is no very obvious target for our deterrent. However, if we are looking at replacing the system, we have to look into the longer term and to a very cloudy future, and one in which things could change very substantially. There are some specific issues of deterrence against some of the most immediate threats, like the terrorist threat, *et cetera*, where it is very unclear how a nuclear deterrent could be effective even against a terrorist threat with nuclear capability, the suitcase scenario. However, one could create arguments to say that the deterrent was relevant against nations which may be supporting that sort of activity. My own view is that when we are coming to judge what the deterrent is for as far as the United Kingdom is concerned, obviously, these issues are relevant but they are probably not the central issue.

Dr Willett: May I just add a bit of gloss to that? As you say, the whole point about Trident is that it has never been designed to deal with all the range of threats. It was always designed to deter threats to the high-end survivability of the nation. Deterrence as an issue for the UK is about a broad package of options, political, conventional military, strategic nuclear, so the Trident system that currently supports the strategic nuclear deterrent was only ever about deterring a certain kind of threat. While that threat may not include 7–7 tube bombers, as Michael pointed out, the key point in this is that we are talking about the 2020–50 time frame, and it is the “just in case” against what we just do not know.

Dr Johnson: I would like to comment on that, because I agree with Dr Willett that Trident was not intended for a broad range of security threats and yet, if we actually project forward for the next 20–25 years, we see a very broad range of security threats, including things like environmental degradation and climate change and depletion of resources, which are both threats to our security and will generate more traditional views of security threats in terms of mass population movement. I list a whole range of them,

of which the only conceivable deterrent role possibly played by nuclear weapons at all, whether Trident, which is an extremely clumsy instrument in these days, or any other, would be war between stable, rationally governed nation states. We have to look at the broader elements of deterrence, which do not necessarily require a nuclear element at all. Other countries have deterrents that are well in place, that are this panoply of other measures, and the problem with constantly calling nuclear weapons a nuclear deterrent is that you end up with a tautology: our deterrence deters. That, I think, is lazy thinking because it prevents people thinking through what actually is the role that nuclear weapons play in that range of deterrence tools and in what ways maintaining nuclear weapons would actually diminish the usefulness and roles of some of those other tools.

Q10 Mr Jones: Can I throw in from Mr Codner's memorandum¹ to us a point I actually agree with: the proposal that retention of a deterrent seems to support is that UK has an influence, indirect or on its wider security environment, because it retains a nuclear deterrent. Is that what you are saying? Would you agree that actually having nuclear weapons not only gives you a seat at the table but also paints a broader security picture that somehow you are a senior power which you could not do if you just had conventional weapons?

Dr Johnson: I think that was largely true in the Cold War. It was certainly perceived to be the truth in the Cold War. I think it is less and less true now. There is a diminishing status value as more and more states seek to acquire nuclear weapons and there is actually a diminishing security value.

Q11 Chairman: We will come on to that issue later on. I want to bring in Mr Plesch and Dr Willett briefly on these questions.

Mr Plesch: I think one of the problems we face because of our relationship with the United States is that while a great many countries around the world see multilateral arms control as something which was important to move much faster on with the Soviet Union out of the way, we are now in a position where, really for the first time, we are pursuing a policy which is nuclear weapons without arms control. That is a key issue, and indeed, frankly, without disarmament, and if one addresses the question of status, a great many countries around the world that we rarely listen to, South Africa for example, are adamant that the connection between possession of nuclear weapons by the big countries and the desire for nuclear weapons by those we are concerned about proliferating, is in fact critical. The powers with weapons undoubtedly deny that, but the rest of the world argues it.

Q12 Chairman: Yes, that is a proliferation issue rather than a deterrence issue.

¹ Note: Ev 16.

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Mr Plesch: It is a question of whether you can have your cake and eat it.

Dr Willett: I wanted to follow up on a couple of Dan's points and Dr Johnson's as well. With the panoply of other issues that there are facing the world, again, deterrence is very specific in what it is trying to do, and its particular role in certain threats that threaten the UK and global security as a whole. The point is that the proliferation of nuclear weapons, nuclear materials, nuclear technologies is only going in one direction and that is up—proliferation can only go one way, I apologise, but the way that we are moving is only in the way of proliferating. There are those that argue that as many as 35 nations now have the know-how to do this. There are those that are declared, those that are suspected and those that may well have this capability in a very short space of time. So the number is growing, and we do not know what the future will hold. While others have nuclear weapons, the only thing, in my humble opinion, that can deter a nuclear weapon is a nuclear weapon. Dan made a very good point about arms control too. I think it is very valid. What the UK should pursue is a dual-track approach. We need to look at the arms control issue again at a multilateral level. The NPT faltered but the nuclear powers and others of this world should be getting round the table to talk about these things. Perhaps, as I said previously, the UK could look at options for reducing its own stockpiles if it decides to extend and replace the current system. So there are options indeed, yes, for moving the disarmament debate forward, but it needs to happen at a multilateral level, and that is not happening at the moment. We cannot risk living in a Utopian world where we hope these things might happen. We should try to make them happen but, at the same time, we need the deterrent there as an insurance policy just in case.

Q13 Chairman: Sir Michael, you indicated a little earlier that you would like to say something.

Sir Michael Quinlan: Could I make three very quick points. Firstly, deterrence is an extremely broad concept. It refers to a whole range of instruments, some of which may not even be military. We may be trying to discourage Iran by economic or political pressure, for example. That is deterrence. I never liked the phrase “the deterrent”, as though it meant just this. This is one of many instruments. Secondly, reference has been made to the seat at the table argument. I personally do not think there is value in that. I do not like that argument. I think one needs much more solid reasons than prestige and status. Thirdly, could I just lodge the fact that Mr Plesch and I will be found to have different views on independence. No doubt you will be exploring that a little later.

Chairman: We will, and no doubt we will discover exactly that.

Q14 Mr Jenkins: I want to just ask you a few simple questions from a simple back-bencher here. When we look at the technical capabilities of Trident, I understand that in the Cold War we could have

launched massive retaliation, but we are not in that scenario now. What would happen if one of our naval patrols suddenly got a message that we need to take out one particular location; we cannot get a conventional bomber there to take it out; we do not have the bombs and we need to take that one out? When you fire a missile with multiple warheads, can you activate one warhead, so that, say, if you have 10 in the missile, would the one warhead go off and the other nine fall to the ground? When I wanted to activate the missile, how would I? If I am sailing round the Indian Ocean and it is decided there is a target over there, how would I know how to aim the missile at that target? Would I rely upon satellite technology? Would I rely upon the American satellite technology? Would the new Galileo European satellite technology give us a back-up in that respect? Or does the missile itself have its own device; you can send it off and it knows exactly where it is going?

Mr Plesch: The fire control targeting system computer software and satellites are all American-derived. The Government has stated formally and informally, I think, that some of the missiles have just one warhead on, and there has been some discussion that these could be as small as only 300 tonnes of TNT, 0.3 of a kilotonne, and the system is designed to have an accuracy within a few metres—not, I think, as good as GPS, which the Americans now have, but it was originally designed to be able to attack Soviet missile silos, so it was always designed to be highly accurate, and of course, it is very fast: less than half an hour from launch to target.

Q15 Mr Jenkins: So the missile itself, when it is fired, relies upon nothing else outside itself? There is no satellite indicator to where it is going, *et cetera*? It relies upon nothing apart from what is in the head of the missile?

Dr Willett: My understanding is that the missile is a totally self-contained package that has an inertial guidance system that takes it to a point in space, and the ballistic trajectory then takes it to the latitudinal and longitudinal point on the target. It does not, in my understanding, rely on external guidance systems such as American satellites that have been mentioned.

Q16 Chairman: Sir Michael, I noticed you reacting a bit about the American software. We will come on to the independence issue in a few minutes. Did you want to add something, Dr Johnson?

Dr Johnson: Mr Plesch said that it is an American guidance system, I agree, but my understanding is in fact that that guidance system relies also on the GPS system, and because the guidance system is American, I do not think it would be adaptable to Galileo, even if Galileo was fully working. The US was very unhappy about the Galileo system precisely because it offered a European alternative potentially to GPS in the future²

² Note by Witness: Dr Johnson has subsequently checked the above statement. While Dr Willett is correct that the Trident SLBMs were designed to use stellar navigation and can work without GPS, the US global positioning system, they have been modified and now make use of GPS to increase the precision of their targeting.

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Q17 Chairman: We have been told that Galileo does not have a military application.

Dr Johnson: We have been told.

Q18 John Smith: I just want to explore the exact nature of the current military threats that this country faces in your expert opinion. The threat scenario is usually identified as a combination of capability that exists and intent. What, in your view, Dr Willett, are the current military threats to this country?

Dr Willett: That is obviously a very open-ended question. I do not want to belittle it by coming back with the point that we just do not know, but it is worth looking back at recent history to show that it is littered with strategic shocks, things that we had not expected: the Falkland Islands, the first Gulf War, 9–11, 7–7. All of them were things that we had not predicted, so to try and make a point about what are the military threats, one could argue that it is as long as a piece of string; it depends on the person's own view. The point is that this particular debate is not talking about the current military threat; it is talking about threats in the 2020–50 time frame. We cannot begin to try and predict what will be round the corner in that time frame. It is the argument about the insurance policy, as always. It is there as a hedge, just-in-case, capability, should threats that require such a response come to pass.

Mr Codner: As far as the United Kingdom is concerned, geographically, clearly, where it is in the Atlantic in the current environment, it is in a pretty safe place. The biggest threat directly to the United Kingdom is probably asymmetric response to activities elsewhere, if you call them responses to those activities, terrorist attack, *et cetera*, to the United Kingdom itself. There is one scenario where you could say the British Government has an obligation as opposed to a choice to engage overseas, and that would be the rescue of non-combatant British personnel and perhaps Europeans in some situation where there was a revolution or whatever. Supporting what Dr Willett said, we are looking into the longer term and there is a presumption, I think, in many places that we are not going to face inter-state war in the old-fashioned sense any more. Sir Rupert Smith's book makes this point, but there are other books by equally distinguished people in different areas, such as Colin Gray, who make the point that we cannot dismiss this sort of scenario in the longer term.

Q19 Chairman: When you said that the greatest threat that we faced was a terrorist incident, would you say that the coming together of a terrorist incident and weapons of mass destruction was the greatest threat that this country is likely to face at the moment?

Mr Codner: It is certainly not the most probable threat. The most immediate threat, you could argue, is terrorist attack. The most probable threat is not a nuclear-armed terrorist. There is that possibility, and it would be pretty horrific.

Dr Johnson: I would like to comment that we should not forget that military threats are security challenges that were ignored or were not adequately dealt with at a much earlier stage, so when we think about the future, we must not assume that the choice that we make now does not have a range of other kinds of consequences in terms of opportunity costs for taking steps that would reduce what we see as the foreseeable security challenges and military threats in the future.

Mr Plesch: I broadly agree with my fellow panellists but I think there is one critical point about capability and not intention that we are in grave danger of overlooking, and that is that neither the Russians nor the Americans have taken their strategic nuclear forces off a high alert status, able to fire thousands of weapons still in under an hour. There has been considerable political and NGO discussion in the United States and in Russia on this point, but it has largely been overlooked. The point about detargeting, which was issued after the Cold War, has been found to be largely rhetorical or entirely rhetorical and there is a very strong technical argument to support that, and grave concern among many experts that the hair trigger which people were so concerned about has not actually been removed.

Q20 John Smith: A little bit more crystal ball-gazing: what about emerging nuclear threats? Speculation: what sorts of scenarios could you envisage in terms of future threats to this country within the time frame of this decision?

Mr Plesch: Clearly, there is the concern, as Dr Willett said, that a lot of countries who have a latent capability may, as proliferation increases, turn their latent capability into real weapons: Japan, Germany, South Korea, Egypt, to name but four. Lee Willett mentioned the word "Utopia". My perspective, and that of many people, is that what is truly Utopian is to think that we can have a world with multiple nuclear powers in the 21st century and not have a nuclear war. That, to my mind, is the real Utopian view.

Dr Willett: I totally agree with Dan, because these nations have their own reasons for having that capability. Perhaps one of the serious risks is us getting dragged into somebody else's conflict rather than necessarily a direct threat to us. The obvious melting pot there is the Middle East and the numbers of countries that are looking to get a nuclear capability there. As Dan rightly mentioned, that number of potential nuclear powers does leave you with the scenario, particularly when you look at those powers' reasons for having that capability, where nuclear war may be more likely, and while you need to have a mature approach to arms control, that in itself is a reason for retaining deterrence in whatever form it be: conventional, political or strategic nuclear.

Ms Hudson: The country which the United States appears to have identified as a potential nuclear superpower rival is of course China. This was gone into in some detail recently in February's quadrennial defence review from the US Defense Department. In terms of the 15–20 year time frame which Dr Reid referred to in September, obviously, there is cause for concern around that because of the very rapid

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economic development that China is currently undergoing. It is precisely to try and avoid the onset of a nuclear arms race with a nation like China that we believe that it is more appropriate to begin to engage in the kind of multilateral disarmament negotiations foreseen in the Nuclear Non-Proliferation Treaty as long as 30 years ago. We need to be aware of that but we need to know the current situation of China, which is, of course, that they have round about 400 nuclear weapons, whereas the United States, for example, has over 10,000. So to start now to begin the process of preventing a nuclear arms race taking place would be more appropriate than to start now to prepare for a nuclear arms race with a nation such as China. Really, that needs to be considered too.

Q21 Robert Key: Should we be paying more attention to the emergence of new threats arising from climate change, such as water shortages, energy crises, pollution crises, shortage of rare minerals and so on?

Dr Johnson: Yes, I clearly think that we have to have a much more diversified concept of both security and the challenges to our security here in the 21st century. We really cannot keep thinking about it purely in military terms. Those are 19th century. The nuclear weapon is a 20th century instrument. Actually, we need to be prepared to put the nuclear weapon into history and start working in a much more co-operative collective security approach to deal with these real security threats, which include trans-boundary threats such as pandemics, either naturally caused like Avian Flu or indeed bio-weapon caused. Nuclear weapons are not only not going to help us on that, but actually hinder us, and that is, I think, a crucial problem that we have to get to grips with.

Dr Willett: Just a small pointer to follow up on the nuclear weapons aspect of the last question. The key point is that no-one else, in my understanding, appears to be having this debate about reducing or getting rid of the capability. The Americans may be reducing the size of their inventory because of affordability issues over certain legs of the triad but nobody else of established nuclear powers is looking to reduce their capability, looking to get out of the game, and of course, there are all those that are looking to get in. There may be the likes of Libya and South Africa that have backed away from it but the key point is that no-one else is getting out of the game, and we are having this debate about getting out, and my humble view would be that the other nuclear powers, if we did make the decision to abolish, would pat us on the head and say, "Well done, boys. Good on you for taking the lead," but then turn their attention back to the politics of the real world.

Q22 Chairman: We are still dealing with the threats that are going to face us in the next decades.

Mr Plesch: We come back to the point about whether a threat comes from individual countries or also comes from a situation of a proliferated world. It is always very easy to think that this proliferation is inevitable. Take the case of China. CND just said 400 warheads. If you look at the evidence of the Defence

Intelligence Agency Director to the Senate last month, they put the Chinese number at "more than 100", that is, half of the UK number. It is very easy to get carried away thinking that there are these build-ups going on. We know the number of countries which have not taken a political decision to go nuclear which could. We know the South Africans did not and we know that a great many countries do, in a sense, adhere to Einstein's precept, which is that nuclear weapons have changed everything except the way we think, and that we hold our security in common, first of all, on the nuclear issue and now, increasingly, on these other issues, and that the critical task for us is to work out how we hold our security in common.

Sir Michael Quinlan: In response to the question that was asked a moment ago, could I say that there are many threats to us in the world and I certainly would not put those with which nuclear weapons might help us at the top. That is not to say that there are no threats with which nuclear weapons might help us. Second point: the mid-point in the life of any likely Trident successor would be, I suppose, 2035–40. It seems to me simply impossible to say what might be the problems then. We would not have done very well in 1970 in describing the situation today, and therefore I think the search for some specific scenario is almost certainly misleading. Third point, of a quite different kind: there have been a number of figures mentioned by my colleagues here as though they were fact, which are speculation, in one or two cases bad speculation. I do not want to take up the Committee's time by traversing them but I hope that not all the figures which have been produced are taken as gospel.

Mr Codner: In response to Robert Key's question, and just expanding on what others have said, yes, of course, these are all very serious issues for now and for the longer term, and the United Kingdom needs to take part in addressing them. The question, taking the military example—and I separate military example from the deterrent for many of the reasons that people have given—is to what extent will there still be a requirement to have military capability and for the United Kingdom to have that? That is one question, and the second one is, to what extent should Britain's contribution to security in any context, whether it is within the context of Europe or globally or whatever, perhaps lean on defence, which is something that we are held to be rather good at? If you take that same argument and look at the nuclear deterrent, you could say that where there are threats for which the nuclear deterrent would be relevant, to what extent should the United Kingdom, which has this capability, be the nation or one of the nations contributing that? In that case, I am looking very much at the European context.

Q23 Linda Gilroy: I am interested in hearing a little bit more about the relationship between climate change, whatever the outcome of our own energy review is, and the industrial development in other parts of the world will mean countries turning in increasing numbers to nuclear energy to fuel their own development. What are the relationships—I

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think Dr Willett touched on it—between those countries that have nuclear energy capability, what are the security impacts which arise from that type of proliferation, and attached to that, are there any lessons to learn from the sort of security framework which the United Nations Security Council has operated for the past 50 years or so, because it has been a great deal more successful, I think, than people probably expected it to be when it came in in terms of keeping the lid on proliferation of nuclear weapons.

Dr Johnson: There is a real problem with nuclear energy, which is that it gives you the technologies and the capabilities that can fairly easily then be transposed into nuclear weapons, and that is a contradiction at the heart of the nuclear non-proliferation treaty and indeed at the heart of the mission of the International Atomic Energy Agency. There is no getting away from that. I actually think that Jonathan Porritt's study, which showed the alternatives as being a much more useful and effective way forward for Britain to meet its energy needs, could be multiplied by 10 for many of the other countries. Where countries already have a nuclear energy dependence, unless they have a political debate, the likelihood is that they will reinforce that. I am thinking about countries like Japan and France. But in fact, nuclear energy is not an easy technology for developing countries to get into in such a way as to make it cost-effective at all. It is highly expensive and the returns are rather low.

Chairman: Dr Johnson, can I stop you there, because I want to come on to nuclear energy right at the end of the session. We will come back to that.

Q24 Linda Gilroy: It was really the relationship with the threat and containing the threat, because I think you mentioned 35 or 36 countries, Dr Willett, and I take it those are nuclear-energy capable countries that you are talking about. What are the risks that are already attached to them, not the ones that might emerge, and how do we create a security framework which answers that particular challenge?

Dr Willett: All I would say to clarify my point was that my understanding is that it is 35 nations which have the knowledge to create nuclear weapons, and the obvious example at the moment, if you are talking about not guessing, for an interesting look at the relationship between nuclear energy programmes and potential nuclear weapons programmes is Iran, and asking yourself really, despite all the rhetoric, what is Iran's real intent? Is it an energy programme or is it something more than that? That is a question that needs to be discussed in public, in my view, because there is too much acceptance that it is just an energy programme.

Chairman: It would help us if you could provide us with a memorandum of which those 35 countries were. I should be grateful for that.³

Mr Hancock: I happen to agree with Sir Michael that it is impossible to predict 30 years on what the threats are, but our inquiry is headed "Inquiry into the future of the UK's strategic nuclear deterrent." I would be

interested in a one-line answer from all of you. Is there a future for the UK's strategic nuclear deterrent? If you cannot predict the threat we are hoping to deal with, is it effective to have a deterrent when you do not know if you have a threat to deter it with?

Chairman: That is a rather large question for a one-line answer.

Mr Hancock: It is the question that leads out of what we have just heard from everyone who has contributed so far, and I think it is the fundamental question for the debate to start off with.

Q25 Chairman: It may be a fundamental question for the debate to end up with. Let us try.

Mr Plesch: As you know, my view is that the historical record and documentary evidence shows that for some considerable time this country has effectively not had an independent strategic nuclear deterrent. We are getting on to this later but that is my one-sentence answer to your question.

Dr Willett: My one-sentence answer would be: can we with 100% certainty say that in the next 50 years one nation with one missile with one warhead will not try to threaten us with it?

Mr Codner: My view is that it relates very much to this business of independence and dependence. It is very much a matter of where the nation thinks it is going to be going in the longer term and its own perception of itself, but at the end of the day, if a more independent deterrent is not affordable, then I wonder why we want to go down that route.

Sir Michael Quinlan: Life does not come with 100% certainties in either direction, but insurance policies are related to things that may or may not happen. The hard question is: how much is it worth? I am not an absolutist on this question at all. I would want to know how much it is going to cost.

Ms Hudson: The current threats that we face cannot be deterred by nuclear weapons, as we tragically saw last summer and as, of course, the United States experienced on 9-11. Future threats or potential future threats I believe could be averted by pursuing a different policy, which would be to de-escalate the current nuclear tensions.

Dr Johnson: I think deterrence is actually a bit like voodoo medicine. If you believe in it, it gives you a bit of reassurance, until it is tested and it fails, at which point it is far too late to discover that it was not actually helping you at all.

Q26 Chairman: You suggest in your memorandum that voodoo medicine can be fatal.⁴

Dr Johnson: It can, because it can distract you from addressing the real illness you have and taking the correct kind of medicine that might help you. I went off on the energy track, but there is a key question on the security framework to respond to your question about Iran and other countries with nuclear energy that I think we do have to address here, and that is that the IAEA, Dr ElBaradei, has determined that plutonium and highly enriched uranium are not necessary in the nuclear energy economy at all, and

³ Ev 95.

⁴ Ev 7.

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yet British policies, partly because of our dependence on Sellafield, yet again are actually impeding our ability to get an international consensus on at least taking those bomb materials, the essential materials to make nuclear bombs out of the nuclear energy cycle.

Q27 Mr Holloway: I have a lot of sympathy with what Dr Johnson says about military threats being problems that were not dealt with earlier, but given that we cannot know where we are going to be in 30 or 40 years' time, can I just ask the two former vice chairmen of CND, Mr Plesch and Dr Johnson, can they see any circumstances where Britain could require its own independent nuclear weapon over the next 30 or 40 years?

Dr Johnson: No. Let me explain. In a worst case scenario that the Government identifies, a terrorist with a weapon of mass destruction, imagine even a nuclear weapon use in that appalling scenario. Having nuclear weapons even Prime Minister Tony Blair says does not deter terrorists, so you are reduced to retaliation. Question mark: against whom? This is where we are crucially different from the Cold War scenario . . .

Q28 Chairman: I think the answer is "no", is it?

Dr Johnson: . . . where a nuclear exchange would have resulted in all-out nuclear war. We cannot guarantee—I agree with the panellists—that at some time in the future somebody might not seek to use a nuclear weapon. However, what we can do is create the conditions under which that would not and could not escalate into a nuclear exchange or nuclear war.

Q29 Mr Holloway: Is that a "no" in terms of Britain having its own missile?

Dr Johnson: It is no in terms of Britain's nuclear weapons having now, or in the future, any useful deterrent effect.

Q30 Chairman: Dr Johnson, I think the answer is no.

Mr Plesch: We do not have it, and if we had it, the answer would be no.

Q31 Mr Jenkins: We have all been dancing round in a circle here very nicely. The one thing that did not come out was with regard to Russia and the state of Russia. My difficulty, although I wish it well and I would not wish a democratic state to take a step backwards, is that now they are coming under increasing pressure domestically, so what happens if we have a nuclear state which suddenly reverts to being a non-democratic state? It has the power, it has the authority, and it is not out of the woods yet, I do not believe. What we need to know is, if it was good enough then, are we saying it is not good enough now?

Mr Plesch: I have already said to the Committee that the greatest physical capability threat is the retention on high alert of American and Russian strategic nuclear forces, and I think in the event that you describe, we would rue the last 15 years of arms control and disarmament and the decision really

America to halt the disarmament process with START II and not to pursue it as fast and as vigorously as we could have done. I think it really points to the squandering of the opportunity to control and eliminate nuclear weapons and weapons of mass destruction that we had at the end of the Cold War, that we still have now, and we sit around saying, "How much longer is this opportunity going to last before we get into a disaster?" not saying, "How do we use this opportunity to build on the tremendous achievements of Ronald Reagan and Mikhail Gorbachev, and the treaties that we had then to really control these weapons?"

Chairman: We have been going for nearly an hour and we have covered some very valuable topics to a depth that I was not expecting to be possible given the size of the panel and the Committee, but in case we might fall behind, I would ask the Committee and the panel to try to stick quite tightly to the subject matters in hand. First, can we go into terrorism and the nuclear deterrent and the consequences of those.

Q32 Mr Hancock: I will shorten my questions because I think some of it has already been touched on. To what extent, if it is possible, is the nuclear deterrent any form of combat to a terrorist threat? Do any of you see that as a realistic situation? Obviously Dr Willet does because he is shaking his head in agreement.

Mr Codner: I mentioned this before. As far as deterring a state from sponsoring terrorists who are using not just nuclear weapons but other forms of weapons of mass destruction possibly, there is clearly an option there for nuclear deterrence against a state which is clearly giving support.

Ms Hudson: I think that is an important point. We have heard on a number of occasions in US policy documents where there is reference to the potential use of nuclear weapons with regard to countries that may be deemed to have supported or backed a terrorist atrocity. I think the problem with that really is obviously that it increases and escalates tensions globally, but of course, it brings nearer the question of nuclear use, so the whole notion of nuclear weapons as a deterrent actually really seems to be now completely out of the window. That is what has been missing perhaps in the public debate so far, where our nuclear weapons are still referred to in this kind of deterrent framework, when actually we know that that has very much changed, not only in terms of referring to their use in defence of our vital interests but also the abandonment of negative security assurances and so on, so I think really the context has very much changed away from the deterrent notion.

Mr Plesch: The new chapter to the SDR after 9-11 makes clear reference—I do not have the exact quote—in the paragraph on nuclear weapons to the fact that terrorists would have to be aware of the full range of UK capability, and that rather throw-away line, perfunctory remark, is I think something that should be explored in some detail, particularly because on the other side of the Atlantic in the mid 1990s under President Clinton the official Pentagon published policy was to include non-state actors

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among the potential targets for nuclear weapons. My own view is that this is entirely unrealistic and the tragedy is that we are tying ourselves to these very unrealistic policies at the price of sacrificing the proven achievements of arms control.

Dr Willett: One would argue that it would be very hard for a non-state actor to develop its own nuclear weapons capability. It would have to get it from somewhere, and that somewhere would at this stage be a state. Just a comment, if I may, with regard to the question that you asked, and without meaning to do down the question, the issue of terrorism and nuclear weapons. I wonder if that somewhat clouds this particular discussion.

Q33 Mr Hancock: The question was not about a terrorist using a nuclear weapon. It was about whether the UK nuclear deterrent is a deterrent to a group of terrorists who would engage in actions against the UK.

Dr Willett: Yes. As per my original point, where they got that capability from does leave the providers of that capability vulnerable to deterrence if the UK could identify them and hold at risk something that that sponsor may hold dear, but again, the question of the terrorism threat is very much focused on today. It is today's issue and just to clarify, of course, while terrorism may still be a threat in 20 years' time or 50 years' time, I just wonder if the focus on the terrorist issue is somewhat clouding the debate on what deterrence will be all about in 20–50 years' time.

Q34 Chairman: That happens to be the subject we are dealing with at the moment.

Sir Michael Quinlan: I do not myself believe that the terrorist case plays any large part in whatever case there is for staying in this business. Might I also say, Chairman, that a number of statements are being made about what the US, for whom I hold no brief at all and I think they get a lot of things wrong, have said, which I think at the very least are in need of the provision of chapter and verse, because they are certainly outwith my own recollection.

Q35 Mr Hancock: If I may go on to something else that has already been mentioned, you, Sir Michael, suggested that you were open-minded on this and you would want to see whether there was a cost-effective alternative.

Sir Michael Quinlan: No, not quite.

Q36 Mr Hancock: I will not misquote you then. I will leave the record to say what you said, but given the financial burdens that we all know of of the current combating of terrorism, not only to us but to other states, to what extent should the development of a successor to Trident be measured against that cost? There is no cost offset, is there, because the war against terrorism will have to go on being financed. In my opinion, it is ludicrous to suggest that Trident's successor is actually going to lessen the cost that we are already embarked upon in fighting terrorists.

Sir Michael Quinlan: The fact that we have to spend money on one thing does not mean that we can afford not to spend it on others. My point about cost is that when we are dealing with something which is an insurance against a very unspecific, very distant set of possible circumstances, given that we cannot afford to cover every eventuality with utter certainty, one has to look at how much one is prepared to pay for that insurance. In other words, how much risk is one prepared to accept? My own view is that there would be some cost that would be simply too much to pay for the insurance of staying in this business. We have not yet got from Her Majesty's Government anything like official information on what the figures are.

Q37 John Smith: Last month President Chirac announced that French nuclear forces had been reconfigured to target power centres of rogue states that may sponsor terrorists, so clearly the French see nuclear weapons as a deterrent against terrorism. Do you think they are wrong?

Mr Codner: That sort of statement from a head of state or head of government is part of the process of executing deterrence. No doubt what he is saying is what they are actually doing but it might not be, and it does not mean that they actually hold any great confidence that this will be effective but it is worth giving it a go.

Chairman: We are falling behind. I want to move on to prospects for arms control now, which is a very important issue that has come up already.

Q38 Mr Borrow: A number of the panel have already touched on this issue. What developments do you expect in arms control over the next decade or two? Secondly, and this is pertinent to the discussion generally, what effect do you think Britain's decision one way or the other on the replacement of our nuclear deterrent would have on the overall arms control situation?

Dr Johnson: Very interesting questions. In a sense, "What developments?" is a bit like saying "What threats?" A lot of it is up to us. If we take the steps now that would increase the salience and the credibility of the non-proliferation regime, which frankly is under enormous pressure and is eroding, then I think we could see some considerable progress being made. On the other hand, if we sit back and we do not challenge the United States sufficiently when it undermines treaties and verification that we support, for example, or the Comprehensive Test Ban Treaty, we will see a progressive erosion. If we do not deal with issues like North Korea and Iran we will see a progressive erosion. To move from that briefly to what effect, I do not think that if we just announce we are not going to have nuclear weapons and then sit back that that will have a direct impact on the policy decisions of other countries, particularly proliferation aspirants, for whom regional power projection and other elements are factors. However, if deciding to renounce nuclear weapons we have to put resources into a strategy to do this safely and securely and therefore work step by step to reinforce the non-proliferation regime, and to take plutonium and

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highly enriched uranium, for example, out of circulation altogether, and work with other NATO states to devalue nuclear weapons. I have had some very interesting discussions with a number of our European allies on how Britain could actually take a leadership role in reinvigorating the view that nuclear weapons essentially have no role in defence and no role in status, and so devalue nuclear weapons. That is a hard job. There is a challenge there. It is not status quo or not status quo. Whichever we choose, we are going to have to make a case and we are going to have to deal with the consequences, but in my view—and, as you saw, I laid out a scenario of 2025 in a much more proliferated scenario, such as the cascade of proliferation that the UN Secretary General warned about, and I put a scenario that looks at a world that maybe does not have zero nuclear weapons but where nuclear weapons are considerably devalued, are marginal in security and military policies. I have discussed in that context how we get there, but there is no time now to go into that kind of detail.

Ms Hudson: I think the prospects for advance on arms control are currently poor if the nuclear weapons states continue to pursue the type of approach that they are following at the moment. Last year at the NPT review conference, there was some indication that nuclear weapons states seemed to want to redefine the NPT in some way as removing the process of disarmament from it, the requirement for disarmament, and seeing themselves as somehow entitled to maintain their nuclear weapons, and of course, we heard Mr Straw saying that yesterday, that Britain was authorised to have nuclear weapons and so on. There has to be an understanding by the nuclear weapons states that, until they begin the process as required in Article VI of the NPT to pursue negotiations in good faith towards disarmament, we are not going to have any headway and there is going to be a continued tendency towards proliferation from other countries who are going to arrive at the conclusion they have a deterrent need for nuclear weapons. The onus is on the nuclear weapons states to start making some progress.

Sir Michael Quinlan: The nuclear arms control agenda has languished over recent years, largely because the present US administration does not believe in any of it. That, I think, is to be deplored but it is a fact. I think the era has passed of bean counting numbers bargains in arms control anyway. I think there are possibilities but they are not of that kind. I do not believe the UK could put itself in any useful such arms control bargains since our numbers are not a function of how many anybody else in particular has. I do not believe that our decisions are at all likely to make a material difference other than in speech making to what other people actually decide to do. That said, I do believe that we ought to look very hard, as we move into another generation, if we do, at what we could do to reduce the scale of what we have. I think I can without impropriety tell the Committee now that I recommended when I was still Permanent Secretary, over 15 years ago, that we could do with three submarines. That idea was not

accepted, but that sort of thinking we could well look to and I think that would be marginally helpful to the general trend of affairs in the nuclear world.

Q39 Chairman: Sir Michael, I think both Dr Johnson and Ms Hudson have said in their memoranda to us that the decision to upgrade in 1980 was a material breach of the non-proliferation treaty. Do you consider that to be true?⁵

Sir Michael Quinlan: No, wholly untrue.

Dr Johnson: My brief quoted Professor Chinkin and Rabinder Singh QC in saying that now to replace Trident would be a material breach, and it is an important element of the argument because of the way in which the states parties to the NPT strengthened elements, including the disarmament element, in both 1995 and 2000 by consensus and that legally this now becomes part of the meaning of Article VI.

Chairman: I should not have paraphrased your memorandum and I apologise for that. I put to you a wholly false question. I want to move on to the nuclear deterrent and the UK's international influence.

Q40 Robert Key: Chairman, I am sure everyone will have their own view on this. Could I start with Sir Michael Quinlan. It is often said that the possession of nuclear weapons by the United Kingdom gives us a seat at the top table. If we did not have nuclear weapons, would we still be at the top table or would it matter if we were not?

Sir Michael Quinlan: As I have said, I do not myself find the top table argument very persuasive or attractive. I think it is rather a pity that we have the confluence between permanent membership of the Security Council and nuclear weapons status, because that does not seem to me logical, necessary or indeed politically desirable. What I think is more relevant is that our possession of nuclear weapons in a very general way gives us slightly greater confidence in the way we act around the world, and since we are still among the countries which have both the capability and the will to take on difficult missions around the world, as we are seeing in one or two uncomfortable places now, nuclear weapons have a certain relevance to that, but the status/top of the table argument I do not myself believe to be a great weight-bearing one.

Mr Plesch: I think all too often we think that moral authority is not something that cuts any ice in the real world, and I think we forget the history of the Second World War, which while it was fought to the Nth degree in terms of hard fighting, also the moral authority of the Allies against the Axis was critical in providing the motivation of that generation to fight that war, and I think that we lose sight of the power of new ideas to save our world at our peril. I think this country would be looked on much more favourably if it did not have nuclear weapons. It would be regarded as being much more modern. If I can just take a moment on the previous question, we I think

⁵ Ev 7 and Ev 3.

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forget, again, at our peril, the enormous achievements in arms control and disarmament made, really, one might say, in the forgotten decade of 1987–96. There is a list of critical treaties all of which had one thing in common: everyone thought they were impossible before they were signed. Everyone thought it was impossible to achieve them, yet we have them, and what we have not done is to build upon them for the future and see how they can help secure our future.

Dr Willett: I think the issue is of status rather than a seat at any particular table, status in the world as a whole and also in particular in Europe. What we have with our capability is a political balance in Europe. There is not much discussion of the French reducing their capability or giving up nuclear weapons and one would have to ask what would be the implications for Europe of us stepping away from this kind of capability. Are we a balance against another state, for example, Germany, looking to establish a capability, which maybe they might be inclined to do if the UK were not there to offset the French capability, as one example? It is a balance against global instability as a whole and, as Sir Michael said, the ability to act with greater confidence.

Mr Codner: I would reinforce the point about Europe and France. This is a consideration as to whether Europe should, in whatever form it takes in the future, have merely one nuclear power. Sir Michael Quinlan in a paper a couple of years ago made reference to Edward Heath's remarks about nuclear weapons being held in trust for Europe, and I think that this is certainly a consideration.

Ms Hudson: I think we should remember that there is an overwhelming demand from the vast majority of countries in the world for the nuclear weapons states to pursue their disarmament obligations, and the status and prestige which would associate with taking a step in that direction would be quite extraordinarily large. I think that one has to ask really whether one wants to be at a top table which is pursuing policies which lead to proliferation and war.

Q41 Chairman: Why do so many countries want it?

Dr Hudson: Looking back to the late 1960s when the nuclear non-proliferation treaty was being drawn up, it was primarily drawn up on the initiative of countries from the developing world who wanted to see an agreement which would prevent proliferation but which would also bring about disarmament, and that was the basis of the nuclear non-proliferation treaty—a kind of balance primarily between disarmament and non-proliferation, and the non-nuclear weapon states agreed not to proliferate and get nuclear weapons in return for the nuclear weapons beginning the process of disarmament, and that strong desire is still very much there and is very strongly manifested at NPT preparatory committees and review conferences, for example, and that demand is still very strong in the world because many countries do not want to see us sliding to nuclear use, nuclear war and so on.

Chairman: There will be a lot of answers to this but I wonder if we could move into the independence issues which we said we would get into, the independence of the nuclear deterrent.

Q42 Mr Hancock: I just have one aside, if I may, because I think the last comments that were made about Europe and the French in particular lead me to the question would it ever be politically acceptable for any government in this country of any political persuasion to abandon the nuclear deterrent all the time the French maintained one? That is just a one-answer question along the panel.

Mr Plesch: Can I link into that to the question the Chairman asked? The French view of 40 years has been that we do not have it and that our dependence upon the Americans makes us a vassal state, so for many continents they would not see the question that way at all. That is a choice we made many years ago.

Q43 Mr Hancock: But the British people would see the exact opposite, would they not?

Dr Willett: It is more a question of the balance in Europe as a whole rather than a particular issue with the French. It is the implications of—

Q44 Mr Hancock: No. My question is would it be possible for any British government of any political persuasion to be able to sell the idea of the abandonment of the nuclear deterrent all the time the French maintain one? That is a straight yes or no answer. That is not looking for the balance in Europe: that is about the political question in the United Kingdom.

Sir Michael Quinlan: It would be very difficult.

Dr Hudson: I do not think it is of particular interest to the majority of the British people. They see nuclear threats in terms of the either the great super powers or rogue states or something like that, but I think we should be aware of the opinion poll which was conducted in the autumn by Greenpeace and MORI which indicated that when those polled knew that the Trident replacement could be extremely expensive 54% of them said we should not have it, and they were not given any subtext about France or anything like that so I do not think it is at the top of people's agenda.

Q45 Chairman: Sir Michael, you said it would be very difficult. Wherein precisely would lie the difficulty?

Sir Michael Quinlan: I have to say I think it is just national gut feeling. To leave the French as the only people with this I think would twitch an awful lot of very fundamental historical nerves. I am not arguing about the logic of it; I just think it would be that gut feeling that we cannot.

Q46 Chairman: But are you not there putting exactly the status argument that you said did not apply?

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Sir Michael Quinlan: I am not commenting on the merit of the argument; I was asked what I thought was the probability of its being made.

Dr Johnson: I completely accept and I hear this argument a lot in the corridors of the FCO in particular but what I find bizarre about it is this: imagine if you were to say to the British public, "We need to spend upwards of £25 billion for a nuclear weapon because the French have one". I think you would be laughed out of court. That is realism—

Q47 Mr Hancock: With the greatest respect, I do not think the British government would pose the question just in that way!

Dr Johnson: Of course they would not but what that underpins is that is not about military considerations; this is not about defence. Indeed, it is a political instrument—

Q48 Mr Hancock: That is what I am trying to get at.

Dr Johnson: This is about politics and not deterrence, and make that decision openly if that is the decision you make.

Mr Codner: I wanted to make the distinction that has come out of the discussion with Sir Michael Quinlan between strong arguments over status and actually what the British self-perception is, which I think is very important to this for the reasons you have given, what the British electorate would vote for if asked. I think we do not have as good an understanding, perhaps you do but I do not as an analyst, of this business of the electorate self-perception. I think the whole nuclear issue is very important in that respect bearing in mind the outcomes of a couple of previous general elections where the issue has been of relevance, and I am not sure that has gone away.

Chairman: Can we now get back to the independence question?

Q49 Mr Hancock: Absolutely, and this leads very conveniently on to the idea of how the British people's view is of the independent nuclear deterrent. Several of you have spoken that you do not believe there is such a thing for the United Kingdom; I would be grateful now if you could expand on the idea of the British public believing we have an independent strategic nuclear deterrent.

Sir Michael Quinlan: I have, in fact, sent your clerk a note, rather belatedly so it may not have got round to the Committee, about the matter of independence,⁶ but I think discussion on this is befogged by failing to distinguish between two different kinds of independence which are different levels of insurance policy with different costs. One is independence of procurement, which the French for the most part have gone for at high cost; the other is independence

of operation. We have gone for the latter which costs a great deal less. It means in the last resort, when the chips are down and we are scared, worried to the extreme, we can press the button and launch the missiles whether the Americans say so or not. We have not got independence for procurement and the result of that is that if, over a very long period, we became deeply estranged from the Americans and they decided to rat on their agreements, we would be in schtuk, great difficulty, and I think one needs to distinguish between those two different sorts of independence.

Mr Codner: I would like to follow, agreeing very much with what Sir Michael Quinlan said. Independence of operation means that in the context of a one-off, which if it ever was used it would be likely to be, we would not have the problem then of replenishment where we are, once again, independent. The issue to my mind over independence is more to what extent can we in the longer term guarantee not only the continuity of an operating system but also of the procurement process over the next twenty years, and whether it is actually in the United States' interest for us to have an operationally independent system.

Dr Willett: A key aspect of the independence argument obviously is the system we have and people looking at the fact we have a Trident system and therefore arguing we are tied in with the Americans. If we start at the front end the question is why do you need this, first, and what do you need, and when we got down to the question of what was the US option, in partnership with the United Kingdom, it was the option that presented the right requirement at the best cost. We did not have an indigenous programme, and other options, for example doing something with the French, would be in this current debate politically difficult and potentially more costly, so it needs to be stated that, of course, one of the key elements in this is that the American option offered the best value for money option.

Mr Plesch: If I might, I think Sir Michael makes a very useful distinction between procurement and operation. Procurement though, as some documents one can find from US presidential archives on the web show, does extend to parts for nuclear weapons which, generally speaking, has been not a view expressed by the Government and not the public understanding of the British people, that we actually procure parts for the weapons, but the question is how long before we are in schtuk. Suez was a crisis that dragged out for some considerable period of time; 1940 was a crisis that built over years, and in both one could not rely upon the United States. If we look at the provision of updated software for weather information, the condition of the targeting, these sorts of things, the time lag is quite short. Former naval officers have said to me that even in the 1980s the time lag was between a year or two. That is not a very considerable period of time in politics, I think. I have explored this in some detail in my memorandum

⁶ Ev 15.

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and, of course, we do have rather tighter controls over information than the Americans, but if you look at what has come out from memoires and letters, at the time when these arrangements were made Macmillan's Permanent Secretary minuted that this would put us in America's pocket for a decade and before Nassau the head of Bomber Command said in a note to a colleague that Macmillan was going to Nassau to defend what was already a myth of independence. Similarly the then defence secretary and his officials in 1962 said that the United Kingdom forces at the time of the V Bomber Force did not operate independently and, of course, the normal understanding from the American side and the documents that Presidents sign is that they are assigned to NATO which is, of course, an integrated command with the Americans.

Linda Gilroy: Sir Michael, you referred to the difference between independence of operation and independence of procurement and I am not sure if it was you or Mr Codner who referred to the deterrent as an insurance policy. The proportion of total managed expenditure represented by the defence budget is 5.4% of what the Government spends on everything. What proportion of that budget can anybody say is represented by the operation of the Trident programme?

Chairman: I am sorry, Linda, but that is a question I would like to come on to immediately after we clear up the independence issues, because it is slightly different, I think.

Q50 Linda Gilroy: The question was in the context of recognising that there is a difference between operating a system which is independently procured and independently operated. We have an independently operated system, some would argue with that, but what is the cost of that?

Sir Michael Quinlan: Could I explain the point about insurance? What I said in the note which I made available to your clerk is that the Americans have got tons and tons of nuclear weapons. If the Americans are solidly with us, nobody else needs anything; the size of their armoury is ample for any conceivable use. For anybody else who is more or less on the American side, as it were, to have them depends on a hypothesis that either they are not available on the day because the Americans do not agree with you about this particular crisis or they are scared, and that points to having operational independence, the ability to fire the weapon whether the Americans like it or not on the day. The other hypothesis against which one might want to insure is the possibility that we become deeply estranged from the Americans, they have gone isolationist over a long period of time, they have ratified on their agreements with us; if that is what you are insuring against then you need what the French have which is independence of procurement, and that costs you at least three or four times as much. Within the defence budget, and you would need to check this with the MoD currently, my impression is that not

more than 3% goes on our nuclear capability. The French have been in the 15%, 20% and even more territory.

Chairman: You are quite right; it was relevant to the question of independence.

Linda Gilroy: And it is 3% of 5% which is nought point something% of what we spend for that deterrent.

Q51 Mr Hancock: So moving on to the next generation, is it possible for the United Kingdom, if we were to go down the line of procuring another version, an updated version, of Trident and a submarine to launch it from, to maintain an independence of operation? Do you think that is a capability that we could have? What does it do for us politically in the world, us being locked so closely to the Americans over and on this issue, not just now but in the foreseeable future?

Mr Plesch: With respect to the independence of operation I think we lose sight of the role of American corporations in managing the operations of Aldermaston, of AWE, and of the submarine refit facility as well. My point is that if you look at any one point of the relationship you can argue about how much operational independence there might be, but in my memorandum⁷ I have endeavoured to provide the spectrum which covers operational questions as well as procurement questions. One has to say if we really want this then we should be prepared to pay for it. I do not think when it comes to insurance policy that people want something, or that your voters should believe they are buying something, where when you get to the small print it says: "Well, in this sort of situation we can use it, you can cash in your insurance policy, but in these other situations, 1940, 1956, then your insurance policy is valueless". That I think is a fraud on the voters, and it is a fraud that has been perpetrated.

Sir Michael Quinlan: 1940 and 1945⁸ are not parallels.

Dr Johnson: For my sins I spend quite a lot of my time among diplomats in New York and Geneva, and I think your question raises a third level of independence and that is independence of policy. I have to say that during the run-up to the Iraq war there was really a lot of consternation among diplomats about why Britain was so close to the Bush policy on going to war in Iraq and why it was clearly flying in the face of evidence, and a lot of those diplomats were making quite sarcastic remarks about the fact that the Bush administration would tug the nuclear lead and that Britain is dependent on the US for its nuclear weapons. Now I am not necessarily saying that is a correct depiction of the facts: I am saying that it is a correct depiction of perceptions in quite a number of countries, including our allies, that

⁷ Note: Ev 1.

⁸ Note by Witness: 1940 and 1956 are not parallels, not 1940 and 1945 as indicated.

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we do not have independence of policy as long as we are so dependent on the US for procurement. The final point on that is that I was in Washington in November and January talking to people from the Department of Energy and the Pentagon and, indeed, up in Congress and I asked them was there any guarantee that the US would continue to supply either Trident D5 missiles, if our option were to be a like-for-like replacement, or cruise missiles—either of those delivery systems would be dependent on US missiles—and while I was told that the expectation is that the United States will continue to produce Trident D5 missiles to about the year 2042, there was no guarantee. Policy could change: there was no guarantee. Also let me remind you that on at least three occasions in the past, Blue Streak⁹, the upgrading of the C4 to the D5 Trident missile and, indeed, the nuclear testing moratorium when Britain had a device down the shaft at the Nevada test site when the US signed the nuclear test moratorium, and though I was very pleased they signed that, the truth of the matter is they left United Kingdom planning policy high and dry with no consultation.

Dr Willett: We have to go back to the point about the independence of use and the one boat. The United Kingdom has a fleet of four submarines to put one on station all the time. We are not talking about having four submarines at sea to fire all their missiles. The United Kingdom requirement is one boat that has on board up to 16 missiles with a set number of warheads that is regarded as sufficient to do the deterrent job. The point here is the independence of use that we have talked about previously in that it is a British boat and a self-contained missile, a self-contained guidance package, that does not rely on the US for permission and cannot be stopped by the US and that boat is there with sufficient capability on its own to do what is regarded by the United Kingdom government as being sufficient to deter that particular threat. As Michael Codner mentioned previously, the independence issue then comes in the re-supply, but the United Kingdom requirement for strategic deterrence is contained in that one boat and that one boat at sea, and therefore the issue of re-supply and the reliance is somewhat academic because, arguably, we would have done the job. On the issue of reliance on America companies—well, you have to buy it from somewhere, so we can either build our own, which will cost more money than buying it from the Americans; we can either go with the French, which we believe will cost more money than buying it from the Americans; or we can build our own, and what we have is the best system that fits within our budget.

Q52 Mr Holloway: Sir Michael, you state that the circumstances in which the United Kingdom would use one of its missiles would be when American missiles were unavailable or when we were in disagreement with them. Mr Plesch's paper makes the point about manufacture and maintenance being very much tied in with the Americans. Logically it

would seem extraordinary to me, whilst you assert that the United Kingdom deterrent is independent, that the Americans would not have some means in the internal structure of the missiles or the delivery system or, indeed, an external means of preventing a successful detonation of one of our bombs. What is the situation?

Sir Michael Quinlan: We believe there is no such thing. Of course, you cannot prove that there is no such thing, in the sense that the whole world is Jesuit conspiracy, and the only reason you cannot find the evidence is just how clever they are! And the question you are posing is of that order.

Dr Hudson: Obviously CND would take the position that whether it was independent or not we obviously do not want it, but just thinking about the 1958 mutual defence agreement between the US and the United Kingdom which gives us, I think, what is probably the most extensive nuclear sharing agreement in the world, and of course there are countries that have raised its legality under Articles 1 and 2 of the MDC, but in that context would we be able or allowed to use our nuclear weapons without US approval and if, indeed, Parliament did decide over the next couple of years that it did not want to replace the Trident system, would we be allowed not to?

Chairman: I am now going to move on to the timetable for decision-making.

Mr Havard: I would like to talk about the decision-making process and the timetable for doing so. We have already had announcements made about the AWE and money being spent in order to provide current safety and current capability so investment decisions have been made about that and have been declared. What I really want to get to is what decisions have to be made when, and what options are there within that decision-making process that actually die away? When do they die away? So what is the timeline for making decisions about a replacement of a capability?

Q53 Chairman: Mr Codner, in your memorandum¹⁰ you gave us some helpful stuff about this. Would you like to begin?

Mr Codner: I have to say that it is all speculation based on when the last possible date that the last submarine has to cease operating for safety reasons, and working back looking at other modules of long procurements and, indeed, Trident and Polaris before that, so the dates that I use are very much speculation in that sense. But if one looks at the last possible date of replacement of the last boat with an extension of life for that boat then we are talking about 2024, by which time another boat must be in service and operating, and if one imposes on that these timelines, as I said, that implies to me, using the language of

⁹ Note by Witness: Dr Johnson in fact meant to refer to Skybolt and not Blue Streak.

¹⁰ Note: Ev 16.

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smart acquisition which some of us are familiar with, that there would need to be an initial gate decision at the very latest in 2010. Many have said it has to be a longer period than that which means that the first amount of investment to reduce the options from a particular range of courses to a particular option would need to be made on that particular date with a view to a main gate decision in about 2014, and the main gate decision for development and manufacture would be the bulk of the expenditure. We are talking about 28 billion¹¹ altogether, then a good 17, the final commitment, would be then. This leads to the question: What is the decision to be made now? Looking at the smart acquisition model we are talking here about the concept phase, so that is reducing the numbers of options—quite apart from the overall decision whether to go ahead which I will come back to—from land base, air launch, continuing the submarines, whether there is an upgrade of Trident, whether there is an extension of the life of the hulls—all of these decisions are the ones that need to be made in this Parliament, and this is the most optimistic in delaying model I can give. All I would say is that because of the nature of those decisions they are in themselves very diffuse and could all be made, as it were, separately so the decisions to be made in this Parliament do not necessarily have to be a “We will go ahead”. What they do involve is a certain amount of investment in studies, etc, the Aldermaston upgrade, and possibly the work Dan has referred to in the development of particular elements in this Parliament. When one looks further ahead, of course, one could say that if the Government does not want to undermine its deterrent strategy at the moment one way ahead would be to make the “Yes” decision now over these parts of the investment and, indeed, make a “Yes” decision at initial gate committing, say, another 3 billion, but the final decision would then not need to be made until 2014 when you make the big investment, so what you are doing is making a considerable but partial investment in sustaining our deterrent capability at the moment with a view to making the big decision in someone else’s Parliament.

Dr Willett: And Michael made the point that the 2024 date was based on the assumption that the life of the current hulls would be extended. That decision has not been taken yet obviously, so the clock currently stops in around 2019–20 when HMS VICTORIOUS comes out of service, HMS VICTORIOUS being the second boat of the class, and the reason why HMS VICTORIOUS is significant rather than HMS VANGUARD is that if the second boat comes out of service the United Kingdom will no longer have the minimum three boats it needs to do the continuous at-sea deterrent. So it is very important to make the point that the clock still stops at 2019 at the moment and, as Mike pointed out, one of the key decisions for this Parliament is whether to extend the life of the hulls. Now, they can be extended for up to five years but beyond that there are United Kingdom safety

regulations about the reactor and the submarine; there are questions as to whether or not it becomes cost effective to continue to run them any further, and even in that five-year period the actual cost effectiveness of maintaining the submarines will reduce, as will their availability. One of the key points in this whole timeline debate is the issue of the submarine. The submarine is the big platform, the big question, in the replacement debate. The missile is under development already in the US, the warhead is the same warhead—it is the platform that is the big question, and there is the issue of maintaining the skillset at Barrow, assuming it is a British-made submarine, and just ensuring that you have the options open at all times until you make that final decision.

Mr Plesch: My understanding from colleagues in Washington is that the American successor SSBN is currently a classified programme. I agree with the view taken by the parliamentary research department that it is likely that the United Kingdom will go with the American successor. That also, I think, is the historical precedent and if one looks at the way in which the discussion went on Polaris that was, first of all, to be their Polaris missiles in new boats, then it was an adaptation of the Polaris missile which turned out to be a dramatically new capability missile, then it was Trident C4 and then Trident C5¹²—ultimately the fourth iteration of what was discussed, all driven by what was going on in the US. Secondly, very briefly, I think it all depends on what you mean by “decided” because in many respects, particularly with respect to warhead design, if not actual development, decisions are very well advanced. Finally, I think a good deal more attention needs to be put on the tactical warhead that was developed and notified to Parliament under the last Conservative government. In a sense why do we want yet another new nuclear warhead if our last three nuclear tests were apparently for a new tactical warhead, and in the 1993 defence estimates the Government said this was going along very well and then it was cancelled? Whatever happened to that?

Dr Johnson: I would like to address this timing question from a different angle. We face a very tough choice—no question. We can either sleepwalk into a much more proliferated world by the 2020s or, if we want to maximise our ability to strengthen the non-proliferation regime and influence other states, then the earlier the announcement of a decision not to procure a replacement nuclear weapon system for Trident the better. The more leverage we have the better we can manage the transition towards a non-nuclear defence-based policy. It would allow us to reconfigure our policies and our infrastructure while if necessary, if we have to cling to the voodoo blanket for a few more years, we know we could still take a Trident out on patrol, as we put our resources, our

¹¹ Note by Witness: The figure should in fact be £20 billion, not £28 billion.

¹² Note by Witness: It is the Trident D5, not the Trident C5.

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intelligence, Aldermaston, the other facilities, towards creating the future in 2025, where nuclear weapons are marginalised.

Dr Hudson: To put a gloss on that, if I may, we have had a commitment since 1968 to pursue negotiations in good faith. That was reinforced in the mid 1990s with the World Court Judgement, and then in 2000 with the addition of the 13 practical steps to the NPT when we acquired the demand for an unequivocal undertaking to accomplish the total elimination of our nuclear arsenal. So that is the strengthening of that. The urgency also is absolutely added by the need to advance the non-proliferation agenda, and many people have observed that if countries like Britain go for new nuclear weapon systems, what kind of message is that going to send to—

Q54 Mr Havard: So you would argue the urgency is we should get on with making a declaration that helps to get rid of them and the people involved with wanting them would say, “We have to make a decision now if we have to have them because the current process is dying on us and we need to make long-term decisions about replacement”?

Dr Hudson: Yes.

Q55 Mr Havard: As I understand it, the Ministry of Defence are not helping us with regard to this inquiry, and you will understand that. At the moment they are declaring no decisions are made, they are still studying it, the Secretary of State has said all of that; we are trying to clear the brushwork so we can have this discussion but, as I understand it, there are projects taking place and you mention the replacement of one particular platform, the submarines, and there could be a capability gap in 2019 unless decisions are made quite clearly, very soon, about whether or not you are going to replace the boat as the platform. So I understand all of that and that is set against projections about what Iran will be able to do and China and all the rest of it. But what I would like to get to is what you said at the start which is that maybe there are different options. All the decision-making we have heard about so far is predicated on one point which is a replacement of the platform for the interballistic missile which is Trident and its integrity. Are there different and other options that could be taken, and what are the timelines for those? I understand what the procurement processes are.

Dr Willett: I have done a fair deal of looking at what the options are and there are pros and cons on all sides. It is worth pointing out that the Government needs to continue with the answer being “Yes” until it decides that it is “No”, so until we come to decision that we do not want it we must always plan and prepare for the fact that it will be “Yes” and it will be looking to retain and that is why the MoD as you suggest will be studying all options. The options basically are the submarine-based deterrent we already have and what you want with a deterrent is to

ensure that your adversary cannot deter you; you want a deterrent that is survivable and that can guarantee that you can deliver the effect that you wish to deliver when you want to deliver it where you want to deliver it, and the only option in my view that delivers that is a submarine-based capability. A land-based option would involve a ballistic missile that would need to be deployed on United Kingdom soil somewhere; that makes a rather large target somewhere on the United Kingdom mainland as opposed to a submarine that is continuously deployed at sea; there is the question that of course we do not have our own ballistic missile and would have to develop one either with the US or independently; there is the question of air-launched options, air launched cruise missiles. Well, we do not have a strategic bomber, we do not have short-range aircraft so we do not have a platform with the range to be able to give you the global coverage that a ballistic missile gives you; the Americans are not developing a bomber programme that would help us at this point—

Chairman: Can I stop you here because these are all issues—

Q56 Mr Havard: Can I ask the question the other way up? Some of us have said that the MoD’s claim is that nuclear capability is not for war-fighting because this is a question of it being simply for deterrence and, Mr Codner, you said this was “not a very meaningful notion” and that largely this is about them having some war with the Treasury on who might provide the money and that this was very interesting in terms of how we might deploy nuclear capability in the future, perhaps based on different platforms. So I am trying to explore the question I asked earlier—that there are clearly other alternatives. Are we in a situation where all these other combinations are still in play in some fashion, or not, and how do they mix into this question about when decisions have to be made. With boats the decision is quite clear; it is 2007 for the concept phase alone.

Mr Plesch: Very briefly, the new chapter makes clear that the Government sees there are military uses for nuclear weapons and, secondly, no attention is given to the re-negotiation of the mutual defence agreement that took place in 2004 managed by John Bolton’s department in the State Department—

Q57 Mr Havard: God help us!

Mr Plesch: Indeed—but are we asked to believe, this is not a question of conspiracy, that there was no substantive political negotiation over the terms under which that agreement was renewed and that it did not involve issues concerning systems and political intent by the United Kingdom for the period to 2014? I do not find that credible in my knowledge of John Bolton and, indeed, of a realistic understanding of the relationship between states and what we know about the British/American relationship on these issues.

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Chairman: Can I stop this point, please, because we have three further issues that I want to discuss very quickly.

Q58 Mr Borrow: I want to come back because I think this timing of decisions is crucial from a democratic point of view, and it is really Dr Johnson's point. Am I right in assuming that if the United Kingdom Government now decided not to go ahead with replacing the nuclear deterrent, then whatever government was elected at the next election would be unable, within the timeframe, to restart that programme and ensure that we could replace Trident when it ran out? That is a crucial issue for democratic politics in this country.

Sir Michael Quinlan: I do not think it is as clear-cut as that. I suspect that if you leave it right through to the end of this Parliament you may find that some things are getting compressed, you may have to spend a bit more, you may be at risk of doing things in a bit more of a hurry than is prudent. I doubt if there is a clear cliff edge this side of the next election.

Q59 Chairman: Mr Plesch?

Mr Plesch: The Government argues in one breath that 35 countries could get nuclear weapons in the blink of an eye and in another that if we did not do this immediately we can never ever be a nuclear power again.

Chairman: Thank you. Now we have three further questions about the impact of US decision-making, about the prospects for Trident service life extension and about the civil nuclear programme, and I want three snappy questions, please, and a few snappy answers!

Q60 Robert Key: Chairman, I would like to explore the extent to which the United Kingdom is locked into United States' decision-making. First, for Rebecca Johnson, how is American decision-making on the future of its deterrent likely to affect the substance of United Kingdom decision-making and, for Lee Willett, how might US decision-making affect the timetable of United Kingdom decision-making?

Dr Johnson: I responded earlier on the missiles and unless we go back to some kind of freefall bombs from aircraft we are going to be dependent on US missiles and, indeed, other US components like tritium and so on, and with US decision-making as it currently stands it is likely they will carry on being dependent on Trident missiles until the year 2042. If we replace Trident like-for-like, however, we are going to build a submarine that is expected to last until at least 2055, so that poses the question: "Will they carry on their system or not and what influence might we have on that?" I have to say from my conversations in Washington I think the influence we will have on that is negligible. The US will make its own decisions based on its own industrial and military perceptions.

Dr Willett: It is obviously important to point out that what the US is trying to do is bring its missile timelines on that into sync with that of the life of its platform because its last platform comes out in about 2042, surprisingly enough the same time as the missiles so the US have done a good job in bringing those two programmes together. That therefore leads into the next issue of what the US will look to replace that with. The US is looking at a replacement submarine, and the D5 life extension programme does give it the option to build more of the new missiles. Of course, the key, however, is their relation to the United Kingdom and there is a slight mismatch at this stage between what the United Kingdom would do if it was to make the decision now to buy a new submarine. The submarine would last until 2050 odd; the missiles at this stage would only last until the 2040s, and the warhead current is slightly shorter, about 2025 to my understanding. So there are those issues that need to be addressed.

Chairman: Kevan Jones?

Q61 Mr Jones: This is really about the decision of the US to extend Trident life. Is there anything in there for us and, secondly, are there any technical reasons why Trident cannot be extended?

Dr Willett: The life expectancy of the submarine is dependent on the durability of the hull and of the reactor. At the moment the United Kingdom has in place a very stringent set of safety measures and the MoD argues that when it comes to end of 25 years the submarine and the reactor have reached the end of their service life. The United Kingdom can extend this for up to five years; beyond that the MoD would argue that perhaps it is too expensive to maintain submarines and to ensure the safety of the reactor and the recertification processes.

Chairman: Now the relationship with the civil nuclear programme. Linda Gilroy?

Q62 Linda Gilroy: Kate, we have already touched on the relationship between civil nuclear power and decision-making on the future of the UK's nuclear deterrent. How do you think a decision not to replace the United Kingdom's domestic nuclear power stations would affect our ability to stop power reprocess and store weapons-related nuclear material?

Dr Hudson: Currently?

Q63 Linda Gilroy: Yes.

Dr Hudson: I am not absolutely certain.

Q64 Linda Gilroy: Does Rebecca have a view on that?

Dr Johnson: Clearly nuclear power and nuclear weapons were intimately involved as we were developing nuclear weapons during the 1950s and extricating them from one another is not very easy. I

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personally think we do not need either nuclear energy or nuclear weapons and we would be much better off in terms of a secure future for this country finding alternatives to both.

Sir Michael Quinlan: Very briefly, we are talking about whether we have enough weapon-usable material. My understanding is that we have. We were I believe prepared to move towards negotiating for some material cut-off treaty but it was the Americans who blocked that, so I do not myself believe, though you would need to verify this with the MoD, that—

Q65 Linda Gilroy: It is also a question of dealing with the nuclear waste that arises from the programmes.

Sir Michael Quinlan: Yes, but in terms of have we got enough nuclear material to keep going with weapons, the answer I think is “Yes”.

Mr Plesch: For most of the post-war period governments denied there was a connection. Finally under the Clinton administration a series of barter agreements involving the exchange of tons of material was made public, so the precedent is not good to say “We actually know what is going on here”. Secondly, there are a number of specialist nuclear materials required for nuclear weapons which are imported from the US at a minimum. I think those points to my mind also go to the larger question that, when it comes to the United States looking at renewing support for Britain, Britain is required to show that it is a serious nuclear power and the question will I think arise immediately in the mind of John Bolton and his colleagues as to how can Britain be an independent nuclear state of any description if it has decided to phase out its civil nuclear industry.

Sir Michael Quinlan: With respect, Chairman, I take it the question is do the possible needs of our military nuclear capability impose any particular direction upon our decisions about civil nuclear energy, and the answer to that I think is no.

Q66 Linda Gilroy: And vice versa, to which the answer may be yes. You mentioned the US view on how we may be viewed but what about public opinion on the future of civil nuclear power? How does that compare with public opinion on the future of the nuclear deterrent? Is there any correlation between the two?

Dr Hudson: As far as I understand it from public opinion polls there seems to be at the moment a slim majority against both replacements of Trident and the development of new nuclear power stations. I think it depends really how extensively the public debate can be and how informed. Obviously the recent findings by the Porritt Committee will have helped.

Q67 Linda Gilroy: Indeed. If that debate you have referred to, putting cost into the equation of the nuclear weapon, affected people’s perception, how would that pan out in your view if cost was put into the equation of energy and future energy costs to domestic users if we were facing such pressures and cost pressures on other sources—sources that were not renewable, with fossil fuels going up and up relentlessly and renewables not being able to fill the gap? Do you think that would affect the public perception, ie that it would significantly bring down the cost of domestic fuel?

Dr Hudson: Certainly all the evidence I have seen indicates that nuclear power is an extremely expensive and highly subsidised form of fuel, and that even if the number of nuclear power stations were doubled it could only contribute to 88%¹³ of our total energy needs, and it would also take an extremely long time to come on-stream, perhaps 10 or 15 years, and the amount of money that could be invested in that would be better invested in renewables and other forms of clean carbon energies and so on, carbon storage energies, which could be brought on-stream much more rapidly. So in terms of economic argument certainly there is not much to sustain a credible case about nuclear power.

Chairman: Thank you very much. What I would next like to do is welcome to this meeting the visitors from the Parliaments of South Eastern Europe who are here with the Geneva Centre for Democratic Control of Armed Forces. I hope you have enjoyed this. I cannot think of a more important form of democratic control than the discussion of whether we replace a nuclear strategic deterrent or not. I am now going to bring this meeting to a close but in doing so may I thank deeply the Members of the Committee and the Members of the Panel who have co-operated so well in keeping their questions and their answers tight and relevant. I think it was an unachievable achievement. Thank you.

¹³ Note by Witness: The figure is, in fact, 8%, not 88%.

Tuesday 21 March 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David S Borrow
Mr David Crausby
Linda Gilroy
Mr David Hamilton
Mr Dai Havard

Mr Adam Holloway
Mr Brian Jenkins
Robert Key
Mr Mark Lancaster
John Smith

Witnesses: Mr David Boucher, University of Southampton, Professor Colin Gray, University of Reading, Professor Shaun Gregory, University of Bradford, and Professor John Simpson, University of Southampton, gave evidence.

Q68 Chairman: Good morning everybody. May I say a particular welcome to our academic witnesses who are giving evidence in this inquiry into the strategic nuclear deterrent. You are most welcome and we are grateful to you for taking the time and trouble to come along. The purpose of this inquiry, as I said last week, is not to come to a decision—that decision will be for others—but to inform the debate. We will be conducting in the course of this Parliament a number of different inquiries into different aspects of the strategic nuclear deterrent and this first one is in relation to the strategic context and the timetable that faces us. We have a lot of issues to cover, and we have a lot of members of the Committee and we have a lot of people who are giving evidence. Please do not feel that it is essential for each of you to answer every question. Please could I ask the members of the Committee to keep your questions as short and succinct as possible—no pre-ambles, please—and in answering questions to the panel please would you keep those as short as possible as well. The questions that we have are divided into distinct subject matters and if it is possible for you to stay within those subject matters (for example, like, “Timetable”; or “Is it independent?” or “What is the attitude of the United States or of Europe?”) it would help us in our inquiry. If I may, therefore, I would like to begin by asking whether the nuclear deterrent that we have is still effective as a deterrent now that the Cold War is over and in the post-9/11 world.

Professor Gray: My answer to that is that, at this moment, in 2006, it is admittedly very difficult to think of a scenario that is halfway plausible of the present time wherein it would be relevant. The main argument for retaining nuclear weapons, for Britain to remain a nuclear weapons state, is that we do not know what the 21st Century will bring. In my very short paper¹—brevity is not usually one of my strengths, but I made an exception for the sake of the Committee—I made the point that I do not think, in 1906, people looking out to the future would have got much of the 20th Century. In 2006, to anyone who says, “I don’t think that Trident is relevant to the Britain’s security situation,” Britain’s security situation could change almost overnight. I am in the process of writing a book about the strategic history

of the last 200 years and I am greatly impressed by the ability of strategic history to effect great changes and to surprise us. We do not know what the world of the 2010s and 2020s and 2030s will be like. We do know, I think, that the world of interstate conflict, as opposed to conflict against irregular enemies, is very likely to return. Whether or not it does, it is prudent of us to assume that it might, and the unique value of nuclear weapons for the protection, if you like, of the ultimate values of the country would be highly relevant in such a situation. Those who say our security future is to do with trans-national terrorists and other irregular forces are just guilty of the sin of presentism: they look out on the world of 2006 and they see the future. I think that is very foolish. The future brings all sorts of threats to which this will be relevant.

Q69 Chairman: How is it possible objectively to judge whether it is effective as a deterrent?

Professor Gray: If a weapons system of a military posture is effective as a deterrent you have no evidence for it. It is like the argument that we were good at deterrence during the Cold War. How do you know? We do not know. We may have succeeded in having a no war outcome despite our deterrent policies. We do not know that. There are no footprints in the sand.

Professor Gregory: I suppose I plead guilty to presentism, in a sense, to the charge that is made. You asked the question about now: Is it still effective as a deterrent? If you look at the security horizon, even in the medium term, the principle threats that we face—threats of global warming, threats of terrorism, threats of collapsing states and civil conflicts, even proliferation—I just do not see the connectivity about deterrents in relation to these kinds of threats. I think Colin is right, the strongest argument is the longer term one. It is the issue of uncertainty. But, even in that context—and I am assuming that is something we are going to explore in the next couple of hours—I still think that looking forward at realistic threats to this country from other states which require us, given our allies, given the European Union, given the United States, to have a deterrent of our own—which, after all, I do not think is an independent deterrent. That is my position.

Chairman: We will come on to that in a second or so.

¹ Note: See Ev 30

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Q70 John Smith: The argument that we are guilty of presentism and we do not know what the future holds, is that not an argument for any military system and any price-tag on the defence budget? It could be applied to any scenario. Surely there must be some reference to intent and/or capability, either present or indeed in the future. We need to identify what these possible scenarios could be, otherwise we are justifying any defensive mode.

Professor Gray: I think that line of argument is unsound. You are right, in the sense that: anything is possible but some things are more likely than others. The danger of presentism is likely to dominate this particular debate, but the value of a nuclear deterrent is so obvious, and, if you like, the ultimate argument of Her Majesty's Government in a whole range of possible scenarios that it is not a case of this as opposed to other military capabilities. This is a quite unique capability. This is the most potent weapon that mankind has ever devised. As I say, it is, if you like, the ultimate argument. Objectively speaking, of course, one does not say, "We have this because the future is uncertain." It is a matter of judgment; but the judgment, I think, would indicate that, given the bad things that might happen in the future, the pay-off could be very, very considerable. I was troubled by the word used by Professor Gregory just now. The word was "given"—you know: "given this alliance; given the Americans; given Europe". I do not know what we should take as given for the 21st Century. Ten, 20, 30, 40 years from now, I do not know who is going to be allied with whom. I know who I hope is going to be allied with whom, but if we start saying, "Given the fact that we always operate with allies; we will always have an American ally; we will always be part of Europe; Russia will always be down and out; China will always be looking for its own prosperity before anything else; given the problems of climate change . . ."—with which, I think, by the way, we can connect strategically to a nuclear deterrent—be very careful of that word "given".

Q71 Chairman: Could I ask you, Professor Gray, please, to keep your answers a little tighter, if I may put it that way.

Professor Gray: Yes.

Chairman: If I may say to the rest of the panel: you will, with each question, have things with which you agree and disagree—that will be perfectly obvious because this is your speciality—but would you mind if we move on to the next issue, which is that of other powers.

Q72 Mr Crasby: First of all, specific threats—and I direct this question to Professor Simpson. What is the nature of the military threat that we currently face from China? How might that threat evolve over the coming decades? What level of investment is China putting into its nuclear programme, and how is its nuclear capability likely to develop in the coming years?

Professor Simpson: At the moment, there does not appear to be a nuclear threat to the United Kingdom mainland from China. They have some fairly ancient

long-range missiles which I think take about two days to fuel up. Their main capability is in short-range missiles, short-range weapons which appear to be focused on Taiwan. As to how China will develop, well, one can argue the past is no guide to the future, but it is interesting that the Chinese really have not engaged in a nuclear arms race with anyone. They do not seem to have been driven, as the US/USSR race was driven, by specific concerns about other states. They seem to want a capability but do not want to go beyond that, so their numbers of warheads are variously at the moment put at 300 to 500. Looking to the future, I think we have to ask ourselves what the world configuration is going to look like. There are indications that the United States is taking the view that China is going to be a competitor, but, at the same time, if you look at the US National Security Strategy document that came out very recently, they are also placing great emphasis on the need to try to address themselves to a cooperative, as it were, solution to their relationship with China. Therefore, as things stand at the moment, we are in a situation where China is a very major trading partner of ourselves. In the main, the threats that we would confront from China will be threats to our trading allies in the region, and will be threats, if you like, to the cheap consumer goods that we are able to obtain from China, from Japan, from South Korea. And it is not self-evident to me that under these circumstances we would want to intervene vis-à-vis China and vis-à-vis that region with our own nuclear weapons.

Q73 Mr Crasby: Turning now to Russia—and I direct this question at Professor Gray. Russia's nuclear capability remains vast. Despite the end of the Cold War, serious questions remain about the security of its nuclear arsenal. What is the likelihood that the UK might face a threat from Russia in the coming decades? I accept, it is difficult to predict the future, but we have to, do we not?

Professor Gray: It is very difficult, certainly. The Russian Federation accords its highest investment priority in defence to modernising its nuclear arsenal. It has been boasting about it for recent years; it has the lowest threshold for nuclear use of any country's nuclear doctrine and it boasts of that. It has a strange theory that in the event of a conventional conflict—where Russia, of course, would be at a great disadvantage because its conventional forces, frankly, are a mess—it would employ nuclear weapons very early and it would implement nuclear escalation which it believes would produce a satisfactory outcome from its point of view. If you look at Russia today, it has, shall we say, unsatisfactory relations on most of its frontiers. No, it is not satisfied with its current situation. There is a whole plethora of quotations from senior Russians one can quote about how it views NATO, basically, as an enemy—and of course NATO is an enemy, in the sense that NATO stands between Russia realising its return as a great power in the current situation. You do not need to invent very imaginative scenarios to see Russia embroiled on several of its frontiers with countries in which we

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have a security stake or maybe to whom we have a legal obligation. Russia, as I say, is almost totally nuclear dependent in its defence positions. It has been emphasising a new generation of nuclear warheads, very precise, very low yield, and I say it has a very, very low threshold for nuclear use. It is not reconciled to the loss of the Baltics; it is not reconciled to the loss of the Ukraine; it is not reconciled to what has happened in the Caucasus; and NATO is right up against its frontiers. Who knows what the future of Russia will be—either under Putin, or who knows who will succeed Putin? I am not making a prediction; I am just saying that the notion that Russia was sort of yesterday's problem is, I think, an unjustified and unjustifiably optimistic assumption.

Q74 Mr Borrow: Could we perhaps move on to some of the emerging nuclear powers and a question for David Broucher, looking specifically at the threats from North Korea and Iran, and perhaps linking into that the possibility of Pakistan, which is in a pro-Western position at the moment, perhaps becoming rather more unfriendly in the future and how that could configure if we are looking into the next 10 or 20 years.

Mr Broucher: Thank you. I think it is quite difficult at the moment to foresee a situation where the DPRK could directly threaten UK interests where the United States would not also be involved. Much the same, I think, is true of Iran. If Iran is, as we think, developing a nuclear weapon and the means to deliver it, its target is not the UK. Its potential target is likely to be a regional one rather than a UK strategic target. That is not to say that things will not change in the future, but, looking at the situation as it exists today, it is very hard to foresee either of those countries threatening the UK mainland. I think the same is true of Pakistan. I would perhaps be slightly less confident about that, but I think you would have to look a very long way into the future to see a situation where the UK mainland would be threatened by any of those countries and where the United States would not be standing with us.

Q75 Mr Borrow: Which other states do you think are likely to develop nuclear programmes between now and, say, 2030?

Mr Broucher: I think that depends very much on the future of the non-proliferation regime. One of my worries about this is the way in which the Non-Proliferation Treaty has been eroded. Confidence in this treaty is flagging, frankly, through the activities of the four countries that have remained outside the treaty or that are now outside the treaty², through the activities of those who have been cheating within the treaty; and also, I think, through the failure of the existing nuclear weapons states to live up to their obligation to pursue negotiations on multi-lateral disarmament in good faith. If the Non-Proliferation Treaty were to break down, and if Iran develops a nuclear weapon, I think it is difficult at this stage to

be precise about which countries might follow suit but there is a danger that you would see several countries considering the nuclear option. I think there are at least 15, perhaps more, countries in the world that could develop a nuclear weapon quite rapidly if they were to take the decision to do so, and this is why I think it is very important that any decision that we take takes account of the fact that we are, as it were, an actor in this play and that the actions of others are conditioned by the way in which they perceive us.

Q76 Chairman: You said 15.

Mr Broucher: That was a figure that I was aware of sometime ago, so it may not be current any more.

Q77 Chairman: Would it be possible for you to let us have a list of the 15 that you have in mind?³

Mr Broucher: I can do some research into that, certainly.

Chairman: Thank you. I would be grateful.

Q78 Mr Borrow: Mr Broucher, I think you mentioned in answer to an earlier question about Iran and North Korea and Pakistan not being a direct threat to the UK. If we are looking across the wider group of nations who could develop nuclear weapons, how many of those do you think not only have the capacity to develop nuclear weapons but also the delivery mechanism to directly threaten the UK?

Mr Broucher: I think in fact very few. Unless you are looking at a situation where there has been a complete breakdown in the current security arrangements: the end of NATO, the end of European Union, a series of situations that we do not currently envisage, I do not think that is the real risk. The risk is that nuclear weapons will be developed by countries for regional purposes, particularly in the Middle East and perhaps in South-East Asia. If the denuclearisation of South America does not hold up, then there is a lot of potential there for nuclear mischief. As you know, there is a treaty that the South American nations have signed up to, keeping nuclear weapons out of that area, and the same applies to Africa and to South-East Asia. If that were to crumble, you could see a whole set of regional confrontations and conflicts that might impel countries in those regions to go for the nuclear option.

Q79 Chairman: Would any of you like to add anything to that?

Professor Gray: Could I say that I think David Broucher's assumption that the British denuclearisation would have an influence on decision making elsewhere is a fallacy. States which are thinking about going nuclear or having a nuclear option for their own very good local reasons would be entirely uninfluenced by the British example.

Chairman: We will come on to that in just a second.

² Note by Witness: Three states, India, Pakistan and Israel, always remained outside the treaty. A fourth, the DPRK (North Korea), has renounced its membership.

³ Note: See Ev 95

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Q80 Linda Gilroy: I was going to address this to Mr Boucher, although he has already given us some extensive views, on what the future is likely to hold for the Non-Proliferation Treaty, and I wonder if you have anything more to say about what we can do to halt the spread of nuclear weapons if the treaty continues to break down and does not recover.

Mr Boucher: I think that will be very difficult because the treaty provides the essential legal underpinning for the activities of the International Atomic Energy Agency. I think we do need an international watchdog, a policeman, if you like, to monitor the civil nuclear industry in a very large number of countries to make sure that nuclear materials are not being diverted for weapons purposes. If the treaty did not exist, I think we would have to invent it or something very like it, but it is difficult to see how we could now negotiate a new treaty getting the same bargain that we got in the 1960s which allows five signatories of the treaty to keep their nuclear weapons on a temporary basis—and that is very important: that it was supposed to be a temporary basis—looking forward to the day when nuclear weapons would hopefully eventually be abolished. It may take a very long time to get to that desirable situation, but the fact is that the treaty was based on that premise, that one day there would be no nuclear weapons left in the world. If you abolish that premise, if you say there are always going to be nuclear weapons in the world, then it becomes very much more difficult to maintain the moral authority for saying that some countries can have it and some cannot.

Q81 Linda Gilroy: On the link you have just made with nuclear civil energy, and reminding us of the role that the treaty has in that respect, I wonder if I could perhaps turn to Professor Gray. You made a statement just now that there were indeed links between climate change and the decision on the deterrent. Could you perhaps say a bit more about that.

Professor Gray: It has been fashionable for quite a few years now to say that the old-fashioned, traditional reasons why states are in conflict (those who want sort of traditional power politics, et cetera) is no longer the security agenda and now we are concerned about pandemic possibilities and climate change, et cetera. The problem is that a fairly abrupt climate change could threaten international civility globally. Given, shall we say, the over-population in Asia, in particular, and the fact that climate change could be at its most adverse in the areas where the populations are, shall we say, at their greatest, we could literally be in a situation where very powerful countries were unable to feed and water their populations. In theory, one likes the idea that the world cooperatively would cope with climate change, but one fears that it might be a case of the 1930s, of *sauve qui peut*, that suddenly one would find that the wonders of information technology and globalisation did not meet the need and that there would be a desperate need for arable land, a desperate need for clean water. The first duty of every government would be, of course, to see to

the physical survival and wellbeing of its own people, and climate change, which really caused a crisis in terms of food and water and also in terms of energy provision, would strain every alliance tie, would strain every inclination to cooperation. One would not have to go very far down that road for the more powerful states to try to ensure that their populations had the food and water that they needed. Suddenly, instead of the 1990s and the current notion that it is information that is the creation of wealth and happiness, one finds the old-fashioned need for, if you like, soil and water. You find that computers do not grow potatoes; that you need land; and suddenly the territorial issues, if you like, make a return to international politics. You could see climate change exploding civility in international politics. That is not a prediction, but I think climate change is in some ways the most threatening possibility to upset the whole game table of international politics in the 21st Century.

Q82 Linda Gilroy: Professor Simpson, in your paper to us you pointed out that by the end of the 21st Century global temperatures could rise between 1.4°C and 5.8°C, and, while the argument exists over the role of human activity in this change, as Professor Gray has just been discussing, it seems probable that the variation, however caused, will impact on the international security environment in significant ways and pose the question to what degree the possession of nuclear weapons assists the UK in facing any threats that arise from climate change. Do you have a view on that which you would like to share with us?

Professor Simpson: I suppose, to put it succinctly, there are some extreme scenarios where you could see a British nuclear weapon capability assisting the UK in this context, but, certainly as we are attached to Europe and the EU, it seems to me that we are going to have to address these things on a regional basis. While I accept Professor Gray's scenario as one possibility, it seems to me, beyond this non-civil world that he is indicating would be generated by it, that it is very difficult to see—to make the banal but obvious point—how our nuclear deterrent is going to stop large areas of Lincolnshire being inundated with water.

Q83 Linda Gilroy: Could I turn to Mr Boucher and the Non-Proliferation Treaty in relation to civil nuclear energy and its role in relation to that. Nuclear energy produces waste, but it does not produce the emissions which cause climate change. There are ever upwards significant pressures for new resources for energy. We have an Energy Review, but, whatever we decide, I suspect the rest of the world will go down the path of adopting nuclear energy. Could you perhaps surmise what might happen in terms of the NPT and its ability to which you have briefly referred to try to contain the consequences of that for security issues.

Mr Boucher: I share your analysis. I think that does underline the need to preserve the integrity of the Committee to strengthen the authority of the International Atomic Energy Agency; giving the

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agency more power, more funds, to monitor the civil nuclear industry in the countries that already have it and other countries that may acquire it in the future to prevent the diversion of nuclear materials for military purposes. But that is only going to succeed if the countries that have to allow this inspection to take place on their territory remain within the consensus that that is the right way to go. If that consensus breaks down, then I think we are in serious trouble.

Q84 Mr Havard: This latest situation in India and the United States of America, where we seem to see people who are part of the process, if you like, having extra emphasis put on them, namely Iran, whereas people who were not a signatory get a benefit by getting a deal with the United States of America. Where does that leave us in terms of the Non-Proliferation Treaty and the policing of it?

Mr Boucher: I can only say that I share your misgivings about that development. I must not lecture my American friends, but it may turn out to have been a mistake.

Mr Havard: Anything from unwise to a blunder, right?

Q85 Mr Havard: In the high level review that there was of the Security Council and its future last year, are you aware of any input there was to recognise the issue that we have just put on the table, about the links between trying to maintain security as nuclear energy itself proliferates within the world? Was there a discussion of which you are aware?

Mr Boucher: Yes, I believe there was in the run-up to that reform. The Security Council did become seized of the issue of weapons of mass destruction in general and the proliferation of the technologies and the raw materials that would be needed to make them and did what it could to strengthen the regime. Yes, the international community is aware of this issue at the highest level and is doing its best to counter it.

Q86 Mr Havard: Do you think it informed the debate at all about the make-up of the Security Council, which was under debate as part of that review?

Mr Boucher: Not directly, perhaps, but I think there is an issue here. There is a widespread perception, particularly among the non-aligned countries that in some way nuclear weapons are a passport to a permanent seat on the Security Council. I think this line of reasoning is absolutely pernicious and we need to be very clear that that is not the purpose of nuclear weapons. They do not confer, as it were, the right to sit on the Security Council and you do not need a nuclear weapon in order to be, for historical, economic, diplomatic or whatever reason, entitled to sit on the Security Council.

Q87 Mr Havard: Do you think there should be a further review of the make-up of the Security Council to take into account the issues relating to obtaining civil nuclear power proliferation and its link with security issues in future?

Mr Boucher: All I can say about that is that it is absolutely essential that the Security Council should remain seized of the proliferation issue; but whether it is necessary to reform it further in order to achieve that, I am less certain.

Q88 Mr Lancaster: We have touched on this before, firstly with Professor Simpson's comments about China and then disagreement, I think, between Mr Boucher and Professor Gray, but to what extent do you think Britain's decision to pursue with a replacement for Trident or a strategic nuclear deterrent will really impact on other countries, both on the pace and scale of what they decide to do, or will it not impact on it at all?

Mr Boucher: If I may respond briefly to the point that Professor Gray made, of course I agree with him that there is no direct correlation. If the UK decided to give up nuclear weapons this would not directly influence any other country to do the same. That would be too facile. If you look at it the other way round: if the UK decides to keep nuclear weapons, will that perhaps influence other countries to wish to keep their weapon and countries which do not have a weapon to think that maybe they should have the right to develop one? There, maybe logic is not quite the same. If the UK were to take a kind of conditional decision that it would retain a nuclear capability if it were not able to restart multilateral arms control negotiations, then you might conceivably begin to get some movement. I would like to see a determined effort by the UK to restart the Conference on Disarmament in Geneva and move it down the track towards multilateral arms control. I think it is not impossible to envisage something like that.

Q89 Chairman: A decision whether or not to replace Trident and the effect that a UK decision not to do so might have on other countries is a question of such importance that I would like, if I might, to ask all of you for your views.

Professor Gray: I think a decision not to replace Trident would have no effect. In fact, this bears on the question of multilateral nuclear disarmament and Article VI of the NPT, where the nuclear weapon states committed themselves to negotiation in good faith for nuclear disarmament. That is, frankly, a nonsense. There has never been negotiation in good faith for nuclear disarmament. There was mention in earlier discussion here this morning of potentially going down to zero. Zero nuclear weapons is, of course, utterly impossible, for the simple reason of verification: if you like, the country that hid the last five would win, and verification is utterly impossible. None of the current nuclear weapon states, to the best of my knowledge, have any intention—and that includes the UK—of abandoning their nuclear weapons because nuclear weapons are found to be too useful. If you endorse

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the notion of nuclear disarmament negotiations, it is a journey, literally, to nowhere. It cannot be a journey to zero, because, if we all signed a treaty saying zero nuclear weapons, it is utterly unverifiable and no-one could trust their security, their promise, if you like, to trust. If we trusted each other, we would not need the treaty in the first place.

Q90 Chairman: As you say in your memorandum,⁴ nuclear non-proliferation is a lost cause.

Professor Gray: Yes. We can slow it down and that may be valuable. Countries acquire nuclear weapons for reasons that to them seem very serious.

Q91 Chairman: Thank you.

Professor Gregory: I have, I suppose, a slightly different view. I agree with the idea that it is too simple to make a connection that if Britain gave up its nuclear deterrent then somehow—the old Labour unilateralist argument of the 1980s—we would lead some great international denuclearisation. I do not believe that. My point would be that removing Britain's nuclear weapons, partly because of its dependence on the United States, is essentially irrelevant; in other words, if we have it or if we do not have it, it is not going to make any difference to whether regional states proliferate or to our security situation. But—but—I think there are a number of states in the world within the NPT framework who have stayed true to that framework, even though they have had the capability to develop nuclear weapons for many, many years—and a number of 15 states has been mentioned. We have had South Africa that has given up a nuclear capability, we have had states like Argentina and Brazil that have turned away from nuclear competition, and we have had the Ukraine that has given up nuclear weapons in the post-Soviet context. I think the possibility is open to Britain, through a phased denuclearisation, a decision not to renew, to assert diplomatic leadership in this field. We would be in a very strong moral position—and, do not forget, we are still a state that punches above its weight through all sorts of things—through the Security Council, through the EU, through the Commonwealth—and this would actually give us much more leverage than simply carrying on in tow by the United States, so that our next 30 or 40 years look like the last 30 or 40. I think we have a chance to cut ourselves free from the American policy in this respect and that would be enormously beneficial, in my view, for all sorts of reasons.

Professor Simpson: First of all, there is an issue that you probably do not want us to go into at the moment as to what precisely you mean by replacing Trident. But, if we are to talk about a bald decision to go for another 30 years of Trident after 2025, I think that undoubtedly would have an influence upon the diplomacy surrounding the Nuclear Non-Proliferation Treaty. It certainly would make it much more difficult for the United Kingdom to take any diplomatic initiatives in order to strengthen the treaty, or, if you like, to prevent the degradation of

the treaty that we see at the moment. This is why I agree with my colleague David Boucher, that if the United Kingdom were to decide to replace Trident then I think that would have to be accompanied by a diplomatic initiative to try, as it were, to ameliorate the consequences. Now, on whether those consequences are real, I think it is impossible to provide any hard evidence—I mean, we are talking about attitudes, we are talking about the way in which people think about these things. But, undoubtedly, if the UK were to choose in a very bald way to say, "We are going to replace Trident," it would be used by those who wish to proliferate, as camouflage, if you like, as cover and justification for that decision. I am minded of what happened in 1958 when in fact the UK and the US decided that they were going to collaborate once more on nuclear weaponry and almost the next week the USSR (as it was then) and the People's Republic of China announced a similar agreement and justified it on the basis of the agreement that the US and the UK had made. In terms of a decision not to replace Trident, again, I think this is something where it is very difficult to put your finger on what the consequences would be in any hard way, but it seems to me that the United Kingdom would be fairly stupid to make a decision not to replace Trident and just to do it that way. It seems to me that if you are going to decide not to replace Trident then you need something in return for it: you need something in the multilateral arms control disarmament field; you need political initiatives to accompany it. But, at the same time, I think that a decision not to replace Trident (a) is not a decision for the British to give up a nuclear weapon capability and (b) is in fact legally going to be difficult for this to be done in any event, because, under the terms of the NPT, we are defined as a nuclear weapon state; it is just we will become a nuclear weapons state which does not have an operational nuclear weapon capability.

Q92 Chairman: Yes, you have set that out in your memorandum.⁵

Professor Simpson: Yes.

Q93 Linda Gilroy: Is there any evidence that the steps which have been taken to reduce the number of warheads and the state of readiness of the present deterrent have had any beneficial impact on proliferation?

Professor Gray: Not that I am aware of.

Professor Gregory: None that I am aware of, either, directly, no.

Q94 Chairman: Professor Gregory, you said that, for example, South Africa had decided to become a non-nuclear state. Was there any benefit achieved by South Africa in the diplomatic terms that you were talking about flowing from that?

Professor Gregory: I suppose that I think, in a sense, there was. You talked earlier about the non-nuclear treaty that covers the whole of Africa, the nuclear-free zone in Africa—the Pelindaba, I think it is

⁴ Note: See Ev 30

⁵ Note: See Ev 24

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called. The decision by the South Africans to do away with nuclear weapons in the post-apartheid transition allowed that deal, and also, in a sense, drew the sting of others on the continent, the Nigerians and others, who might—and still, indeed, might—develop nuclear weapons in that context. In that sense, it opened the door to a pan-African non-nuclear-nuclear-free zone, arrangement, and I do believe stayed the hand. I do not have evidence for this—and Africa is not my specialist area—but in the decade and a half since then we have not seen serious moves in the nuclear direction on the African continent—indeed, the reverse. States that we were worried about in 1990s, like Libya, like Algeria and others that were on the maps at the time as potential proliferators when people were talking about an “arc of crisis” encircling Europe, all fizzled.

Professor Simpson: I think it is arguable that, had it not been for the standing that South Africa gained in the nuclear non-proliferation area as a consequence of its disarmament, we would certainly have found it much more difficult to make the NPT permanent in 1995 and arguably it was the South Africans who were central to us being able to do that. Without the South Africans, it might not have happened. Of course, the same in fact applies to the Review Conference in 2000. The South Africans, in the context of the New Agenda Coalition, of which they were one of the leaders, took a very, strong, positive lead in that. The negotiations which produced a Final Document were negotiations between the New Agenda Coalition and the P5 essentially, and therefore I think diplomatically the South Africans’ disarming was very, very significant in (a) strengthening their position within Africa and (b) enabling the non-proliferation regime to survive through what could otherwise have been a very difficult period.

Q95 Chairman: But, if we look at what is happening in Iran, is not Professor Gray right to say that nuclear non-proliferation is a lost cause?

Professor Simpson: No, because what is happening in Iran is a mixture of two things. One is the problem of handling what many believe to be an Iranian desire for nuclear weapons—but a desire which is still probably about five years away from fruition. Secondly, it is something which is, as it were, at the point of a broader set of issues which were alluded to earlier: What is going to happen if, as a consequence in the rise in the price of oil, a significant number of states in future decide that they want to acquire nuclear power stations and the dual-use facilities which go along with them? Under those circumstances, we have to have a regime which attempts to come to grips with the problems associated with dual-use facilities, the problems associated with having a nuclear fuel cycle which is almost entirely in the control of the individual state in order to give that state energy security. We now see an exercise which is being attempted within the International Atomic Energy Agency, and also via American policy as set out in the latest document, to see if in fact one can set up an international system

of providing fuel for power stations, low enriched-uranium fuel, while at the same time having this as part of a package which would enable one to pressurise other states, such as Iran, not to acquire the full fuel cycle for similar purposes because they are guaranteed on an international level—and therefore not to give them an excuse for acquiring enrichment capabilities, which is what we are all worried about at the moment.

Chairman: We have spent a long time on non-proliferation. Could we now move on to terrorism.

Q96 John Smith: Of course a very real and present danger to this country is the threat of international terrorism. What role do you think nuclear deterrent currently has or a future deterrent could ever have in terms of tackling this problem? The French, in January, announced publicly—and whether they did it or not, we do not know—that they had reconfigured their nuclear forces to target potential supporting countries of international terrorist groups, and threatened that nuclear weapons would be used against them if they were the victims of terrorist attacks. The British have not done that. Theoretically, at least, do you see a role for nuclear weapons in that?

Professor Gregory: I have not seen any credible analysis where anyone in France or here or in the United States has come up with a way of using nuclear weapons to deter terrorists directly. Nuclear weapons are about, essentially, states. Therefore, the analysis that I have seen is about deterring state supporters of terrorism—assuming you can make that jump. Chirac said in his January statement that France for many years has had an anti-cities policy—basically, if you threaten France, it is going to destroy your cities—and France was responding to the so-called Saddam question: How do you deter someone who does not feel threatened by the holding to ransom of his or her populations? because they do not make the same calculations that perhaps more civilised states do. The answer is: You target their economic and political and military centres of power. That is what Chirac has done; that is what the French have done. In essence, we have done something similar in the UK—we have, and so has the United States—because everyone has been wrestling with this conundrum. Because we know we are going to have to justify nuclear weapons to our publics going forward, how can we find the right deterrence arguments to persuade them that these weapons still have utility in relation to these new threats?

Q97 Chairman: Posing that question to anybody else as well.

Professor Gray: One probably should not assume that one-size fits all, and that all terrorists are beyond deterrence. Certainly, I accept mostly what Professor Gregory has said: I am sure there are many terrorists who literally are beyond deterrents, but terrorists require support, and, to the degree that they require state support, the states that support them are capable of being deterred. There have been moves—certainly in Russia, certainly in France, not

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in the UK, and there are moves which are still in fairly early stages in the United States—to adjust the Cold War characteristics of the nuclear arsenal to make those nuclear weapons, if I may use the phrase, “more useable” and to have lower yields, to be able to apply them much more precisely—so the counterforce damage against very particular targets doing very little collateral damage—and it may be that some terrorist targets, particularly those that are very hard to find, in very difficult terrain, would be appropriate targets for nuclear action. There is relevance to having nuclear weapons, shall I say, to discourage terrorists or to discourage those who are supporting terrorists. In the new environment, we are not in the business of having nuclear threats to destroy populations. If we ever had to use those weapons, they should be employed against very particular targets and for very particular purposes, and that requires a nuclear arsenal that is not really the nuclear arsenal we have which we have inherited from the Cold War.

Q98 Chairman: Professor Gray, would your strategy be to consider the possibility of using nuclear weapons against terrorists?

Professor Gray: Absolutely. If the political case and the military case required it, I certainly would not want terrorists and those who support them to say they can use weapons of mass destruction against Britain and we will do our best with conventional weapons to bring the roof down on their heads. I would like them to know that they are messing with a nuclear power.

Q99 Chairman: I see. Thank you. Professor Gregory?

Professor Gregory: I think there is another element to this that is important. The French explored the idea for a long time of *dissuasion du fort au fou*, in other words the deterrence by the strong of the mad, and it points us to the problem with the deterrence of terrorism which is not simply lack of targets and imprecision and all the rest of it; it is that fundamentally deterrence rests on you being certain or reasonably confident that you can understand the calculus of your adversary, the person you are seeking to deter, or the group you are seeking to deter. We thought we could do that with confidence with the Russians because we thought we knew them. We are less confident that we can do that with the Iranians and others because we know them even less and so on and so on and so on. My point is that in all the arguments I have read—and I am sure we have all read them—I have not seen plausible analysis that shows how one can deter leaderships of terrorist groups or others who may not (indeed the suicide bomber does not) make the same kind of rational cost-benefit kind of calculus with which we are used to dealing with state leaderships. I think this is just not something we can deter with nuclear weapons.

Q100 John Smith: Are there any grounds to believe that the Americans did consider in the immediate aftermath of 9/11 mounting a nuclear attack on Afghanistan?

Professor Gray: I do not believe so.

Q101 John Smith: It was never considered?

Professor Gray: I do not believe so.

Q102 John Smith: At any time?

Professor Gray: No.

Chairman: Now I would like to move on to the seat at the table issue. Robert Key?

Q103 Robert Key: We have dealt at some length with this argument but there are some aspects of it that I would still like to explore. It is often said that possession of nuclear weapons gives the UK a seat at the top table and I was interested, Mr Broucher, that you said this was a “pernicious” idea. Would you explain what you mean by that?

Mr Broucher: When I was in charge of the UK delegation to the Non-Proliferation Conference I was often approached by diplomats from developing countries whose line would be: “The real reason you have nuclear weapons is because it guarantees your seat on the Security Council.” If you accept the premise that you have got to have a nuclear weapon to be a permanent member of the Security Council, does not that, as it were, strengthen the argument for nuclear countries like, I do not know, Brazil or Mexico or Japan or I could go on, to develop this capability in order also to have a seat at the top table, and is it not rather better for us to establish that the reason we have a seat at the top table is because we are a powerful industrial nation with a great trading history and a great diplomatic history and we are a member of more international organisations than anyone else, a whole range of reasons why we can contribute. I do not think you need to be waving the big stick in order to justify your seat at the top table. **Robert Key:** Does anyone disagree with that proposition? That is remarkable.

Q104 Chairman: — I am not sure that Professor Gray in his memorandum⁶ entirely agrees with that proposition.

Professor Gray: It is an historical fact that members of the Security Council have been nuclear armed and the notion that we can change that unilaterally and the world would accept the logic—The idea Mr Broucher has just outlined is attractive but I think—and I would not use the word foolish—it flies in the face of historical experience, which is to be a permanent member on the Security Council you have to be a very great power and very great powers are nuclear armed; at least they have been thus far. To try and rewrite that would be very difficult and not very persuasive. I think the diplomatic cost to Britain of abandoning her nuclear weapons would be very considerable and the case for Britain

⁶ Note: See Ev 30

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maintaining her position would become very much more difficult if she does abandon her nuclear weapons.

Q105 Robert Key: I notice that Professor Simpson said earlier that we would have to address these things on a regional basis but of course if we looked at it from a European point of view, in 10 to 20 years' time it is quite clear that France under no circumstances, as far as I can see, will give up the nuclear deterrent, but we could see that we might do so, which would leave only France with a nuclear deterrent. Do you think the United States would ever allow that to happen? That they would sit back and see Britain giving up the nuclear deterrent knowing that France would be the only European country with one?

Professor Simpson: First of all, at that stage you get into a discussion over what is a nuclear deterrent and what it is that we would have if we gave up Trident (or not have), but I think a great deal is going to depend on how the European Union, NATO, the whole European body politic evolves and our relationship with it, and in those circumstances I think you are into the set of questions which I posed in the memorandum⁷ of at what point in the proceedings might the United Kingdom and France link themselves militarily to Europe with the nuclear deterrent and would Europe in fact want a nuclear deterrent, as again we pointed out in the memorandum. If you have been in NPT forums you will realise that one of the problems the European Union has in getting a common position is that you have got two nuclear weapons states plus at least three states which were former neutrals and to try to get a common position from that group of states is not easy. It has been done but it is not easy. I think under those circumstances, let us put it this way, the United States would be very unwise to put pressure upon the United Kingdom to keep a nuclear deterrent which it decided it did not want to have. The real issue would be what would be the *quid pro quo* because if you go back to the UN Security Council issue, in many ways our real strength now is our ability to provide intervention forces, peace-keeping force under the UN umbrella. That is what we bring to the table. And again I think in an American context one of the questions that they might well look at is whether it is better for the United Kingdom—this harks back to the late 1960s—to spend a lot of its defence resource on the nuclear deterrent, which does not appear really to have much relevance to global problems or to regional security problems, or to spend its money on forces which are useable and which do appear to be very relevant to the current and possibly future security problems of the United Kingdom and globally?

Chairman: Can we move on to the issue of independence now please. David Hamilton?

Q106 Mr Hamilton: I am still trying to work out Professor Gray's previous answer to the other question and that is that we nuke the terrorists because I am just thinking of how the Russians would deal with the Chechynes in relation to that. It has far more ramifications than just the answer that was given. It is a real problem that we have got to deal with. Professor Gray, the Committee heard in its evidence session last week different perspectives on the independence of the UK's nuclear deterrent and in particular about whether Trident or any successor system could be operated and maintained independently of the United States. In your judgment, is the UK's nuclear deterrent genuinely independent? What are the implications of any potential dependency we would have on the United States?

Professor Gray: Britain's nuclear deterrent since the early 1960s obviously has been thoroughly dependent upon the co-operation and indeed the willingness of the United States to sell us or loan us the most vital equipment, in other words the vehicles for delivery. So, yes, the independence of the deterrent is obviously highly questionable. Under what circumstances, grave national emergency and such like phrases, one can imagine an independent British decision, aside from American wishes, I have difficulty envisaging. From my own point of view, I think the Anglo-American connection regardless of what happens in Europe in a sense is our security environment. We learnt that three times in the 20th century, so as the holder of two passports—British and American—I am not the least troubled by the American connection, but for anyone who wishes to question the true independence of the British nuclear deterrent I would concede that it is, if you like, a hostage to American goodwill; I think that is true.

Q107 Mr Hamilton: But could the United Kingdom be totally independent of the United States in relation to Trident or is it too dependent on the United States satellites, guidance systems, software, and so on?

Professor Gray: It is my understanding that the dependency is critical and will continue. We certainly could develop a genuinely technically independent deterrent, but Trident I think could not be.

Q108 Chairman: Professor Simpson has something to add.

Professor Simpson: I think you have to be very careful in answering these questions to focus down on the components of the question, and in a sense there are three components. One is acquisition, one is use, and the third is decision making. It is true that the Trident missiles are held in a common stock at King's Bay with the United States missiles. It is equally true though that when on patrol it is possible for them to be used as a result of a United Kingdom decision. So to that extent use is something where the UK is independent in its ability to use and even though the missiles submarines are committed to NATO, in fact the decision system is such and the command and control system is such that it has to

⁷ Note: See Ev 24

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come through the UK naval system in order for the decision to be conveyed that they are to be used. So to that extent you have got independence. As to whether or not the United Kingdom would ever be in a situation where it felt it had to use them independently, I have grave doubts, that is on its own and not in association with the United States or not in association with France. As I say, I have grave doubts about that because it seems to me that all conceivable situations where this might arise would be situations where the rest of the Europeans, either in the EU or NATO, were involved and therefore the threat would be a generalised threat to Europe.

Q109 Mr Hamilton: Professor Simpson, what would be the costs and benefits of limiting future dependence on the United States in our nuclear operations?

Professor Simpson: I think the benefits are likely to be benefits which would be only, as it were, felt in the longer term in acquisition, and in any event I suspect that unless you went for a totally different system from Trident, the only alternative is to actually look to the French or to look to a totally different system to give you greater independence. But, as I say, I think you are talking here about a situation where there is going to be quite a lot of lead time. You are not talking about a situation where submarines are on patrol and someone in America then says, "We do not want you to use them." Under those circumstances I think the UK could still use them so you are talking very largely in non-independence independence terms about acquisition and, of course, acquisition cycles which, if you go for Trident, are liable to be very long, a decade/decade and a half, which is one of the reasons why our feeling is that in fact one of the issues you need to explore is whether the existing system's life can be extended.

Q110 Mr Holloway: To follow on from what Mr Hamilton was saying, can I ask Professor Gray could Britain independently detonate a nuclear weapon? Could we decide here is a spot that we would like to put one and we would like it to go off; can we do that on our own?

Professor Gray: Yes.

Q111 Mr Holloway: I thought you were implying earlier that we would not be able to do that.

Professor Gray: Yes we could.

Q112 Chairman: So the satellite guidance, weather information, all of that is independently held by the UK, is it, or is available to us independently?

Professor Gray: I can think of no technical reason why we would be prevented from detonating a weapon if we so chose is my answer to that.

Q113 Chairman: But if you are so content with the dependence of the UK on the United States, what is the point of our having it?

Professor Gray: Well, I believe that the alliance with the United States has been proven by history, and common sense tells me as well that it is the prudent

course for Britain for the future. I do not know what may happen. One can imagine all sorts of things. I do not know what the 21st century will bring. We may sail on happily with the American alliance and all will be well. If we are going to be in the expeditionary force business, as has been mentioned here in the discussion already this morning, British forces on a UN mandate or a NATO mandate will be around the world doing good, and I think it is important that behind the British element of the forces (which may be substantial in some cases) that there should be British weapons of mass destruction. No-one is going to care as much for the security and safety and, if need be, rapid evacuation of British forces as does the British Government.

Chairman: I see. Thank you. Let us move on to the timetable of the decision making whatever it might be. Dai Havard?

Q114 Mr Havard: We have done the preamble. The Government has said that decisions need to be made of certain types in this Parliament hence our inquiry. What I need to really try and get from you is a view about what sort of decisions you think we need to make in this Parliament, both in terms of political decisions and capability decisions, and why we need to make those decisions now. Can I start with you, Professor Gregory perhaps, as you were nodding at me.

Professor Gregory: I start from a point of view that I think we have got an historic opportunity to walk away from these weapons and that we should do that and therefore I do not think I am the right person to ask about the timetable for carrying them forward.

Chairman: But there is a timetable involved.

Q115 Mr Havard: Exactly, there is a timetable involved in what you suggest as well, is there not?

Professor Gregory: Yes there is.

Q116 Mr Havard: There is a certain political timetable for that.

Professor Gregory: I understand. The Trident system, as far as I know, can run on until 2025. The Americans are talking about possibly extending the system as late as 2040 but you have 15 to 20 year cycles, which means we have to take a decision one way or another on this, as I understand it, by around 2010. I know there has been debate about whether that is not slightly premature and, to be honest, I do not know what the exact physical timetable of these weapons is.

Q117 Mr Havard: Right, do you have a view, Professor Simpson?

Professor Simpson: First of all, I think there is one driver in terms of the missiles (and it is not my knowledge but my impression) and that is that there was an agreement with the United States which was of a specific duration over the storage and maintenance of the missiles at King's Bay. I have no knowledge as to what the end date of that was but I presume it was probably somewhere in the range of 2020 to 2025, and therefore there is a question of whether if you want to extend the life of the system

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you would have to make an extension to that agreement. I think that is in a sense the key decision as far as the United States is concerned in terms of having to make additional agreements with the United States to extend the life of the existing system and it may well be, I do not know, that the current Government and the current Prime Minister feels that such an extension is better negotiated whilst it is in office and he is in office rather than anyone else, and while the current American President is in office. I am speculating here but that seems to me a possibility. In terms of the warhead, as I think the Ministry of Defence memo indicated,⁸ there the question really is maintaining the technical credibility of the warhead into the indefinite future in a situation where we are not able to test because of the testing moratorium, and that is a possibility both for the United States and the United Kingdom, and France for that matter, who have this problem of sustaining the technical credibility of the warhead under a non-explosive nuclear testing regime, and that seems to be the driver for the current collaboration between them. Insofar as there is a core driver to the current schedule, it appears to be the question of the submarines and there the issue appears to be a belief that the submarines have a limited life to the 2020 through about 2027 period, depending on which of the submarines you are talking about, and quite why that limited life exists is again not clear to me. Whether it is on hull fatigue, whether it is a consequence of the reactor life and refuelling the reactor, or whether it is a problem over the capabilities at Barrow and what the nuclear submarine building programme looks like at Barrow, and whether there is a large gap after the Astute class finish building there, and whether therefore in a sense the decision is about whether we should sustain a nuclear submarine capability in the United Kingdom (because if one did not build a new set of nuclear submarines to take Trident then that capability would be lost). I do not know, but those seem to me to be the issues that are out there driving us.

Q118 Mr Havard: I do not think you are a million miles away from all of them together actually. Perhaps I could look at it in a slightly different way and look at where the United States are now because there is this relationship and it is so inter-linked. I have been watching with interest the Quadrennial Review they have just been having and statements within that. It seems as though to some degree they are looking at whether or not they need to upgrade and replace their own nuclear deterrent capability extending the new D5(A) missile so they can go to 2042 and the Mk4 re-entry vehicle, and those sorts of things (the technicalities of the process) and also their own submarine fleet in order to continue to carry them so we know all of those things. What I really want to know is what you think is coming out of all that decision making that is happening in the

United States, what the implications are for all of that about where it leaves us in making this decision that we have to make.

Professor Simpson: If I am honest I do not know the answer to that. All I would say is that the lesson of Chevaline for the Navy and the Ministry of Defence is never to be left out of step with the United States Navy, never to be placed in a position where we have to effectively support an American system which is not in current service in the United States.

Q119 Mr Havard: What do you think, Professor Gregory? Do you see any implications from the current thinking in America that alters any of the timing of the decisions or the type of decisions we need to make?

Professor Gregory: I would agree with what John has just said. I think if we go, as is most likely, down the path of the continuation of existing policy (because that is in a sense the least risky option for the Government to take) then the experience of Trident the D5, for example, is we like to have the best system, the current system, the most up-to-date system, the system we know the Americans are going to support for the longest period of time because that gives us the “Rolls Royce” of nuclear weapons and so on and so on. I do not see us deviating from that policy. We are not going to replace Trident (if we do) with an aging system which, as John says, is going to be out of the American arsenal in a few years’ time. We will not do that.

Q120 Mr Havard: Professor Simpson, you said a lot of this is clearly driven by the capability decision. We have to make decisions about procurement and acquisition of new submarines and all of that. We know the potential dates for the capability gap if we do not extend the life of the current boats and buy new ones and so on. The whole thing seems to be driven partly by that but also partly by the fact we are talking about strategic nuclear weapons. What I find interesting about the United States’ position is that they now say that they want to change from “threats from large institutional forces” to “irregular, disruptive and catastrophic threats”. That is the conceptual change. It says it is “defeating violent extremists; defending the homeland; helping countries at a strategic crossroads; and preventing terrorists and dangerous regimes from obtaining weapons of mass destruction”. That is what their policy is going to be based on. We have partly discussed about where do nuclear inter-ballistic missiles fit into that particular policy, and not into most of it it would appear. What I really want to get at is if there is going to be this change of debate in the United States, are we going to see a different form of nuclear deterrent? Is the nuclear deterrent not simply going to be strategic, is it also going to be thought to be sub-strategic, whatever that might mean, or is it going to move partly to tactical?

Mr Boucher: I think you had better stop there because that is quite a long question.

⁸ Note: See The Future of the UK’s Strategic Nuclear Deterrent, HC (2005–06) 835.

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Mr Havard: That seems to me to be important in the sense that all the decisions have been predicated on strategic inter-ballistic missiles being nuclear? Does it mean that it is going to morph into something different?

Q121 Chairman: Let us have some answers please. Professor Gregory?

Professor Gregory: I would look to the French for an answer to that. The French have kept two systems. They have kept their submarine-launched ballistic missile system for this basic strategic deterrence but they have also kept a stand-off, an accurate, aircraft-delivered missile system which is the system that they are adapting for striking these precision targets and articulating arguments in relation to holding at threat the various parts of a dictator's regime or taking out perhaps underground weapons of mass destruction centres, or whatever it is, and you are right to put this finger on this absolute conundrum. If Britain goes down the path of replacing Trident, ie a submarine-based launch, for all the arguments that one makes for that which really centre on the vulnerability argument (essentially, as long as we have something out there we always have this capability in a way that we do not have otherwise) I think that is always going to be in tension with the issue of flexibility. We have tried to fudge this over the last few years in the new context by articulating sub-strategic roles for Trident but those are pretty unconvincing, I have to say, and certainly the French and the Americans, as they face up to this new threat agenda as they see it, are doing that not on the basis of configuring their strategic systems but on the basis of developing these smaller high precision, more accurate and (many fear) more useable nuclear weapons.

Chairman: Linda Gilroy, do you have anything to ask here or shall we move on to Robert Key?

Linda Gilroy: I am happy to move on.

Q122 Robert Key: In broad terms how is the United States' nuclear relationship with Europe going to develop over the future decades? Could you get out your crystal ball and help us?

Professor Simpson: I am very tempted to make a response to you by saying I have got no idea at all! I think what is clear is that the relationship is evolving in so far as it has moved from one where Europe was heavily dependent upon the United States from a security perspective to one where Europe appears an increasingly important base or staging post for the United States if it is going to operate extensively in the Gulf, or if it is going to operate extensively in the stands in Central Asia. I think in turn that is going to generate a rather different relationship of costs and benefits from the perspective of the Europeans because it almost reverses the situation that we had before 1991 where the United States was committed to defending Europe and to that extent it was placing its homeland at risk from an attack from the USSR. Now in some ways we are in a situation where arguably Europe is going to be at risk from the areas in which the US wishes to operate in the next 10 or 20 years because it is providing staging areas. For

example, if missile defence were to develop a number of the key facilities for missile defence of the United States are going to be in Europe, and that missile defence is not necessarily going to defend Europe itself, so you are going to move into a rather different relationship. Quite how that relationship is going to play out, especially given that a number of the European states in the EU were not in NATO and have not been in NATO and have taken a very different view of the United States to the view we take of the United States, I think is just very unclear. **Professor Gregory:** I think again it is helpful to look at this from the French point of view. We are probably at the moment as close with the French in terms of nuclear co-operation as we have ever been. We set up this Joint Commission on Nuclear Policy and Doctrine under the Major Government, you will remember, in 1992–93 where we started to talk quite seriously in the post-Cold War context with the French about a whole raft of nuclear questions, largely staying away from the operational but co-ordinating arms control policy, talking about all sorts of things, co-ordination of nuclear policy in all sorts of fields. The French have this idea that Europe in the end will become a centre of power of some kind and if it is going to be a power, for the French, it needs to be a nuclear power, and that means in the end the co-ordination of Britain's and France's nuclear weapons. The question concerns these European states within Europe who are neutral or anti-nuclear and do not buy into this kind of thing. The French have a wonderful way round this. They have this idea of *dissuasion par consteil*. It means "by the fact they possess nuclear weapons", and the logic is this: any state that thinks about taking on the Europeans has to factor in somewhere deep in its recesses the fact that two of the European members are nuclear powers, therefore it does not matter whether these other European states accept this, want this, feel protected by France's extended deterrence or whatever, none of that matters; what matters is this fact. And the French will say that what that means is that sooner or later the other Europeans are going to have to talk to them about the European question and the best way I have heard it encapsulated is if European defence goes forward over the next 20 or 30 years so that we do eventually have some kind of European army, in whatever form it is going to be, that army will need a nuclear dimension. We cannot therefore sit and reach that end point and not have done any thinking about nuclear forces, so this co-ordination is going on. It is highly secretive. I have done research in Paris and here in London and found it almost impossible—no-one will talk about the Joint Nuclear Commission. The best way I heard it encapsulated is it is like a mole. It is going on underground quietly and then 20 or 30 years down the road, when need be, it will pop up. That is a nice little way of conceptualising it.

Q123 Robert Key: Can I be absolutely sure that I understand where France's deterrent rests. It is three components, is it not?

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Professor Gregory: Two.

Q124 Robert Key: Four SSBN, three squadrons of Mirage-2000 equipped with air-launched missiles—
Professor Gregory: Yes.

Q125 Robert Key: Does it not also have a flotilla of Super-Etandard on the aircraft carrier?

Professor Gregory: Yes it does but they all deploy one weapon, they all deploy the ASMP.

Q126 Robert Key: I want to come back to something you said earlier, but just for one moment is it conceivable that if the French buy into the British aircraft carrier programme and we find ourselves without our Joint Strike Fighter project, the Rafale will fly off both British and French carriers deploying French nuclear weapons?

Professor Gregory: It is an interesting thought.

Q127 Robert Key: It is interesting but could you comment on it, please?

Professor Gregory: In a sense this debate that we are having is being conducted with one of the big pieces of the jigsaw missing. We are thinking about either continuing our relationship with the United States or we are thinking about, as I would prefer, giving it up. The big hole here is the possibility of moving with the French down the path of a European deterrent and uncoupling ourselves from the United States, in which case these things you are talking about, like flying French missiles from British aircraft carriers, suddenly become less fanciful, let us put it that way. Yes, the French have a degree of technical collaboration and co-operation with the United States but have largely independent nuclear forces in all three realms of their submarines, their missiles (which Britain left decades ago) and their warheads. In essence—and I would not make this case—you could make a case for Britain moving towards the French as a way of actually empowering themselves paradoxically because they would be given by the French and would necessarily have as part of Europe a much bigger say in the development of the co-ordination of nuclear forces in Europe, allowing us to come technically on board in areas like computing and all these other things that we are working on, in a way that we will never have that kind of equality with the United States because they are simply too large, too powerful, and too dominant.

Q128 Robert Key: We have been told in the Committee that the French nuclear deterrent costs maybe three or four times as much as the British one because they do the whole thing from building the ships to the weapons themselves, whereas we of course procure and do not build our own system entirely. Why is it that there is such a difference in public opinion in France where they are prepared to see 20% of their defence budget taken up on a nuclear deterrent? French public opinion is robustly behind the nuclear deterrent whereas in this country we are timid, we are doubting whether we should

continue, we are talking about not doing it. What is the difference between the French democracy and the British democracy in this respect?

Professor Gregory: I think the two nuclear programmes have very different histories. The underlying thing for the French is that we need to remember that the French developed and started to go down their nuclear path in the 1950s. They had just passed through 70 years of history in which they had been invaded three times, in 1817,⁹ 1914 and 1940. For them, and it is still the case with Mr Chirac's statement in January 2006, the number one reason for the retention of nuclear weapons for the French is to guarantee the survival of the state. I think there is a direct connection between that and the national humiliation of occupation. That is why.

Q129 Chairman: Do you think they are wrong?

Professor Gregory: In the modern context, yes, I do. They are wrong because hopefully what I have been saying all morning has been consistent with the basic parameters of my thinking that nuclear weapons are not relevant to the main security threats we face now and most likely in the future.

Q130 Robert Key: I certainly can understand this idea that the French have a very different concept of something they call “the state” to which they are implacably wedded and emotionally involved at every level which we simply do not have in this country, we have a rather more practical approach. We touched on this question of Anglo-French nuclear co-operation which is apparently so secretive. I wonder if any of our other witnesses would like to comment on this secrecy.

Professor Simpson: Can I just make a comment of a more general nature. I think there is a difference between British and French defence planning in that the British defence planning is much more systemic, much more management technique-led, in that if you look at the 2004 Defence White Paper it is laid out there at the back just what are the contexts in which British forces will be engaged, what are the forces that are going to be needed for those contexts, and in a sense what it is that we are incapable of doing beyond those contexts by default, whereas the French have not arrived at that very almost clinical way of deciding what their forces are going to look like. Of course, in the UK case, the one element of the forces which really does not fit into this framework at all is the nuclear force. I think that is another reason why you have a rather different relationship. In terms of discussions with the French, clearly one element that makes life difficult is the commitments the United Kingdom has dating from 1958 that effectively they cannot talk to the French about nuclear weapon issues unless the United States agrees to it on specifics because that is part of the nature of that agreement.

Professor Gray: I think the French nuclear weapon programme is not only about survival in the context of the three invasions. It is also about the French sense of glory, of status and French self-regard,

⁹ Note by Witness: The first invasion was in 1870, not 1817.

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which also of course one can relate to French history over the last 150 years of course. I would like to throw a rock in the pool here by saying that I can imagine without too much of a stretch a continuing, shall we say, drift apart of the Atlantic between Europe and the United States. I believe that if Europe does indeed become a genuine defence entity, then that is incompatible with NATO, and in some ways the stronger Europe becomes, if one can imagine that, the less likely it is that NATO will survive. NATO has been an American guarantee organisation essentially. If Europe, almost unimaginably from today, were to become a genuine potential partner in a defence and foreign policy sense, NATO as we know and love it could not exist. In fact, I think the relationship across the Atlantic is very dubious for its future anyway given the differences of outlook between the United States and Britain on one side and Europe by and large on the other. It came to a head, as we know, in 2002–03 over Iraq and I think we should not take for granted the fact that Britain can happily co-operate in the “European project” whatever that becomes and all the while remain happily part of the great family of American defence. I see a need for a choice. Personally I have no difficulty if I have to choose between being in bed with Washington or being in bed with Paris. I know what I would choose, and it would not be Paris!

Q131 Robert Key: Come off the fence, Professor!

Professor Gray: This is a serious point. As Europe comes together, if it does, and acquires, shall we say, a unified place in international politics, I think the existing structure and the existing relationship to the United States would alter and become much more distant. I think NATO would be very, very fortunate indeed to survive, bearing in mind that NATO is the only organisation that actively involves the United States in European security and the fact of course that the European project is sharing a continent with a heavy nuclear armed and nuclear focused irredentist Russia, and there may yet be lively times in Europe that do not appear in very much of today's commentaries.

Q132 Robert Key: I believe it would be a mistake to look at this issue entirely from the Atlantic end of Europe. This might be one for Mr Broucher. I am very conscious of the role of Turkey in the future of NATO and the future of European defence. I wonder if you have any knowledge on the perspective of how Turkey views this issue given the determination of the French and Germans that Turkey will never be part of the European Union and at the same time Turkey's determination that they will, and the fact that the Turks are determined to be good NATO partners? Do the Turks say anything about their role in the nuclear world? Do they have nuclear ambitions? Where would they see their preference? Would they prefer to see a French-dominated nuclear scene in Europe or an American and British one? Mr Broucher first, please.

Mr Broucher: I am not an expert on Turkey but I think it is true to say that the further east you go, the closer you get to the areas of instability around the former Soviet Union, around Russia, and the more you find that countries in that region look to the United States as the ultimate guarantor of their security. It would be my expectation that they value the US connection and ultimately the US nuclear umbrella and that you would not find them being particularly enthusiastic about developing an alternative strategy.

Q133 Mr Holloway: Can I just rewind about 10 minutes. Professor Gray and Professor Gregory have been quite straightforward and clear about where they are coming from on this. Do either of the other of you favour Britain having an independent nuclear deterrent in the future?

Mr Broucher: I have never been in favour of unilateral disarmament. I do not think we should go out of the nuclear business unilaterally if we determine that our national security requires us to retain a weapon. I think there are questions now about whether that requirement still exists. I have always been in favour of multilateral nuclear disarmament and I think we have ceased to pursue that with the vigour that we used to give it and that we ought to revive that area. It may not work, but I think it is something that has not been explored properly for a number of years and could be explored. I think the moves that we made to reduce our capability, in contrast to the opinions of my colleagues, did help to strengthen the Non-Proliferation Treaty and I believe that there have been negotiations in good faith in the past: on the Comprehensive Test Ban Treaty, on banning nuclear weapon from outer space, on banning nuclear weapons from Antarctica, and agreements among the nuclear powers to respect the non-nuclear status of South America, Africa and South East Asia. So there have been negotiations in good faith, and there have been successful negotiations to outlaw biological and chemical weapons, so I do not think we should give up on arms control. If the decisions that we are going to take allow the timetable for us to approach this in slightly slower time then there would be a case for Britain taking a diplomatic lead in trying to restart multi-lateral negotiations.

Q134 Chairman: Before we move on to you, Mr Broucher, can I go into that a little bit more. I am going to go into contingencies here so you might not want to answer. If there were nothing on the table from somebody else that would make it worthwhile giving up our nuclear weapons, would you wish to see the nuclear strategic deterrent modernised in order to retain its usefulness?

Mr Broucher: I think the simple answer to that is yes. If we cannot make progress with disarmament and there are going to be at least one, possibly two, nuclear armed countries that might be hostile to the United Kingdom, then you could make a strong case for us retaining the deterrent.

21 March 2006 Mr David Boucher, Professor Colin Gray, Professor Shaun Gregory and Professor John Simpson

Q135 Chairman: Thank you, that is very helpful.

Professor Simpson: First of all, I think the issue of independence is a bit of a red herring in all this. It seems to me that if you have independence of use then the issue of where you acquire it from is not awfully significant. As long as you can acquire it the system will function, if it is to be used. In terms of the question you directly asked about the future, it seems to me that the issue is what sort of nuclear weapon capability are the British going to have in future, because just saying that you are going to abandon Trident does not mean that you do not have a capability. The real question is what sort of capability. To that extent it seems to me that the real issue here is how much of our military resources, how much of our national resources are we going to commit in the nuclear area as against in other areas? I am struck by this 49-page document which the Americans have produced because I think you would find it difficult to get what is said here about nuclear weapons and nuclear capabilities into two pages of it and it seems to me that the real judgemental issue that we face is what salience do we think nuclear weapons are going to have in the world of the future and in terms of our defence capabilities.

Q136 Mr Holloway: Sure.

Professor Simpson: All the evidence points to that evidence being very limited indeed.

Q137 Mr Holloway: So what is your opinion then?

Professor Simpson: I am inclined to go down the same road as David Boucher in that it seems to me the key question is what can you actually get from this decision-making process by way of reducing the capabilities of others, and therefore if it takes more time, if it is useful to extend the current capabilities to try to move multilateral negotiations on, let us do that.

Chairman: Then we will move on to the final area which we have covered to a certain extent already and that is the relationship with civil nuclear issues. Linda Gilroy?

Q138 Linda Gilroy: How relevant is the public debate over the future of the civil nuclear power to decision-making on the future of the UK's nuclear deterrent, in the sense that there are issues perhaps connected with the stockpiling, reprocessing and storage of weapons-related nuclear material and waste that would be affected by a decision to abandon civilian nuclear power? I am not sure who might be most—

Professor Simpson: Sorry, I am a bit lost, you mean a decision to abandon civil nuclear power?

Q139 Linda Gilroy: We have an on-going energy review at the moment in which there is a big debate about the future role or non-role of nuclear energy. If we were to continue going down the path of gradually letting go of our nuclear energy what would be the implications in relation to any decision about the nuclear deterrent? Does that pre-empt the decision about the nuclear deterrent or have additional costs for the nuclear deterrent?

Professor Simpson: I do not think the two are connected in any obvious way. The military sector is completely insulated from the civil sector now. I do not see any obvious need to acquire additional fissile material for any decision, at least I do not at the moment see any need to acquire additional fissile material for military purposes. In fact, we have already transferred some plutonium from the military to the civil sector. There is an issue over nuclear submarine fuel which is a slightly complex area.

Q140 Linda Gilroy: The processing of the waste and the costs of that would lie entirely with the military programme rather than the civil programme?

Professor Simpson: I am not quite sure what waste you are going to process out of the military programme because the fissile material is there. You might have to rework some of the plutonium to wash out material which had gradually built up over time but that cost would be very small and would probably be done in a plant which is not committed to EURATOM. One of the things you have to remember is that France and the United Kingdom, unlike the United States and Russia, are under EURATOM safeguards, so in a sense anything that is not specifically military is safeguarded via EURATOM.

Q141 Linda Gilroy: Finally how does public opinion on the future of civil nuclear power compare with public opinion on the future of the nuclear deterrent? Is there any correlation or crossover in the debates that are going on?

Professor Simpson: I have not seen any figures.

Chairman: Do any of you know what the public opinion on either of them is? If you do not, I think we had better finish there. Can I thank you very much indeed for your very helpful and interesting evidence this morning. We are most grateful and I would also like to thank the Committee for keeping it tight and brief.

Tuesday 28 March 2006

Members present:

Mr James Arbuthnot, in the Chair

Mr David S Borrow
Linda Gilroy
Mr Mike Hancock
Mr Dai Havard

Mr Adam Holloway
Mr Brian Jenkins
Robert Key
John Smith

Witnesses: Mr Peter Whitehouse, Corporate Development Director, Devonport Management Limited, and Commodore (Rtd) Tim Hare, gave evidence.

Chairman: Good morning. Thank you both for coming to give evidence. This is the third evidence session in the Committee's first inquiry into the strategic nuclear deterrent. As you know, this is one of a series of inquiries that we will be conducting during the course of this Parliament. The morning will be broken into two parts: the first will deal with technical matters and the second with the wider strategic issues. Before we begin the evidence I would like to take two declarations of interest.

Linda Gilroy: In my original declaration of interest I referred to various defence interests in my constituency. I would like to make it clear that DML lies on the edge of my constituency.

Mr Borrow: I have already mentioned, but I think I should repeat this morning, that I am currently undertaking an Industry and Parliament Trust fellowship with Thales UK.

Q142 Chairman: Are there any other declarations of interest? That brings me straight to a point which Commodore Hare may wish to emphasise. While you are currently employed by Thales, is it correct that you wish to make plain that you are giving evidence this morning in a personal capacity, not as a representative of the defence industry in general or of Thales?

Commodore Hare: Yes, please.

Q143 Chairman: Do you want to add anything to that?

Commodore Hare: Only that I left the nuclear deterrent scene some four years ago when I retired from the Royal Navy having spent the majority of my working life there. Since then I have been working for Thales UK for four years but in an area not related to nuclear deterrence in any way at all. I am in the underwater systems division that makes sonar sets for the Royal Navy. Ironically, we make them for the SSBN force, but essentially we are an equipment supplier. I have not been engaged in any professional activity for Thales on anything to do with nuclear deterrence or the submarine programme.

Q144 Chairman: That is a very helpful introduction. Mr Whitehouse, would you care to introduce yourself as well?

Mr Whitehouse: I am Corporate Development Director with DML. I have responsibility for corporate strategy and as such take a great interest

in matters relating to future deterrence and the way that interacts with the current programme. I was one of the senior team that input a lot of information into the DIS work last year.

Q145 Chairman: I wonder whether we could begin by asking Commodore Hare to summarise what we currently have in the UK Trident system in terms of the main components and the technical capabilities that the system currently provides?

Commodore Hare: Our nuclear deterrent capability is vested in a single system, Trident, which has a dual capability. It has a full strategic capability and a sub-strategic capability. That system, which has been bought from the United States, is hosted in UK-designed and built nuclear submarines, called in the jargon SSBNs, of which we have four. Supporting that system is some shore-based infrastructure, command and control, which is UK-designed and procured. There are facilities at Faslane, Coulport and Devonport which again are UK-procured and controlled. To go into a little detail on the Trident system itself, essentially it has four elements. There are the submarine platforms, which are UK-designed and built, in which the launcher, fire control and navigational sub-systems of the Trident system are hosted. The missiles which are part of the Trident system are procured from the United States. There is a pooling arrangement whereby the United Kingdom has bought 58 Trident missiles. At various times in a submarine's life, normally after refit, it has to deploy to Kings Bay, Georgia, to onload itself with the appropriate number of missiles from the pool. I would like to emphasise that the UK has bought them, but through expediency and a significant saving in the original Trident costs—something like £3.8 billion, I think—it was decided to use that pool in the United States rather than store and support the missiles in the UK. In my view, that was a decision based on expediency. Finally, there is the warhead for which the UK is the design authority and that is UK-procured. Those are the core elements of our singular Trident system which provides the UK's nuclear capability.

Q146 Chairman: How is it operated?

Commodore Hare: The operational posture comes under the heading CASD which stands for Continuous-at-Sea Deterrence. The thought behind it is that at any one time we have one submarine deployed on patrol which houses the complete

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strategic and sub-strategic capability. The missiles on board that submarine for safety, confidence and security-building measures are not targeted at anybody, and the alert status is now reduced from that which existed in the Cold War to a number of days. At any one time, however, there is one submarine ready to move up the alert and readiness status curve should the government of the day so dictate. The important point I would make about Continuous-at-Sea Deterrence and why it is such a pillar of our posture, if you like, is that this is largely a people issue. Operating nuclear submarines and the Trident system is an extremely complex and difficult business and we need to keep our people up to speed and focused on operating the submarines and missile system safely and effectively at all times. The best way to do that is by having one on patrol at all times. There is also the related escalatory issue that having one submarine at sea at all times is a recognisable status quo, so nobody will be confused by submarines coming and going from their base port at Faslane in a routine fashion. If one did not have CASD but some alternative and just deployed submarines when one wanted to one might be sending incorrect signals which might be misinterpreted by any potential adversary. That would be a pretty dangerous thing.

Q147 Mr Holloway: Why would it take several days to operate them? Has some impediment been built in?

Commodore Hare: No. Trident is technically a very flexible system and it can really do what you want it to do within certain constraints, but its various sub-systems, for example the navigation sub-system, take time to reach their accuracy limits. As you will understand, if you are to have a system as accurate as Trident's you have to know exactly where you and your potential targets are.

Q148 Mr Holloway: But that would take several days?

Commodore Hare: Not necessarily several days. Retargeting the Trident system does not take very long. There are some political rather than technical issues to do with the seven¹ days' notice.

Q149 Mr Havard: The title of this discussion is the Strategic Nuclear Deterrent, but a doctrine is being developed about the sub-strategic use of what was designed as a strategic weapon or platform. Underneath that there may be a tactical use which is different. Can you say something about the idea of the use of this system in terms of its strategic and sub-strategic role?

Commodore Hare: I think that there is a lot of misinformation about the so-called sub-strategic role which you yourself mentioned. Sometimes it is confused with a tactical role which is not what either our policy or the Trident system is about. This is not

a system that is geared or operated to achieve military objectives, by which I mean taking out a town, city, territory or whatever. It is for strategic use only and is on the right hand of the deterrence equation to be used *in extremis* when the survival of the nation state is at stake. When the sub-strategic concept was introduced its role was described by Lord Robertson in his speech in Aberdeen in 2001,² if my memory serves me well. It will be on the record. We use the term "sub-strategic", not "tactical", deliberately. It is a sub-strategic role. What it means is that it offers the government of the day an extra option in the escalatory process before it goes for an all-out strategic strike which would deliver unacceptable damage to a potential adversary. It gives it a lower level of strike with which to demonstrate will, intent or whatever. It does not have to be used at all but it gives the government of the day that extra option at the sub-strategic level. To my mind, that is a welcome option.

Q150 Mr Havard: In terms of configuration that does not mean a great deal?

Commodore Hare: Not a great deal.

Q151 Mr Havard: You would deploy one warhead as opposed to a number?

Commodore Hare: The actual number and deployment and nature of warheads or missiles is fairly classified information, but as I said in my opening statement when each submarine goes to sea it has the capacity to fulfil the complete spectrum of capability, strategic and sub-strategic.

Q152 Linda Gilroy: Mr Whitehouse, from a technical and operational standpoint, to what extent is the UK's Trident system dependent on the Americans? Can you tell us whether in practice the UK could use the system independently of the United States if it so wished?

Mr Whitehouse: First, obviously the UK is reliant on the US facilities in Kings Bay for turn round of the missiles when the submarines are in refit, unlike Polaris. That is fairly fundamental. Secondly, the systems that sit within the submarine associated with missile targeting and firing are obviously reliant on design authority support from the US. That is another key element. In the event that any of the components within the re-entry vehicle system and warhead are reliant on the US for design safety case substantiation, that is a third key element. According to my understanding—perhaps Commodore Hare can add to this—obviously the decision to use the weapon is a very serious matter, but essentially that is something which is under UK control.

Commodore Hare: I would absolutely endorse that. Certainly, operationally the system is completely independent of the United States. Any decision to launch missiles is a sovereign decision taken by the UK and does not involve anybody else. I have read

¹ Note by Witness: There are some political rather than technical issues to do with the several days' notice, not the seven days notice.

² Note: Lord Robertson's speech was on 1 March 1999 in Aberdeen, not in 2001.

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talk in the press about the Americans having some technical golden key. That is just not right; they do not. As Mr Whitehouse has indicated, the only engagement with the United States that we have now, and which we have had for a very long time, relates to the design authority for the missile and supporting launcher, fire control and navigational sub-systems that are housed in the Vanguard-class submarines.

Q153 Linda Gilroy: I think that some commentators also say that not only is it a technical golden key but in the event of the United States not liking a decision taken by the UK it could very quickly make it difficult for us to operate the system independently?

Commodore Hare: I would be very interested to hear how. The best analogy I can give is that if Ford went bust tomorrow all the Ford Focuses in the country would not suddenly come to a grinding halt. Certainly, it would be difficult if the United States withdrew its design authority and logistics support for the missiles, fire control launcher and navigational sub-systems. Eventually, it would cause some difficulty, but I argue that that would take quite a long time. I think that the risk of that happening is very low. As you know better than I, the Americans have been our allies for well over 100 years, and certainly there is no indication of the US withdrawing its support today or in previous history, as I understand it. One must balance that risk against the enormous cost benefits that we have in procuring an American system to house in our submarines. That should not be underestimated.

Q154 Mr Hancock: You are right to suggest that there has been a lot of press speculation about whether or not the system is truly independent. We have always prided ourselves that this is our independent strategic nuclear deterrent, if we leave out of account the option that the Americans might shoot down a missile that we fired. One of the speculations in the newspapers and elsewhere at the weekend is that if the Americans wanted to prevent a missile being used they could bring it down. There was also the suggestion that technically they could disable a missile as they do with test launches. Missiles fired in tests are brought down by an inbuilt signal sent to the warhead or missile itself, not the carrier. Are both of you saying that the Americans do not have that capability? If we are to progress this debate the independence of our deterrent is of vital importance to the British people if they are to support something like this. If it is there only to back up the Americans that is a different thing. Do you say it is impossible for the Americans to bring down our missile by a code similar to that which they use in a test launch?

Commodore Hare: Nothing in this world is “impossible”, but to the best of my knowledge and experience that is just not right.

Q155 Mr Hancock: “Not right” if it is possible for them to have that capability now you do not know of it?

Commodore Hare: Correct.

Q156 Mr Hancock: Mr Whitehouse?
Mr Whitehouse: I agree with that.

Q157 John Smith: Dealing specifically with communication systems to be able to target the missiles, is there any dependence on the Americans in that area?

Commodore Hare: Absolutely not.

Q158 John Smith: I absolutely agree with your observation about our being allies for the past 100 years. That is why I sit back aghast when we have such difficulty in negotiating technology transfers on something as basic as the Joint Strike Fighter. I am not exactly at ease with the idea that we should not worry about it because they have been allies for a very long time. But we are dependent on the Americans for being able to target our missiles?

Commodore Hare: No.

Q159 John Smith: Not in any way at all?
Commodore Hare: No.

Q160 John Smith: Not in terms of the transfer of data and access to satellite communication?

Commodore Hare: We are independent. The dependency on the United States is that it is the design authority for the missile and its fire control, launcher and navigational sub-systems. We depend on them for design authority information and logistics support, but that is all. As to the other things you mention, we are truly independent.

Q161 Linda Gilroy: Mr Whitehouse, since the original agreement with the Americans, in what ways has our deterrent developed differently, and does that give us any different added value in capability?

Mr Whitehouse: The 1958 agreement came about as a result of the American decision to cancel Skybolt. That resulted in the UK being given access to the Polaris capability. From the very first days of the submarine programme the US has encouraged divergence in terms of the technologies in the platform, obviously with the exception of the missile and its sub-systems. In most respects the submarine platform itself outwith the missile compartment and what it carries is a UK solution which has diverged significantly from US technology and the way that that has itself developed. What we have in the existing Vanguard-class submarines and the overall Trident solution is fundamentally a UK platform and approach to carrying the American missile system for delivering UK nuclear warheads.

Q162 Linda Gilroy: Does that give us the ability to do things which the United States deterrent cannot do, perhaps to go places where it cannot go?

Mr Whitehouse: Insofar as the submarines that we deploy are slightly smaller than the American ones, that is probably the only obvious external difference. In terms of capability—where a submarine goes and what it can do in terms of launching missiles—

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essentially it is the same as the American system. At the end of the day, the warheads built in the UK are deployed in American re-entry vehicles which come off the missiles when they deploy the warheads. Thereafter, in all essential terms the capability is the same as that of the Americans, probably even down to arming, fusing and firing.

Q163 Mr Jenkins: Commodore Hare, there are a number of British warheads depending on the requirements. Where are the warheads fitted? Can they be fitted or changed on board, or do the missiles have to be taken back to a British port to be refitted with different warheads?

Commodore Hare: All of this is very much a UK activity. The weapons are designed and constructed at AWE Aldermaston and transported to the operational base in the north-west of Scotland and fitted there.

Q164 Mr Jenkins: We have spent a lot of time and money on this submarine-based system. What is the advantage and disadvantage, apart from the horrendous cost? Why do we not have a shore-based system? Why does it have to be a naval option?

Commodore Hare: The main reason is the vulnerability of the system. If one houses a deterrent system in a submarine it is virtually invulnerable. The submarine can sink beneath the waves and it is extremely difficult to detect once it is away from its home base. Any other land-based or air-based system is hugely vulnerable to a pre-emptive strike. One may recognise some Cold War thinking about that, but that is the rationale behind the focus on a submarine-launched system as the primary system. It is interesting that France, which has a dual capability—air and sea—still focuses heavily on the submarine. I suspect that, should the Americans decide to move down from their current triad of land, air and sea capabilities, the very last one they would give up would be the submarine-launched system. The decision that faces you today is whether to extend the current capability rather than start from new. If the decision is made to have a continuing capability, I would argue strongly that there are a number of real advantages in terms of cost, expediency *et cetera* in pursuing the submarine option rather than the alternatives of land and air.

Q165 Mr Jenkins: I think that publicly there is a mistaken belief that we are thinking of replacing the existing system. I do not think that that is the debate. The debate is to find out now whether the existing system is the best option in future and what the alternatives are.

Commodore Hare: I would argue that at the moment the Government's position, as I understand it, is that it wishes to keep options open for continuing the capability perhaps after the life of the current Vanguard-class system runs out, and certainly there must be study and debate on what the most cost-effective system might be, be it a submarine, land or air option. I do not know the maturity of that debate and study work within government, but I am sure that that is what is going on. I agree with you. If it is

helpful, I am happy to articulate why I believe that the submarine option is the most expedient for the country, but that may be a different point.

Q166 John Smith: I think it would be a good idea to develop the argument as to why it is the most expedient option and to build into the argument the affordability options within the sea-based system.

Commodore Hare: Perhaps I may start in a rather negative way, if you like, and articulate what I perceive as some of the disadvantages of having a land-based or air-based system. First, with a land-based system one would have to build a number of silos somewhere in the UK to house the ballistic missile that is required. That in itself brings with it huge difficulties in terms of costs and safety. Where would one site the air base? Can one just imagine the planning issues surrounding the siting of a silo anywhere in the UK? There are some practical issues there. Certainly, it would be extremely expensive. We have, laudably, very strong safety criteria relating to all nuclear installations in the UK. To meet those regulations would be very costly. Secondly, this country does not have a ballistic missile capability. We would have to buy a new missile which would be a new experience for us, and a pretty costly one. We would certainly have to design from square one a new warhead and go through all the very rigorous safety criteria for that missile and warhead. I believe that the cost of such a system would be extremely high. Of course, one is also left with the fact that it is vulnerable to pre-emptive strike. The air-based system that is being fielded in literature that I have read is the so-called cruise missile option. I have difficulty with cruise missiles. First, by its very nature a cruise missile is a military weapon, not a political one. Currently, with its conventional warhead it is used to achieve military objectives. I would be worried about housing our nuclear deterrent capability in something that could be confused with a weapon that is essentially a military device. Never mind the more practical fact that one would have to devise a new warhead to fit those missiles. One would need a lot of cruise missiles to deliver the strategic strike that one can achieve with Trident now. To fuse that with the aeroplane will be a very costly business, and again there is a whole raft of land-based infrastructure issues. Where does one store the weapons? Where would one site the airbase? Again, that would be a costly issue and politically it would be pretty difficult. I return to the submarine platform option which to my mind has some benefits. The shore-based infrastructure is a given now; there is an accepted footprint of cleared nuclear installations, if you like, which is able to support the current Trident programme and will continue to support it at relatively modest cost for the foreseeable future. A lot of the infrastructure is already there. I cannot say that we know all the technical challenges that might face us in procuring something to replace the Vanguard-class, but certainly Mr Whitehouse and his team and others in British industry are expert at procuring nuclear submarines and pairing them with a missile system such as Trident. All that knowledge

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is there. The indications from the United States are that Trident works and fits the nuclear policy of both the Americans and this country. It seems to me that it is the most expedient path to follow. As to the absolutely pivotal issue of cost, my gut reaction is that it would probably turn out to be the cheapest of the three options, although I have no studies or figures to support it.

Chairman: Mr Whitehouse, is there anything you would like to add to that?

Q167 John Smith: Would you deal also with affordability?

Mr Whitehouse: I agree with what Commodore Hare has said. There is no doubt in my mind, having looked at this simply as someone who is interested in it rather than in my professional role, that given the amount of infrastructure and capability in the UK at the moment to create and support a follow-on submarine, in the event that the UK has a deterrent of this type, the submarine option is the logical and, I believe, the most affordable one to go for. My understanding is that it has military advantages. I think there is a big issue sitting behind it, in that in the event we moved away from Trident D5 and the Mk4 re-entry vehicle and the warhead it contains we would be off on another major exercise to develop, without underground testing and proving, a new class of warhead. That is a very significant undertaking, bearing in mind that the existing warhead is based largely on American experience, albeit the detailed design and manufacture have been carried out in the UK. To go through what was gone through to create the Trident warhead in conjunction with the development of a new delivery mechanism and system would be a massive undertaking.

Chairman: We will now move on to the timetable.

Q168 Mr Borrow: If I may just give a general overview, the government has said on several occasions that it will need to make a decision on the future of the UK's strategic nuclear deterrent during this Parliament. Exactly what decisions need to be made, and what is the timetable for those decisions?

Commodore Hare: First, it is clear from free and open literature from the MoD that the clock stops, if you like, on Continuous-at-Sea Deterrence—the posture to which I referred earlier—around 2020. As to the timetable, I was impressed by the evidence the Committee heard from Michael Codner and Lee Willett from RUSI, so my answer will be broadly along similar lines to theirs. That is in published literature. Therefore, by 2020 something has to be done to ensure a continuing capability. My personal view is that the most likely option which will then occur is that there will be an extension programme for the four Vanguard-class submarines. Again, in the published literature I think that some study has been made to look at the feasibility and costs of that. While the actual timelines and costs are not public knowledge—certainly I have no visibility of them—to extend those submarines is doable, probably not

for very long, maybe for five or six years or something like that. That gives one a bit of a breathing space to procure a successor to the Vanguard-class submarines, be it land, sea or another submarine design, which takes us to having something operational by about 2024 or 2025. If you take my favoured submarine option, traditionally it has taken us rather a long time from concept stage to delivering an operational capability in nuclear submarines. Historically, it has taken up to 19 years. That is a very long time. I am sure that with today's knowledge and expertise we will be able to cut back on that. If we want something deployed by, let us say, 2025, we are talking about my favoured date for decision time of 2010. That is the first time that one has to take some big decisions, by which I mean that one has to start spending money. To my mind, 2010 is the time when one has to start making perhaps some fairly modest expenditure which ramps up later to extend the current Vanguard-class. One would also have to start spending some money on the design of the successor submarine system, if it was a submarine, with perhaps greater expenditure coming in the middle of the next decade, 2014 or 2015. In the smart procurement jargon, I am talking about the initial and main gates, but they are all to do with approval times for major expenditure. While I believe that some conceptual study work should be conducted now, and probably is but I do not know, I do not see any key decisions having to be made until 2010 if we want to continue capability after the Vanguard-class runs out.

Q169 Mr Borrow: Your view is that the existing Trident system is likely to become difficult in about 2020. It could be extended to about 2025. Therefore, 2025 is the date by which one needs to have a new platform and system in place?

Commodore Hare: Yes.

Q170 Mr Borrow: Your view is that the extension of the life of the existing system is four or five years?

Commodore Hare: That is my view. Mr Whitehouse is probably better qualified to answer this. I should have made it clear that there is no difficulty with the US-procured Trident system. The missiles, fire control, launcher and navigational sub-systems are fine, and there is a programme in place to extend them until time immemorial or 2040—something that is way outside the timeframe that we are talking about. It is the submarine platforms which is the issue, in particular the nuclear steam raising plant which has a safety justification of 25 years. To renew that safety justification is a non-trivial activity largely because of the very laudable, strong safety rating and criteria that have to be met. To extend the safety justification is non-trivial. It can be done but, to my understanding, not for much more than five or six years.

Mr Whitehouse: In terms of the life of the nuclear steam raising plant, that is an inherent function of the design features, metallurgy and duty cycle when the system is in use. Once the Vanguard-class has had its series of first refits the fuel life is not an issue because the fuel will be good for another 20 to 25

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years. Within the MoD experience has been that the older classes of submarine have become less available and reliable because of reactor system issues in a third commission; in other words, beyond the 20-year point. One of the key issues is the extent to which the Vanguard-class reactor plant, which is a totally new generation plant, has inherently the same design features and issues that could cause problems and loss of availability towards the end of a second commission, if you will. There is an issue as to whether having had a second non-refuelling refit the Vanguard class can run beyond the five or six-year period. In that second refit the major systems within the non-nuclear components of the submarine itself would have to undergo major overhaul. We know what these systems and equipments look like as a result of the first overhauls after an eight or 10-year commission and, therefore, that could be tackled around the middle of the next decade in Vanguard and on the subsequent submarines. It is really the nuclear steam raising plant that one needs to focus on towards the middle of the second commission; in other words, after five or six years in service following second refit. There is in my mind, however, a totally different enter-left-stage issue that influences this decision. There is a big facility at Barrow with highly specialised skills and capabilities which builds these submarines. If the Astute-class runs to seven submarines—there is a massive affordability issue in relation to that—with an output of one every two years that build programme would be likely to end in about 2018. If there is not to be a significant strategic gap in their throughput and we are not to see them facing the possible loss of skills and capability they need to be getting on with the design and build of a successor submarine, perhaps the SSBN, to maintain capability. Once it disappears it would be very difficult to recreate. A lot of the difficulties with Astute have been associated with a gap in the design and build programme. It is not just an issue relating to the existing platform and the systems it carries; it is also a matter of the existing industrial infrastructure to build the submarines at Barrow and subsequently to support them at Devonport. As part of the submarine industrial base, we face our own issues with gaps appearing in our refit programme. Given the present scale of the entire submarine programme, industrial infrastructure, fixed cost and capability retention issues are becoming very significant as an industrial dimension to this decision.

Q171 Mr Borrow: Are you saying that the Government is not in a position to say that it will not bother with a refit or life extension but will move straight to the building of a new platform, and the timetable is now so tight that there will be practical difficulties in delivering that by 2020?

Mr Whitehouse: If we look at the Vanguard-class build schedule, based on what appears to be publicly available information the period between the decision to go and having the submarine in service is 13 to 14 years. That timescale, however, benefited very significantly from a technology development programme which was in place for a number of years

before that, associated in part with the new attack submarine planned at that stage. The Astute-class will have taken, in the event that it goes into service in 2009, 15 years to get there. It has, however, a number of cost issues associated with it. Therefore, if those are to be addressed and not replicated in a new class of missile-carrying submarine the Government/MoD will need to look at the adoption of perhaps more radical platform concepts rather than just putting the missile compartment into an Astute-class submarine. It will obviously need to do things in terms of the fundamental engineering of the submarine to address the problems of cost escalation associated with the supply chain and infrastructure that is needed to build these things. It is also probable that consideration will need to be given to the inclusion of some new technologies, perhaps moving towards fully electric propulsion to get away from all the mechanical equipment that sits in the machinery space. If one accepts that those things must be factored into the decision one would take a slightly different view from Commodore Hare and say that the concept work would need to step up a gear and get going sooner rather than later, and before 2010 if one is to have submarines becoming available perhaps in the early to mid-2020s. Finally, thinking a very long way ahead, that creates an interesting issue. The submarine class that enters service in 2025 with a life of 25 to 30 years will be carrying a missile system that the Americans have committed to supporting only until 2040 to 2042. That is a good illustration of the sorts of dimensions that have to be factored in in deciding when to start in order to have submarines available to maintain a Continuous-at-Sea Deterrence which requires three available boats to ensure that there is one at sea at any given time.

Q172 Mr Borrow: Looking at the political cycle, given that the Government has said that a decision needs to be made in this Parliament, which could run until 2009/2010, if the main expenditure takes place post-2010, on which there seems to be agreement, but work needs to be done before that, irrespective of the decision of the Government whether or not to go for a replacement of Trident and maintain the independent nuclear deterrent, we must ensure that work is done between now and the next election so that whichever party is elected to form the government it is in a position to make a decision about the big expenditure to retain the capability. If that work is not done before 2009/2010, irrespective of which party forms the government after the next election, it will be too late to meet the timetable to replace Trident when it runs out?

Mr Whitehouse: If some pretty fundamental concept, assessment and optioneering work is not started imminently one closes off the option. If one does not close off the option,³ it makes it much more difficult to retain Continuous-at-Sea Deterrence some time early in the 2020s.

³ Note by Witness: Sentence amended: If one does close off the option, it makes it much more difficult to retain Continuous-at-Sea Deterrence some time early in the 2020s.

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Q173 Mr Borrow: If the Government decided not to pursue the submarine option but to look at a land, ship or air option, how would it affect the timetable? Would that take even longer?

Commodore Hare: It is speculation. I am afraid that I do not know the answer to that question. I would guess that it would be a similar timeframe because of some of the technical challenges to be faced. While Mr Whitehouse and I may differ slightly on some of the key decision points and timeframes, we are absolutely agreed that there needs to be some modest expenditure now on conceptual study work to look at the options, timelines and potential costs to enable government to make a decision later on in the timeframe. That should be happening very soon, if not now.

Q174 Mr Hancock: The Americans have launched a new submarine with Trident capacity within the past two years, according to a paper I read. One boat has been built in the past two years and they are now looking at their next generation of boats. What is the difference between what they are going to do and what we would have to do?

Commodore Hare: I did not know that a new Trident submarine had been launched in the past year. What I do know is that they are in the process of converting a number of their Trident submarines to what are called SSGNs. They are redesigning the missile tubes so that instead of using them for Trident nuclear missiles they can accommodate Tomahawk cruise missiles. That has happened in the past two years. There is also the SSN generation of Virginia-class submarines which are non-nuclear ballistic missile submarines, but I do not know of any other.

Q175 Mr Hancock: Have they extended the life of any of their submarines?

Commodore Hare: Yes, they have.

Chairman: Mr Holloway, do you want to raise a particular issue about service length?

Q176 Mr Holloway: Are they not extending the life of the Trident submarines?

Commodore Hare: Until 2042.

Q177 Mr Holloway: What does that involve?

Commodore Hare: My understanding—Mr Whitehouse is better able to answer—is that their safety criteria are different from ours. They take the view that their SSBNs do not operate in such a hostile, aggressive environment as their SSNs and therefore they are able to take a slightly different attitude to the extension of reactor plants. We have a much stronger and different safety regime.

Q178 Mr Holloway: Mr Whitehouse, what would that involve for the Americans?

Mr Whitehouse: The original life of the submarines, based on what I have read publicly, was in part a function of the planned life of the D5 missile. A few years ago they took the decision that they would extend the planned life to 40 to 42 years by adopting a refuel and refit at the 20-year point. The

maintenance regime that they follow is not too dissimilar from that in the UK, except that once they convert four of the existing 18 submarines to the SSGN to carry Tomahawk they will have 14 Trident-capable submarines each with 24 missile tubes, whereas we have 16. Seven will be deployed on each coast. The fundamentals, therefore, are that they have a rather less stressful deployment regime. They have far more submarines with more missile tubes deployed more widely geographically. That means that their work is less hard. There is no doubt that at the 20-year point they will be addressing some fundamental obsolescence issues in the equipments installed and basically doing everything that we do in our refits but at intervals that are twice as long as ours. It is really basic engineering. Obviously, they have taken the view that because of the operating cycles of their reactor plants they are able to perform up to that point in time.

Q179 Chairman: Mr Whitehouse, you mentioned the possibility of putting Trident missiles into Astute-class submarines. If that is possible when would an initial gate and main gate decision be needed?

Mr Whitehouse: My understanding is that the Polaris submarines, the Resolution class, were essentially a development of the attack submarine of the day with a missile compartment in the centre section. I am not involved in any of the classified optioneering and so I cannot talk about it. One of the options must be to look at carrying out a similar transition with the Astute-class submarine. It does, however, carry forward a lot of the technology from the preceding classes of submarine. It has obsolescence issues just sitting there waiting to jump out and it has affordability issues. One of the matters that the MoD will need to do is to look among other options at the creation of a new generation of SSBN, if it decides that that is what it wants.

Q180 Chairman: If that was what it wanted when would an initial gate investment decision be needed?

Mr Whitehouse: Given the affordability, engineering obsolescence and related dimensions, I would not markedly change my view that work would need to start on that immediately once it had been selected as the option. One does not know when one can downselect and say that is what one will do, but it would probably be within 18 months to two years in order to be sure that one has the first submarine available when needed and, looking at it from the industrial dimension, to try to create continuity in the build programme at Barrow.

Chairman: Let us now move on to the warheads.

Q181 Mr Havard: From what you have just been saying, it seems to me that there are almost two timelines running side by side. One is to do with platforms and one is to do with the actual warhead. Can you say what decisions need to be made and when about the actual warheads?

Commodore Hare: I have to say from the outset that I am not a warhead expert. Questions on warhead probably need to be addressed to AWE scientists. I

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will just give my view. A warhead is like any other piece of technology; it consists of a number of piece parts, some of which in time become obsolescent. Rather like one's car, one carries on replacing the piece parts until one day one either goes to a dealer or wakes up one morning and decides it is time for a new model. One moves from one's Ford Escort to a Ford Focus, to use that analogy. The UK warhead goes through a continuous process of safety and reliability assessment and pierce parts that become obsolescent are replaced, continuing the process in accordance with AWE Aldermaston's remit. I suspect that some time in the mid to late 2020s it will be time, if we still have a Trident system, for a replacement warhead to be procured.

Q182 Mr Havard: In terms of decision-making you seem to be suggesting that if there is to be the replacement that you describe, as far as the platforms or boats are concerned the decisions at the conceptual stage need to be made next year?

Commodore Hare: I think that some study work needs to be started about the nature of the platform.

Q183 Mr Havard: When do decisions need to be made about the weaponry?

Commodore Hare: The warhead is related more to the Trident system. If we assume that we will still have a submarine-based system the warhead decision can be taken independently of the submarine. The warhead relates just to the missile. My personal view—it is just that because I do not know the answer to the question—is that one would not need to have a replacement warhead until well into the mid to late 2020s. One has, therefore, a little time on one's side before one has to make any decisions or have a peak in expenditure at Aldermaston.

Q184 Mr Havard: One set of decisions has already been made about Aldermaston. What do you see as the rationale for that?

Commodore Hare: In my limited dealings with Aldermaston I have always been hugely impressed by its dedication, skills and experience. I have always been hugely confident that it is able to fulfil its dual remit which is to maintain the stewardship of the current stockpile for safety and reliability and to be in a position to design and procure a new warhead should the government of the day decide that it wants one. When I was in post with Aldermaston there were two problems. First, its infrastructure was becoming very dated, by which I mean that a lot of its buildings were crumbling. Secondly, the workforce was following my age line, if you like; it was getting to the end of its professional careers. One needed to inject some young blood into AWE to perpetuate the skills base. My understanding is that the recent expenditure by government is focused on those two areas to ensure that the infrastructure is able to support the twin remit of Aldermaston and that the demography of the workforce remains sensible and there is an injection of new blood to replace retiring people.

Q185 Mr Havard: The Government says that the expenditure is to retain core skills, the safety of the current stockpile and its effectiveness and the replacement of facilities. As I understand it, the Trident missile system is a combination of things. The D5 is to be upgraded by the Americans to the D5(A), or whatever it is. It has on it a W76 warhead, or something similar. There is also work being carried out on the re-entry vehicle. We are putting £350 million a year into Aldermaston between now and 2008 and 1,000 scientists are to be recruited. There is the Orion project which is a new laser that can simulate nuclear explosions, because we cannot test in the way that we did in the past. That is one-third owned by Lockheed Martin which is the company which produces the missiles. Are we really retaining a capability to develop our own nuclear deterrent? Is that what it is really all about?

Commodore Hare: I believe that we are. I can only speculate because it is a long time since I have been engaged with AWE. My information is the same as yours. I must correct one point. AWE Aldermaston is government-owned but contractor-operated. In the jargon it is called a GOCO (Government-owned contractor operated) facility. You said that it was owned by Lockheed Martin.

Q186 Mr Havard: As I understand it, there is a contractual agreement and one-third of it is owned by Lockheed Martin.

Commodore Hare: My understanding is that the operation of Aldermaston is through a consortium of Serco, British Nuclear Fuels and Lockheed Martin. You are quite right that Lockheed Martin is American-owned.

Chairman: Let us move on to the defence industrial strategy.

Q187 Linda Gilroy: Affordability is a key issue. Mr Whitehouse, can you tell us what are the prospects for the formation of Subco in addressing the issue of affordability and the extent to which it is likely to be able to do that if it comes about? What is your view on how we continue to obtain value for money beyond 2016 in relation to the shipbuilding and submarine requirements of the Government?

Mr Whitehouse: I think that the cost issues associated with the submarine capability in the UK are quite fundamental at this point, with a planned force level moving down towards eight SSNs and four SSBNs and the requirement to consider the procurement of further attack submarines as well as the need to cope with the decision on the future SSBN. There is a clear and absolute need to achieve consolidation and rationalisation because the nuclear facilities bring with them a lot of skills and very specialised and expensive infrastructure. The majority of those costs are fixed. Therefore, to take the whole enterprise forward and to keep it affordable, it is of paramount importance to have cross-site consolidation and rationalisation. I focus on Faslane, Devonport and Barrow. As far back as 1994 when I was working on the initial tender document by Devonport to the Government after the decision to privatise we went a long way towards

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bringing the then VSEL, the owners and operators of Barrow, into the DML consortium to try to start that. That was 12 years ago. The need even then was quite obvious. Where we sit today it is very important. The prospects for it are under debate at the moment. They have been influenced by some of the press coverage of possible developments last week, which I do not want to go into, but one way or another cross-site consolidation is fundamental. It must happen in order to save significant costs if a future SSBN is required and it is to be affordable.

Q188 Linda Gilroy: On the skills and knowledge base, if the decisions that we have talked about this morning were delayed what would be the implications? If there was a decision not to replace Trident and somebody wanted to take a future decision to do so what would happen to the skills base in the interim, and with what implications?

Mr Whitehouse: That is a very interesting point. A decision not to do things within the required timescale implies an intent at some time in the future not to have a deterrent. That is a fundamental message to send 15 years away from not having a deterrent through inaction. That is a very important political and philosophical point. First, in terms of

the practicalities, in the event that work does not start within the required timescale—there are slightly differing views on that—an obvious point is that to keep the current deterrent going as long as possible perhaps more rather than less work would have to be done in the second refits. Secondly, near certain workload gaps would appear in the design and build capability associated with Barrow, unless it was possible to slow up the build rate for the Astute-class submarines and produce them over a longer period of time. But then it would be quite likely that the SSN force level would begin to drop because one would not have submarines coming into service quickly enough to replace the Trafalgars as they go out of service. It is almost like a matrix of influences and results, but there is no doubt that the key result would be a major affordability issue within the industrial base. Capability would be retained but would have nothing to do or one would have to let that go. It is a bit like weapons capability; once it is allowed to go it would be very difficult if not impossible to recreate it.

Chairman: We are going to finish the first part of the session here. On behalf of the Committee I would like to thank both of you for coming along and giving clear evidence and answering our questions so concisely.

Witnesses: Dr Andrew Dorman, King's College London, Dr Dominick Jenkins, Greenpeace UK, Mr Malcolm Savidge, Oxford Research Group, and Dr Bruno Tertrais, Foundation for Strategic Research (Paris), gave evidence.

Q189 Chairman: I welcome all of the witnesses to our discussion. We have a lot of ground to cover in the next hour. You do not have to answer all of the questions just because you are all there. I ask the Committee to keep questions short and the witnesses to keep their answers short. Without cutting out the meat, try to keep them as tight as possible. Dr Dorman, I begin by asking you what you see as the nature of the threats that we face, first from the existing established nuclear powers, particularly Russia and China?

Dr Dorman: If I may go back slightly, we adopted a nuclear deterrent basically for two reasons: one was threat-based and the other was our status as a world power. In terms of the threat-based reason, there are existing nuclear powers including Russia, as you have articulated. Originally, the goal of Trident replacement was to deter what was then the Soviet Union, adopting the then Moscow criteria to destroy sufficient Soviet cities to deter them from attacking the West. That threat has now receded quite significantly. In the short to medium term most analysts do not see a significant threat in that respect. The question is the longer term: can we see a resurgent Soviet Union in some form—Russia, China or some other big power in that area? In terms of minor threats, we talk about rogue states, to use American parlance. Would smaller powers potentially threaten to use nuclear weapons against the UK? Both those threat bases require potentially different types of nuclear response. If one is talking of a minor rogue state, using American parlance,

one does not need assured second strike capability with the ability to hit a wide range of targets at any time of the day. They are likely to aim at only urban conurbations such as cities; they are unlikely to try to destroy our existing capability. The ability to destroy the British nuclear system as it exists now rests only with the likes of Russia. The question arises: do we need to retain that capability?

Q190 Chairman: I would like to move on to what you may have described as minor threats, perhaps emerging threats such as Iran or North Korea. Dr Jenkins, would you like to comment on the threats we face from Iran and North Korea?

Dr Jenkins: Dealing specifically with Iran and North Korea, it is important to put this in context. American intelligence agencies say that any potential nuclear threat from Iran will emerge only in a timeframe of 10 years. The way Greenpeace views this, therefore, is that we have a window of opportunity to improve the situation by acting in a certain way, by which I mean not continuing to threaten Iran, for example.

Q191 Chairman: I am sure you are right about that, but we will get to issues such as what we should do. What I am trying to establish at the beginning is what the threats are. What do you in Greenpeace see as the threats?

Dr Jenkins: Our view is that the major threat is definitely the large existing nuclear powers which are in a state of forbearance and peace. This is very

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much the larger problem and, therefore, our action should be concerned primarily with preventing a return to a cold war-type situation.

Q192 Chairman: Mr Savidge, welcome back. What do you see as the threats from Russia, China, North Korea, India, Pakistan or wherever?

Mr Savidge: Basically, the assessment that the MoD has made in its most recent White Papers is that at present we do not face any major threat. Obviously, one can look at the question whether or not Russia at some point in future may become hostile. We make a reference in our written submission⁴ to a suggestion made by Liam Fox in a publication that we shall be bringing out this week, which I hope we can submit to you.⁵ It is a symposium of different views on this issue which I hope would be of great interest to the Select Committee. Liam Fox asks whether there could be a hostile power that conquered the whole of the rest of Europe without provoking a nuclear war and then was deterred by a British deterrent when it would not be deterred by a US nuclear deterrent. I suspect that that scenario was drawn up originally during the Cold War and has not moved on very much since. If one looks at it, one must take account not only of the dissolution of the Warsaw Pact but the dissolution of the Soviet Union and the expansion of NATO and the European Union. One has a situation where there is a power imbalance. If one first takes the proposal that Russia becomes hostile one then has an incredible power imbalance between Russia as it is now and NATO as it is now. I just cannot see that as a likely scenario. Why would Britain on its own be likely to get into conflict with, say, China? It is also important to say that very often in the popular media there is a tendency to say that for some reason Iran or North Korea would be an immense threat to us if it got nuclear weapons. I cannot envisage the probability of this country, which does not now have an empire, getting involved out of region without being involved also either with the United Nations or NATO or at least with the United States.

Chairman: Once again, you are moving on to the response that we might make. I am trying to work out the threat.

Q193 Mr Holloway: We are told that China has a small and very out-dated nuclear arsenal. In what sort of condition are the Chinese to accelerate and update their arsenal?

Dr Dorman: The Chinese nuclear deterrent forces are quite small compared with the other P5 members, to use that language. They could put more money into their capability and develop a more significant nuclear capability. That would take them some time. From the point of view of the UK, it is probably one of the countries least likely to be threatened by China given our geographical position *vis-à-vis* that country and given that other countries, particularly the United States, would be more of a threat presumably to China than ourselves.

Mr Savidge: My understanding is that China has some plans to expand its forces primarily as a response to its concern about missile defence, but again this is very much an issue of the United States in relation to China. I do not see that it has a particular effect on any potential threat to the United Kingdom.

Q194 Chairman: I am asking for trouble because I will expand the question slightly to the issue of the threat of international terrorism. Clearly, we face a threat from international terrorism. Dr Tertrais, is the issue of a nuclear deterrent at all relevant to the threat of international terrorism?

Dr Tertrais: I believe that it is only of partial relevance. Most of the defence and fight against international terrorism has nothing to do with western nuclear deterrence, British, French, American or otherwise. This would be relevant only in the very extreme scenario where a state deliberately sponsored a terrorist group and asked it to act on its behalf. If one of our governments had incontrovertible evidence that a terrorist act was being sponsored by another state's government and that it would be of such magnitude that it could enter the realm of our vital interests in such a case there would be a role for nuclear deterrence. That was what the French President tried to put forward in a speech on 19 January. That is an extreme scenario and my understanding is that it is understood as such by the French Government. Nevertheless, it is not excluded. If I may say a word about China, I disagree that because of its distance it is of no direct relevance to our nuclear deterrent. I believe that there are scenarios in which our nuclear deterrent, British or French, can be helpful in countering a possible blackmail by China. For example, I believe that in a case where the Europeans are allied with the Americans in a crisis in the Far East if the Chinese wanted to deter us from supporting our allies and intervening in the region there would be a role for our nuclear deterrence, British or French. I do not accept the idea that there is no scenario in which China is a relevant consideration.

Mr Savidge: If I may respond on the issue of terrorism, Dr Tertrais has made a valiant attempt to make Jacques Chirac's recent speech sound sensible, but in the majority of cases where there has been any clear identification between a state and terrorist organisations it is usual that such organisations have a political objective. They are not likely to be the sort of organisations which would be interested in obtaining nuclear weapons. I would have thought that it would be the fanatical, absolutist organisations like Aum Shinrikyo or al-Qaeda which would have the objective of nuclear terrorism. It is, surely, very unlikely that they would be sufficiently closely identified with a particular state that it would be meaningful to try to use nuclear deterrence. Even with the identification that one had with, say, al-Qaeda and the state of Afghanistan, there was never a thought of nuking Kabul or something like that. I find that an improbable scenario. As to China, surely in any discussions of this sort we would be part of NATO. There has been

⁴ Note: See Ev 42

⁵ The Future of Britain's Nuclear Weapons, Oxford Research Group, March 2006.

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a suggestion that China could blackmail us. One cannot rule out anything, but to me that is a low probability.

Chairman: We move on to nuclear proliferation.

Q195 Mr Borrow: If the UK Government has to make a decision essentially in the next couple of years either to replace or end its nuclear deterrent in 15 or 20 years, what effect will it have on the proliferation of nuclear weapons in the rest of the world? Perhaps we can start with Dr Jenkins.

Dr Jenkins: We take serious note of what has been said by the UN Secretary-General that there is a possibility of a cascade of nuclear proliferation. That point was also emphasised by a high-level panel at the UN. That has been underscored, somewhat less strongly, by Jack Straw in statements by him. There is a real problem but I think that it is a lesser problem than a return to the nuclear arms race. We believe that in a situation where all the major powers are not in a state of enmity we should see it as an opportunity to strengthen the NPT and so forth. This would be the worst possible time to go ahead with a new nuclear programme. It would send the wrong signal.

Q196 Mr Borrow: I gained the impression that Dr Tertrais wanted to respond to that.

Dr Tertrais: I would be willing to. I do not think there is any evidence that unilateral disarmament by the UK, or France for that matter, would have any positive impact whatsoever on the dynamics of nuclear proliferation. I remind the Committee that during the so-called decade of nuclear disarmament, 1987 to 1996, tremendous efforts were made in arms control, disarmament and non-proliferation. During the same time the nuclear programmes of India, Pakistan and Israel, and Iran, Libya, North Korea and Iraq for that matter, continued unabated, at least until 1991 regarding Iraq. Although the argument has some appeal on paper, the dynamics of nuclear proliferation are not connected, or only very, very slightly, to what we do as established nuclear powers with our own nuclear programmes. Perhaps the conventional balance matters. For instance, there is a lot of evidence that the nuclear programmes of proliferating countries seek to counter our western conventional superiority. I argue that that probably matters more than what we do with our nuclear programme. I have never seen any convincing evidence to the effect that drastic measures of unilateral nuclear disarmament, especially by small nuclear powers like France and the UK, would have any meaningful impact on the dynamics of nuclear proliferation.

Q197 Mr Borrow: Mr Savidge, if the UK made the decision not to renew its strategic nuclear capability in 15 or 20 years what impact would it have on the ability of the UK to assume a leadership role in international arms control negotiations?

Mr Savidge: If I may say so, that puts the question extremely well. I agree with Dr Tertrais that there is a tendency on both sides of the argument to take too

parochial a view and vastly overestimate the significance of the British nuclear deterrent within the whole scheme. I think that that applies to both sides of the argument. Dr Tertrais said that if Britain simply said that it would give it up it would not necessarily have an immediate effect. We ought to be looking at the whole question of whether this is an issue on which we should try to take a lead in a different sense. We have taken a lead in relation to things like climate change, global poverty and a whole range of other issues. By working together with other countries perhaps we can discuss this issue and see if we can push it forward, even against a very adverse international climate. We have had a degree of success with the other issues. I think it very important to try between now and at least the next nuclear non-proliferation treaty revision conference to get the world community to look at this issue. We all know that if nuclear proliferation goes on and we continue to have wars at some point we are bound to have a disaster.

Q198 Chairman: It is in the nature of this debate that you are bound to disagree with one another from time to time. You will not need to express your disagreement in every case, particularly to come back on points. The discussion is extremely valuable, but disagreement will be a fact of life in this debate. We have had it before, and it is extremely helpful to us. Dr Dorman, I move to a point that you raised; namely, that possession of a strategic nuclear deterrent is partly threat-based and partly status-based. Do you believe that it gives us status and, therefore, we regard it as valuable to have nuclear weapons?

Dr Dorman: I think that when we originally decided to acquire nuclear weapons one of the reasons was status, and it was seen at the time—there is documentation on it—that cutting-edge technology was a symbol of our being then a world power, not a superpower, as we defined it; that is, a power with interests beyond our region. It is now old technology; it is not really a symbol of advanced technology. Most nuclear weaponry is relatively old technology. The question is whether it gives us any diplomatic leverage. One has a two-sided argument: first, whether if we got rid of these weapons it might give us a little more diplomatic leverage in some respects to nudge debates in other ways. The other side of the argument is that it still gives us a bit of diplomatic leverage. I think that the people best qualified to answer that would be the Foreign and Commonwealth Office in terms of how much they think it gives them the leverage that they need. One area of discussion is: can we imagine getting rid of nuclear weapons and leaving one other power in Europe with them? We have seen a number of statements in that respect.

Q199 Chairman: And the answer?

Dr Dorman: I think that we could. One of the matters that we have to think about in the field of defence is that this is all about balancing risk. If we

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make a decision to acquire a new generation of nuclear weapons it comes at a financial cost probably in terms of other defence capabilities. One of the big questions to be decided is: what level of capability do you want to give up to retain the nuclear capability, because it is unlikely that you will get more defence money?

Q200 Chairman: Dr Jenkins, as to status does it give us a seat at the top table?

Dr Jenkins: My short answer is that at this stage in terms of the Security Council we have that seat anyway and we would not lose it by not having nuclear weapons.

Q201 Chairman: Dr Tertrais, if the French were to give up their strategic nuclear deterrent would it be an enormous blow to French pride?

Dr Tertrais: I am tempted to comment on some of the undertones of your question but I will not. Certainly, it would be a blow to the French conception of independence. I argue that if the French did develop their own independent nuclear deterrent force partly for reasons of status, influence and prestige, as I believe was also the case with the UK, in today's world that dimension is of much less importance than during the cold war. If the French took the step that you mention I believe that it would definitely mean a clean break with the traditional French concept of independence. The French nuclear programme was, and still is, intimately linked with its concept of independence and, I add, its independence *vis-à-vis* the United States, because that is what it is all about. Michael Codner⁶, whom I believe you heard, said that there were two concepts of independence: the British one and the French one. These are two concepts of nuclear independence. The British and French do not have the same concept of nuclear independence, although in both cases the intimate link between nuclear status and the relationship with the United States is very important.

Q202 Chairman: We will come back to the French stance towards the end. Mr Savidge, would you like to add anything to the issue of top table status?

Mr Savidge: Our membership of the Permanent Five is based on our position in World War II. It is really coincidental that those became the nuclear powers. If we look at it now, when talking about expanding the Permanent Five there is no particular suggestion that because India has nuclear weapons it would be favoured before, say, Japan or Germany. Looking at our status within G8 and the EU, there is no particular indication that the nuclear powers are favoured as against the non-nuclear powers. In general, most of the major disarmament talks were either bilaterals between the United States and the then Soviet Union, now Russia, and the multilateral ones have tended to involve nuclear and non-nuclear powers. I do not think that there is now a great status argument.

Chairman: Let us move to the issue of the independence of the UK's strategic deterrent.

Q203 Mr Holloway: Dr Jenkins, in your written submission to the Committee⁷ you cast doubts on the independence of our weapons. In what ways do you consider them not to be independent of the US?

Dr Jenkins: Often the debate continues to be framed in terms of deterrence, whereas the Soviet Union is no longer there and in a sense the purpose of nuclear weapons is being reinvented both here and in the United States and perhaps elsewhere. I think that it is in that context that we should consider the question of independence. First, Trident is very much a trans-national enterprise. I have given some of the technical details of that. The way I put it is that, first, we now have the doctrine most strongly articulated in Washington of the pre-emption of conventional war fighting with usable nuclear weapons. There is an interrelationship. In technical terms, because Trident has been made trans-national we may be inheriting parts of that doctrine so that, talking specifically about rapid retargeting, it appears that we have already acquired that new capability. What would be the purpose of having that rapid retargeting capability? Clearly, we already have the capacity to hit Moscow.

Q204 Mr Holloway: The question was about our operational independence. What do you consider to be the factors in relation to that question?

Dr Jenkins: In a previous session the question was raised whether in the final analysis if we were attacked with a nuclear strike we would be capable of responding to, say, a Russian attack.

Q205 Mr Holloway: Independently of the Americans?

Dr Jenkins: I think that is correct. However, the real life scenario today is not that because we will not be attacked by Russia. In that situation the only real circumstance in which I can conceive we would ever use it would be to assist an American attack, because for any other purpose Washington has so many means to come back at us, ranging from the kind of economic coercion that it exercised after Suez to much simpler things such as degrading the technical capability of the system.

Q206 Mr Holloway: Dr Tertrais, if we tried to have a system which was not reliant on American technology, Kings Bay et cetera, what would be the factors involved in that, and what would be the cost of developing our own system?

Dr Tertrais: I believe that it would be more costly for the United Kingdom to pursue other options, such as building its own system or even buying a French system. That would certainly be more costly than an American option. Are you asking me to give you some specific cost figures?

Q207 Mr Holloway: No. I just want your general impression.

⁶ Note by Witness: It was in fact, Mr Michael Quinlan, not Mr Michael Codner.

⁷ Note: See Ev 34

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Dr Tertrais: My general impression is that given what I know about the very close defence relationship between the UK and the US any US option will always be cheaper in strict cost terms than any other option.

Q208 Mr Holloway: We took evidence from someone a couple of weeks ago. He suggested that talks were taking place at the moment between the British and French on the subject of their nuclear weapons and some sort of mid to long-term co-operation between them. Have you any idea of those talks and the nature of the matters being discussed?

Dr Tertrais: I certainly have a good idea of the general nature of French/British nuclear co-operation. In a previous capacity I participated in it. My understanding is that today, as a few years ago, there are two kinds of co-operation: political/strategic co-operation, with a close strategic dialogue on nuclear issues, including nuclear deterrence, and also staff talks, that is, a dialogue between your nuclear military staff and ours. That has been going on for years. I am not aware of their current agenda. I would be very surprised if at this point in time there were in-depth discussions about the long-term future of practical, technical co-operation between France and the UK. I would be very surprised if in parallel with government thinking here some options were being seriously discussed at this point in time.

Chairman: Once again, we will come back to that issue towards the end. I would like to move on to the timetable for decisions to be made.

Q209 Mr Jenkins: If you do not have an answer to my question please say so. I want to try to get some evidence and facts on the table. There may be different opinions, but within the public arena I want to give everyone a chance of putting their view on the table rather than debate it during the present session. Dr Dorman, it is said that we need to take a decision in this Parliament with regard to the future of our system. What exactly are the decisions that need to be taken, and why do they need to be taken now?

Dr Dorman: I think that some decisions need to be taken in this Parliament, for example whether we want to replace the nuclear deterrent and what type of capability we want. We need to make some significant decisions about where we go in the long term. As alluded to in the session earlier this morning, there is an industrial dimension. If you want to go for the submarine-based replacement programme there is a potential gap or window in terms of the production of submarines between the Astute-class and the replacement of the Trident fleet, if the Government says that the Trident fleet needs to be replaced. We have seen problems with the Astute-class. We had a downturn in submarine orders and there was a loss of skill sets which they had to rebuild. If you want to delay your Trident replacement or try to replace it with the same system you will have to continue to build additional SSNs or nuclear-powered attack submarines to keep the production line going, or you will have to acquire the ballistic missile submarines earlier. If you decide to

go for a different system, whether it be land or air-based, you will start to run down the potential nuclear build capability.

Q210 Mr Jenkins: You are doing the one thing that I did not want you to do. I asked a specific question. I can ask a lot of questions and give you the opportunity to pick which answers to give, but I do not want to do that. That was why I asked what decisions needed to be taken, and when.

Dr Dorman: I think that we need to decide by the end of this Parliament whether we want to replace the nuclear deterrent and what type of capability we want. That will then allow one to start making decisions early in the next Parliament in terms of acquiring those capabilities.

Q211 Mr Jenkins: I have asked you twice now and I will leave it at that. Mr Savidge, do you have any idea what decisions have to be made in this Parliament and when?

Mr Savidge: One hears very diverse advice on this matter. Today, we heard Mr Whitehouse make a clear case for why the industry would find it optimum to have the longest possible time and the earliest possible decision to keep the industrial base and skills going. Obviously, that is one aspect of the case. Having listened to various experts at conferences and read some of the literature, it seems that a lot of others suggest that the boats might be kept going longer and that in an emergency rather than the optimum for the industry one might be able to have a shorter lead time to produce a replacement, particularly if it was to be a submarine.

Q212 Mr Jenkins: I was hoping for a date, for example that by 2009 or 2010 we have to make a decision, because if we do not there will be consequences. The consequences, quite simply, will be that once we lose our skill base the decision is made for us. Maybe I am asking the wrong people; maybe you do not have the knowledge and experience to give me those dates?

Mr Savidge: Certainly, I would be happy to talk to my co-authors who obviously would have more expertise on matters such as nuclear reactors. I could provide the Committee with a written submission later. I have to say that the general view is that we do not have to make that decision before the end of this decade. That was the view expressed by Commodore Hare and a number of others. When Mr Whitehouse went for an earlier date he was talking about when the decision about concept had to be made. That could still mean that one would not have to make the actual decision whether or not to go ahead until after 2010.

Mr Jenkins: We have already made a decision about Aldermaston. Because of the aging workforce we need to put more people into the establishment to maintain the capability. All these things play an important role. Chairman, I do not think that the witnesses have the necessary back up and experience to deal with the timetable.

Chairman: That is probably so.

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Mr Jenkins: It will be a waste of our time to continue. To shorten the timetable perhaps I can forgo that section.

Chairman: Let us turn to what other possibilities there might be in regard to the service life extension of Trident.

Q213 Linda Gilroy: Dr Dorman, the United States is in the process of extending the service life of its Trident submarines in order to keep them in service until 2042. What is the US doing to extend the life of its force, and should the UK embark on a similar programme of service life extension for the Vanguard-class?

Dr Dorman: I declare that I am not a scientist and cannot give you the exact figures. I understand that, for example, we have a different reactor system on our boats from the American boats, which means, as alluded to in earlier submissions, that if we want to extend the life of the boats we can make that decision but we start to run into some risks about how long those platforms will run. To go back to the Polaris system, you may remember that in the early 1990s we extended the life of those boats and started to run into difficulty in keeping them at sea while the Trident system came on board. The danger of service life extension is that that might happen again. You start to get into the "what ifs". What happens if something goes wrong with the system?

Q214 Linda Gilroy: In your paper you say that the decision faced by the UK is what effect it wants to achieve and at what price. You refer to Trident as the deluxe system and say that it may not be necessary given the threats that the UK faces after the Cold War. What are the alternative procurement possibilities?

Dr Dorman: You have the full range. You can have no nuclear capability whatever. You can have what the Japanese have which is a virtual nuclear deterrent. They have nuclear expertise and a nuclear industry. They could design a warhead relatively quickly. They have their own space programme and so could design a ballistic missile relatively quickly. Within the space of a couple of years they could constitute a nuclear capability if they so wished.

Q215 Linda Gilroy: I will come back to that in a moment. I think that in your paper you also mention cruise missiles with nuclear warheads⁷⁸

Dr Dorman: I was going to move to that. Trident is deluxe in that it gives you, under the then Moscow criteria, the ability to level a number of cities at any moment of the day and assured second strike. This was a system that could not be destroyed on the ground or, in this case, at sea; it was impervious. If one wants to start taking further risks to minimise costs one can go for an air-based system, whether it be free-fall bombs, which you will remember we had up until 1998, or cruise missiles. The simplest way would be to take the existing Storm Shadow which has come into service as a cruise missile and put a nuclear warhead on it. One could have a land-based

system. If one did it very crudely, one could take the existing Trident missiles and put them on land. That would probably be the least popular solution. Generally, we have moved away from that and gone towards either air or sea-based systems. But they will give options that will keep one in the nuclear game at lower cost.

Q216 Linda Gilroy: To return to the idea of the virtual nuclear state, you have explained a little what you mean as far as Japan is concerned. Is that really likely to be taken seriously as a deterrent?

Dr Dorman: One suggestion that some of the panel have made is that if we cannot see nuclear weapons being used against terrorist organisations and potential proliferating states, our main concern is a resurgent Russia or China-type scenario. One has a lead time in which one thinks that that threat will emerge and become significant, in which case the virtual nuclear arsenal solution gives one the ability to redevelop and rebuild the nuclear capability, if one so wishes, over that timeframe.

Q217 Linda Gilroy: Provided that the states that you are talking about do not have their own?

Dr Dorman: It assumes that if Russia suddenly becomes a big nuclear threat to the United Kingdom it will be over a number of years; it will take them some years to reconstitute its nuclear capability, but again it is about what risks one wants to take.

Q218 Chairman: Dr Dorman, you heard Commodore Hare and Mr Whitehouse earlier talking about the alternatives to nuclear-based missiles. I got the impression they believed that a cruise missile-based system would not necessarily be any cheaper than a submarine-based system. Did you disagree with that while they gave that evidence? If you did, on what would you base your disagreement?

Dr Dorman: It can be cheaper depending on how one runs it. If one wants to run a cruise missile system based either in the air or on submarines that is always available to be used it becomes very expensive. That is an ongoing commitment. If one bases it on the same systems being used for alternative operations where one can then use the nuclear programme it becomes far cheaper because one is not keeping people constantly on alert. If you remember, we had the WE 177 with free-fall bombs on Tornados. Those Tornados in the post-Cold War period would generally make conventional training sorties but could then be used in a nuclear role. All one needed to do was keep Aldermaston going and keep those bombs in service and maintained and keep the armaments people on station. It is not that big an infrastructure. If one wants to keep a permanent air alert it becomes far more significant.

Chairman: Dr Tertrais, we said that we would return to the relationship with France.

⁷⁸ Note: See Ev 39

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Q219 Robert Key: Dr Tertrais, I start with some technical questions about the French deterrent. Can you tell us the nature of that deterrent, technically? One has missiles and submarines. Can you please expand?

Dr Tertrais: The French have two components, one of which is nearly identical to the British one: a force of four submarines with long range ballistic missiles with one on patrol at all times. I would, however, argue that the current missile in terms of technical preferences is inferior to the Trident II D5. There is an additional air-based component which is some form of cruise missile. The vast majority of French nuclear warheads are in the submarine force. Nevertheless, the French consider that they are really two different legs and each is necessary to ensure a credible deterrent.

Q220 Robert Key: Can you explain a little the post-nuclear testing generation warhead, the TNA?

Dr Tertrais: When France decided to commit itself to the CTBT in the early to mid-1990s there was a decision to develop a new formula for new generation warheads. The warheads could not be tested any more after the entry into force of the CTBT. Several nuclear tests in 1995 in the final French campaign were specifically devoted to validating this new formula. As has been said, this formula will be used on weapons which will begin service two years from now. The formula was tested in 1995/1996 but the warheads are coming into service by 2008. We call them robust warheads which means that they are bigger, heavier and less modern, but they have the great advantage of not needing to be tested any more. To give you an idea, the way that the Americans speak about "Reliable Replacement Warheads" these days sounds a lot like the sort of things that we have done.

Q221 Robert Key: The President has recently said something about the targeting policy of France. Can you expand on that?

Dr Tertrais: One can say that in public discourse at least there are two different forms of targeting, one of which is targeting *vis-à-vis* major powers. The French define major powers as those that can threaten the very survival of France as an organised state or entity, such as Russia, China or perhaps others in future. As to these, France exerts deterrence through the threat of unacceptable damage of any kind. The French consider that there is another class of potential adversaries whom they call regional powers. For this class the deterrence would be exerted through the targeting of centres of power, that is, political, economic or military—the things that the leaders of such countries would hold dear. Therefore, it is assumed generally in public literature that the planning of options would be more limited and targeted for regional powers than for major powers.

Q222 Robert Key: The policy of the French Government is that the second type of targeting policy would cope with the issue of international terrorism?

Dr Tertrais: No, it would not, certainly not in such general terms. It would have a relationship with the issue of international terrorism only in the extremely hypothetical case where the head of state or government of such regional power decided to try to bypass our nuclear deterrence by trying to hide himself or itself behind a terrorist group that would make a major attack, or threaten to make a major attack, on French interests.

Q223 Robert Key: It seems to me that in France there is very little debate or disagreement about the nuclear deterrent, certainly much less than in this country. Can you explain that to me?

Dr Tertrais: I think that is true. The consensus, maybe not so much in terms of public opinion as in political parties, is much stronger in France than in the UK. I have a feeling—I have never made any detailed study of it—that there are two factors involved. One is the fact that nuclear weapons today are still associated with Gaullism (de Gaulle—of course, not de Gaulle himself) and independence.

Q224 Robert Key: *Le force de frappe?*

Dr Tertrais: Yes, although that expression lasted for only two or three years, I believe. In 1967 we took the strategic decision to be fully independent for our survival and that required an independent nuclear deterrent. That has remained very firmly in the French strategic culture. The second reason which is linked to the first is that basically the sensitivity of the debate in this country, as I understand it, and your relationship with the United States is by its nature very different from what we have; in other words, your nuclear debate is linked to the debate about your relationship with the United States. Ours is in a very different position. Perhaps I may add that traditionally while there has been a fairly strong consensus on the virtues of nuclear power, military and civilian, we do not have a strong green or environmentalist movement in our country. This is a statement of fact.

Q225 Robert Key: I can certainly confirm that from my observations. Suppose that the United Kingdom decided not to replace Trident and phased out nuclear weapons. Would France then regard itself as the nuclear power for the whole of Europe? Would you see France taking over the role of providing a European nuclear shield?

Dr Tertrais: That is a very big question. I think that there would be two different reactions to that hypothetical decision. One would be, "Oh, we are now the only nuclear power left in Europe, which means that potentially we have a more important role in the future protection of Europe". But I must add immediately that I think there would also be a second reaction, that it would increase pressure on the French to do the same thing. The argument sometimes used is that each would be glad to be the only nuclear power in Europe. I do not think that that is a real world argument. In the real world responsible French leaders would think, "Well, if the UK is beginning this trend there will be more pressure on us to follow suit and that is a problem

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for us." I believe that the French are happy with a situation where there is more than one nuclear power in Europe.

Q226 Robert Key: I have spent the past quarter of a century regretting the fact that France has not been a member of the Nuclear Planning Group, for example. Do you think there is any prospect that France would begin to co-operate more closely with Britain in a nuclear programme?

Dr Tertrais: Like you, I regret that France does not participate as an observer at the NPG. I think that it could and should do so at zero political cost. That being said, is France ready to co-operate more with the UK? My assumption is that it is, but my understanding of the way French political leaders take stock of 10 years or so of nuclear dialogue is that they have the impression that there is a kind of glass ceiling beyond which it is very difficult to go in terms of French/British nuclear co-operation. That glass ceiling arises partly from the existence of strong technical co-operation with the United States in the nuclear military field but also perhaps from how far the British are willing or able to go in greater Europeanisation of the nuclear deterrence programme. My understanding is that French leaders are willing and able but are not so sure that the Brits are.

Q227 Robert Key: I have also spent 25 years trying to understand the nature of the French state and how French citizens perceive their state. That is inconceivable to a Brit. We cannot begin to imagine how the French can be as attached to something called the state of France, and you on the other hand cannot imagine how we can be so friendly with the Americans. But I find this hard to believe when we have so many defence procurement programmes in common France, with the involvement of big companies like Thales. We know that the French and British Governments are talking to each other about aircraft carriers. The French must be rubbing their hands as they see the joint strike fighter arguments rage. You envisage buying a British-designed carrier from which Rafale aircraft will deliver French nuclear missiles. Is this my wild imagination?

Dr Tertrais: Not at all. I think that for the French in terms of future European or British co-operation many things are open as long as it does not encroach on their very specific concept of independence *vis-à-vis* the United States. Beyond that, those things are possible. I certainly concur with your characterisation of the French attachment to the state. I think that the French attachment to nuclear weapons is also part of the same cultural background. I add that such hearings as this could not take place in France.

Q228 Robert Key: Why not?

Dr Tertrais: First, because our Parliament's role in foreign and defence policy is much less important in our system than in yours. Secondly, the executive branch is extremely touchy about any debate in Parliament on nuclear deterrence, and there is a lot

of frustration among your French counterparts on that. Nuclear deterrence is really an issue for the President. It is a kind of joke to say that in terms of pure nuclear strategy and policy the real monarchy is in France, not the UK.

Q229 Chairman: Dr Tertrais, you have won our hearts. Dr Jenkins, does Greenpeace have a view as to whether France has a strong green movement?

Dr Jenkins: We have an active campaign in France directed against the M51 programme. We think that the way forward is a European approach, and certainly part of that would be a freeze on that new development as well as our own potential new Trident system. That would be helpful as part of the development of an alternative European approach to that put forward by the United States.

Q230 Mr Jenkins: Dr Jenkins, you said earlier that Russia was no longer a threat. What inside information do you have? According to my information, at the present time the Russian state is fragile and, looking forward, it will become more fragile. What guarantee do you have that we will not see a backward lurch from democracy to a totalitarian state in Russia which has the second largest arsenal of nuclear weapons? Why do you feel that you have the right to put our country's future defence on hold because you have the inside track on Russia in future? Would you like to inform me about how you have obtained that information?

Dr Jenkins: Perhaps I may clarify what I said. I think I was quite direct in saying that the major threats that we might face in future and should be most concerned about were from the existing major nuclear powers. Contrary to what you said, I took the realist's view that Russia could again be a threat. I very much agree with Mr Savidge's specific reasons why at the moment it is not a threat. It is for that reason that I think it most important to use this time when we have good relations with Russia to take forward multilateral disarmament, playing very much a leadership role in conjunction with other major states. I think there was a bit of a misunderstanding in that respect.

Mr Jenkins: I am glad you have clarified that.

Q231 Chairman: Dr Dorman, you gave the impression that you wanted to add something.

Dr Dorman: I should like to add something to the debate. If I may go back in history, in the early to mid-1990s when we were considering replacement of the sub-strategic deterrent at one point we looked quite closely with the French at a new cruise missile. We subsequently decided to go for the sub-strategic Trident option instead but we looked at an air-launched cruise missile with the French. We have had quite significant links with them.

Q232 Linda Gilroy: Dr Tertrais, the French programme takes up a much bigger slice of the defence budget and is much more expensive. Although I hear what you say about it being the President's decision, what sorts of pressures emerge from that, and is it a growing problem?

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Dr Tertrais: It is certainly a growing problem. There are lots of pressures from those inside the defence establishment, including of course the military circle, who are not concerned with nuclear deterrence issues and are persuaded, I think wrongly, that if they took money out of the nuclear budget it would automatically go to the conventional defence budget. I am not sure that that exactly captures the way that our defence budgets are constructed. That idea, nevertheless, exists. More generally, among the up and coming generation of politicians and military and civilian leaders nuclear deterrence is something less obvious, and certainly less than a given, than it was to the

previous generation. I am fond of saying that the next president in 2007, whoever he or she might be, will be the first president of the post-World War II generation. He or she will see the world through very different eyes from those of the previous one. There will be strong pressures on the next president, whoever he or she might be, to reduce the nuclear budget, and I believe that it will be a very interesting moment for the future of nuclear deterrence.

Chairman: You will not have been able or had time to say all that you could have said, but that is because you are experts. I am grateful to all of you for coming to give very important evidence to this inquiry.

Written evidence

Memorandum from Dan Plesch

Mr Chairman, members of the Committee, it is an honour to provide evidence to Parliament on such a grave matter. Any Trident successor could be in service until 2070, so that a renewal decision will influence strongly British strategy throughout the century.

The independent nuclear deterrent is something people support for use as a last resort, if Britain was in peril as it was in 1940, at Trafalgar and when facing the Armada.

My evidence is that Britain's independent nuclear deterrent fails what I call, "The 1940 requirement". In addition, the political price paid to acquire this politically defective system is political dependence on the country that supplies it, the United States.

If Britain retains a US sourced nuclear capability for the 21st century then it is not reasonable to expect that Britain could use it in circumstances where the US were either actively neutral as in 1940 or actively opposed as in 1956 at Suez, let alone where the US were an adversary. Such circumstances are as undesirable as they are unlikely, and yet this is precisely the test that an independent force must pass to be worth the expenditure of financial and political capital. Indeed the Government rests its case for renewal on the argument that we must have a system proof against unforeseen events. My testimony is that successive governments have long ago given up that independent capability, though they are loath to say so in public. The restoration of independence would improve the quality of UK-US relations by removing this unnecessary distortion.

At the time the present arrangements were made with the United States, we now know that the view of Harold Macmillan's Permanent Secretary was that the Nassau agreement put Britain in America's pocket, while the chief of bomber command wrote that independence was a myth even before Nassau. Of the Prime Ministers, Harold Wilson consistently argued that Britain did not have an independent system.

There has long been a general understanding amongst specialists that while Trident is a US missile system, its independence can be sustained by two ideas. These are that Trident can always be fired independently and that the warheads are independently British. My evidence is that the facts do not sustain these propositions.

The present system of co-operation is organised under the Polaris Sales Agreement and the Mutual Defence Agreement with its Joint Atomic Information Exchange Group, Joint Working Groups and programmes of visits.

The Committee recorded in 1993 that, "The UK purchases its Trident D5 missiles from the US, through the US Strategic Systems Programme. Although specific missiles in the pool of such missiles held at King's Bay, Georgia, will not be identifiably British, the UK Government will take title to the missiles it purchases." The illusion of independence is sustained when the words "Royal Navy" are painted onto missiles that are to be photographed during a test-firing. The US firm, Halliburton controls the company servicing the submarines in Plymouth.

The warheads are fitted to US re-entry vehicles and use an arming-fusing-firing system designed and manufactured by the Sandia US national laboratory. The warheads are manufactured at the Atomic Weapons Establishment in Berkshire which is at present one third owned by Lockheed Martin under a long-term agency arrangement. The Committee may want to examine what further independence is lost through the acquisition of Insys by Lockheed Martin since Insys support helps enable the Ministry of Defence to implement its oversight of Lockheed Martin and the other partners in AWE management.

The Government provides no information on either the amount or the proportion of AWE running costs and capital expenditure spent in the United States. It also does not provide information on the sourcing of the capital equipment used to manufacture the weapons or on the sourcing of the nuclear and non-nuclear materials and components within the weapons. What is known, permits the following matters to be established. The A-90 plant used to manufacture warheads is a direct copy of the T-55 plutonium processing plant at Los Alamos. US nuclear parts are provided by the United States according to de-classified documents signed by Presidents Carter and George H W Bush. US non-nuclear parts are included in the warheads, presumably because they are not available in the UK.

Documents obtained by the US non-governmental group, the Natural Resources Defence Council, show that since 1960, the US has supplied the UK with the blueprints for weapons including those for the W76 Trident.

Since 1958 the UK has needed the Nevada site to test its nuclear weapons and now requires the use of the Nevada site for non-nuclear explosions—the so-called sub-critical tests—to ensure that the weapons work. The development of new types of weapons without explosive testing remains a contentious issue amongst US specialists.

The Committee may wish to examine the status of the modern tactical warhead described in the 1993 Defence Estimates. Why is it not suitable as a basis for a Trident replacement?

The allocation of British submarines to NATO means that the patrols would normally be co-ordinated with US officers. In the days of the V-bombers prior to Polaris, the then US Defense Secretary Robert McNamara and his officials explained that the British did not operate independently. Today's British submarines need US generated computer software, some supported by US satellites, to provide navigational, weather and targeting data.

US opportunities to prevent the use of Trident aside from economic, political and military action, range from the short to the long term. Short notice withdrawal of digital information provided both physically and by satellite has the potential to prevent the system from being used. Over longer time periods the withdrawal of support would cause the submarines, missiles and warheads to cease to function.

Any US sourced successor to Trident will be subject to similar dependence. This leads to the question of whether a non-US option is possible. Successive governments have decided that it is neither practical nor affordable. Cooperation with France would fall foul of the restrictions that the US has placed upon the use of the information and technology it has supplied to the UK since 1944.

A number of senior British officials have expressed their disquiet at the influence on British policy that results from the supply of nuclear weapons systems by the United States. It is not known how extensive and specific this influence is. On weapons issues, it appears that the US suspended the main operation of the Joint Working Groups in the late 1960s when the UK was not itself developing a new weapon, and that Chevaline was partially driven by the desire to keep the relationship going. In 2004, the Mutual Defence Agreement was renewed until 2014. We do not know if any policy assurances were sought by the Bush Administration on such issues as new nuclear weapons, possible requirements to resume nuclear testing and arms control and counter-proliferation policy. It is easy to assert that the relationship does not work this way, but the facts contradict this. On other issues such as Rolls Royce participation in the Joint Strike Fighter and the British desire for an ITAR waiver, there has been nothing special about the relationship. To suggest that there is no quid pro quo for the Polaris agreement and the exchange of atomic information would be to adopt an idealistic utopian view of Anglo-American amity that has no basis in reality. There is nothing to suggest that British independence is any less of a myth than it was before Nassau or that Britain has left America's pocket since then. I do not mean by this that the relationship has the monolithic and crude character of Soviet satellites, rather that it produces an atmosphere and an understanding of what should be done with a fair degree of latitude, punctuated by more specific exchanges.

There is a strong argument that whatever the reality, these are matters of state not for public scrutiny. However, it is precisely because these matters may influence policy across the board that it is essential that Parliament and the electorate be properly informed.

It is likely that some will argue for the continuation of the status quo for a number of well known reasons. These include that the arrangement gives the UK access to the very best US technology, is a means of access to US decision making, and provides what is called a second centre of decision making in crisis. The second centre argument falls to the same case I have already made, the US has the means to prevent the UK engaging in nuclear war. The issues of technology and influence must be weighed against the loss of freedom of action for the UK. My own view is that whatever was the case in the past it is now essential to national, international and indeed the US interest for the UK to be able to be able act un-fettered by nuclear weapons dependence. Whatever decisions individuals and the nation takes one thing at least should be clear. Do not accept a US-sourced nuclear weapon and then complain when governments follow US policy.

Many of the questions that are raised concerning a successor to Trident assume that the UK is an independent and benevolent actor internationally. Some UK partners, including South Africa, continue to argue that the Mutual Defence Agreement breaches Article 1 of the NPT which prohibits the indirect transfer of nuclear weapons between any party. At best the nuclear supply can be considered to use a loophole the like of which the UK would object to if any other state used it. Indeed the US and the UK focus their non-proliferation strategy and arguments concerning the breach of the NPT on partial technology transfers. While the UK and the US may not regard their own conduct as of concern, many other states do and this undermines Britain's ability to act.

US-led Western policy since the end of the Cold War has seen the abandonment of arms control in favour of military pre-eminence and pre-emption. Nuclear Weapons were managed during the Cold War with an uncomfortable combination of four approaches. There were deterrence through retaliation, deterrence through the threat and ability to fight nuclear war, arms control and disarmament. Present policy has seen us turn a deaf ear to our many friends abroad, from New Zealand and South Africa to Ireland who urge us to pick up the baton of disarmament agreements from Presidents Bush snr, Reagan and Gorbachev and press on to the finish line. It is no use waiting for others to act—many smaller states are doing what they can and we need to catch-up. It is only in this way that we can create the global consensus necessary to prevent proliferation and terrorist acquisition of nuclear weapons. Our present proliferation policy pays lip-service to the disarmament provision of the NPT and seeks to base security on a policy of "Do As We Say, Not Do As We Do." Such a policy is as futile internationally as it is at home.

Arms control and disarmament have been abandoned not merely in order to retain weapons for retaliatory deterrence but to support policies for the tactical or even pre-emptive use of nuclear weapons. In Britain such policies are described in a perfunctory manner in both the Strategic Defence Review and in the Post 9/11 New Chapter. In contrast, in the United States they are expressed fully in the National Security

Strategy, Joint Chiefs of Staff Doctrine, in Presidential Policy on Weapons of Mass Destruction and in the 2001 Nuclear Posture Review. These documents expound on the utility of using nuclear weapons in many situations in addition to retaliatory deterrence. The British Government has not distanced itself from these policies. One conclusion is that the UK has now aligned itself with policies for fighting wars with nuclear weapons and that this is the reality of the twenty first century. Another conclusion is that it is impossible to conceive that Britain and the United States would actually carry out such policies, so that for a policy of no more than bluff the tried and tested tools of arms control and disarmament have been cast aside. In brief, the UK buys weapons that fail the 1940 requirement at the price of being tied to ineffective policies.

6 March 2006

Memorandum from the Campaign for Nuclear Disarmament

SUMMARY

The decision on whether or not to replace Britain's nuclear weapons system must be taken on the basis of what will most contribute to the security of the British people. This paper suggests that non-replacement would best meet that requirement and would also make a significant contribution to international security by strengthening and advancing the disarmament and non-proliferation regime that is widely supported by states and civil society organisations globally. The requirements of the international treaty framework are outlined, together with the links between the failure of the nuclear weapons states to disarm and the dangers of nuclear proliferation. Legal opinion that a Trident replacement would be a material breach of the nuclear Non-Proliferation Treaty (NPT) is noted. The strategic context in which Trident was bought is analysed, together with the factors that brought that period to a close, including the substantial nuclear disarmament that took place towards the end of the Cold War. It is noted that rather than disarming in the post-Cold War period, Britain adapted some of its weapons for sub-strategic use and in part restated the function of Britain's nuclear weapons as the defence of vital interests. In the current context it is noted that there is widespread opposition to a Trident Replacement, partly because it is generally thought to be irrelevant against the threat of terrorism. Britain's links with the United States (US) are considered, including nuclear sharing via the Mutual Defence Agreement, and policy similarities that include the abandoning of negative security assurances and the considering of nuclear weapons as part of a useable arsenal. The possible emergence of China as a nuclear threat is considered. The paper concludes that moves towards NPT compliance, exemplified by non-replacement of Trident, can help reverse the dangers of nuclear proliferation and prevent a new nuclear arms race. The current policy orientation of the British Government is exacerbating these dangers and an urgent reversal is required to ensure Britain's security.

The requirements of the international treaty framework: understanding the relationship between nuclear disarmament and non-proliferation

1. Concerns about the possession and proliferation of nuclear weapons are not new. Indeed, the international desire for nuclear disarmament and non-proliferation has been manifested strongly—at both state and civil society levels—for many decades. The most significant legal expression of this is the nuclear Non-Proliferation Treaty (NPT), of 1968. The NPT was the result, in particular, of widespread international concerns about the dangers of proliferation and the spiralling weapons stocks of the nuclear weapons states. Prior to 1968, both Sweden and India had led attempts in the United Nations (UN) General Assembly to bring both of these under control. Whilst in 1965 the US and Soviet Union had put forward their own proposals for a treaty, these were rejected by the non-nuclear weapons states because the disarmament component was insufficient, only really limiting the nuclear club to its existing members. The perspective of much of the international community at that time can be summed up in the words of the former German Chancellor Willy Brandt: “The moral and political justification of a non-proliferation treaty follows only if the nuclear states regard it as a step towards restriction of their own armaments and toward disarmament and clearly state they are willing to act accordingly.” The resulting treaty inextricably linked disarmament and non-proliferation and provided a framework for the achievement of both. Article VI states: “each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.” It can be argued that the non-proliferation pillar of the NPT has been relatively successful. Only three, possibly four, states possess nuclear weapons outside of the NPT framework despite fears in the early years that many nuclear weapons states would emerge. Rights under Article IV of the NPT, to the development of nuclear power for civilian purposes—which has been taken up by over forty countries—have not been used as a jumping off point for nuclear weapons proliferation. But the disarmament pillar of the NPT has not met with success. The five declared nuclear weapons states of the NPT still retain massive nuclear arsenals and are currently making no progress towards their NPT commitments. Indeed, there have been recent attempts to suggest that the nuclear weapons states are somehow legally entitled by the NPT to possess nuclear weapons. In November 2003, Defence Secretary Geoff Hoon stated: “Under the terms of the Nuclear Non-Proliferation Treaty, the

United Kingdom, the United States, France, China and Russia are legally entitled to possess nuclear weapons". In fact, what that the nuclear weapons states are actually legally obliged to do, under the NPT, is work towards the elimination of their nuclear weapons.

2. The twin requirements of the Treaty—disarmament and non-proliferation—are fundamental to the security of the world today. The understanding of the inter-relationship between the two—and the need for compliance in both areas is a perspective that continues to predominate within the international community. It is very clearly and regularly conveyed through, for example, speeches by numerous state representatives at UN meetings, such as the NPT Review Conference of 2005. This position was recently expressed by Kofi Annan, who linked the failure to disarm with the danger of nuclear proliferation, at the 60th anniversary of the UN: ‘the more that those states that already have [nuclear weapons] increase their arsenals, or insist that such weapons are essential to their national security, the more other states feel that they too must have them for their security’. The failure of the nuclear weapons states to comply with their obligations under the NPT—taken together with an apparent orientation towards nuclear use by some of these states—has real potential to create a tendency towards proliferation. The logic of the “deterrent” notion is that all states need nuclear weapons to protect themselves. This point has also been made by Nobel Laureate Professor Sir Joseph Rotblat, “If some nations—including the most powerful militarily—say that they need nuclear weapons for their security, then such security cannot be denied to other countries which really feel insecure. Proliferation of nuclear weapons is the logical consequence of this nuclear policy.”

3. Concern about the failure to make progress on disarmament led to a further strengthening of the NPT’s requirements. In 1998, Brazil, Egypt, Ireland, Mexico, New Zealand, Slovenia, South Africa and Sweden issued a declaration entitled: “Towards a Nuclear-Weapons Free World”. Working together as the New Agenda Coalition (NAC) these countries demanded that the nuclear weapons states commit themselves to the elimination of their nuclear weapons and work on practical steps towards this goal. In the face of major opposition from the nuclear weapons states, the NAC received very strong support within the UN General Assembly, and their work resulted in the adoption of the “13 practical steps” by the NPT Review Conference in 2000. This included the commitment by the nuclear weapons states to ‘an unequivocal undertaking to accomplish the total elimination of their nuclear arsenals’. The Review Conference of 2005 confirmed that the achievements of the 2000 Conference remained part of the NPT framework.

Trident Replacement and the international treaty framework

4. Given the clarity of the NPT requirements on disarmament there is concern, not only that Britain is not making progress towards disarmament, but also that it may be seeking to engage in vertical proliferation through the replacement of Trident. Recent investments in, and building work at, AWE Aldermaston only serve to strengthen this fear. At a time when our government pursues the notion of “counter-proliferation” against those thought to be pursuing horizontal proliferation, this would be a hypocritical step. Defence Secretary Dr John Reid has stated that “anything we do in future will be fully consistent with our obligations under the NPT”. However, recent legal opinion makes it clear that a replacement of Trident would not be acceptable under the NPT. In 2005, Peacerights sought a legal opinion from Rabinder Singh QC and Professor Christine Chinkin on “The Maintenance and Possible Replacement of the Trident Nuclear Missile System”. In their opinion, the replacement of Trident is likely to constitute a breach of Article VI of the NPT:

“74. Enhancing nuclear weapons systems, possibly without going through parliamentary processes, is, in our view, not conducive to entering into negotiations for disarmament as required by the NPT, article VI and evinces no intention to ‘bring to a conclusion negotiations leading to nuclear disarmament in all its aspects’. It is difficult to see how unilateral (or bilateral) action that pre-empts any possibility of an outcome of disarmament can be defined as pursuing negotiations in good faith and to bring them to a conclusion and is, in our view, thereby in violation of the NPT, article VI obligation”.

Singh and Chinkin further hold the opinion that such a breach would be a material breach of the treaty:

“80. The linkage between the principles of non-proliferation and the obligation to negotiate towards disarmament shown by the negotiation history . . . indicate that Article VI is a provision ‘essential to the accomplishment of the object or purpose of the treaty.’ The non-nuclear weapon states required commitments from the nuclear weapon states as part of their willingness to accept non-nuclear status under the NPT and failure to comply with article VI thus, in our view, constitutes material breach.”

The final sentence quoted further indicates the significance of compliance with the disarmament requirements of the NPT. For the nuclear weapons states to do otherwise will have a negative impact on the compliance of non-nuclear weapons states with the non-proliferation requirements of the NPT.

The strategic context in which Britain bought Trident

5. In July 1980, the British government announced the decision to buy the US C4 Trident missile system, as a replacement for the Polaris system, which was due to reach the end of its service life in the early 1990s. In March 1982, the order was changed to the Trident D5, a new development announced by the US in October 1981. Trident was not merely a replacement for Polaris, it was actually an expansion of Britain’s

nuclear force, in contravention of our stated commitment to disarmament. Polaris had three 200-kiloton warheads on each missile and had been modernised to have a number of dummy or decoy warheads on each missile as well, but each missile could only be used against one target. The advance of the Trident system was that the warheads were multiple independently targetable re-entry vehicles, which could be independently aimed to achieve the destruction of a much greater range of targets. The range of delivery was also increased from the 2,500 miles of Polaris to 6,000 miles. In other words, Trident has a longer range, greater accuracy, and can reach more targets than Polaris could and, in addition, can carry almost 200 warheads, each of which has around eight times the power of the Hiroshima bomb.

6. Trident was a system devised specifically for the Cold War context in which it was initially planned. It was part of the US shift towards “counterforce” weapons, which would give it nuclear war-winning capabilities. The D5 system provided the US with the capability to destroy almost all Soviet land-based intercontinental ballistic missiles. Britain’s move from the C4 order to the D5 order was explained by the need to retain commonality with the US. But in the years between the decision to buy the D5 system and its arrival in the early 1990s, a change in the strategic context—of monumental proportions—occurred. Changes in the Soviet leadership in the mid-1980s led to substantial disarmament initiatives on the part of the Soviet Union, which received a positive response from the US leadership. The Intermediate Range Nuclear Forces Treaty (INF) Treaty was signed by Reagan and Gorbachev in 1987, eliminating a whole class of medium and shorter range nuclear weapons. The INF Treaty was the first nuclear arms control agreement to actually reduce nuclear weapons.

7. In July 1991, the Strategic Arms Reduction Treaty I (START I) was signed by the US and Soviet Union, reducing their deployed strategic arsenals to 1,600 delivery vehicles carrying no more than 6,000 warheads. Towards the end of 1991, Bush and Gorbachev each pledged to make further significant reductions in their nuclear weaponry. In December 1991, the Soviet Union was dissolved and the bipolar world of the Cold War ended. The Warsaw Pact was also dissolved and the western alliance no longer faced a hostile superpower and its bloc.

8. Despite this monumental change in the strategic context, the pace of disarmament faltered during the 1990s. START II, which sought to reduce deployed strategic arsenals to between 3,000 and 3,500 warheads and banned the deployment of multiple-warhead land-based missiles, was signed in 1993, but abandoned in 2002. In 1997, Clinton and Yeltsin agreed a framework for START III negotiations that included a reduction in deployed strategic warheads to between 2,000 and 2,500. Negotiations were supposed to begin after START II entered into force, but that didn’t happen. In May 2002, Russia and the US signed the Strategic Offensive Reductions Treaty (SORT), limiting their operationally deployed warheads to between 1,700 and 2,200 each. But this Treaty has yet to be approved by the Senate or Duma.

9. Despite the demise of its superpower opponent, Britain pursued the procurement and deployment of the Trident nuclear weapons system—a system designed to confront a massive, enormously armed, hostile state actor. The first Trident submarine entered into service in 1994, and the other three joined it at regular intervals over the next few years. In the post-Cold War period, Britain had achieved a more formidable nuclear arsenal than at any previous point. Whilst weapons like Polaris and the WE 177 freefall bombs have been decommissioned it would be wrong to suggest that this constitutes a measure of disarmament, as these were aging weapons that have been replaced by an enhanced system. Furthermore, whilst Britain’s tactical nuclear weapons were withdrawn, at the same time the number of warheads on some of the Trident missiles were reduced, thus becoming sub-strategic missiles. In this way Britain maintained a strategic and sub-strategic nuclear force, keeping its options open about where it wished to target its nuclear weapons. Indeed, in November 1993, Defence Secretary Malcolm Rifkind explained the need for Trident in the post-Soviet era in terms of securing Britain’s “vital interests”. This was a significant shift from—and perhaps more accurate than—the previously stated position that Trident was necessary to deter nuclear attack. The role of Britain’s nuclear weapons in defence of Britain’s “vital interests”—defined in part as economic interests—was subsequently restated in the British government’s Strategic Defence Review of 1998. Thus Britain pursued new roles for its nuclear weapons in the post-Cold War period, meeting neither the letter nor the spirit of its commitments under the NPT. This was particularly disappointing given the historic political changes and real disarmament achievements that could have been built upon to move towards the complete elimination of nuclear weapons. Four countries—South Africa, Belarus, Kazakhstan and Ukraine—did, however, give up their nuclear weapons. These countries, together with the path-breaking disarmament moves of the end of the Cold War, show that nuclear disarmament is not a utopian fantasy, but a realisable policy. The impetus towards nuclear disarmament must be recovered.

Today’s strategic context

10. Britain’s greatest current security threat is generally accepted to be terrorism, perpetrated by non-state actors. It is very widely agreed that nuclear weapons are no use against such threats, and this point has certainly been made by the Prime Minister, who stated in October 2005: “I do not think that anyone pretends that the independent nuclear deterrent is a defence against terrorism.” Trident Replacement is also opposed by the former Conservative Defence Secretary Michael Portillo who has concluded that Trident should be scrapped, as did the late former Labour Foreign Secretary Robin Cook, and many others across a range of parties and civil society organisations. Indeed, a recent Greenpeace/MORI poll also indicated that 54% of those polled opposed a Trident replacement when they realised the likely cost. However, the Prime Minister

has also made it clear that he believes, as was outlined in the Labour Party Manifesto before the last general election, that Britain should maintain its “independent nuclear deterrent”. It is this position that presumably determines government thinking on the question of the Trident Replacement. The thinking behind this was made clear by Dr John Reid in September 2005, who, on opening the public debate on the matter, appeared to suggest that Britain needed to replace Trident in case we face a nuclear enemy in the future. This position is a matter for serious concern. It would seem irresponsible to begin preparations now for a rerun of the edge of the abyss nightmare of the Cold War, where we genuinely feared nuclear annihilation, and terms like “mutual assured destruction” and “the balance of terror” were used to describe the military and political policies that shaped our world.

11. The fact that we currently face no nuclear threat, and there is no imminent danger of such a threat emerging, presents us with the opportunity to begin the process of negotiations towards disarmament as required under the NPT. A decision by Britain not to proceed with a replacement for Trident, together with a commitment to working for multilateral disarmament, could help break through the logjam that currently exists around this issue. Of course, Britain does not exist or act in isolation, and there are also treaties that tie us in to a nuclear framework, and the implications of these would have to be considered. Britain’s membership of the nuclear-armed NATO is one such example. Another is the 1958 Mutual Defence Agreement between Britain and the US, most recently renewed for ten years in 2004, and believed to be the world’s most extensive nuclear sharing agreement. We are dependent on the US for all three aspects of Britain’s nuclear weapons—platform, delivery system and warheads—and the collaboration on these takes place under the MDA. In fact, there has been concern over many years from a number of states about the legality of this Agreement in the context of Article I of the NPT. In this regard, we note that a legal opinion sought from Rabinder Singh QC and Professor Christine Chinkin in July 2004 found it to be “strongly arguable that the renewal of the Mutual Defence Agreement is in breach of the nuclear Non-Proliferation Treaty.” This Agreement seems to be a significant component within the “special relationship” between Britain and the US, and it is thought that it may underpin foreign policy cooperation as well as nuclear cooperation.

12. In this context, changing US policy on nuclear weapons and nuclear use is of considerable concern. The 2001 US Nuclear Posture Review spoke of nuclear weapons as part of a “usable arsenal”, and of the development of nuclear weapons for battlefield use. A draft revised Doctrine for Joint Nuclear Operations, which was revealed in *Arms Control Today* and *The Washington Post* in September 2005, described pre-emptive use of nuclear weapons in conventional wars and discussed battlefield scenarios, post-nuclear weapon use. Whilst this draft revision has been formally withdrawn by the Pentagon, other public documents from the Department of Defense and other sources say many of the same things. Furthermore, the “negative security assurances” framework appears to have been abandoned; this was an addendum to the NPT agreed in 1978 by a number of the nuclear weapons states, which agreed not to use nuclear weapons against non-nuclear weapons states. This shift in policy could also contribute to a possible tendency towards proliferation among non-nuclear weapons states. It is also apparent that British policy has turned in the same direction. Defence Secretary Geoff Hoon, prior to the war on Iraq, on 24 March 2002, stated that the British government “reserved the right” to use nuclear weapons in the event of Britain, or British troops, being threatened by chemical or biological weapons. Under international law, the use, or threat of use, of nuclear weapons, is illegal under virtually all conceivable circumstances. In 1996, the International Court of Justice ruled that “the threat or use of nuclear weapons would be generally contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law.” The circumstances under which currently the US and UK—and recently France also—have suggested they may be willing to use nuclear weapons, are not legal.

13. Given this policy orientation, it is of some concern that when Dr John Reid opened the public debate on Trident Replacement, he referred only to Britain’s nuclear weapons as a “deterrent”, necessary against potential nuclear threats. This avoids the issue of nuclear use and the abandoning of negative security assurances. But it should be noted that public opinion is overwhelmingly against this turn in British policy. The Greenpeace/MORI poll of September 2005 found that when asked the question: “Would you approve of using the nuclear bomb . . . against an enemy that does not possess it themselves?” 87% disapproved. However, it is necessary to consider what type of future nuclear threats may be envisaged by those who perceive it as necessary to retain a nuclear “deterrent”. Light may be shed on this by looking at the recently published US Quadrennial Defense Review Report. The Report describes the Pentagon’s new perception of the “long war” in which the US is engaged. It will be a war “unlimited in time and space” against global Islamist extremism, fought in dozens of countries simultaneously and for years to come. But the Report also, in its section “Shaping the Choices of Countries at Strategic Crossroads”, identifies China as the one of the major and emerging powers that has “the greatest potential to compete militarily with the United States and field disruptive technologies that could over time offset traditional US military advantages absent US counter strategies.”

14. China is a rapidly growing economy. Starting from a very low level of output per head, it has enjoyed the fastest economic growth in the world for more than 25 years, and if it continues to grow at this rate at some point the size of its economy will exceed that of the US. For this reason, the rise of China is a primary strategic concern of Washington. It is quite possible to see US moves to put weapons in space, to continue to develop a limited national missile defence system and to develop a similar system with Japan, Taiwan and Korea, as the beginning of a nuclear arms race against China. The presumed goal would be to maximise US

military superiority and simultaneously force China to stall its economic growth by devoting more and more resources to arms. China is of course a declared nuclear weapons state, but of a very limited capacity and, whilst modernising its arsenal, is certainly at present incapable of destroying the US. China is estimated to have about 400 strategic and tactical nuclear weapons—50 more than France, and almost 10,000 less than the United States. It seems extremely unlikely that China would want to invest huge amounts of money in a nuclear arms race, especially when it is aware that the Cold War arms race bankrupted the Soviet Union. We note, for example, that China has always supported—and actively tried to progress—discussions for a Treaty on the Prevention of an Arms Race in Outer Space. In October 2004, at the UN First Committee in New York, China submitted a draft treaty to prevent the placing of weapons in space. This attitude by China is to be welcomed and serious steps should be taken to prevent the development of an arms racing leading to a new nuclear superpower confrontation in years to come. But US policy does not seem to be orientated towards avoiding such a development—rather its actions may provoke it. Over the last few years, large numbers of US nuclear forces have been redeployed from the Atlantic to the Pacific; over two thirds of US nuclear missile carrying submarines are now located there, enabling accurate nuclear strike capabilities against Asia-Pacific targets. It is possible that John Reid sees China as the potential nuclear armed superpower threat that we may face in the future, but there are many ways to avoid such a fear becoming a reality. Prevailing upon our ally the US to pull back from provoking a nuclear arms race with China would be a very constructive route.

Conclusion

15. Britain currently faces no nuclear threat, and no other security threat that can be resolved through the possession or use of nuclear weapons. Possession of nuclear weapons does not deter terrorist attacks and the continued possession of them, in spite of NPT obligations, is more likely to lead to nuclear proliferation than to counter it. The current selective approach of the US and Britain towards nuclear weapons proliferation and treaty compliance—condoning and even encouraging states like Israel and India in their illegal possession—and attacking Iraq on unfounded suspicion of possession of weapons of mass destruction, can only turn countries away from NPT compliance. The orientation towards illegal pre-emptive war by both the US and Britain contributes to an increase in global tension and instability and can lead countries to think they need their own nuclear “deterrent”.

16. As new economic powers emerge, so there is the possibility that they may choose to develop large nuclear arsenals, capable of threatening or destroying other states. They are more likely to do so under political or military pressure from other nuclear-armed states, in response to a perceived threat to their own security. It is by no means a foregone conclusion that any emerging economic power would wish to invest large sums of money in arms, which could be profitably invested in other economic sectors, or in advancing the well-being of their populations.

17. A significant move to generate multilateral negotiations on disarmament could begin to resolve both the current danger of proliferation and global instability, which is exacerbated by the current policies of Britain and the US, and the possible longer term threat of the rise of a nuclear-armed superpower enemy. We have seen in the past how courageous initiatives can lead to substantial disarmament, and the international situation cries out for another such initiative. A decision by Britain not to replace Trident would be such a move. It would help to restore confidence in the possibility of NPT compliance and would demonstrate that relations between nations, and resolution of their security concerns, can be built in the framework of international law. In addition, Britain’s commitment to support and help bring into force the draft Nuclear Weapons Convention currently lodged with the UN would be a positive way of advancing towards multilateral disarmament. Noting the global tensions that exist currently, it is an urgent matter to embark on this process.

7 March 2006

Memorandum from Dr Rebecca Johnson

THE STRATEGIC CONTEXT

1. In part because of policy failures at the end of the cold war, nuclear weapons are once again increasing in salience after a drop during the 1990s. Nuclear war is no longer as direct a threat for Britain, but the risks of proliferation and nuclear terrorism have grown, as nuclear weapons continue to be treated as a potent currency of power. The largest arsenals have been cut, but nuclear weapons and the materials to make them—plutonium and highly enriched uranium (HEU)—are increasing as a security problem, especially for countries like Britain.

2. The primary nuclear threat envisaged during the cold war was military conflict between some or all of the nuclear weapon states leading to all out war. In the 21st century, the world now faces four kinds of nuclear-related dangers:

- the continued possession of sizeable arsenals of nuclear weapons by a small number of states;
- the pursuit of nuclear fuel cycle capabilities or weapons-related programmes by further states, whether outside the treaty regimes or in violation of them;
- the revaluing of nuclear weapons as an instrument of policy and power projection, and the emergence (or re-interpretation) of nuclear deterrence as a doctrine for weak or tyrannical regimes to maintain domestic control and hold off outside interference; and
- non-state armed groups, usually classified as terrorists, seeking to buy or steal nuclear materials and/or weapons from unsecured facilities or transport routes, or through an international nuclear black market, such as that of Pakistan's Dr A Q Khan.

3. As of March 2006, eight countries are known to deploy more than 13,000 nuclear weapons between them, with an additional 16,000 further weapons or plutonium cores in reserve or storage. More than 90 percent of these are in the Russian and US arsenals. Five nuclear weapon states (US, Russia, China, France and Britain) are members of the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT), and formally committed to nuclear disarmament. Three others (India, Pakistan and Israel) acquired nuclear arsenals outside the NPT. These range in estimated size from 30 to 200. These nuclear weapon possessors all regard themselves as having the capabilities for deterrence, but their respective doctrines range from dissuasion to defence and use, and may include the following: nuclear weapons for last resort; or as a weapon that could be used for pre-emption or retaliation, especially in relation to biological or chemical threats; or to dissuade invasion or offset disadvantage when facing adversaries with greater conventional forces.

4. Britain's nuclear weapons are assigned to NATO, a Cold War security institution that is now seeking a relevant security role for the 21st century. At UK instigation, NATO's nuclear planning group in June 2005 suddenly resurrected an expression of appreciation for the "continuing contribution" made by "the United Kingdom's independent nuclear forces". But what, precisely, has Trident contributed to NATO's security and who has it deterred? Did it make a difference with former Yugoslavia or Iraq? Nuclear deterrence theory, which ignores the obvious lack of deterrent effect in Britain's recent conflicts, starting with Argentina in 1982, is a modern version of voodoo medicine. If one believes in it, there is little that rational argument and evidence can do to dissuade. Much of the time, this may be harmless, though witchdoctors can be expensive. But too often, such belief in the unverifiable, supernatural power of the rituals and quackery of voodoo lead the sick to reject more proven remedies or to become addicted to unhealthy "cures" that further weaken their abilities to counteract the genuine sickness. In that case, voodoo medicine may be fatal. The voodoo medicine and addiction analogies are not just rhetorical. Failing to give a convincing answer to the question of what British nuclear weapons are for, those wishing to extend nuclear dependence for several more decades resort to mumbo jumbo and the tautology implicit in the constant need to refer to the euphemistic "nuclear deterrent" rather than the more accurately descriptive term "nuclear weapon".

5. Cold war politics underpinned the NPT and enabled it to be generally successful in constraining proliferation for 30 years. Now its credibility and effectiveness have come under severe pressure. There are three causes for this: failures by the weapon states to devalue their nuclear weapons and move more effectively towards nuclear disarmament; de facto Western acceptance of the proliferation accomplished by Israel, India and Pakistan; and violation of the NPT by states parties to the NPT, notably Iraq (before 1991) and North Korea, which withdrew from the treaty in 2003 with little penalty. Iran has also caused growing concerns with attempts to conceal and then proceed with an unnecessary uranium enrichment programme that could be used for nuclear weapons.

6. Though the differences should not be glossed over, the incentive for these respective regimes to acquire nuclear weapons is the belief that they would augment regional power projection, enable them to deter neighbours and big powers such as the United States, and have their economic and development concerns taken more seriously. The behaviour, policies and assumptions displayed by the declared and de facto nuclear weapon states fuel and appear to justify these beliefs in aspirant proliferators.

7. While there may be disagreements over ranking, security practitioners (and, for that matter, informed public opinion) would generally list the major security challenges facing Britain (and the world) as:

- Environmental degradation, climate change and depletion of agricultural or water resources;
- Poverty, hunger, overpopulation, pandemics like AIDS or avian flu;
- Failing states abroad and the disintegration of social institutions at home;
- Non-state armed groups and terrorists, especially if equipped with biological, nuclear or radiological weapons;
- Organised crime, gangs, warlords;
- Trafficking in drugs, arms, people;

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- Poorly educated and/or unemployed males aged 15–25, especially combined with small arms and light weapons;
 - War, whether between states or internal, as in “civil war”.

There are overlaps between a number of these categories of security challenge. Policy-makers choosing where to prioritise resources need to ask the salient question: For which of these do nuclear weapons enhance our security?

8. At best, nuclear weapons would play a deterrent role in only one specific version of these scenarios: war between stable, rationally governed states armed with nuclear weapons. The constant repetition of the phrase “the British nuclear deterrent” encourages sloppy thinking about defence. This becomes obvious if we consider the implied assertion “the deterrent deters”; this is a linguistic tautology that tells us nothing about whether nuclear weapons actually play a role in strategic deterrence, which comprises many other elements to which, sadly, less attention is paid.

9. UK nuclear weapons, assigned to NATO, are likely to have potential targets in accordance with the US Joint Nuclear Doctrines. These would result in a large loss of civilian life and significant environmental and health damage for millions. In almost all cases it would be impossible to distinguish between civilian and military targets and the nuclear explosions would result in massive radioactive contamination. It would be impossible to have such targets and comply with international law, which prohibits the indiscriminate killing and maiming of civilians.

10. Such a wide range of nuclear targets also indicates that US nuclear strategy goes well beyond deterrence into the area of nuclear war fighting. Documentation from US Strategic Command refers to nuclear weapons as the “capability to create a fear of ‘national extinction’”. Moreover, “should we ever fail to deter such an aggressor [referring to Iraq and North Korea], we must make good on our deterrent statement in such a convincing way that the message to others will be so immediately discernible as to bolster deterrence thereafter.” This policy amounts to punishment in order to deter others, which is also contrary to international law and well outside the only possible use the International Court of Justice (ICJ) advisory opinion did not categorically rule out in July 1996, ie when the very survival of a state is at stake.

THE NON-PROLIFERATION REGIME AND BRITAIN’S LEGAL OBLIGATIONS

11. Part of the strategic context that should not be ignored is the broader context of the non-proliferation regime and Britain’s legal obligations. The rather vague language in the NPT’s Article VI on “cessation of the nuclear arms race at an early date and to nuclear disarmament” was brought up to date and given greater clarity and meaning during the past decade through agreements adopted when the NPT was indefinitely extended in 1995, an authoritative interpretation by the ICJ in 1996, and by agreements negotiated by the nuclear weapon states and adopted by all NPT parties by consensus at the 2000 Review Conference.

12. In particular, the 2000 NPT Review Conference built on the ICJ’s interpretation of the NPT’s legal obligations in a 13 paragraph section of the final document, for which Britain has claimed credit, having played a constructive role with key non-nuclear states (the “New Agenda Coalition”) and the Clinton administration to strengthen the NPT. In accordance with the consensus final document, the five nuclear powers made an “unequivocal undertaking to accomplish the total elimination of their nuclear arsenals” and committed themselves to a programme of “practical steps for the systematic and progressive efforts to implement Article VI”.

13. Among the 13 principles and measures that were explicitly identified, the agreements required further unilateral, bilateral and plurilateral reductions of strategic and non-strategic nuclear weapons, adherence to the principles of transparency, irreversibility and verified compliance, and “a diminishing role for nuclear weapons in security policies to minimise the risk that these weapons ever be used and to facilitate the process of their total elimination”.

14. This makes clear that the nuclear disarmament objective of Article VI does not depend on accomplishment of general and complete disarmament (although this is also an objective), and that the obligation is not just reductions in nuclear weapons, but their elimination. The decisions and final document adopted in 1995 and 2000 contained many other provisions to strengthen the non-proliferation regime, including commitments to the IAEA’s Additional Protocol and measures to strengthen nuclear safety and security and combat illicit trafficking.

15. The British Government recognises the binding authority of the NPT. In 2004, two eminent lawyers attached to Matrix Chambers, Rabinder Singh QC and Professor Christine Chinkin of LSE, noted that consensus agreements by states parties in a review conference are “an appropriate source of interpretation of the obligations of the NPT”. They further argued, “The importance of Article VI to the objects and purposes of the NPT is shown both by the negotiation history of the NPT and by the reaffirmation of its significance by the 2000 Review Conference. The Review Conference also emphasised that strict observance of the NPT is required, that is observance with both the letter and spirit of its articles.”

16. In late 2005, Singh and Chinkin published a further legal opinion, concluding that “The replacement of Trident is likely to cause a [material] breach of article VI of the NPT”. In accordance with these judgments, none of the nuclear weapons systems under consideration as a follow-on to Trident would be in conformity with UK obligations under the NPT.

17. A core question that needs to be asked is whether the continuing possession of nuclear arsenals or the abolition of nuclear weapons offers more national, regional and global security. Proliferation not only diminishes security; it also erodes the marginal utility attached to existing arsenals. As the number of states acquiring nuclear weapons grows, the deterrence or security value and status of such weapons for their existing possessors diminishes exponentially.

18. It is necessary to recognise that what prevents the nuclear genie from being put back in its bottle is not the technology or know-how, but the value still accorded to nuclear weapons, particularly by states that have them. That nuclear weapons are presently regarded as an important emblem and currency of power is not a natural or military fact or attribute connected with the weapons’ utility, but a social and political construct bolstered by the actions of the major powers. Hence, when a country such as Britain acts as though its prestige and security are guaranteed only by the continued possession of nuclear weapons, it sustains a context in which nuclear weapons become the ultimate necessity for, and symbol of, state prestige and security. This is a recipe for proliferation.

19. The Government’s desired timeframe for a decision means that the question of Trident’s replacement has come to the fore when the non-proliferation regime is under heavy and damaging pressure, as illustrated by the nuclear programmes of Iran and North Korea and the ignominious failure of the NPT Review Conference in May 2005. We risk making a nonsense of the non-proliferation regime if our decision conveys to the rest of the world that nuclear weapons are far too valuable for even these small islands off western Europe to think of giving them up for at least the next 50 years.

TWO SCENARIOS FOR HOW THE THREATS AND STRATEGIC CONTEXT MIGHT CHANGE IN 20 YEARS

20. As stated succinctly by the Tokyo Forum for Nuclear Non-Proliferation and Disarmament in 1999, “The world faces a choice between the assured dangers of proliferation or the challenges of disarmament.” As a significant country and a long-time possessor of nuclear weapons, Britain is not a passive onlooker: our choices and policies will play into future developments. Whether we like it or not, the British decision about whether to replace Trident could prove to be a tipping point, with profound implications—positive or negative—for global non-proliferation efforts. Unless the non-proliferation regime is strengthened and given renewed credibility, it is highly unlikely that the status quo will remain stable. Therefore we need to look at two possible scenarios for the year 2025: greater proliferation or substantial progress in global nuclear disarmament.

Scenario 1: A nuclear proliferated world in 2025

21. The impetus behind the NPT was President John F Kennedy’s nightmare vision of a world with over 20 nuclear weapon states. He knew just how fragile, dependent and unreliable the deterrent relationship between just two rival powers, the United States and Soviet Union, could be. As Kennedy well understood, the more nuclear players there are, the less the security for all. The risks of miscalculation, accident, unauthorised or terrorist uses are greatly multiplied.

22. Either nuclear weapons are used against a non-nuclear adversary, which breaches international laws and binding security assurances, or the nuclear logic of “use them or lose them” will make it likely that a first use—whether accidental or for regional or strategic purposes—would cause at least a bilateral nuclear exchange. If regionally confined (for example, to South Asia or the Middle East), this may possibly be contained; but the greater likelihood is that crisis decision-making and alliance politics could quickly result in escalation into wider nuclear war involving most if not all nuclear weapon possessors. In such a post cold war scenario, Britain would not necessarily be a primary target, but our nuclear weapons could well contribute to the catastrophe. UK nuclear weapons would neither prevent such a scenario nor deter an attack, but they could well make it impossible for a government to avoid being drawn into destroying others, even as we ourselves are destroyed.

23. How might such a proliferated world come about? Look first to the “defence” corporations and arms traders. Britain, France, the United States and South Africa helped Israel acquire a substantial nuclear arsenal and they now turn a blind eye. There was initial outrage when India—closely followed by Pakistan—conducted nuclear tests in 1998, but the Bush administration has managed to put a seal of approval on the accomplished proliferation of these volatile South Asian neighbours, most recently with the US-India nuclear deal. On the political plus side, during the 1990s, several countries, including South Africa, Ukraine, Belarus and Kazakhstan gave up nuclear weapons, while Brazil, Argentina and others renounced nuclear weapon programmes or ambitions.

24. Though more than a dozen countries had nuclear weapon programmes, only Iraq and North Korea are known to have violated their NPT obligations and developed substantial nuclear weapon programmes. Iraq’s programme was dismantled under international inspections (by the IAEA and UNSCOM) during the

1990s. North Korea repudiated the NPT in 2003 and now claims to have nuclear weapons; while revelations about Iran's nuclear programme give substantial grounds for suspicion that Tehran has ambitions to develop a nuclear weapon option, if not the weapons themselves.

25. In a complex game of bluff and bluster, capitalising on muddled policies by the US and China, North Korea pursued the development of missiles and reprocessing capabilities for 20 years, weathering several regional and international attempts to persuade it to give up these programmes, including the 1994 Agreed Framework signed with the United States. In 2003, one year after being lumped in with Iraq and Iran as the "axis of evil" in President Bush's "State of the Union" speech of January 2002, North Korea evicted the IAEA inspectors and announced its withdrawal from the NPT. This withdrawal was reported to the UN Security Council, which did nothing, despite the fact that there is substantial disagreement about whether the withdrawal is legal. There are indications that North Korea can still be bought off, so the Six Party Talks continue to press for Pyongyang to accept economic and security incentives in return for its return to full compliance with the NPT. However, for the time being North Korea acts as a poster boy for others, viewed as having got away with proliferation and convinced the United States that it has a "nuclear deterrent" and must be treated with kid gloves.

26. While North Korea's nuclear gamesmanship appears to be chiefly directed towards the United States, the inadequacy of Kim Jong Il's regime, the shared border with South Korea, long and painful history with Japan and the mistrustful US-China relationship all contribute to a volatile security environment, where misjudgement or miscalculation could potentially result in the use of nuclear weapons.

27. Though the crisis over Iran's nuclear fuel cycle programme formally dates back to August 2002, with revelations about undeclared nuclear facilities for heavy water production and enriching uranium, Iran's nuclear ambitions date from the 1980s, when the West supported Iraq and turned a blind eye to Saddam Hussein's use of chemical weapons against Iranian towns and troops. Iran has fought hard against being referred to the UN Security Council for concealing key nuclear facilities and violating its IAEA safeguards by claiming that it sought uranium enrichment—and all aspects of the nuclear fuel cycle—solely for peaceful purposes, evoking the NPT's Article IV as enshrining this right. At time of writing, Iran is under threat of being reported to the Security Council and President Ahmadinejad has threatened in turn to expel the IAEA inspectors and proceed with uranium conversion and thence to enrichment. Though Iran continues to claim interest only in nuclear energy for peaceful purposes, the IAEA's finds and the configuration of Iran's planned nuclear fuel cycle suggest otherwise.

UK Contributions to Scenario 1

28. There are two ways in which UK policies currently impede a more concerted international strategy to reduce nuclear dangers: our commercial interest in reprocessing clashes with efforts by the IAEA and others to find non-discriminatory international approaches for controlling the production of plutonium and highly-enriched uranium; and our constant reiteration of the military utility and security value Britain attaches to its nuclear weapons.

29. First, there is only a small handful of countries that produce plutonium or highly enriched uranium (HEU) for commercial purposes (Britain, France, Japan and a few others); but there is a growing number of others (including North Korea, India, Brazil, Iran) on the threshold of doing so. Iran and other developing states have termed the "sheep and goats" approach that Britain prefers—restricting the activities of some countries based on political suspicions—"nuclear apartheid". Such an approach may have prevailed during the Cold War, but it carries little weight and no moral authority in the more complex proliferation environment of the 21st century. This may be one (though not the only) reason for the inadequacy of attempts by Britain, France and Germany (the EU-3) to mediate the crisis with Iran. Sellafield has long been an economic albatross, and it now stands in the way of Britain playing a leadership role in promoting more effective strategies to curb the production of plutonium and highly enriched uranium worldwide.

30. It is too early to know whether a nuclear crisis with Iran can be averted. One frequently-raised parallel is particularly unhelpful: If Britain needs a nuclear deterrent, then why doesn't Iran, given its volatile region, the previous use of chemical weapons by Iraq, and greater fears of invasion? In addition to security considerations, Iran's leaders have drawn a further lesson from the "successful" proliferation examples of India, Pakistan, Israel and, most recently, North Korea. If some states take the route of nuclear weapons acquisition and can be seen to gain enhancements in status, security, political or regional prestige—or are perceived to have gained the capability to hold off invasion or pressure from more powerful countries—it will become increasingly difficult for governments to explain why they are not giving these advantages to their people as well.

31. Each new nuclear entrant or proliferation aspirant will cause several of its geostrategic rivals to reconsider their position. If lack of constructive action allows the non-proliferation regime to erode any further, the danger is not just that a few additional countries will hedge their bets, but that global restraints will crash, causing a proliferation surge—perhaps to 20 or 25 nuclear weapon capable states in 2025. In this daunting scenario, the marginal utility for Britain of being one of the 20 or 25 nuclear weapon possessors will be greatly outweighed by the overall human insecurity that this outcome would mean for the world—and therefore, of course, for UK national security.

32. In addition to the heightened risk that nuclear weapons will be used, more nuclear proliferation means wider production and distribution of nuclear materials and technologies, together with a higher number of nuclear facilities and transports. Not only will these activities increase environmental problems and the dangers of accident, but they also increase the opportunities for theft or black market trading—and therefore the risk of terrorist acquisition.

Scenario 2: fewer nuclear weapons and possessors

33. Even if nuclear disarmament were really pursued in good faith, as required under the NPT, there are technical and political hurdles that make it unlikely that a completely nuclear-weapon-free world could be achieved by 2025. However, if effective policies to reduce nuclear weapon salience were put in place from now on—starting with the existing nuclear states—it is not at all unrealistic to conceive of a strategic context in 2025 where nuclear weapons were totally marginalised from security or military policies. In such a situation, a much smaller number of nuclear weapons might remain for a while in the arsenals of only a few powers—perhaps only the United States, China and Russia—in a form of storage that Stansfield Turner called “strategic escrow”. Some American analysts have called this situation “recessed” or “existential” deterrence. Though nuclear weapons would remain in existence, either in a couple of well-secured national arsenals or at an internationally-guarded location, they would not be deployed or on alert status, but retained solely as a “hedge”, pending the final managed transition to a nuclear weapon free world. Though I do not argue that such a hedge is needed, since I think the full abolition of nuclear weapons would be more practical to enforce and verify, I recognise the attraction of this transitional phase for US policy-makers, which would probably insist on being the last to give up its nuclear weapons. It would be illogical and foolish for Britain to expect to hang on to the last as well.

34. Even with the possibility of a resurgent Russia (with some retained nuclear weapons) becoming antagonistic to the UK and its interests, it is very difficult to envisage how or when it might seek to use nuclear weapons against Britain or Europe, with which it is now economically interdependent. Instability in Russia could be dangerous for Europe’s security and interests, but not in terms of a Soviet-style nuclear threat.

35. China is clearly an emerging power in international affairs. While the US and some Europeans might view China as a strategic rival, this is less about military threat than about economics and geostrategic projection. Neither China’s history and culture nor its capabilities lend themselves very plausibly to theories of future threat to Britain that could reasonably be cited as a reason for retaining nuclear weapons. Moreover, China would be more likely to pursue asymmetric warfare capabilities to undermine US military dominance than try to match its nuclear or conventional prowess.

36. How to manage the transition to a nuclear-weapon-free world is the scenario that NATO’s Nuclear Policy Directorate invited Sir Michael Quinlan, Dr David Yost, Joseph Pilat of Los Alamos nuclear laboratories, and me to explore with representatives from 25 of the 26 NATO members in Prague in March 2005. Though it was not to be expected that such diverse experts would come to happy agreement overnight, there was a large measure of acceptance for the view that to stand any chance of moving in this direction, the first steps would need to be taken to change nuclear policies now. Leadership would be needed to devalue nuclear weapons and prohibit the production of nuclear weapon materials—whether for weapons or civilian purposes. (It should be noted that the IAEA has determined that nuclear energy can be efficiently produced using low enriched uranium (LEU) and that neither plutonium nor HEU are necessary in the non-military fuel cycle).

37. Leadership will also be necessary to build the political will, expertise and confidence for there to be further progress in nuclear non-proliferation and disarmament. In the first stage, this would necessitate reducing the salience of nuclear weapons by embedding a normative prohibition, starting with use. (The use of biological and chemical weapons in war was prohibited in 1925, creating an essential norm that helped develop the conditions for banning these weapons altogether in 1972 and 1993 respectively. Such norms do not of themselves prevent all use but they greatly reduce the incentive and provide a basis for concerted international action against any perpetrator.)

38. Instead of pursuing new types and designs of nuclear weapons that destabilise international relations, the expertise of nuclear weapons scientists must be directed towards working out the technical and verification issues so that the transition towards a nuclear weapon free world can be managed safely and securely. (The UK has been widely commended for verification studies carried out by AWE scientists, for example on a nuclear test ban and, most recently, the five-year study on verifying nuclear disarmament 2001–05.)

39. A decision to replace Trident would mean AWE’s scientific resources would have to prioritise warhead research, design and maintenance, instead of addressing the more vital questions of verification and the safe decommissioning and dismantlement of nuclear facilities and secure disposal of weapons-usable materials. It would also undermine the credibility Britain has painstakingly built up with its constructive approach to the NPT and verification in the past eight years. By contrast, Britain would have far more to gain by being the first to renounce dependence on nuclear weapons, thereby enhancing its credibility with the non-nuclear weapon powers (over 180 countries) and leading the way back from the proliferation brink.

UK contributions to scenario 1

40. According to government policy since 1997, “When satisfied with verified progress towards our goal of the global elimination of nuclear weapons, we will ensure British nuclear weapons are included in such negotiations”. Such progress won’t happen if we sit in our status quo and do nothing: our future security will necessitate creating the political will and security conditions for the abolition of nuclear weapons to become a feasible reality.

41. To facilitate the conditions for progress in creating the political and security conditions for non-proliferation and disarmament to be made, current policies need to change, which will in turn lead to further progress and change. This is a dynamic process, where each level of increased confidence and security stimulates and reinforces the next. The reverse is also true: each failure to take a step in the right direction will reinforce the perceived military and security value attached to nuclear weapons, thereby stimulating others to acquire them too. We are on the brink of a proliferation spiral caused by current policies and inertia. By having the foresight to give up its own nuclear reliance, Britain could promote a different kind of future and contribute to creating an alternative non-proliferation and disarmament spiral.

42. This memo is not the place to explore what these steps would entail in more detail. However, it must be noted that at issue are not just the costs—over £25 billion—but the opportunity costs. Britain is not an extraordinarily wealthy country for which the billions earmarked for a new generation of nuclear weapons would be easy to find. The cold war justifications for nuclear weapons don’t work as they once did, and there is no longer any traction in the argument that nuclear weapons provide an economical deterrent that keeps conventional defence costs lower than would otherwise be required. On the contrary, the MoD is stretched thin by the wars in Iraq and Afghanistan, and the Treasury issues frequent warnings about the future funding of the health and social services, pensions and schools.

43. As terrorism continues to dominate the agenda, the onus must be on preventing access to such materials or devices. The most effective long term approach is through the prohibition and elimination of nuclear weapons and weapon-usable nuclear materials. Pending the achievement of this objective, important practical measures can be put in place to limit the available sources, increase physical safety and security, and reduce vulnerability through better intelligence and security provision relating to materials production and storage, fuel cycle facilities and bases. Such measures would be much more effectively pursued in a context in which nuclear weapons were systematically devalued in military and security policies. At present, British efforts are too easily dismissed as an example of the failed colonialist approach of “do as I say, not as I do”.

TIMING AND OPTIONS

44. The question of replacement has arisen because Trident’s procurement cycle was 14 years, following a decision in 1980 to replace the Polaris system. The first submarine, HMS Vanguard, went operational in 1994, and the fourth, HMS Vengeance, finally entered operational service in February 2001. In large part due to the design of the nuclear reactor, the official operational life of these submarines is given as 25 years: without service life extension they can be expected to be decommissioned around 2019–26. On that basis, the Government has put the decision on replacement onto its agenda for this Parliament.

45. This timing allows for the most expensive option to be chosen: a like-for-like replacement, requiring that a new fleet of submarines be built to carry similar or upgraded missiles. A final decision on other options could be delayed, giving more time for the government to assess the political and security trends—and, more importantly, contribute to creating a political and security environment more conducive to UK and international security and disarmament.

46. Extending the service life of the existing submarines, which in practice means a major refit of the hulls and nuclear reactors, could be accomplished in up to 10 years. Both of these options would cement Britain’s heavy dependence on US delivery systems and continued nuclear collaboration (for example, in the supply of tritium and neutron generators). Both options are also vulnerable to “The Scottish Question”, ie the lack of any practical alternative to the Royal Navy base at Faslane in Scotland for berthing the larger submarines capable of firing Trident missiles. If pressure builds for nuclear weapons to be removed from Scotland, as some Scottish Parties and anti-nuclear groups are determined to achieve, Trident or its replacement might be turned out of Faslane with no other suitable berth in sight.

47. Theoretically, there is also the option of a “new capability”, which might be US-supplied sea or air-launched cruise missiles, or even a return to free fall nuclear bombs on long-range aircraft or collaboration with France for a joint “Eurobomb”. While there is some military interest in cruise missiles, which could avoid the Scottish Question and are viewed as more flexible for “sub-strategic” purposes, very few can be found to argue in favour of a joint Franco-British nuclear force or a return to nuclear bombers. However, it must be noted that these all could be viewed as a cheaper way to remain a nuclear weapon state, and procurement decisions could be delayed for at least another decade.

48. Current US plans anticipate deployment of Trident D5 missiles to 2042, but this could change if US policy were to change. It is projected that replacement UK submarines would be expected to be operational to at least 2055. If the US decided to discontinue D5 missile production before 2055, Britain could be left

with expensive but impractical submarines with years of life left in them. Or else British planners might be faced with the awkward task of finding alternative missiles, perhaps requiring new missile types to be retrofitted into submarine hulls that were designed to carry the D5.

49. Britain has found itself in similar difficulties as a result of US policy changes on at least three previous occasions: when Washington cancelled the Skybolt air-launched ballistic missile system in 1962; when the Reagan administration decided in 1980 to equip its submarines with D5 missiles instead of the C4 design that Prime Minister Margaret Thatcher had thought she would be leasing; and when President George H W Bush signed a Senate-mandated moratorium on nuclear testing just weeks before Aldermaston was due to conduct a warhead test explosion in Nevada in October 1992. The dangers of dependence on the United States have also been highlighted by the recent problems in negotiations on the Joint Strike Fighter.

PRE-EMPTING PARLIAMENT'S DECISION? AWE UPGRADES AND DEFENCE INDUSTRIAL STRATEGY

50. Two other points need to be highlighted when considering timing and decision-making. During 2003–05, planning permission was sought and new investment was committed by the MoD as part of plans to upgrade AWE Aldermaston by building new laboratories, a super-computer, and laser and hydrodynamics facilities for designing, refurbishing and testing nuclear warhead components. Although the previous contract was not due to expire, a further 25 year contract worth over £5 billion was signed with AWE's management consortium (that includes Lockheed Martin and British Nuclear Fuels).

51. Secondly, despite government insistence that no decision has yet been taken on whether to replace Trident, the MoD's White Paper on Defence Industrial Strategy seems to be predicated on the assumption of further submarine procurement to maintain the UK's capability in this field: "We have duties of nuclear ownership and commitments to the USA which can only be fulfilled by close control of an onshore submarine business . . ."

52. There is the danger that some decisions committing finances to future procurement and new weapons facilities are already being taken, driven more by the demands of defence contractors in this field than by assessments of Britain's real security needs. I can provide further detail on both these developments if requested.

CONCLUSIONS

53. The British debate on nuclear policy should not just be about which nuclear system will follow Trident, but must pre-eminently address the question of whether it is in Britain's best interests to have a nuclear follow-on to Trident at all.

54. Two scenarios can be envisaged, depending on whether the non-proliferation regime is reinforced or eroded. Failure to take disarmament seriously or dissuade Iran and others from acquiring nuclear weapons will lead to the collapse of the NPT. This will make the world a much more dangerous place and is likely to result in a proliferation cascade by 2025. After constructive engagement for a few years during the 1990s, British nuclear policy—including the upgrading of AWE Aldermaston—has become retrogressive and is now contributing to the erosion and weakening of the non-proliferation regime.

55. There is growing consensus that traditional state-based conflict will be less of a threat than the kinds of diffuse, transboundary, human security challenges arising from climate change, non-state armed groups with terrorist agendas, pandemics (naturally occurring or associated with bioweapons), poverty and conflicts over energy or water supplies, as well as organised crime and trafficking.

56. A nuclear follow-on to Trident will not only be irrelevant for dealing with the foreseeable security priorities of the next few decades: it will contribute to proliferation, divert defence resources away from the real threats, and diminish the efficacy of dissuasion and deterrence that could more reliably be provided by non-nuclear tools.

57. In the 21st century security environment, non-proliferation and deterrence must adapt or else they will fail. Having acknowledged that nuclear weapons are useless against terrorism, the Government needs to take the next logical step and think beyond nuclear weapons to deter and defuse the foreseeable threats of this era and help to establish alternative approaches that recognise the security needs of all peoples.

58. The only sustainable long term solution will require the prohibition and elimination of nuclear weapons and weapon-usable nuclear materials. While there is still a chance to prevent proliferation by limiting the available sources and increasing physical safety and security, Britain and the other nuclear powers have to recognise that their own weapons and policies are part of the problem and hinder international efforts to devalue nuclear weapons and reduce proliferation incentives.

59. Now is the time to begin phasing out nuclear weapons, starting with a decision not to replace Trident. Contrary to myth or parody, giving up nuclear weapons will not happen overnight or leave Britain naked and vulnerable. It is high time to recognise their irrelevance and start planning for a safely-managed transition to a more relevant security approach, with a more appropriate allocation of defence resources.

60. While this Defence Committee inquiry is an important first step, the Government should undertake a comprehensive security and defence review that combines the perspectives of foreign affairs, international law and defence. The review should analyse the role of nuclear weapons and efficacy of theories of nuclear deterrence and use in the post 9/11 security environment, including wider concepts of security and the issues of decommissioning, safety and security of materials, components and facilities.

6 March 2006

Memorandum from Sir Michael Quinlan

The Annex herewith, an extract from a 1997 monograph, examines the general concept of independence in relation to UK nuclear-weapon capability.

The UK's present force comprises submarines, missiles and warheads. The submarines and warheads were designed in the UK—the latter in cooperation with US laboratories and with some components bought from the US, but design remained ultimately in UK hands. Both submarines and warheads were manufactured in the UK. Trident missiles were bought (not leased) from the US and are periodically serviced there, but the UK has full ownership of the number bought. Nothing in this means that the US controls the UK force operationally, any more than in normal use of language the fact of owning a Focus and having it serviced at the local Ford dealer makes it appropriate to assert that the Ford Motor Company controls my motoring. If the US chose to default on its agreements it would be able ultimately (over an extended period) to make it difficult for the UK to maintain the force, but it can neither dictate that the force be used if HMG does not so wish, nor apply any veto—legal or physical—if HMG were to decide upon use. If it were true that the US controls UK capability, the entire point of having it, as explained by successive UK Governments for nearly 50 years, would be void. It is presumably not suggested that all these governments have been either grossly deceived or relentlessly mendacious.

NPT ARTICLE VI

It is sometimes contended that extension or renewal of UK nuclear-weapon capability would be in breach of the UK's obligations under Article VI of the 1968 Nuclear Non-Proliferation Treaty. That Article commits the five nuclear-weapon powers recognised in the Treaty to the eventual total elimination of nuclear weapons; and the commitment has since been underlined at regular review conferences of Treaty parties, as well as obiter by the International Court of Justice in the course of an advisory opinion in 1996. But several considerations tell against claims that the commitment entails a categoric bar to the UK's continuing to possess nuclear weapons:

- (a) The Article says nothing about the speed at which, or the conditions under which, eventual elimination is to be achieved. No state has maintained, nor could any reasonably do so, that the commitment is to be interpreted regardless of the world's political and security environment.
- (b) The Article sets the elimination of nuclear weapons alongside “general and complete disarmament” by all parties. Nothing in the text puts the two obligations on different footings. We are not remotely in sight of “general and complete disarmament”.
- (c) There is neither evidence nor likelihood that all the other four recognised nuclear-weapon states (to say nothing of non-recognised ones) will be willing to abandon their armouries in the foreseeable future. It would be wholly unreasonable to interpret Article VI as imposing unilateral and total obligations upon the UK regardless of what others do.
- (d) HMG has made it clear, for example in the 1998 Strategic Defence Review, that it stands ready to give up its armoury as soon as everyone else does.
- (e) The UK has almost certainly already the smallest and least diverse armoury among the Five (China discloses virtually nothing official about its capability). The UK has been more transparent than any of the others in making information public about its holdings.

Given all this, while Article VI is undoubtedly in a general way a consideration weighing against renewal, especially at the current scale, and should be taken into account accordingly, it is nowhere near constituting an unconditional imperative in either legal or political terms.

Annex

EXTRACT FROM APPENDIX 1 OF “THINKING ABOUT NUCLEAR WEAPONS” BY MICHAEL QUINLAN, RUSI WHITEHALL PAPER NO 41, 1997

From early in the nuclear age the US armoury was more than adequate in material terms—numbers, diversity, reach and technical and operational quality—for the needs of any alliance or coalition to which the United States was committed. The security case for any of its partners to spend scarce resources on providing an independent supplement could rest only on hypotheses that in some scenario or other the US armoury might be thought not available, or not reliably available; for example, that in the situation of

effective nuclear parity between East and West, with the United States itself inescapably under mortal threat, the Soviet Union might calculate (or, as British spokesmen were usually careful to say, miscalculate¹) that when real operational decisions had to be faced US nuclear power would not be used, or not fully and promptly used, in the defence of Western Europe. The existence of independent nuclear capability in Western Europe, far more directly threatened by possible Soviet aggression, was seen as a useful added insurance against any such assessment.

Given such a premise, what independence needed to mean in practice (at least from the standpoint of security rationale; cloudier considerations of political posture or national image are not addressed here) depended on what were the scenarios of perceived US non-availability to be insured against. These scenarios could be of two kinds. The first postulated that the United States, while still politically committed to its allies, might hold back when faced with the nuclear decision amid the heat and fear of war. The second postulated a deeper and longer-term estrangement from Europe—a radically-changed environment in which the United States had disengaged from European security, and in particular had withdrawn its cooperation and abrogated any obligations to European allies in nuclear procurement and support. If it were desired to cater just for the first sort of scenario, what was needed was simply operational independence (call it Mark I): the capability to press nuclear buttons whether or not the United States so chose. But to insure also against the second sort—long-term US estrangement—required procurement independence (Mark II). It is unilluminating to argue about which Mark is “real” independence; the practical point is that they are alternative insurance policies. As in most insurance situations, the wider the cover required, the higher the premium. The United Kingdom chose, from the beginning of the 1960s, to take out the Mark I level of cover; and this cost around 5%, and indeed often much less, of the defence budget. French experience appeared to suggest three or four times as much for Mark II. The difference in insurance cover was also a major difference in long-term opportunity cost elsewhere in defence provision, as comparative contribution to Alliance non-nuclear capability and in the Gulf War may illustrate.

12 March 2006

Memorandum from the Royal United Services Institute

1. THE STRATEGIC CONTEXT: WHY THE UK NEEDS A STRATEGIC NUCLEAR DETERRENT

1.1 Currently, the wrong debate being had, which is why many will welcome the HCDC debate—especially structured, focused, balanced and transparent as it is. There has been too much focus on the what, when and how much: these are very valid questions, but valid only after addressing the questions of “what is deterrence, what is it for, how do you do it, why do we need it, and what is its value to the UK?” In sum, the first question is why, not what.

1.2 Deterrence is a political, and not a military, matter.

1.3 Key value of strategic nuclear deterrence to the UK:

1.3.1 *Grand strategic deterrence*

- Political tool to deter other nuclear-capable powers, especially at a time of growing proliferation.
- The history of armed conflict is a history of wars taking people by surprise. From UK perspective, Falklands, Gulf War and 9/11 were all surprises. Cannot predict what threats will emerge in the next 50 years.¹
- Threat is the sum of capability plus intent. Capability takes a while to develop. Intent can change much more suddenly.
- Common view that the UK does not face a threat today that can be offset by nuclear weapons. Nuclear materials, technologies, weapons and delivery systems are proliferating.
- While effective deterrence requires a range of options other than just nuclear weapons to deter a wider range of threats, strategic nuclear deterrence is designed to deter high-end threats to the survivability of the nation, only nuclear weapons can deter a nuclear weapon, and no other nuclear power is considering giving up its capability while many other nations—not to mention non-state actors—are looking to acquire the capability.²
- As long as other potential enemies possess nuclear weapons, the UK must retain its strategic nuclear deterrent. The challenges are to make the capability more relevant to new challenges with a more flexible—and perhaps smaller—inventory.

¹ Any successor system to Trident will be in service for 30 years from 2020 or so.

² In 2002, the Atomic Energy Commission (AEC) declared that as many as 35 states had the knowledge to build nuclear weapons. In 2005, the Nobel Peace Prize was awarded to International Atomic Energy for their work in halting those trying to convert civil nuclear programmes into military capabilities.

1.3.2 International status

1.3.2.1 It is an implied tenet of British security policy that being a nuclear power is fundamental to the UK's international status. A nuclear deterrent could be argued to provide the UK with:

- considerable authority in international political structures;
- status in Europe and in the world as a whole;
- a political balance in Europe;
- a safeguard against US dis-engagement in Europe;
- a balance against global instability.

1.4 Nuclear Disarmament

1.4.1 Just because the UK may reduce or abolish its capability does not mean that others will follow suit. Each declared nuclear power—never mind those wishing to and trying to develop such a capability—has its own reasons for keeping theirs that are wholly unrelated to the implications of any UK decision to abolish its own capability and, even, to pressures for multi-lateral global disarmament.

1.4.2 However, the UK could make a contribution to disarmament, for example through reducing warhead or missile inventories, while retaining sufficient capability to provide a flexible deterrent.

2. DECISIONS

2.1 Once you have addressed the question of why, if the answer to that question is that the UK does require a nuclear deterrent capability, there are a variety of capability choices available—each with their own performance, time and cost implications.

2.2 What must the UK Government decide in this Parliament? There are, perhaps, three levels of decision, at the top end one major political decisions down to a series of capability decisions that can inform, shape or influence the major decision. The question is what decisions are required, and when.

- Level One—Retain or abolish the nuclear deterrent. There is a decision in principle to be made before any investment in retention is decided. A final conclusive decision could wait until there is commitment to major investment. This could be at: the Initial Gate, when the UK takes the decision to move into the investment phase; or conceivably not until the Main Gate stage of commitment by government to the programme, when the major investment decision for development and manufacture is taken.
- Level Two—upgrade or extend the existing system, buy a direct replacement, or develop a new capability. This decision could be based initially on a Level One decision in principle. Final commitment to an answer would be at Main Gate stage although many options would be dispensed with at Initial Gate.
- Level Three—current capability decisions, including the investment of funds at the Atomic Weapons Establishment (AWE), Aldermaston, or funding designs for the next generation of submarine. Some of these decisions are already being taken. Others may be taken depending on any decision to invest in “Concept Phase” work on refining capability options or in moving to Initial Gate. Even if the decision taken in this Parliament is only to move the main decision right as much as possible by extending the life of the current boats by five years, these decisions are critical to ensure that, when the decision eventually does have to be made once and for all, the Government still has all options open.

3. CAPABILITIES

3.1 The capability issues have to be discussed in broad terms at this early stage because they relate to strategy, timelines and cost issues. These issues cannot be addressed independently of technology. What we need to replace and when is crucial.

3.1.1 The capability requirement should be established on the basis of an assessment of the likely effect required back to the delivery system needed to deliver that effect and to the affordability of those options.

3.2 Platform options

3.2.1 Land-based system.

3.2.1.2 A ballistic missile deployed on UK soil.

3.2.1.3 The system would give the UK global reach.

3.2.1.4 The UK would need to develop—indigenously or in partnership—an Intercontinental Ballistic Missile (ICBM), a new warhead, a new launch site, and supporting infrastructures. Perhaps some of these costs could be offset with a joint programme with the US, especially if the offensive capability could be put in place under the umbrella of a US ballistic missile defence (BMD) system on UK soil.

3.2.1.5 However, the lack of a US programme would mean that the UK would need to bear a large proportion of the costs for this option. This option also would represent a huge political cost, and would turn part of mainland UK into a potential target. Lastly, a land-based system would be liable to pre-emption, therefore undermining deterrent.

3.2.2 Air-based system.

3.2.2.1 Aircraft-deployed options: a nuclear-armed cruise missile; or a free-fall nuclear bomb.³

3.2.2.2 An air-launched system would provide a degree of flexibility.

3.2.2.3 However, this option would require: a new aircraft; a new warhead; a base on mainland UK; and other infrastructure support.

3.2.2.4 Aircraft options

- The UK does not have a strategic bomber (as announced in the Quadrennial Defense Review, the US is looking to develop a future strategic bomber programme: however, the emphasis for this programme is on conventional munitions).
- The UK could consider basing the weapon on existing transport and surveillance aircraft, but this option risks these assets being required for other tasks at other times.
- A shorter-range aircraft might need to be based overseas for some operations, and this risks denial of basing rights.

3.2.2.5 Aircraft and any missile would need overflight rights for most missions. Air-based options also are liable to pre-emptive attack, thus undermining deterrent.

3.2.3 Sea-based (surface system)

3.2.3.1 Nuclear-armed cruise missile fitted to UK escort flotilla (UK surface ships do not have the capacity to carry a ballistic missile). A neat fit with any potential sea-based BMD capability.

3.2.3.2 However, a surface ship is visible and thus can be targeted. The UK escort flotilla is also tasked with many other roles.

3.2.4 Sea-based (sub-surface system)

3.2.4.1 Unique benefit of the sub-surface option is the invulnerability required to guarantee the survivability of the deterrent. If a system can be seen, it can be hit and will not deter.

3.2.4.2 The UK already has a submarine platform and missile system programme, and the infrastructure support already is in place.

3.2.4.3 Options:

- Nuclear-armed cruise missiles on UK SSNs. UK SSNs already fitted for Tomahawk cruise missiles, and submarine support infrastructure exists already. However, the SSNs are tasked with other missions.
- Hybrid submarine, capable of conducting both SSN and SSBN operations and carrying a variety of payloads. Main driver here would be affordability of two classes of nuclear-powered submarine.⁴ The UK's Astute class submarine would need to be re-designed before it could carry such a payload, however.
- Continue with a dedicated SSBN. By threatening to exert the most catastrophic use of force from an independent, autonomous, invulnerable platform deployed in a Continuous At-Sea Deterrent cycle, SSBNs are the most effective form of deterrence. SSBNs have the flexibility to carry a variety of nuclear and conventional systems—SLBMs, Tomahawk cruise missiles, Intermediate Range Ballistic Missiles (IRBMs), each of which with either nuclear or conventional warheads. A deterrent system deployed in a continuous cycle also underlines commitment to the deterrent, reduces risk of escalation (if a boat is seen to sail during a period of tension) and also—most critically—guarantees the survivability so fundamental to effective deterrence.

3.3 Weapon System options

3.3.1 Cruise Missiles

3.3.1.1 Much debate focused on cruise missiles on the grounds that their capabilities are more credible in light of today's threats, but—perhaps most importantly—under the perception that they are cheaper.

3.3.1.2 Host of problems associated with total reliance on cruise missiles.

- Cost: design and test of new warhead (thus violating the Comprehensive Test Ban Treaty).
- Cost: only single warhead weapons, a much larger number of missiles would be needed to carry the current inventory of warheads.

³ Under the 1998 Strategic Defence Review, the UK withdrew the air-based WE177 freefall bomb.

⁴ The US has developed four of its Ohio-class submarines for a conventional role, and is considering adapting its Virginia-class SSNs to carry SLBMs as well as fitting conventional warheads to Trident D5 ballistic missiles.

- Capability: slow speed means that they can be shot down, so deterrent impact not credible.⁵
- De-stabilising: dual nature of weapon risks escalation as adversary will not be able to tell if missile is nuclear or conventional until it hits.⁶
- UK does not have an indigenous capability. Tomahawk is a US-made weapon. UK Storm Shadow conventional only, air-based only and short-range. France is developing a longer-range, sea-based version.
- Nuclear cruise missile: US has no Block V Tomahawk funding, nor is it looking at a nuclear warhead option. All R&D would be down to the UK.

3.3.2 Ballistic Missiles

3.3.2.1 Ballistic missiles are only system that deliver the global effect at place and time of choice, with autonomy through national and international air space.

3.3.2.2 Current D5 missiles have planned life of 25 years. In service 1994.

3.3.2.3 US developing a new version of the D5 missile, the D5 LE, which includes upgrading existing missiles.⁷ These missiles will remain in service until 2040s. UK has not yet determined whether to opt for this improved version.

3.3.2.4 US plans for conventional warheads for ballistic missiles carry same dual nature/escalation risks that cruise missiles carry (see above).

3.2.3.5 However, UK extending current capability may also mean buying into the programme to ensure UK has missiles available for an extra five years.

3.2.3.6 No evidence to suggest US is looking at the D5 as a land-based option.

3.3.3 Nuclear Weapons

3.3.3.1 Current UK Warhead Issues

- UK looking at research, capability and stockpile issues.
- An upgraded warhead would not need to be re-tested.
- Critical step: the investments in the AWE at Aldermaston to ensure sufficient support for the current deterrent system and to retain the capability to develop an upgraded warhead if the Government requires it.⁸ The current warhead design can be maintained in service at least into the 2020s, with some relatively minor upgrading and refurbishment during the first half of the next decade.⁹

3.3.3.2 Reports suggest UK discussing with US options for more accurate, smaller and cheaper nuclear weapons:

- Part of logic here appears to be that smaller weapons are potentially more useable, and are therefore more effective as a deterrent against some of the new threats.
- These should be seen as one component in a deterrent package.

3.3.4 Conventional Weapons Options

3.3.4.1 As well as the conventional options noted above, UK could look at other options such as kinetic energy warheads.

4. TIMELINES

4.1 The UK national strategic deterrent is a system of systems, including the missile, warhead, the submarine, and the supporting infrastructure. Extending, upgrading or replacing these components represent the timeline challenges which are driving the UK debate.

4.2 Critical decision element: lead time to design and build a new submarine

⁵ In combat, several US Tomahawk cruise missiles have been shot down using surface-to-air missile systems. In test firings, Tomahawks are regularly tailed by a chase plane, indicating that they can be tailed and shot down by aircraft.

⁶ This risk, with the implication that the adversary might push the nuclear button just in case, was precisely the reason why the US and the Russian Federation gave up their sea-based nuclear cruise missile programmes under the START negotiations.

⁷ This process includes replacing some specific missile components, including the re-entry vehicle, or “bus” (see: Youngs, T & Taylor, C “Trident and the Future of the British Nuclear Deterrent.” House of Commons Standard Note SN/IA/3706. 5 July 2005, pp 11–12; “US Navy to Extend Life of Trident Force”, in *Jane's Missiles and Rockets*, 1 September 2000). For additional reference, see: House of Commons Select Committee on Defence. Memorandum Submitted by the Ministry of Defence. 20 January 2006. Available on-line: <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmdfence/835/835m04.htm>

⁸ In 2005, the MoD announced a £2 billion upgrade (see: MoD, Press Notice. “Facilities Upgrade for Atomic Weapons Establishment.” Press notice 146/2005. 19 July 2005; Ingram, Rt Hon Adam, MP. Response to Written Questions, 7 June 2005, column 464W. Available on-line: <http://www.acronym.org.uk/written.htm>). An investment of a further £5.3 billion had been announced in 2003 (see: Reid, Rt Hon John, MP. House of Commons *Hansard* Written Answers, 3 November 2005, part 7. Available on-line: <http://www.publications.parliament.uk>). For further reference, see also: House of Commons Select Committee on Defence. Memorandum Submitted by the Ministry of Defence. 20 January 2006. Available on-line: <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmdfence/835/835m04.htm>

⁹ House of Commons Select Committee on Defence. *Ibid*.

4.2.1 The key timeline in this debate relates to the submarine. Warhead exists already. Missile/s exist already. Infrastructure support largely in place. No decision yet taken on the out of service dates for current deterrent platforms.

4.2.2 Can service life of current boats be extended?

- The key timeline is when HMS Victorious comes out of service around 2019–20. Victorious is the second boat in the class, and when she withdraws from service the UK will no longer be able to carry out Continuous At Sea Deterrence unless a replacement boat is in service.
- This time period can be extended if the decision is taken to extend the life of the submarines. However, extending the life expectancy of current boats by five years does nothing more than defer the decision.
- If service life of SSBNs is extended by five years from the current service life of 25 years, whole system has a life-cycle of up to 30 years.
- Beyond this, meeting UK's safety requirements for the hulls may require an investment that no longer delivers value for money given the age of the hulls themselves, with costs of running the boats increasing and availability likely to reduce. At that point, building a new boat simply delivers better value for money.

4.3 Some argue a new submarine design is needed: others argue that the Astute SSN design could be developed for an SSBN programme. Key here is what the capability requirement will be: speed, what weapons/how many, number of tubes. Also, even though new nuclear reactor cores have been developed (meaning that cores do not replacing during the life of the submarine), the propulsion system design may need to be refreshed to ensure it will still be sufficiently current in the 2050 timeframe.

5. COSTS

5.1 Costs of a replacement (whether by renewal or refurbishment) cannot be known until a decision is taken and when programme requirements and parameters are known. Also highly relevant to cost is the chosen deterrent strategy which will define among other things the number of warheads and the nature and readiness of delivery systems.

5.2 Like Polaris before it, Trident came into service on time and under budget. Trident absorbs around 3–4% of the UK's defence budget for each year.¹⁰

5.3 Who will foot the bill for any new system? One the one hand, the UK strategic deterrent is a political tool that should be paid for by the Government. On the other hand, allocating the replacement system to the defence budget might put at risk other key programmes.

5.4 Timelines and costs—potentially could be reduced by increasing co-operation with the US. However, significant political issues on both sides here.

6. CONCLUSIONS

6.1 The three key capabilities for a credible independent deterrent are: a survivable platform; a survivable weapon system; and the autonomous ability—from a sovereign platform in international waters, through international airspace to a point in the sky and on to a latitude/longitude point on the Earth's surface—to deliver effect at place and time of choice.

6.2 Assuming the Government decides that the UK continues to require a strategic deterrent, a submarine-based option is the only one which guarantees the survivability which is fundamental to effective deterrence.

6.3 Dan Plesch argues that “it is unrealistic to consider that the world can continue indefinitely with uncontrolled armaments and not see a nuclear war.”¹¹ However, given the changing nature of the threat, the logical solution for the UK Government would be to retain a minimum strategic nuclear deterrent and to deliver a more flexible range of capability options in the submarine package, while perhaps making a contribution to disarmament by reducing warhead and missile levels, and while delivering this capability for the same or less cost than the original Trident programme.

6.4 Until the decision is no, the UK must continue to plan as if it is a yes. This includes taking key capability decisions to ensure system remains current and to ensure all options are available to Government. If the decision is no, could take boats out of service today. However, in Government statements there has been no mention of abolishing capability—only to “modify, replace, update or diminish”, or “reduce”.

¹⁰ Trident's acquisition cost reached just under £15 billion, it has through life costs of around £280 million per year, and has occasional additional expenditure at Aldermaston and elsewhere. This gives a total cost of under £25 billion over its potential 30 year life-expectancy. For reference on Trident's acquisition costs, see: *Hansard*, 18 Jan 2005—Written Ministerial Statements, column 27WS.

¹¹ Plesch, D (2006). “The Future of Britain's WMD”. London: The Foreign Policy Centre. pi.

6.5 Delay in making decision/s also risks a potential increase in costs. Risk of losing skill base in Barrow. Hard point of 2019 for when replacement system needs to be in service, and development and manufacture phase will take a set amount of time: thus, delay in making decision/s means that assessment phase may need to be truncated; doing this increases risk and, possibly too, costs. Any gap in programme also, arguably, denies UK ability to re-constitute programme in time.

6.6 Defence Industrial Strategy underlines UK need to retain sufficient—and independent—understanding of all the elements of a nuclear deterrent, including the complex weapon systems and platforms (notably submarines) that form a core part of this capability.

6.7 Given the length of time required to bring a new system into service, the Government should currently be at the stage where it is looking to fund concept phase studies, such as capability and user requirement studies, to define capability and cost issues for all options, and—if required—developing a submarine design for a new SSBN.

13 March 2006

Memorandum from Michael Codner (RUSI)

1. BEGINNING THE REPLACEMENT PROCESS

Expenditure on “replacing Trident” has already begun in the sense that maintaining and refurbishing existing capability for research, development and test at Aldermaston was announced in the summer of 2005. The refurbishment is to do ostensibly with maintaining the safety of existing warheads rather than designing new ones. This expenditure is necessary regardless of any decision over the future of the UK’s nuclear deterrent. But the issues are related. We do not need to speculate about the usefulness of modernised facilities in this research establishment for developing future nuclear capability, although clearly investment in AWE would be needed and dwindling expertise sustained and expanded if the choices over a new system included development of warheads in Britain. The matter is one of sustaining an independent nuclear capability in the short and medium term in the face of expenditure markedly above running costs. If the decision was to be taken in this Parliament to dispense with nuclear capability when the Vanguard-class submarines were withdrawn, this raises the question as to whether any additional expenditure in the meantime to maintain existing capability would be worthwhile and whether Trident should not be scrapped earlier.

2. THE PROBLEM WITH ANNOUNCING FUTURE ABOLITION

The problem the Prime Minister and his successors would face by announcing a future termination of the capability is of compromising Britain’s current nuclear policy. The UK would be perceived internationally, and in particular by those who need to be deterred, as having concluded that there is a dwindling need for a deterrent. Of course, in the meantime the UK would still have the capability to respond to a nuclear attack, or indeed launch a first strike if circumstances demanded. Her deterrent posture would not actually be weakened in theory. But other reasons for maintaining the deterrent would be compromised, for instance national status and influence as a major power and member of the UN Security Council and, in particular, any influence over US policy that nuclear capability might bring. And the Government would face a huge problem of internal politics. If a national nuclear deterrent is not essential for security in the uncertain future, is it truly necessary now? If it is not, running costs alone might be justifiable for a “nice-to-have status” thing, but not any additional expenditure. There are overwhelming priorities for funding in health and education, not to mention conventional military capability.

What decisions and when?

3. So what is the decision that needs to be taken in this Parliament? Working back from a replacement date for the first of the Vanguard-class of about 2024,¹² the MoD would need to make decisions in the next 19 or so years about a new platform, whether sea or air or some land-based arrangement. There will need to be a weapon system, whether refurbished Trident or some other newly-developed system, and of course a warhead. The platform programme appears to be the critical path, and it is possible to sketch out some notional timelines.

4. Using the language of Smart Acquisition, the MoD would need to commit to a development and manufacture phase for a replacement platform at least eight years beforehand, judging by the timelines for equivalent large projects. And one must consider that the technical and project risk for such a programme needs to be extremely low. The Trident came into service most unusually for major defence programmes on time and within budget, and the Government would want to achieve the same predictability. Main Gate,

¹² This date is the latest possible to allow a continuous deterrent assuming that there is extension of life of the hull and power generation of some of the Vanguard Class.

when this decision needs to be taken, would be in the 2015 timeframe. An Initial Gate decision to embark on an Assessment Phase of a very small and specific number of options would need to be some five years before this that is, in about the 2010 timeframe. So the MoD needs to decide fairly soon whether to embark on a Concept Phase, during which the specific options to be addressed during Assessment can be derived.

5. Now the major procurement investment decision would be made at Main Gate. This is likely to be at least 85% of the total procurement cost. The bulk of the remaining likely maximum of 15% of expenditure will be committed at Initial Gate. So the actual commitment of new money to be made in this Parliament would be only a few per cent of the total still quite a lot of money, but this would not be the sort of decision that would need a major redirection of Government spending to finance. The main decisions must be made in investing in continued nuclear capability, as one surmises, in about 2010, and particularly 2015, when shed-loads would be required.

6. One might conclude, therefore, that in all probability the Government will indeed fund a Concept Phase without necessarily having to make any commitment to Assessment and Development/Manufacture phases, a relatively easy decision to make, and one that would both politically and diplomatically reinforce current policy over which there is broad consensus across the main political parties.

7. When actually to decide? A decision by 2007 would keep any public debate clear of the next General Election in say 2008. The first big decision, however, would be made midway through the next Parliament involving an Initial Gate commitment of spending that could be into billions of pounds over five years. And continuing the fantasy of a rigid four-year cycle, the really big decision would be towards the end of the subsequent Parliament, when contracts would be placed for development and manufacture. A government could therefore say “yes” to replacement until 2015 at the latest committing, say, £3 billion in Concept and Assessment Phase funding as necessary to support ongoing deterrent policy. This is of course in addition to the running costs of the Trident Programme and AWE Aldermaston. It could then say “do” in 2015 saving, say, a further £17 billion in Development and Manufacture.

8. NOTIONAL LATEST DECISION DATES

	<i>Concept Phase</i>	<i>Initial Gate</i>	<i>Main Gate</i>	<i>In Service</i>
With submarine life extension	2007	2010	2015	2024
Without life extension	2003	2006	2010	2019

This crude analysis accepts that the stages of Smart Acquisition will be adopted. And by this analysis it would seem that a decision to extend the life of the hulls and power plants of some of the Vanguard Class submarines has already been taken. However there has been a recent example of a major platform project in which the definitive milestone of Main Gate as been subdivided—namely the Future Carrier. It is possible that staged Concept, Assessment, and Development and Manufacture phases would be adopted for replacing the nuclear deterrent. This would have the effects of:

- Spreading commitment of funds over a longer period allowing Government to delay the ultimate decision to commit to the bulk of manufacture funding;
- Reducing the profile of each investment decision to an incremental process in which there would be few occasions when the nuclear deterrent issue would break through the media’s threshold of interest. Indeed we could be well into a Concept Phase or indeed a phased Assessment Phase with no definitive Initial Gate.

9. NOT FOR “WARFIGHTING”?

If we assume, therefore, a qualified “yes” in 2007 to continued long-term nuclear capability, what events might jeopardise subsequent “yeses” in 2010 and 2015? To answer this question fully, one must first establish what a British nuclear deterrent capability is actually for in the understanding of the Government. We are not likely to have a clear exposition in this Parliament. Nor is it probably necessary politically given the political consensus and the lack of interest in the majority of the electorate. The MoD claims that the nuclear capability is not for warfighting—not a very meaningful notion. If they were ever to be used—and deterrence hinges on that possibility—that *would* be warfighting. What the MoD means is that there are no scenarios short of nuclear doomsday in which nuclear weapons would have a role in an operational plan. The “not for warfighting” line is possibly rather directed at the Treasury in making the case for funding outside the defence budget. This issue is of great importance to the MoD and the Navy in particular. If funding of a replacement is not drawn from central government funds but comes as a whole or in part from a Defence budget of similar proportions to today, large parts of the Equipment plan in the next decade will be unaffordable and the UK’s conventional military posture will demand review.

10. SUB-STRATEGIC DETERRENCE

And what, therefore, of “sub-strategic deterrence”, the concept launched in the early 1990s when the “tactical” 600-pound bomb was being withdrawn but never actually revoked in subsequent policy papers? “Sub-strategic” is another notion rather difficult to define, except insofar as it excludes the need for tactical capability. Any deployment or use of a long-range missile-fired nuclear weapon is strategic with a capital “S”. “Sub-strategic” in this context means carrying fewer than the full complement of missiles in a submarine, and announcing that this is the case inviting the possibility that a small number of missiles might be used in circumstances short of doomsday. The perceptual uncertainties created by this concept could be said to reinforce deterrence against the sporadic use, say, by a rogue state with a small number of unsophisticated nuclear weapons or indeed conceivably of non-nuclear weapons of mass destruction. In any event, there is a paradox here between “sub-strategic” and “not for warfighting” that needs to be resolved.

11. EFFICACY AGAINST LIKELY THREATS

There are of course other hugely difficult issues relating to the nature and effectiveness of deterrence in an uncertain future. Terrorists with transcendental aims, and indeed rogue governments with their backs to the wall, will not use empirical risk assessment and cost-benefit rationales to constrain their use of nuclear weapons. So where is the deterrence against the most likely nuclear threats?

12. DIRECT OR INDIRECT SECURITY

Ultimately, it is difficult to avoid the conclusion mentioned earlier that nuclear capability for the UK has more to do with international status and influence than with direct security. The proposition that retention of the deterrent seems to support is that the UK has influence indirectly over its wider security environment because it retains a nuclear deterrent—albeit arguably only a token—which supports its status as a Permanent Member of the Security Council and, most importantly, might modify US behaviour in this and other respects. This issue of national status and influence is much wider of course than the nuclear deterrent. Arguably it underpins the UK’s “expeditionary” military strategy and explains why as a relatively safe island power in the Eastern Atlantic the UK commits more of its GDP to defence than most European countries.

The US Relationship

13. In this context, the long-term relationship with the US is of paramount importance both in addressing the issue of need for a national capability and in the options for a replacement. There is a paradox here, too. If the UK’s security relationship with the US, and indeed that of Europe, were to weaken, there could be a greater need for an independent deterrent because US extended deterrence would be unreliable. But UK-US collaboration and access to technology would be prejudiced. If the relationship were to strengthen, affordable collaborative solutions may be available. But why would we need an independent deterrent except to reinforce international status and influence? This debate is one in which it is almost impossible for a British Prime Minister to engage in publicly even though in the wider context it is at the heart of the United Kingdom’s security and defence policies. It would not be a problem for a Frenchman.

14. And will the US want the UK to retain a nuclear deterrent in the longer term? The scale of UK’s nuclear capability is not significant. The uncertainties that having more than one nuclear challenge may create in the perceptions of a nuclear opponent may have been highly relevant in the Cold War in reinforcing deterrence and supporting US’ extended deterrence to Europe, but are arguably not relevant in the present context. The situation might be greatly simplified from a US perspective if there was no junior partner whose perspective is only significant if it is different.

INTERVENTION OF EVENTS

15. The best a Labour, or any other Government for that matter, can hope for is for the debate to proceed *sotto voce* “as it has since the 1987 General Election” and for none of these issues of substance to be raised to a high political level. And they stand a good chance of being successful if the decisions are taken in the three incremental steps described earlier. What are the events, therefore, that could scupper a replaced or refurbished nuclear deterrent? A breakout of international nuclear disarmament and success of the non-proliferation regimes is most unlikely. Similarly, it is unlikely that missile defence could achieve sufficient guarantees of protection against a large-scale nuclear attack to make deterrence irrelevant. A few more likely scenarios are:

- A major national economic crisis before 2010 or 2015, making replacement options unaffordable.
- Significant military failures abroad causing a collapse in confidence in the electorate in the value of the UK’s expeditionary military strategy, and military capability generally, in enhancing world status and influence. Defence expenditure of all kinds beyond direct homeland defence might then be considered purposeless and wasteful.

- A series of asymmetric attacks on the UK using terrorism could similarly persuade the electorate that any security capability beyond homeland security was purposeless or indeed provocative.
- Proportional representation was introduced following General Elections with hung Parliaments. It is possible that different, more equivocal security policies could emerge from coalition governments and that other priorities could absorb the necessary funds.

13 March 2006

Memorandum from Professor John Simpson¹³

EXECUTIVE SUMMARY

1. This paper attempts to work systematically through the context that any UK nuclear deterrent capability will have to operate within over the next 50 years. In doing this, the “strategic context” has been defined in a very broad manner, but one regarded as appropriate for an issue arguably last discussed in detail in the period 1959–62 by the British Nuclear Deterrent Study Group, a group of senior serving officers, officials and scientists.
2. The objective of the paper that follows is to try to identify a series of questions/criteria/options (highlighted in the text below) that may be used to guide thinking about the future strategic environment in which the UK will operate. Few of the questions are open to simple answers. But since it may be another 50 years before the issue is tackled again, our main conclusion is that much more detailed analysis and research is needed into them, in order to clarify both the nature of the new strategic environment into which the UK is moving, and the role that the UK can reasonably be expected to play in that environment.

3. In particular, key contextual variables appear to be:

- What deterrent roles a future nuclear force could reasonably be expected to perform and in their absence, whether the expectation would be that UK nuclear weapons would at some point actually be used;
- the choice between a greater or lesser UK nuclear dependence on the US and enhanced military cooperation with France and the EU/NATO;
- decisions on any extra-European contexts a future nuclear force would be designed to operate within;
- decisions on the exact nature, magnitude, affordability and concept of operation of the nuclear capabilities that may be required;
- decisions on the targets that the weapons may be used against;
- the attitudes of the UK population to the use of UK nuclear weapons other than in defence of the British Isles; and
- the nature of the complex interplay between UK nuclear decisions and those of others, particularly in the non-proliferation and arms control contexts.

INTRODUCTION

4. The strategic environment the Polaris, Chevaline and Trident systems were designed to operate within has changed radically since 1991. Prior to that the strategic premise that dominated official policy was that the UK faced a threat of surprise attack by a Soviet Union/Warsaw Pact that had both the perceived capability and assumed intention to expand into Western Europe and elsewhere. It was believed by contemporary decision-makers that possession of nuclear weapons (and a range of other military capabilities) by the UK served to counter both the actual and developing Soviet military and political threat. Further, it was argued that the UK’s nuclear weapons obviated the need for more specific capabilities to deter or combat a large range of potential lesser non-conventional and conventional threats arising from existing or future foreign capabilities. This placed nuclear-weapons at the centre of UK Defence Policy.

5. Internationally, the acceptance of these strategic assumptions meant that the concept of nuclear deterrence became the central organising mechanism for contemporary international security relations. Its supporters argued that it stabilised the military relationships between the main protagonists of that period and enabled them to be institutionalised through bilateral arms control agreements.

¹³ The colleagues who contributed language and ideas to this text include David Boucher (former UK Ambassador to the CD); Brian Jones (Visiting Senior Research Fellow, MCIS); Ian Kenyon (Visiting Senior Research Fellow, MCIS) and Richard Maguire (Research Fellow, MCIS).

6. By way of contrast, the current situation has been described as one where:

...in the 21st Century we are faced with new fears, prompted by a new global security environment characterised by the proliferation of all types of WMD and their delivery systems . . . [This new environment] appears to centre on regionally based sets of security problems and the threat posed by international terrorist organisations. In this environment the central role of deterrence, both nuclear and otherwise, appears to have diminished.¹⁴

7. In the face of these new security concerns, *the idea that nuclear deterrence can still act as the predominant mechanism to manage and stabilise global and regional security relations must be questioned*. In addition, the decisions in 2000 by the NPT nuclear-weapon states to formally de-target their own nuclear capabilities appear to symbolise a tacit shift in the roles their nuclear-weapons are expected to perform. Operational capabilities are becoming hedges against future undefined threats, rather than current defined ones. The relevance of existing nuclear arms control agreements, other than those relating to these new threats, is also being questioned.

8. The immediate need has been for military capabilities to engage in intervention and counter-insurgency operations in the hope of stabilising conflict situations. While these have included the development and use of advanced conventional military technologies (precision guided bombs and missiles and network centric warfare), nuclear weapons have not been involved, other than in the form of statements that “nothing is ruled out”.

9. In this context, there is a temptation to use forecasts/scenarios of the future strategic environment to drive UK nuclear policy. Unfortunately, such techniques are inherently problematic, and the forecasts they produce may be no more than “guesstimates”. *Is it wise to base decision-making about the need for a Trident successor system solely upon such forecasts?*

10. If not, what complementary techniques can be used? One would be to examine the need for replacing Trident in more general terms, and to assess whether it represents the most cost-effective insurance against a range of credible, future generic threats, such as biological or chemical weapon proliferation. A second is to examine whether nuclear weapons have a real military role, as against political role, in the 21st century. A third is to focus on the unquantifiable political (and possibly economic) benefits that can be derived from the role of a UK nuclear force in US-UK security relations and other politico-military areas. In all three cases, it is often presumed that the benefits of a UK nuclear force are positive, but there is little hard evidence to support this position. Are there indeed tangible benefits in all these three areas which can be set against the costs of ownership of nuclear weapons?

11. These techniques may offer some basis for arguing that the UK has a need for a nuclear deterrent and also guidance on what type of nuclear-weapon capability the UK should possess—sea, air or land based; ballistic missile, cruise missile or aircraft; operational or potential; numbers; and warhead yields. However, they appear to offer little guidance on the type of deterrent capability that may be desirable in future or what its specific targets might be. *For instance, does the deterrent need to be immediately available, operational and deployed, or can it be a reserve capability which can be activated in a matter of days, weeks or months—the art but not necessarily the article? And what might be the targets of the first type of force?*

12. One significant issue in answering this question may be the future of AWE. Any decision not to replace Trident with an equivalent system would still necessitate retention of many of AWE’s capabilities in order to dismantle the Trident warheads and engage in “defensive” research. The UK would then create a new category of nuclear state, namely an NPT nuclear-weapon state with no deployed capability. It is only if a political decision were taken to terminate all nuclear weapon activities, defensive and offensive, that AWE’s fundamental purpose would change. Indeed since the international moratorium on nuclear testing came into existence 10 years ago, AWE’s “legacy management” activities have been an increasingly important part of its role. *Is it therefore feasible and desirable for AWE to sustain a dual role of maintaining a “potential” nuclear-weapon capability as well as managing the UK’s nuclear weapon legacy if the decision was taken not to replace Trident? And if not, what confidence and transparency measures would be needed to convince other states that the UK was no longer a nuclear-weapon state—especially if it continued to rely via NATO on its nuclear security being provided by others?*

The Nuclear Future

13. The UK Government currently has a rare opportunity to reconsider the entire set of arguments surrounding its continued possession of nuclear weaponry. The “insurance against uncertainty” temptation and the other types of justification identified above are a very unsatisfactory basis for committing scarce defence resources to this activity. *How therefore might one systematically analyse whether the indefinite continuation of an operational UK nuclear deterrent is justified?*

¹⁴ Ian R Kenyon and John Simpson (eds), Deterrence and the New Global Security Environment, (London: Routledge, 2006). The chapters of this book were previously published as papers in a Special Edition of the journal Contemporary Security Policy, Vol 15.1, April 2004.

14. One pragmatic way of doing this is to identify a small number of key questions that could assist and guide thinking on this. The remainder of this paper will therefore focus on the following *fundamental contextual questions*:

- Will there still be a UK to defend?
- Will current security mechanisms remain in place?
- What may be the main security threats in future to the well-being of UK citizens?
- Will industrial war be replaced by people's war?
- Which areas of the world will be zones of peace and which of conflict—and how will the UK relate to them?
- What targets would the UK Government choose to threaten with its nuclear weapons in the 21st Century—and how much support would they receive from the UK population in doing so?

Will there still be a UK to defend?

15. The answer to this question lies both within and outside the UK. Internally, it relates to the further devolution of powers to Scotland, Wales, Northern Ireland (and England?), and whether this will result in one or more of these regions gaining sovereign status either within or outside of the EU. A study has already been made of the possible consequences for the UK of greater independence for Scotland, where the UK nuclear force is currently based.¹⁵ *Would existing "federal" nuclear force arrangements persist in the event of greater devolution of powers?*

16. Externally, the key issue is whether the nuclear deterrent will remain a national capability or become an EU capability—and whether NATO will persist, and with it the existing arrangements under which the UK nuclear force is committed to a NATO role. This issue can be deconstructed into two elements: *Would the UK give-up its sovereignty in defence issues to the EU, and would the UK (and France) be expected to use nuclear force to deter an attack on an EU state?*

17. On the first element, it is possible, although currently unlikely, that this issue would arise by 2025. If it did the subsidiary issues *would be whether the EU collectively would want a nuclear deterrent* (particularly given the traditional non-nuclear policies of Ireland and Sweden), *and if so how the UK and French forces would be incorporated into the defence forces of an EU political entity.*

18. On the second element, it seems inconceivable that an EU state under threat of, or actual, external military attack would not ask for assistance from its fellow EU and/or NATO states. Such a case, however, would probably be confined to those states on the eastern or southern periphery of Europe. It cannot be discounted that WMD would be involved. *In these circumstances, would the European nuclear-armed states be required to provide positive nuclear guarantees to their EU partners and EU conventional forces, including UK ones?*

Will current security mechanisms remain in place?

19. Three major mechanisms are central to UK security activities at the moment: the UN, NATO and the treaty-based WMD regimes. In addition, the bilateral UK-US and UK-French security relationships will almost always have a bearing on any future nuclear decision-making.

20. The relevance of the UN to UK security policies lies in the UK's position as a permanent member of the UN Security Council, and the consequent self-imposed responsibilities to aid actively UN peacekeeping, conflict resolution and peace enforcement measures with military force. It is inconceivable that the UN would not remain in being into the indefinite future. One consequence is that a nuclear-armed UK may be requested to provide positive nuclear or WMD security assurances to UN members confronted with threats from regional neighbours. A UN role would imply a possible requirement for a UK nuclear deterrent system that had a global reach. It also raises the issue of possible conflicts (as arose in the 1960s) between its global use, and its exclusive commitment to NATO. *Should UK governments plan to sustain the ability to provide nuclear security assurances on a global basis?*

21. NATO continues to be the legal basis for European defence arrangements and the common defence inherent in it underpins UK-US nuclear co-operation. As NATO evolves in its membership and its defence focus moves out to its eastern and southern boundaries (and in cases such as Afghanistan beyond them), the relationship of its nuclear-weapon capabilities to these activities may arise. *What future role would a UK nuclear force have in the evolving military commitments of the NATO states?*

22. The greatest nuclear capabilities on NATO's borders will almost certainly continue to reside in Russia. It continues to be viewed by many as a state whose political and social stability remains uncertain, and whose future direction is unclear. Concerns that it might take a more aggressive approach towards

¹⁵ Malcolm Chalmers and William Walker, *Uncharted Waters: The UK, Nuclear Weapons and the Scottish Question* (East Lothian: Tuckwell Press, 2001). For a recent study of some of the issues surrounding the Faslane base and other nuclear facilities in Scotland see Brian P Jamison, *Britannia's Sceptre: Scotland and the Trident System*, (Glendaruel: Argyll Publishing: 2006).

Europe and project its future military power in support of economic goals cannot be ignored, although little hard evidence exists to support this thesis. Russia is, however, not solely a European power and any major nuclear disarmament on its part would require a global agreement. *What significance should be attached in UK nuclear planning to insure against a re-emergence of a nuclear threat to Europe/the UK from Russia?*

23. The NATO and UK nuclear weapon capabilities remain heavily dependent upon the US commitment to the defence of Europe. It has been argued that it now sees NATO Europe more in terms of a convenient base for operations outside the NATO area driven by its own-self interest than part of a common defence structure. *How will the US nuclear relationship with Europe evolve in the coming decades, and what implications might this have for the future of the UK nuclear force?*

24. During the Cold War period, Treaty regimes played a central role in limiting nuclear proliferation and enabling the UK to maintain what it regarded as a technically credible deterrent force. The bilateral agreements between the US and USSR limited the USSR's offensive and defensive missile systems and enabled the UK strategic force size and nature to be driven by the provision of the assured capability to destroy the USSR's government, capital (and inhabitants).

25. The bilateral nuclear limitation and reduction treaties will terminate in the next decade and the US has withdrawn from the ABM Treaty. However, this will not necessarily result in states which might be hostile to the UK acquiring effective defences against the current or future UK deterrent force. Indeed it is debatable if any perfect "defence" against nuclear weapons is possible. Lord Zuckerman, the Government's Chief Scientific Advisor in the 1960s once commented that all that was required for the nuclear destruction of a city is for one weapon to evade defences.¹⁶ *Would any government willingly risk the lives of the population of one or more of its cities in the belief that their defences might work, and thus should their possible existence drive the technical capabilities of any future UK programme?*

26. The nuclear non-proliferation regime contributed to the successful prevention of overt proliferation through to 1998; enabled South Africa to pull-back from proliferation and enter the NPT; and facilitated the effective handling of the consequences of the USSR collapse. By 1998 only four states remained outside of the Treaty, three of which were believed to have nuclear weapon capabilities. Since that point, confidence in the effectiveness of the NPT as a non-proliferation mechanism has been slowly eroding. Two of the states outside the Treaty (India and Pakistan) have tested several devices and declared their weapons to be operational while others (the DPRK, Iran and Iraq) are perceived by some to have been in membership of the NPT while undertaking an active nuclear-weapon programme. Nevertheless the Treaty remains the legal corner-stone of the non-proliferation regime, and the basis for international actions against proliferators.

27. One of the assumptions underlying the NPT was that nuclear weapons were a necessary, but temporary, evil associated with the historical context of the Cold War in which they were developed. As a consequence, many states party to the Treaty profess to believe that a move by the existing NWS to pursue nuclear disarmament in good faith in accordance with their commitment in Article VI of the NPT would help to strengthen the Treaty regime. Of the existing nuclear weapon states, the UK has been for a long time been seen as the most "forward-leaning" towards negotiating nuclear disarmament, and it has gone further than any of the others to reduce the number of its weapons unilaterally and use the reduction process to analyse how nuclear disarmament might be verified.

28. There is a risk that a UK decision to renew its capability will be seen as confirmation that nuclear weapons are now a permanent feature of the international security landscape. Even if this was believed to be true it would be counterproductive for it to be acknowledged. For both forms of acknowledgement would erode the moral and political underpinning of the NPT still further. At the same time, it is impossible to demonstrate that a UK decision to forgo renewal of its capability, either alone or in through negotiations with others, could now arrest the erosion of the NPT.

29. This appears to make it important to try to link any future UK nuclear force decisions to WMD disarmament and counter-proliferation initiatives, and thus to try to shape the future strategic environment in a positive way.¹⁷ Further consideration of this issue from both a legal and a political angle thus seems warranted. Above all, *can the issue of the UK's future nuclear-weapon capabilities be handled in a manner which takes these issues into consideration and does not reduce further international support for, and confidence in, the NPT?*

30. In terms of the UK and US bilateral security relationship, the UK government will have to balance the need to "hug the US close" to preserve the perceived, but difficult to prove, multiple benefits of this relationship to Britain's security and (possibly) economy against the need for an independent capability to act in case UK interests diverge significantly from those of the US. In terms of procurement policy, the only financially viable alternative to continuing with US designed and built delivery systems appears to be a much closer nuclear relationship with France. In that context options might include not only the adoption of a French-built submarine-launched ballistic missile, but also an air-launched capability operating from one

¹⁶ Lord Zuckerman, "Nuclear Reality, Military Illusion, Political Responsibility", Disarmament (New York: UN, 1964), vii, p 4.

¹⁷ Eg in 1967 when a possible decision to abandon the UK strategic nuclear deterrent was being discussed, it was proposed that this should use to generate momentum for a rapid increase in numbers of states signing and ratifying the NPT. See Paper prepared under the aegis of the Official Committee on Overseas and Defence Policy in response to a request by the Prime Minister in his minute 94/97 of 24 July 1967 to the Foreign Secretary, National Archives, DEFE 25-123.

of the RN/French Navy's future aircraft carriers. *What would be the costs/benefits of accepting or limiting future dependence on the US in nuclear operational and procurement matters? What would be the costs/benefits of moving to a closer nuclear-weapon relationship with France? How would the two interact with each other?*

What may be the main security threats to the well-being of UK citizens?

31. Future threats to the well-being of the UK may be of a security, economic or environmental nature. The current security environment is characterised by instability and uncertainty: there is no obvious reason why this situation should not persist into the indefinite future. The focus of threats and their geographic source is unlikely to be static. Political circumstances and decisions, along with the diffusion of technologies, including “black market” trading in WMD capabilities, have conspired in recent years to increase the risk that the UK’s unavoidable vulnerability to unsophisticated nuclear, biological and chemical weapons will be exposed.

32. International terrorism will remain a serious threat for most if not all of the next 20 years and beyond. But it will probably not be a strategic threat (to our continued existence or democracy) even if nuclear, chemical or biological weapons capabilities are involved. Reducing that threat will almost certainly require the cooperation of other national governments, some of which (eg Pakistan and the DPRK) may have military, WMD and regional objectives that conflict with our own aspirations for global stability. This may bring UK counter-terrorism and non-proliferation policies into direct tension and require the careful weighing of the UK’s conflicting objectives. The key questions are *does the UK’s possession of nuclear weapons pose a credible threat to terrorists, given the difficulty of targeting them and the apparent disproportionality of such a response—and does the UK’s possession of nuclear weapons pose a risk of their being stolen and used by terrorists?*

33. The UK and European economies are now closely integrated into the global economy. Any major disruption of trade flows in that economy would have a significant effect on the wellbeing of those in the UK. This gives the UK a significant incentive to assist in sustaining regional stability, especially in areas such as China/Japan/South Korea, the Gulf and South and Southeast Asia. It also raises the issue of the degree to which the UK/EU should play an active diplomatic, and possibly military role, in reinforcing security relations in these distant areas by active involvement in security guarantees/military assistance commitments, including nuclear ones, rather than limiting them to European boundary areas. *Is it desirable to offer nuclear assistance to specific regional economic partners, and would the use or threat of use of nuclear weapons in this context have domestic political support?*

34. As the global economy expands, so too does the pressure on resources, such as water, oil or other basic necessities. Disruption in resource flows may have physical effects as well as economic ones. A global expansion in the numbers of nuclear power stations and fuel cycles designed to provide energy security also runs the risk of creating more states with nuclear capabilities that place them “six months away from the bomb”, with its associated security implications. *What future connections, if any, will emerge in these areas between international frictions over resources; threats of nuclear proliferation; and a requirement for UK nuclear forces to counter them? What would any UK government do with its nuclear capability if faced with such challenges?*

35. A potentially greater threat to UK security lies in the area of climatic change rather than nuclear weaponry. The Third Report of the Intergovernmental Panel on Climate Change (IPCC), established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), estimated in 2001 that by the end of the 21st century global temperatures could rise by between 1.4C and 5.8C.¹⁸ While argument exists over the role of human activity in this change, it seems probable that climatic variation, however caused, will impact on the international security environment in significant ways. *To what degree would the possession of nuclear weapons assist the UK in facing any threats that arise from climate change?*

Will industrial war be replaced by people’s war?

36. Since 1991, a school of thought has been slowly emerging that argues that the “industrial” wars of the last century are things of the past,¹⁹ and that the domination of warfare by tanks, aircraft, battleships/aircraft carriers, and above all by ballistic missiles and nuclear weapons, is over. This school argues that the objective of warfare now is control over populations and peoples, not territory. In such an “asymmetric” conflict nuclear weapons are irrelevant. Others, however, would argue that it is only the existence of nuclear weapons that has allowed this move away from industrial war to occur, and that if they were forgone it would become possible again. At the root of such a debate is the issue of whether disarmed states will always be in a state of potential nuclear-weapon possession.

¹⁸ IPCC, Third Assessment Report—Climate Change 2001, [Cambridge: Cambridge University Press, 2001].

¹⁹ See for example, General Sir Rupert Smith, The Utility of Force: The Art of War in the Modern World, (London: Allen Lane, 2005).

37. This shift in military thinking away from the postures developed for the Cold War to those demanded by the post-9/11 world is mirrored by recently released United States policy documents. The 2005 Quadrennial Defense Review contains a shift away from a focus on traditional threats from large, institutional forces to irregular, disruptive and catastrophic threats. It calls for “defeating violent extremists; defending the homeland; helping countries at strategic crossroads; and preventing terrorists and dangerous regimes from obtaining weapons of mass destruction”.²⁰ Only the second of these (or, to a limited degree, the last) would seem to offer a role for old style nuclear deterrence. *What is the relevance to the any UK nuclear successor system of this reduction in the salience of nuclear weaponry in the overall US defence posture?*

38. This trend can already be seen in UK defence planning, where UK military capabilities are being justified in terms of the specific role that they can play in a range of military activities to be performed in a limited range of geographical areas—nuclear weapons are the sole exception.²¹ As a result, a disconnect is emerging between the resources necessary to enable the UK military forces to carry out their contemporary and future roles in respect of nuclear counter-proliferation and people’s wars, and the current nuclear capabilities designed to deter surprise disarming attacks and inflict unacceptable damage on an enemy. *Should a UK nuclear capability designed for “industrial war” be replaced by a similar one in 2025, or should the resources needed for this role be diverted to military capabilities more appropriate for an age of “people’s war”?*

Which areas of the world will be zones of peace and which of conflict—and how will the UK relate to them?

39. In the space of 15 years Europe has been transformed from a zone of military friction and potential nuclear war into a zone of peace. Political agreement and economic, social and political integration, allied to a lack of potential external security threats to the west and north, have raised profound questions about the military role the UK needs to be able to play in the next 50 years in both an internal European context and an external one.

40. Currently, it is difficult to see any significant security threats to the UK homeland arising in its immediate geographical vicinity—unlike the situation in which its nuclear forces were first developed. Rather, the armed forces are likely to be operating on the east or southern peripheries of Europe; to prevent nuclear proliferation; and to stabilise zones of conflict in areas where Europe has economic or resource interests (ie East and South Asia, and the Middle East and the Gulf, as well as Africa). This line of thought suggests that if UK nuclear capabilities were necessary to support them they would need to have a global reach through being highly mobile and have integrated logistics. Again, *is it desirable for a replacement UK nuclear force to be able to support its conventional intervention forces and to have a global reach? And although deterrence between states now appears to be obsolete, would the situation change if states outside Europe acquired an ability to target the UK with long-range nuclear delivery systems?*

41. Such a force may also need to be sufficiently autonomous to operate within different “coalitions of the willing”, be they US, European or “other” led. A decision to acquire and sustain such a nuclear force begs a wider question: to what extent is it desirable for the UK Government to move into an entirely new theatre of nuclear operations, where the pre-emptive deployment (and even use) of nuclear weapons may become an integral part of military planning and operations? Such a move may heighten the incentives for regional powers to proliferate to defend themselves against such deployments, and lead to the use of visible offensive nuclear deployments in force projection and war-fighting, rather than as deterrent and political weapons. *Is such a change in UK nuclear doctrine desirable and capable of being implemented at an acceptable cost (including opportunity cost)?*

What Targets would the UK Government Choose to Threaten with Its Nuclear Weapons in the 21st Century—and how much Support would they Receive from the UK Population in doing so?

42. In the early 1960s, Sir Robert Scott, the PUS in the MoD, argued that identifying the targets the UK would want to destroy if military action was to occur was the most useful way of considering what weapon systems would be required over the next 20 years.²² The service chiefs and senior civil servants agreed that focusing decision-making on the fundamental question of how many Soviet cities needed to be destroyed for the UK nuclear force to be credible was the only way to decide “how much was enough”? If this methodology were to be applied to the issue of Trident replacement, it would mean asking *what targets would a 21st century UK government, but more significantly the UK population, be willing to see destroyed with nuclear weaponry?*

43. If the targets are to be terrorists, then where might nuclear weapons be detonated in the “war on terror” without killing civilian non-combatants? If they are to be used against the armed forces of hostile nation-states in regions other than Europe, then will any UK government be willing to accept responsibility in the UN and elsewhere for the huge numbers of civilian deaths resulting from such usage? Considering the

²⁰ Quadrennial Defense Review Report, US Department of Defense, 6 February 2006. Available from: <http://www.defenselink.mil/qdr/report/Report20060203.pdf>

²¹ “Annex: Determining the Force Structure”, Delivering Security in a Changing World: Future Capabilities, Cm 6269, Ministry of Defence, July 2004. Available from: <http://www.mod.uk/NR/rdonlyres/147C7A19-8554-4DAE-9F88-6FBAD2D973F9/0/cm6269—future—capabilities.pdf>

²² Sir Robert Scott to Harold Watkinson, “Strategic Deterrent Policy”, February 1962, National Archives, DEFE 7/2143.

damage caused to the UK political system by the invasion of Iraq—in terms of trust of government, the engagement of the citizen and views of the alliance with the United States—will future UK governments be self-detected from the use of nuclear weapons by the potentially disastrous effect on the UK body politic of the human casualties involved?

44. Possible scenarios where nuclear weapons might be used on grounds of security are ultimately at the heart of any UK debate because nuclear weapons are qualitatively different from all other types of weapon. A fact masked by most analysis of the value of nuclear deterrence and the need for a deterrent is that most nuclear weapons are designed to destroy a huge target area in one certain blow. To refuse to discuss the consequences of use is to refuse to discuss the issue of Trident replacement at its most fundamental level.

45. Potential use is an issue that policy-makers have steered away from in the past on the grounds that deterrence sought to avoid conflict. But if the UK is moving into a world where traditional concepts of nuclear deterrence are largely irrelevant for reasons described above, *are the main grounds for arguing for the continued possession of nuclear weapons to be one of the utility of nuclear weapons in destroying potential targets, rather than in a deterrent role?*

46. At the height of the Cold War, UK government planners believed that the UK population would only support the use of nuclear weapons in conditions where the security of the British Isles was directly threatened. It seems even less likely that the current UK population would (if consulted) be more amenable to its use unless in response to a direct threat or use against UK territory or its perceived vital interests—unless it had become fully integrated into a wider EU entity. Moreover, the UK government has accepted a detailed legal commitment about the circumstances in which nuclear weapons *would not* be used through UNSC 984 of 1995.²³ Under what circumstances *do UK nuclear weapons have national utility if their deterrent capability appears to be restricted to a mainly extra-European role, and if their scope for use is hedged around with legal commitments and the uncertain reactions of the UK public in a world of transparency created by access to a global media?*

The Timing of a Decision

47. Given the current and future uncertain strategic environment, a key factor is when critical decisions on the UK's future nuclear capability will have to be taken. A range of technical factors will dictate this. Although taking more time before making a decision will not necessarily lead to any clarification of the future security environment, it is unlikely to be a significant disadvantage. The luxury of additional time is that it would allow a deeper analysis of the political, military and economic factors and the complex cost-effects judgements involved.

48. Delaying a decision, if it was done consciously and visibly in order to allow a set period of time to elapse for the UK to explore one or more disarmament/arms control initiatives influencing the size and nature of the ongoing UK nuclear capability, would allow the UK to go some way towards shaping the strategic environment against which the UK Trident successor decision would eventually be taken. It would also lessen any negative impacts of that decision upon the global nuclear non-proliferation regime. Moreover, it is not impossible that the life of the existing force could be extended (eg by altering its operating arrangements or renewing only time limited elements of the force) to allow all these possibilities to be fully explored, and thus important aspects of the future strategic environment clarified.

49. At the same time, in order for an effective public and Parliamentary debate to take place, there is a need for a clearer and more detailed description from the Government of its perception of the potential future threat environment based on the best current intelligence assessments available to it. This could take the form of a summary of the latest estimates of the future potential strategic and sub-strategic threats based on clearly identified assumptions about foreign, military and economic policy objectives. Such a move would require a release of intelligence information no more significant than that routinely provided to the US public on an annual basis.

9 March 2006

Memorandum from Professor Colin S Gray

1. It is usual in a defence debate for there to be weighty arguments on both, or all, sides of an issue. The issue of Britain as a nuclear weapon state (NWS) is unusual in that all of the merit lies on one side of the argument, the case for Britain remaining a NWS.

²³ This notes the following security assurance given unilaterally by the UK in 1995 to all NPT non-nuclear weapon states. “The United Kingdom will not use nuclear weapons against non-nuclear States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons except in the case of an invasion or any other attack on the United Kingdom, its dependent territories, 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-nuclear weapon state in association or alliance with a nuclear-weapon state”. Currently, the only states not covered are China, (DPRK?), France, India, Israel, Pakistan, Russia and the United States.

2. This short paper argues that the case for Britain retaining a nuclear capability is an overwhelming one. It argues also that in cost-benefit terms, the cost is modest while the benefits are potentially priceless.

3. The case for a British, or, to be honest, a US-enabled, British nuclear deterrent, has eight components, the first of which is by far the most weighty. In summary form, Britain should remain nuclear armed because:

- (i) The future is deeply uncertain, it is not “foreseeable”.
- (ii) Nuclear weapons offer the ultimate protection of core national values (survival, independence, way of life).
- (iii) Our denuclearisation would be completely irrelevant to the prospects for non proliferation.
- (iv) Conventional weapons cannot substitute fully for the political and military effects of nuclear weapons.
- (v) If British forces deploy to regions that contain nuclear weapon states, they need to be supported by a British nuclear arsenal.
- (vi) Denuclearisation would be interpreted correctly abroad as a gratuitous self-demotion in global diplomacy.
- (vii) A nuclear capability might offer Britain an alternative to accepting conventional defeat, should some expedition go very seriously wrong.
- (viii) It is necessary to retain Britain’s nuclear infrastructure. That is a wasting asset and it would be hard to restore once it had been run down. A denuclearised Britain could well realise it had made a terrible mistake and would want to rebuild its nuclear capability, or option at least.

4. Assumptions drive arguments. Here are mine:

- Nuclear weapons are here to stay, like gunpowder they, and the knowledge of how to build them, will always be with us.
- The future cannot be foreseen. In 2006 we can no more predict the strategic history of the 21st Century, than our predecessors in 1906 could predict what the 20th Century would bring.
- What we do know about the 21st Century is not encouraging. We have a modernising China that is on a collision course with the USA. We have a dissatisfied Russia which has large irredentist claims on virtually all of its frontiers, and has a military doctrine emphasising nuclear escalation. Also, we know that climate change is underway, and that it has the potential to explode all civility in international relations. And we know that there will be further cases of nuclear proliferation. Nuclear non-proliferation is a lost cause, but it is one that we can try to lose slowly and survivably.
- There are no moral issues involved with British nuclear weapons. Nuclear weapons exist. States acquire them for reasons that seem persuasive. Moral attitudes are simply irrelevant.
- Nuclear disarmament is a nonsense. Everyone is for it, in principle, but noone will do it. Furthermore, an agreement on complete nuclear disarmament is utterly non negotiable. It could never be verified. If verification did not matter, because we all trusted each other, we would not need a disarmament treaty.
- Unilateral nuclear disarmament by Britain would be a self-inflicted diplomatic and strategic wound offering zero rewards. Each seriously potential nuclear weapon state will have its own reasons for wanting nuclear weapons. Whether Britain retains or abandons its semi-independent nuclear arsenal would be entirely irrelevant.
- Strategically viewed, a NWS is different from a non-NWS. NWS are treated with greater care and their enemies are obliged to exercise great caution in upsetting them. It is prudent for Britain to go into the unknown future as just such a state.
- Financial assessment of cost and benefit of NWS is, of course, impossible to make. We can price nuclear forces, we can specify some alternative military uses for that money, but what financial value do we place upon the literally unique strategic and political consequences of being nuclear armed? A few more conventional arms may be useful, no question. But, a strategic nuclear force might save a British or Allied military expedition from disaster, or even Britain itself from blackmail or assault by WMD. Price that, if you can!

5. I do not know, and cannot know, the value to Britain of it remaining a NWS. Opponents of Britain remaining nuclear armed are similarly ignorant. There are no experts on the unknowable future. The first rule of statecraft is prudence, do not take avoidable risks. Especially is that true if the defence insurance is modestly priced and is readily obtainable.

6. If I am wrong, and Britain’s nuclear weapons are of little strategic utility, then we will have spent some money prudently, but unnecessarily. Our nuclear armament certainly will not have worsened our security condition. But if I am right, then Britain will come to bless the wisdom with which it decided to retain its nuclear crown jewels, the ultimate guarantor of our survival and independence.

Memorandum from Dr Bruno Tertrais

1. As the United Kingdom begins a national debate on the future of its national deterrent, the existence of the French nuclear deterrent matters to the UK. It is part of the strategic context of future UK decisions. France intends to maintain nuclear weapons well into the 21st century.

2. France and the United Kingdom are the only two nuclear powers in Europe. Any decision by one country or the other to get rid of its nuclear deterrent would leave the other in a position of “monopoly” in Europe. Also, France and the United Kingdom have nearly-identical conceptions of nuclear deterrence. Evolutions on one side of the Channel are thus inevitably of interest to the other side.

FRENCH RATIONALES FOR MAINTAINING A NUCLEAR DETERRENT

3. Three major rationales are put forward by French leaders to retain and continue to modernise the country's nuclear force.

4. One is the “life insurance” function. French political leaders realise that the world can change rapidly. They believe that it is impossible to exclude the emergence of a new major threat to Europe at the horizon of 15–30 years, and deem it prudent to maintain a national nuclear deterrent. They insist that a major threat could perhaps one day come from far away. Then-Prime Minister Jospin indicated in 1999 that French deterrence should be able to counter any threat, “even a distant one”. This was interpreted as signifying that the build-up of nuclear arsenals in Asia was deemed a matter of concern for Europe. The rise of China is considered by some analysts as deserving attention. Some in France believe that the capability to deter China might be needed in the future. For instance, Beijing could try to prevent European support for the United States in the course of a crisis in Asia, or European participation in a Western intervention in a region of strategic interest. In his January 2006 speech, Chirac emphasised that the rise of nationalisms and the competition between poles of power could give rise to new major threats.

5. A second rationale is to guarantee that no regional power will be in a position to blackmail or pressure France with weapons of mass destruction (for instance at the occasion of a military intervention in the Middle East or in Asia). In this regard, the prevailing opinion in Paris has traditionally been that nuclear deterrence is a better and safer choice than missile defence. Starting with the 1994 White Paper, Paris acknowledged that its vital interests could be threatened by regional powers. This evolution was confirmed under Chirac. The kind of scenario that has French officials worried is one where, for instance, a country tries to block military intervention by threatening to strike the national territory. There is the fear that ballistic and nuclear proliferation could continue despite the best efforts of the international community. No specific countries of concern are identified in French public discourse, but Iran is clearly among them.

6. A third reason for maintaining nuclear deterrence is to ensure that Europe could one day benefit from the same kind of strategic autonomy France has been able to enjoy since the 1960s. In the absence of a single political authority in the European Union, the French are not ready to share the decision to use nuclear weapons with partners and allies. Nevertheless, they are keen to “transpose” their concept of strategic autonomy through the possession of nuclear weapons to the European Union.

FRENCH NUCLEAR POLICY

7. The French nuclear deterrence covers French “vital interests”. The 1994 White Paper defined it as follows: “the integrity of the national territory, including the mainland as well as the overseas departments and territories, the free exercise of our sovereignty and the protection of the population constitute the core [of our vital interests] today”. The mention of “sovereignty” in what was to become the benchmark public language on this issue is noteworthy: it suggests that the French authorities believe that nuclear deterrence can help resist to blackmail or political pressure by another country. The limits of vital interests remain vague, to avoid an adversary being able to calculate the risks inherent in his aggression, because the scope of such interests evolves and can change over time, and because it would be up to the President to decide whether or not these interests are at stake. In his January 2006 speech, Chirac confirmed that allied territory could be part of vital interests, and also stated that the safeguard of strategic supplies could not be excluded from the scope of vital interests.

8. According to French doctrine, an attack on vital interests would bring on a nuclear response in the form of unacceptable damage regardless of the nature of the threat, the identity of the State concerned or the means employed (conventional, chemical, biological, nuclear or other).

9. France's nuclear deterrent is for States only. Chirac reaffirmed this a few weeks after the September 11 attacks. Nevertheless, he was also keen to emphasise in his January 2006 speech that a State using terrorist means against vital interests would be subject to nuclear reprisals.

10. France has consistently rejected the adoption of a “no first-use” posture. This has been manifested by reservations attached to the Negative Security Assurances conferred in 1995 by France, as by other official nuclear powers, to non-nuclear State Parties to the Nuclear Non-proliferation Treaty. Two main arguments are set forward. Paris sees nuclear retaliation as being consistent with the right to self-defence recognised by Article 51 of the United Nations Charter, thus prevailing in case of aggression over

commitments of non-use made in peacetime. France asserts that countries that do not respect their own non-proliferation commitments should not expect that the NSA would apply to them, thus implicitly subscribing to the norms of “belligerent reprisals” that also underpin US and UK doctrines.

11. France’s deterrent rests on three components: four SSBN carrying a maximum of 48 missiles and 288 warheads; three squadrons of Mirage-2000 equipped with air-launched missiles; and one flotilla of Super-Etendard on the Charles-de-Gaulle aircraft carrier equipped with air-launched missiles. According to open sources, France now has less than 350 warheads.

12. All systems are currently being modernised. The fourth and final new-generation SSBN will enter service in 2010. (The first one entered service in 1997. It is scheduled to get into retirement around 2030.) The Rafale aircraft with ASMP-A missiles, which will be the first missile equipped with the first “post-nuclear testing generation” warhead (TNA), will start being introduced in the force in 2007. A new SLBM (M51) will be introduced in 2010, along with the fourth new-generation submarine. By 2015, the M51 missiles will start being equipped with the new generation warhead (TNO).

13. French nuclear planning and targeting would be adjusted to the threat. To deter a major power, France would rely on the threat of “unacceptable damage of any kind”. To deter a regional power, France would rely on the threat of destroying “centres of power”. The option of using reduced SLBM payloads has been introduced in recent years. The French deterrent has also been adapted to include the option of an Electro-Magnetic Pulse (EMP) strike.

14. France is traditionally cautious about territorial missile defence, for both conceptual and budgetary reasons. Nevertheless, Chirac’s January 2006 speech signalled a new pragmatism in this regard: he stated that missile defence could be a “complement” to nuclear deterrence, thus implicitly paving the way for French participation in a future NATO missile defence system.

15. Having significantly reduced its nuclear arsenal since the end of the Cold war and dismantled several key nuclear installations, and maintaining its force at a level of “sufficiency” (a French expression equivalent to “minimum deterrent”), France considers that its nuclear policy is consistent with its international legal obligations, including Article VI of the NPT.

DIFFERENCES BETWEEN FRANCE AND THE UNITED KINGDOM

16. Sir Michael Quinlan once wrote that there were two conceptions of nuclear independence: the British one and the French one—the latter being much more demanding and thus expensive than the former. France’s deterrent remains independent in terms of procurement, planning, and operations. France is the only NATO member which does not participate in the Nuclear Planning Group. There is, however, limited nuclear cooperation with both the UK and the US.

17. There is little debate in France about whether or not the national nuclear deterrent force should be retained. This in spite of the fact that the French force is much more expensive than the British one. There are three reasons for this difference between the British and the French context. One is that nuclear weapons are still very much associated in the French national psyche with independence from the United States. There has never been a strong antinuclear movement in the country. Another reason is that the French modernisation cycle is spread over time, and does not easily lend itself to any critical decision point—whereas the UK has to make key political decisions with regard to the replacement of its submarine-launched missiles. A third reason is that there is near-absolute presidential control on nuclear decisions. One might say that in the nuclear realm, France is much more of a “monarchy” than the UK is.

18. British and French doctrines are nearly identical. Both countries insist that they should have limited nuclear options in addition to massive strike options. But France’s concept of a “final warning” is slightly different from the UK concept of “sub-strategic use”. The final warning is the idea to threaten an adversary who might have underestimated French resolve to defend its vital interests, or misjudged the exact limits of these interests, with a single limited strike on military targets. The final warning concept is a compromise between the need to avoid the “all or nothing” dilemma and the equally pressing need, in French minds, to avoid adopting a flexible response-type concept—both options judged not credible. The final warning could not be repeated, and would be followed by a massive strike if the adversary persisted. It is judged still relevant in the new strategic context, given that a regional or distant adversary might be more prone to misjudge French determination to safeguard its vital interests than the former Soviet Union would have been.

19. Another idea particular to France is the idea that since 1996 all nuclear weapons are considered “strategic”. The idea is that any nuclear weapons use would be a sea change in the nature of the conflict, and therefore would be of a strategic nature.

CURRENT CHALLENGES

20. While there is a consensus in Paris that the decision to use nuclear weapons could never be shared, there is also an openness to discuss nuclear policy issues with EU members should they be interested in the future. In any case, Paris considers that its nuclear force already has a European role, since French “vital interests” are increasingly intertwined with those of its neighbours.

21. Many in the armed forces and in Parliament criticise the heavy burden of nuclear expenses in the defence budget. Nuclear programmes make up for 20% of the equipment budget. On average, the planned nuclear budget for the period 2003–08 is €2.82 billion per year. Still, the French nuclear budget has never been so low, both in terms of proportion of the defence expenditure and share of the national budget and GDP.

22. However, the memories of the Cold war fade away, a new generation of political leaders emerges, and the number of military well-versed in nuclear matters rapidly decreases. Since it is prudent to assume that defence budgets are now structurally constrained, maintaining the French nuclear consensus will require political leadership as well as good communication skills to explain why the choice that was made in the late 1950s is still valid today.

THE FUTURE

23. The next French president will certainly be tempted to further reduce the nuclear expense. But any significant reduction would imply critical political choices. A decision to cancel the fourth new-generation SSBN would imply the termination of the current policy of permanence of sea of at least one SSBN. A decision to scale down the “simulation” program (designed to ensure the reliability and safety of warheads in a no-test environment) might encroach on the ability of France to independently maintain a viable deterrent for the foreseeable future. A decision to terminate the airborne component of the French nuclear deterrent would mean a significant loss of flexibility in planning and targeting.

24. Four factors will weigh on the next French president’s thinking on nuclear deterrence issues, including budget and procurement. (1) The nature of the potential threats, from both major and regional powers. (2) The political landscape in Europe, which may or may not allow for a greater explicit European role for the French nuclear force. (3) The general French economic and budgetary situation. (4) The relationship with close nuclear allies (Would increased cooperation with allies allow for savings?) (5) The decisions taken by the United Kingdom on the future of its nuclear deterrent.

25. There has been a renewal of French-British nuclear cooperation since the early 1990s, notably through the creation of the Joint Nuclear Commission, the development of staff talks, and the two public joint statements issued at the Chequers (1995) and Le Touquet (2003) bilateral summits. However, the nature and scope of existing UK-US agreements in the nuclear field may be an obstacle to further technical cooperation.

17 February 2006

Memorandum from Greenpeace UK

1. Greenpeace welcomes the Secretary of Defence, Dr John Reid’s, promise of a full and open national debate on Trident renewal. Such a debate can only take place if the Government provides Parliament, independent experts, civil society groups, and citizens with its case studies of the financial, military and foreign policy consequences of building a new nuclear weapon and of alternative non-nuclear strategies. To date Greenpeace Freedom of Information requests for such case studies have been refused.

2. This makes no sense at a time when, as the Government has stated in its Strategic Defence Review, there is no direct military threat to Western Europe and it does not foresee the emergence of such a threat. It also makes no sense as such studies do not concern current military operations. The large number of Members of Parliament from all political parties signing Early Day Motion 1113 shows that there is a strong sentiment in the House of Commons that these case studies should be released. In order that the House of Commons Defence Select Committee can make a full assessment of the case for and against replacing Trident by a new nuclear weapon system, the Government should provide the Committee with all relevant case studies before it begins its investigations so that it can ask the relevant questions and call on expert witnesses to assess these studies.

3. Since its beginnings in 1971, Greenpeace has campaigned for practical measures to end the nuclear threat, such as a ban on nuclear weapons testing. In that time, half the world’s nuclear weapons have been dismantled, and there has been a *de-facto* end to nuclear testing since 1998. The post-Cold War development and deployment of Trident threaten this progress and is destabilising. The development and deployment of a new nuclear weapon system by the UK would make an already bad situation worse. It would give states across the world an excuse to upgrade their own nuclear weapons or to acquire their first atomic bomb.

4. To appreciate why this is the worst possible time to go ahead with the development of a new nuclear weapon, a look at Britain’s existing Trident nuclear weapon system. Trident is a globally destabilising weapon for several reasons.

5. *Trident threatens states across the globe.* Trident was designed so as to give the US the ability to carry out a nuclear first strike which would destroy Soviet missiles before they could be fired from their silos. This led to the development of a high-speed, first strike, weapon with global reach. A Trident submarine patrolling in the Atlantic can hit targets across the Middle East, Russia and China. The net result of

Trident's exceptional capabilities was that its impact immediately exceeded its original anti-Soviet mission specification—making countries across the globe potential targets of a devastating first strike. Moreover, the addition of the UK Trident fleet to the US one has increased the Trident system's globally destabilising effect. The disposition of the US and UK Trident fleets, and the extraordinary range of the Trident D5 missile, means that every day the USA and the UK project massive nuclear force into the Middle East—providing states such as Iran with a not unjustifiable argument for acquiring their own nuclear weapons. The recent shifting of part of the US Trident fleet to the Pacific so that the major part is now based there is especially short-sighted. The relatively small number of Chinese land-based intercontinental ballistic missiles could be easily destroyed in a surprise attack, meaning that the new threat from Trident gives China a strong incentive to upgrade its nuclear arsenal.

6. *Trident increases the danger of accidental nuclear war.* Even if the UK never intended to use Trident aggressively, its acquisition of a weapon with the capability to take part in a US-led first strike against the Soviet Union made nuclear war more likely. Through increasing the capacity of the USA and the UK to carry out such a strike, it added to the pressure on Soviet commanders who, whenever they received warning that a nuclear surprise attack might be underway, had only minutes to assess whether the alert was genuine or (as frequently happened) a false alarm, and decide whether to fire their missiles or face losing them. In a crisis and time of high alert, Russian and Chinese commanders would face the same dilemma today.

7. The end of the Cold War made a nonsense of the UK Government's official rationale for Trident—deterring a Soviet nuclear attack on UK territory. Since then Trident has been progressively remade so as to enhance its capacity to be used as an instrument of coercion against non-nuclear states—a process which has only added to its destabilising effect.

8. The problem facing US and British nuclear strategists is that they can only use their nuclear weapons as instruments of coercion if the state being coerced actually believes that they might use them. This is at present an incredible prospect in the UK, because the public is overwhelmingly opposed to the first use of nuclear weapons and to their use against non-nuclear states. In a September 2005 Greenpeace/MORI poll looking at British public opinion, 87% were against using nuclear weapons against a non-nuclear state, and 77% were against the first use of nuclear weapons. Such actions would also be completely contrary to international law, which absolutely prohibits the use of nuclear weapons as instruments of coercion and the first use of a nuclear weapon against a non-nuclear state.

9. To overcome these barriers of illegality and public opinion, proponents of the continued development of the US and UK nuclear arsenals have developed two tactics:

10. *First, presenting some non-nuclear states as constituting an imminent threat which can only be dealt with through the use of nuclear weapons.* The first step has been to try to convince the public that their very existence can be immediately threatened by distant non-nuclear states. This has been done by suggesting that by “rogue” states armed with chemical or biological weapons pose an immediate threat to the US and UK population and by arguing that we have “vital” interests that are vulnerable to attack by such states, with catastrophic results. Most strikingly, in its 1998 Strategic Defence Review, after stating that “there is today no direct military threat to the United Kingdom. Nor do we foresee the re-emergence of such a threat,” the Government developed a new rationale for Trident. It stated that the size of Britain’s Trident force would now be determined by what was “necessary to deter any threats to our vital interests”—according to the Strategic Defence Review “vital interests” means UK trade, investments, and access to resources (especially Middle Eastern oil).

11. *Second, attempting the impossible task of making Trident a weapon which could be used against military or economic targets without the death of (many) civilians.* This has involved research and development to make Trident more accurate, the deployment of missiles with single warheads, and a contact fuse (which enables a smaller warhead to be used to destroy a hardened target). The UK Government statements suggest the UK may already have adapted its Trident warhead to give a smaller explosion—effectively transforming Trident into a “mini” nuclear weapon. This work has gone hand in hand with the development of targeting technologies which increase Trident’s ability to hit a wide range of targets across the globe as soon as their locations are known (See Annex A).

12. The UK’s Trident system is not independent—in fact it is entirely dependent on US technical support (See Annex B). It is inconceivable that the UK would use Trident without US permission. The only way that the UK is ever likely to use Trident is to give legitimacy to a US nuclear strike.

13. There are precedents for the US using UK participation in this way for conventional military operations. The principle value of the UK’s participation in the recent Iraq war was to help legitimise the US attack. Likewise the principle value of the firing of UK cruise missiles as part of the larger US cruise missile attack on Baghdad was to help legitimise the use of such weapons against urban targets.

14. It would be a grave mistake for the UK to replace Trident with a new nuclear weapon. We have already given states across the world an incentive to upgrade their nuclear arsenals or to acquire the atomic bomb for the first time through upgrading and continuing to deploy Trident at a time when the Cold War is over and, as the Government has stated in the Strategic Defence Review, there is no direct military threat to us. The development of a new nuclear weapons system would provide a further incentive for states to upgrade their nuclear arsenals or to acquire the bomb for the first time. In particular, while the UK

Government might claim that this was for the defence of UK territory against nuclear attack, other states would look at how we have upgraded the Trident system and wonder whether we were taking a further step in developing more “usable” nuclear weapons.

15. The development of a new nuclear weapon would also strike at which stop the spread of nuclear weapons and are vital to the achievement of nuclear disarmament, the Nuclear Non Proliferation Treaty (NPT) and the Comprehensive Nuclear Test Ban Treaty (CTBT). Both Treaties are already on the critical list. The US and the UK’s development of more “usable” nuclear weapons and strategies which involve using nuclear weapons against non nuclear states to protect “vital interests” is directly contrary to the deal at the heart of the NPT, and strengthened in the 1995 and 2000 NPT Review Conferences, whereby the declared nuclear weapon states are to carry out nuclear disarmament and non nuclear states are not to acquire nuclear weapons. The CTBT, for its part, has not entered into force but has contributed to a de facto end to nuclear testing since 1998. The danger is that the continued deployment and development of the Trident system by the US and the UK will lead other states to ask, why should we continue not to test when the US and the UK are continuing to develop their Trident system and make it more “usable” without testing?

16. The development of a new nuclear weapon would be against the UK’s legally binding commitment under the NPT to take progressive steps to disarm its nuclear weapons, and while it may not be against the letter of the CTBT, it would strike at the heart of that Treaty. Other states would ask, if the UK is upgrading its nuclear arsenal then why should we respect the de facto ban on nuclear testing? Equally seriously, it may not be possible to develop a new nuclear weapon without eventually having to test it and this would almost certainly kill the CTBT completely.

17. This is a critical time. The UK played a leading role in strengthening global cooperation to reduce the nuclear danger after the end of the Cold War. Most vitally the UK played a major role in the negotiation of the CTBT in 1996. The impasse at the 2005 NPT Review Conference show that there is now a danger that global cooperation to deal with the nuclear threat may now unravel. To emphasize the danger, the UN Secretary-General, Kofi Annan stated on 9 August 2005: “We are witnessing the continued efforts to strengthen and modernise nuclear arsenals. We also face a real threat that nuclear weapons will spread. Without concerted action we may face a cascade of nuclear proliferation.”

18. At such a time it would be height of folly for the UK to now build a new nuclear weapon system. Greenpeace urges the Government to uphold its promises and legal obligations under the NPT to reduce, and then eliminate, the role of nuclear weapons in its security policies, by:

*Firstly, taking Trident off patrol and storing its warheads in an internationally monitored facility.
Secondly, immediately abandoning preparations to build a Trident replacement;
and Thirdly, working with European partners and other non-nuclear states to restart the multilateral nuclear disarmament process.*

19. This is a strategy which members of all political parties can unite behind: It would provide reassurance to those who believe that it would be unwise to be completely without a nuclear option while other countries continue to have nuclear weapons. Moreover, as the 2005 Greenpeace/MORI poll has shown, such a policy would be popular because it would respond to the public’s strong conviction that we should not use nuclear weapons first or use them against non-nuclear states. These moves would send a clear and unambiguous message to Washington that it is absolutely opposed to the current US doctrine of pre-emptive use of nuclear weapons against non-nuclear states. It would make clear that the US could not call on the UK to legitimate a US nuclear attack by participating in it. Furthermore, it would make clear the UK’s commitment to the NPT and the CTBT and put us at the forefront of the agenda of multilateral disarmament and peace-building which alone can ward off the return of a Cold-War type situation, in which we as a nation are once again threatened by thousands of nuclear weapons.

20. Greenpeace would welcome the opportunity to give further oral evidence to the Committee on the future of the strategic deterrent.

Annex A

MAKING TRIDENT MORE USABLE AND MORE THREATENING—TECHNICAL TRANSFORMATION

21. The years since the end of the Cold War have seen major technical changes to the Trident system. These have been partly driven by the US nuclear weapons laboratories, whose current annual budget of \$6 billion massively exceeds the Cold War average of \$3.8 billion.

22. These changes are often justified by the need to maintain the safety of the stockpile, and also to ensure that, if used, the warheads would be less indiscriminate (they would destroy military and political targets while killing fewer civilians). The latter point represents an attempt to mollify public hostility to any first strike against a non-nuclear state.

23. The changes made also mean that the upgraded Trident can better fit the USA’s and UK’s new post-Cold War objectives: specifically, it can hit targets across the globe and be rapidly retargeted at mobile missiles and other shifting targets. The key changes to the UK Trident system are as follows:

24. *Extending the number of targets and rapid retargeting.* The US Submarine-Launched Ballistic Missile Retargeting System (SRS) enables Trident submarines “to quickly, accurately and reliably retarget missiles to targets”, and allows “timely and reliable processing of an increased number of targets”. The system allows the USA rapidly to produce a nuclear attack plan using a small number of Trident warheads in a regional operation. The UK has purchased the fire control system, used to assign targets to the warheads on the submarines, at the core of SRS, and this has been installed in UK Trident submarines.

25. *Single-warhead missiles.* In 1993 Malcolm Rifkind argued that a hostile leader might gamble that the UK would never use Trident to secure its vital interests because of the public outrage that would follow a full-scale Trident attack. He therefore recommended the development of a “sub-strategic” Trident. This “sub-strategic” mission was first deployed on HMS Victorious in December 1995 and involved fitting some missiles with only one warhead.

26. *Low-yield warheads.* UK Trident may also have been made more “usable” by reducing the yield of the warheads. On 19 March 1998 the Secretary of State for Defence, Mr George Robertson, in reply to question by Ms. Roseanna Cunningham MP, stated that “The UK has some flexibility in the choice of yield for the warhead on its Trident missile.” This flexibility may be intended to help fulfil the sub-strategic mission. A lower yield can be achieved by detonating only the atomic bomb part of the weapon, making it an atomic fission weapon rather than a hydrogen fusion weapon.

27. Further developments now under way in the US are also important. The close technical cooperation between the UK and the US mean that it is very likely that what is being developed in the US will later be adopted by the UK.

28. The US nuclear laboratories are continuing to develop the Trident system in ways that facilitate its use against targets across the globe. In 2005 the US Treasury allocated \$1.7 billion for the development of the Trident D5 missile alone. Programmes under way include:

29. *Reducing the yield of the W76 warhead.* There appears to be a current programme to reduce the size of the nuclear explosion produced by the US W76 warhead. According to a July 2005 report in the Santa Fe *New Mexican* newspaper, the W76 is being modified so as to reduce its yield by 40% to 60 kilotonnes.

30. *Improving the W76 warhead’s ability to destroy hardened targets.* If Trident’s warhead could be made to explode close to the ground, then a low yield warhead could be used to destroy hardened targets such as missile silos. To achieve this the USA is seeking to give the W76 warhead a radar arming, firing and fusing mechanism similar to those fitted to the W88, which already has such a capability.

31. *Improving the D5 missile’s accuracy.* If Trident was made more accurate, then a lower-yield warhead could be used to destroy a wide variety of targets. Recent years have seen a number of projects underway to give Trident “GPS-like accuracy” (about 10 million). The idea is to use GPS and/or inertial guidance to steer a manoeuvrable re-entry vehicle to its target. Manoeuvrability will be achieved either by adding controllable flaps or a moveable inside weight to the re-entry vehicle. Lockheed Martin has also sought to develop the idea that a super-accurate Trident could be used with a conventional warhead to destroy hardened targets.

32. These programmes are already becoming reality. The US Congress withdrew funding from the Navy’s programme to improve the D5 missile’s accuracy, but the Navy has been able to continue it using other funding, and in March 2005 the *USS Tennessee* carried out a test of a new re-entry vehicle with flaps and GPS guidance.

Annex B

UK’S TRIDENT SYSTEM NOT TRULY INDEPENDENT

33. Acquiring Trident gave the UK a greater nuclear weapons capability than it could ever have achieved on its own. This enhanced capacity, however, had significant consequences.

34. The fact that, in theory, the British Prime Minister could give the order to fire Trident missiles without getting prior approval from the White House has allowed the UK to maintain the façade of being a global military power. In practice, though, it is difficult to conceive of any situation in which a Prime Minister would fire Trident without prior US approval. The USA would see such an act as cutting across its self-declared prerogative as the world’s policeman, and would almost certainly make the UK pay a high price for its presumption. The fact that the UK is completely technically dependent on the USA for the maintenance of the Trident system means that one way the USA could show its displeasure would be to cut off the technical support needed for the UK to continue to send Trident to sea.

35. In practice, the only way that Britain is ever likely to use Trident is to give legitimacy to a US nuclear attack by participating in it. There are precedents for the USA using UK participation in this way for conventional military operations. The principal value of the UK’s participation in the recent Iraq war was to help legitimise the US attack. Likewise the principal value of the firing of UK cruise missiles as part of the larger US cruise missile attack on Baghdad was to help legitimise the use of such weapons against urban targets.

36. The most likely scenario in which Trident would actually be used is that Britain would give legitimacy to a US nuclear strike by participating in it.

37. The well-established links between the US Strategic Command (STRATCOM), in Omaha Nebraska and the UK's Permanent Joint Headquarters in Northwood, London would facilitate the planning of such attacks. In a crisis the very existence of the UK Trident system might make it difficult for a UK prime minister to refuse a request by the US president to participate in an attack.

38. The UK Trident system is highly dependent, and for some purposes completely dependent, on the larger US system. The assembling of information available in the USA, but kept secret in Britain, by John Ainslie in his 2005 report *The Future of the British bomb*, shows how extensive this dependency is (see table below).

39. The UK's dependency on the USA has operational significance. For example, the UK's reliance on US weather data and on navigational data provided by the US Global Positioning System (GPS) means that, should the USA decide not to supply this data, the capacity of the UK's Trident missiles to hit targets would be degraded.

40. Conversely, the close relationship between US and UK systems also means that the upgrades to the US Trident system have already been incorporated into the UK Trident system. The Royal Navy's adoption of the new US fire control system has most likely already improved its capacity to retarget its Trident missiles rapidly in order to hit a range of targets outside Russia—thereby adding to other states' concerns that they could be the target of a combined US/UK Trident strike.

<i>System</i>	<i>Degree of dependency</i>
<i>Warhead</i>	The UK warhead is a copy of the US W76 warhead.
Arming, fusing and firing system	This triggers the explosion. The model used in UK warheads was designed by the US Sandia Laboratory and is almost certainly procured from the USA.
High-explosive (HE)	This starts the nuclear explosion. The UK uses a different HE to the USA. Key explosives calculations for the US warhead cannot simply be duplicated so US labs assess the UK HE's long-term performance.
Neutron generator	This initiates nuclear fission. The neutron generator used in UK warheads is the MC4380, which is manufactured in the USA and acquired "off the shelf".
Gas reservoir	This supplies tritium to boost the fission process. It is most likely that the reservoir used in UK warheads is manufactured in the USA. UK gas reservoirs are filled with tritium in the USA.
Re-entry body shell	This is the cone-shaped body which contains the warhead. The UK purchases the Mark 4 re-entry body shell from the USA.
<i>The D5 missile</i>	The UK does not own its Trident missiles—they are leased from the USA. UK Trident submarines must regularly visit the US base at King's Bay, Georgia to return their missiles to the US stockpile for maintenance and replace them with others.
Guidance system	The Mark 6 guidance system used on the UK's Trident D5 missiles is designed and made in the USA by Charles Stark Draper Laboratories.
<i>Submarines</i>	UK Vanguard-class Trident submarines are UK-made, but many aspects of the design are copied from US submarines and many components are bought from the USA.
Navigation	The high accuracy of the Trident D5 missile depends on the submarine's position being precisely determined. This is achieved using two systems: GPS, which relies on satellites, and the Electrostatically Supported Giro Navigation System (ESGN), which uses gyroscopes. In both cases UK Trident submarines uses the same US system as the US Navy submarines. The USA has the ability to deny access to GPS at any time, rendering that form of navigation and targeting useless if the UK were to launch without US approval.
<i>Targeting</i>	Target packages are designed and formatting tapes produced on shore, then stored on the submarine—using US software at each stage.
Onshore targeting	The software installed in the computers at the Nuclear Operations and Targeting Centre in London is based on US models and is probably derived from the US Navy's Submarine Launched Ballistic Missile Integrated Planning System.
Weather and gravity data	The US Navy supplies local gravitational information and forecasts of weather over targets, both of which are vital to high missile accuracy, to US and UK submarines.

System	Degree of dependency
Fire control system (FCS)	Used to assign targets to the warheads on the submarines. UK submarines carry a slightly different model to that on US submarines. However, all the hardware and software used by the system is US-produced. The hardware is produced by General Dynamics Defense Systems. The contracts show that the UK uses similar, if not quite identical, software.
Management	British nuclear warheads are designed and made at Aldermaston near Reading. Aldermaston is part managed by the US corporation Lockheed Martin. Repairs to Britain's Trident submarine are carried out at Devonport, which is part managed by another US corporation, Halliburton.
Research and development	There is extensive cooperation between Aldermaston and America's nuclear weapon laboratories—Los Alamos in New Mexico and Sandia and Lawrence Livermore in California.
Testing	The W76 warhead was tested at the US nuclear test site in Nevada in the early 1990s. The UK has no test site of its own. The missiles are test launched from British submarines under US supervision at Cape Canaveral off the Florida coast. These tests are analysed by the Applied Physics Laboratory (APL) at Johns Hopkins University and by the Charles Stark Draper Laboratories.

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Memorandum from Dr Andrew Dorman

In publishing "Delivering Security in a Changing World: Defence White Paper" in 2003²⁴ Geoff Hoon, the then Secretary of State for Defence, confirmed that the decision surrounding the replacement of Trident would have to be addressed in the next parliament. In the meantime a contract to update and maintain the relevant infrastructure at the Atomic Weapons Establishment at Aldermaston was approved.²⁵

²⁴ "Delivering Security in a Changing World: Defence White Paper", Cm 6,041-I, (London: TSO, 2003), p 9.

²⁵ Geoff Hoon, House of Commons Parliamentary Debates, Statement on "Delivering Security in a Changing World: Future Capabilities", 21 July 2004, col 348.

Outside the official domain Professor Michael Clarke published a piece in *International Affairs*²⁶ in which he outlined the likely issues before policy-makers. More provocatively Michael Portillo, the last Conservative Defence Secretary, queried the continuing relevance of the nuclear deterrent in a piece published in *The Sunday Times*.²⁷ Apart from these relatively little has emerged about the current state of British nuclear thinking and there has been virtually no wider debate.

Once the debate begins there is a danger that it will solely focus on the traditional argument about the morality of nuclear weapons and whether the possession and potential use of such weapons is legal. Some of those who have spoken in favour of retention of such a system have spoken of replacing the existing Trident system with a similar deluxe version again based on submarines. Whilst the costs of such a system are not known, figures between £20–40 billion have been quoted. This is not an insignificant sum and this paper argues that in reviewing the issue of replacing the existing Trident force the impact on defence, wider government and the country also needs to be considered. Such a decision is not cost neutral, a price will have to be paid elsewhere. Put another way, as the defence debate has moved towards aiming towards effects based operations and effects based warfare what effect does the United Kingdom want to achieve and where does a nuclear capability fit in. In other words are there now better alternatives to achieving the foreign policy aims of the United Kingdom? And will the cost associated with acquiring such a system have such an adverse impact in terms of our other capabilities that it is worth changing the parameters that currently surround the deterrent?

The original thinking behind the creation and maintenance of the British deterrent was twofold. Firstly, it was seen as the only way to counter-balance the threat posed by the Soviet Union. Indeed, when in 1980 the decision was taken to replace the previous strategic nuclear system the rationale used to acquire the Trident system was based on the need to satisfy the “Moscow Criteria”²⁸—the ability to threaten to inflict sufficient damage on Moscow and a number of other Soviet cities at any time of the day, 365 days of the year, and thus deter the Soviet Union from any act of aggression against the United Kingdom. This was the main reason for the then government rejecting the idea of the then SDP who argued in favour of a force of SSNs equipped with nuclear armed cruise missiles. Such a force would have had to be distinct from the existing SSN force to remain constantly available and there were fears that improvements in Soviet air defences might make such a capability redundant.

Critics who argued that the United Kingdom could rely on extended deterrence provided by the United States and did not need its own deterrent were countered with the argument that the United Kingdom provided a second centre of decision-making and thus complicated Soviet decision-making in this area.

Now the Soviet Union is no more and whilst Russia retains a significant nuclear arsenal few envisage its use against the United Kingdom. Moreover, even Russia’s conventional capability no longer threatens Britain’s interests as those of the Soviet Union once did. In fact the more likely threat comes through trans-national crime and the use of energy supplies as a bargaining tool.

The requirement therefore to maintain the “Moscow Criteria” has gone in the short to medium term and this partially explains why those who favour the replacement of the existing Trident force with a similar unnamed system have also suggested that such a force could also be equipped to carry Tomahawk cruise missiles and even special forces to provide additional value for money. The danger of this route is that the different roles might not be conducive. For example, in the Special Forces role how close inshore would we be prepared to let a ballistic missile submarine go? To what degree would we be prepared to run risks of it being detected to support this role?

In place of the Soviet Union the two principal threats to the United Kingdom have been identified as the rise of international terrorism, represented by the likes of al Qaeda, and the acquisition by so-called “Rogue States”, to use American parlance, of weapons of mass destruction.²⁹

Both these scenarios present problems for those in Britain committed to the retention of a nuclear capability. The likes of al Qaeda are unlikely to be deterred by a nuclear deterrent. For a start the frequent absence of a geographical base means that such a deterrent has nothing to be targeted at. Moreover, the relative indiscriminate nature of the current deterrent means even if such a target were to appear the use of nuclear as opposed to conventional munitions would seem unlikely. Moreover, it is hard to imagine a situation where a British government opts to use nuclear weapons and an American administration does not. If a nuclear weapons were to be used then a smaller more precise system is called “mini-nukes” would be far more relevant.

The Rogue States argument appears to have greater salience and has therefore received greater support. Whilst the United Kingdom has not named any particular states the traditional argument goes that such a state might threaten to use a weapon of mass destruction against Britain or its forces. Britain therefore needs

²⁶ Michael Clarke, “Does my bomb look big in this? Britain’s nuclear choices after Trident”, *International Affairs*, vol 80, no 1, January 2004, pp 49–62.

²⁷ Michael Portillo, “Does Britain need nuclear missiles? No. Scrap them”, *Sunday Times*, 19 June 2005.

²⁸ John Baylis, “British Nuclear Doctrine: the ‘Moscow Criteria’ and the Polaris Improvement Programme” *Contemporary British History*, vol 19, no 1, Spring 2005, pp 53–65.

²⁹ “Delivering Security in a Changing World: Defence White Paper”, Cm 6,041-I, (London: TSO, 2003), p 4.

to be able to deter such a regime and that it is therefore sensible to continue to maintain a nuclear capability. Again the idea of dependence on the United States is again rejected and the assumption is made that whilst the regime may be rogue it does accept the concept of deterrence and thus act in a rational manner. If this argument is accepted the need for a Trident type system is also questionable. These “Rogue States” will at best threaten our large urban conurbations via relatively crude devices. They will not be looking to or have the capability to conduct pre-emptive first strikes against our nuclear capabilities. In other words the requirements to have an assured second strike by the United Kingdom are far less than they previously were. This means levels of alert and dispersal procedures can actually be scaled down and alternative platforms to submarines could be considered.

If the requirement is only to have the capacity to reconstitute the “Moscow Criteria” in the long term whilst retaining a capability to deal with Rogue States then there are a range of cheaper alternatives. For example, arming cruise missiles with nuclear warheads would provide a far cheaper solution and allow for the retention of key nuclear skills. Platforms for such weapons could include submarines, surface ships or indeed aircraft. Here it is worth noting that the RAF has recently accepted the Storm Shadow missile into service in the conventional role. Such a force would not necessarily have to be retained on constant patrol but could, in the long term, be developed into such a role if the international situation deteriorated. More far-reaching would be to maintain a virtual nuclear arsenal similar to the Japanese capability. There have been a number of estimates ranging from 6–24 months about how long it would take Japan to build a nuclear capability if it so wished. Japan has a civil nuclear programme and advanced rocket technology. Likewise the United Kingdom would retain its design teams and invest in maintain the capacity to build and reconstitute its nuclear force but not actually have one day to day. This would clearly be quite radical; it would also send a significant diplomatic signal to those contemplating acquiring their own system.

This leads onto the second reason why the Attlee Government decided to develop a nuclear capability in the late 1940s. At the time such weapons also brought with them a degree of prestige. Nuclear weapons represented cutting edge technology and, as 1948 Defence White Paper stated “the United Kingdom, as a member of the British Commonwealth and a Great Power, must be prepared at all times to fulfil her responsibility not only to the United Nations but also to herself.”³⁰ Indeed the Iranian argument about its “civil” programme follows similar lines of argument. The irony for the United Kingdom is that this argument still remains at the heart of the deterrent debate. Although the technology is now very dated, there is a clear disconnect in government policy. On the one hand it wants to discourage proliferation of nuclear weaponry to further states and on the other is not prepared to relinquish its own capability. When pushed and off the record policy-makers and indeed by implication some ministers indicate that ultimately nationalism and the traditional rivalry with France that prevents the relinquishing of such a capability. Put another way whilst France retains such a capability so must the United Kingdom and it must also be a Rolls Royce one at that.

Such arguments not only commits successive British Government to the maintenance of the relevant nuclear infrastructure but it also means that the defence budget over the next decade or so will consequently have less resources available for the conventional side of defence. The reality for Britain’s defence planners is that financial resources are finite and any investment in a replacement for the Trident force will mean that there will be fewer resources available for other conventional capabilities which may actually be pertinent for dealing with these threats. In other words, does a Trident replacement provide more political effect for its investment than other elements such as additional infantry battalions, new aircraft carriers or more combat aircraft? For many within defence today it is this resource issue that is beginning to raise queries about the utility of the nuclear deterrent and not the moral argument.

Yet few within government seem prepared to openly challenge the existing orthodoxy. Today the world has changed fundamentally and it would seem appropriate to really debate what role such a deterrent plays. Within the increasingly diminishing defence field there is comparatively little thought given to the nuclear issue as attention has focused on other areas. In Ministry of Defence the issue of corporate memory is growing as an issue as military and civil service fast-streamers compete to see who can move jobs more often. As a result, the nuclear submariners tend to dominate nuclear thinking and institutionally they are the least likely to suggest change.

Within the Labour government memories of the wilderness years of the 1980s remain strong. Unilateralism is a scar that remains sore within the party and no Labour leader is likely to want to open that wound. It would seem that only with a cross-party consensus could such a change be made and that does not look favourable at present.

Outside government CND stick to their moral opposition to nuclear weapons and remain marginalised. Within the wider academic arena the defence community has shrunk with the end of the Cold War. In a sense as the debate became less and less relevant those engaged in it slowly vanished.

It therefore looks as though we will blindly head towards replacing the existing Trident system with a similar model, if the Americans will sell us one without really considering why we are doing so.

³⁰ “Statement Relating to Defence, 1948,” Cm 7,327, (London: HMSO, 1948), reprinted in Brassey’s Naval Annual, edited by Rear Admiral H G Thursfield, (London: William Clowes and Sons Ltd, 1948), p 528.

In a Department of State that regularly refers to the need to engage in effects based operations we may well be wise to consider what effect we are seeking to achieve and at what price. Does the retention of such a capability confirm greatness or merely reflect a desire to dwell in the past?

8 March 2006

Memorandum from the Oxford Research Group

1. INTRODUCTION

1.1 Dr John Reid has indicated that the Government's Manifesto pledge to retain Britain's nuclear deterrent applied technically for the life of this Parliament, though he thought "all reasonable people would assume it to apply for the life of the Trident system".ⁱ Significantly he did not suggest that it should predetermine the position of the Government or his Party in the discussion on replacing that system.

1.2. Dr Reid also expressed the view that: "It is not absolutely essential that you have a cross-party consensus but in my view that would be desirable. It is also desirable with any such important issues that there is the maximum information and consensus across the public as well as across Parliament."ⁱⁱ There would doubtless be common agreement to these sentiments across all Parties, the issues are of such gravity that they should transcend political point-scoring and sloganising, and merit an objective and open-minded approach and thorough debate.

1.3. The Government has not produced a comprehensive review of nuclear policy since the end of the Cold War.ⁱⁱⁱ In vastly changed circumstances, different potential threats should be assessed. In an unpredictable world absolute security against all conceivable threats is not possible, it is therefore necessary to analyse probabilities and priorities, and compare the relative potential risks of different policies.

1.4. The Prime Minister has expressed certainty that "there will be the fullest possible Parliamentary debate", but would neither commit himself to, nor rule out a vote. However he did say: "It is a huge decision for the country and it will probably be done in a far more open way than decisions have been taken before".^{iv} An interesting precedent is 1-2 March 1955, when there was a two day debate, in which the Prime Minister [Churchill] and Leader of the Opposition [Attlee] both made major speeches and which concluded with a vote.

2. STRATEGIC CONTEXT

2.1 *Positive Developments*

2.1.1 There would be common agreement that some developments have substantially improved our common security. The most significant of these is the ending the Cold War and the Nuclear Arms Race.^v

2.1.2 The nuclear arms control regime, particularly The Nuclear Non-Proliferation Treaty (NPT), has been far more successful than most experts were predicting a few decades ago.^{vi}

2.1.3 It was ultimately shown in Iraq, that containment and inspections had forced an unwilling state to disarm. Pressure and diplomacy have persuaded Libya to abandon its attempt to obtain nuclear weapons. Other countries such as Brazil and Argentina have done so voluntarily, and Ukraine and South Africa have voluntarily renounced nuclear weapons which had already been developed and deployed.

2.1.4 If an African Treaty is successfully negotiated, there will be Nuclear Weapons Free Zones throughout and beyond the Southern Hemisphere.

2.2 *Causes for concern*

2.2.1 There are however growing causes for concern including: the de facto nuclear weapons states outside the NPT—Israel, India, and Pakistan; North Korea which has left the NPT and whose claim to have developed nuclear weapons is almost certainly true or nearly so; Iran which threatens to leave and might develop a capacity within several years. There are a growing number of "latent"/"threshold" nuclear weapons states, which if they made the political decision could convert civil nuclear programmes to weapons production. There is the danger that any actual or potential nuclear weapons state, which currently seems stable or unthreatening, may change regime.

2.2.2 As the Prime Minister has said "the A Q Khan network showed, there is an export market in this".^{vii} non-state actors as well as states may transfer nuclear weapons capacities for commercial and/or ideological reasons.

2.2.3 There is the increasing threat of nuclear terrorism.

2.2.4 "The proliferation of delivery system technology is every bit as much a matter for concern as the weapons of mass destruction themselves."^{viii} Sensationalist reports tend to exaggerate the present and potential ballistic missile capacity of states of concern. However, despite the Missile Technology Control

Regime, there is a clear risk that long-range rocketry will gradually spread. This is complicated by the possibility of dual use technology, for civil purposes—such as communications satellites—and for military applications.

2.2.5 Despite its immense success, the NPT has serious weaknesses including:

- (a) The Treaty (Article IV) gives parties the inalienable right to develop civil nuclear technology and promises them assistance to do so. However the potential risk of “dual use” was underestimated. This has been succinctly expressed by Professor Michael McCwire:
“The other problem was ‘dual use’—the fact that materials and technology required for legitimate, peaceful purposes can also be used (diverted) to produce weapons. The essential elements of a nuclear explosive are highly enriched uranium and/or separated plutonium. Uranium is also used to fuel nuclear power reactors, and for that purpose natural uranium has to be enriched so that the proportion of U235 is close to 5%. By repeating this process of centrifugal enrichment once, the proportion of U235 rises to more than 25%. A second repetition (ie a total of three passes) results in 93% highly enriched uranium (HEU), which is weapons grade. Similarly, weapons-grade plutonium contains at least 93% Pu-239. Plutonium is a by-product of burning uranium in a nuclear reactor, and is separated out in a chemical reprocessing plant. In sum, if a state has a self-sufficient capability to generate nuclear power, it also has the potential to produce an explosive device.”^{ix}
- (b) The number of potential nuclear weapons states, currently around thirty, is therefore liable to grow.
- (c) The nuclear weapons states which have not joined or have left the Treaty.
- (c) Non-nuclear weapons states doubt the good faith of the nuclear weapons states to fulfil their treaty obligations, not least to move towards nuclear disarmament on a realistic scale or time-table. This leads to accusations of double standards. “We must abandon the unworkable notion that it is morally reprehensible for some countries to pursue weapons of mass destruction yet morally acceptable for others to rely on them for security/and indeed to continue to refine their capacities and postulate plans for their use.” [Mohamed ElBaradei, Director General, *International Atomic Energy Agency*.]^x
- (d) These last two factors [2.2.5(c) and (d) above] undermine international unity in dealing with problem states such as Iran.

2.2.6 Such flaws in the arms control regime have been used by some in the US, to argue for imposing counter-proliferation measures primarily by military force, unilaterally or with coalitions of the willing. Such policies have been incorporated in current US administration strategy documents,^{xi} but potential risks should not be underestimated. Multilateralism and international treaties could be undermined, while proliferation might be encouraged if states seek a nuclear deterrent against “pre-emptive” attack. The choice and treatment of “friendly” states can seem capricious, and because the strategy is apparently inequitable and relies on military might, it is inherently provocative and unstable. Early resort to war rather than diplomacy is immensely threatening in a world with nuclear weapons.

2.2.7 Despite its imperfections “the NPT remains the cornerstone of the nuclear non-proliferation regime and the framework for nuclear disarmament” [UK Statement at NPT Review Conference 2005].^{xii} It is the only almost universal security regime, but needs to be strengthened and reinforced, and that will be difficult. The UN Secretary General’s High-level Panel (2004) warned: “We are approaching a point at which the erosion of the non-proliferation regime could become irreversible and result in a cascade of proliferation.”^{xiii} The failure to reach agreement on this, at both the NPT Review 2005 and at the UN Summit, has made this situation even graver. Particular responsibility must rest on the P5, because of their role in the UNSC, and official status as nuclear weapons states. As the UK has said “the NPT is a treaty for us all, it is a treaty from which there can be no turning back, no evasion of our responsibilities—all our responsibilities.”^{xiv}

2.3 Deterrence and potential threats to UK

2.3.1 *Nuclear Terrorism* While most political terrorist groups would regard causing fatalities on a vast scale as likely to undermine their support-base, a tiny minority of fundamentalist, absolutist or apocalyptic groups—like Aum Shinrikyo or al Qaida—could attempt nuclear terrorism. Despite claims by President Chirac,^{xv} nuclear deterrence can have little relevance to this threat. Such groups will not necessarily be identified with any country or any easily located geographical position, they are quite likely to be suicidal and indifferent to—or might even welcome—the deaths of non-members of the group in their vicinity, particularly if fomenting conflict is one of their objectives. Most analysts would agree with the Prime Minister: “I do not think that anyone pretends that the independent nuclear deterrent is a defence against terrorism.”^{xvi}

2.3.2 *Invasion* During the Cold War some saw UK nuclear weapons as a deterrent against invasion. Liam Fox still argues that “the prospect . . . cannot be ruled out . . . that a hostile power might overrun the European Continent without a global nuclear conflict resulting” and that it would then be deterred from attacking Britain by the greater chance that the UK as compared with US would use nuclear weapons.^{xvii} With due respect to Dr Fox, this reads like a scenario drawn up during the Cold War, which takes insufficient

account of subsequent realities. If the future hostile power is assumed to be Russia—which might be inferred from Dr Fox’s Heritage Foundation lecture^{xviii}—the possibility that at some point a Russian Government could become antagonistic cannot be ruled out. However the Warsaw Pact and the Soviet Union are dissolved, NATO and the EU have expanded, there is now a massive power imbalance between NATO and Russia. If some other large country is seen as a potential “hostile power”—China(?), India(!)—the scenario is even less credible. It may be claimed that no possibility can be “ruled out”, but it was an eminent Victorian statesman, who when the Generals urged him to increase the army in India in case the Czar tried to attack Britain via the sub-continent, inquired if they wanted to garrison the Moon to prevent invasion from Mars.

2.3.3 Biological/chemical attack Though the term Weapons of Mass Destruction can be useful, it has dangerously blurred the vast difference between nuclear weapons and most biological or chemical weapons.^{xix} Even large quantities of highly lethal biological or chemical agents cannot easily be converted into usable weapons which would cause death on a massive scale. Geoff Hoon, when he was Defence Secretary implied at the Defence Select Committee^{xx} and in subsequent media interviews that UK nuclear weapons might be used in response to or even in pre-emption of a biological/chemical weapons attack. However, he subsequently confirmed in response to a Defence Question on 15 July 2002, “that British Government policy has not changed since John Major, during the Gulf War, explicitly ruled out the use of British nuclear weapons against Iraq, even in reply to a chemical or biological attack on our forces, on the grounds that a proportionate response could be made using conventional weapons and that Britain would never breach the Nuclear Non-Proliferation Treaty.”^{xxi} Though the question was specific to Iraq, the answer presumably reflects a continuous general policy of Conservative and Labour Governments.

2.3.4 Nuclear attack Looking ahead to 2031 the Ministry of Defence has reckoned that “the risk of air-launched WMD attacks will remain very low”.^{xxii} Only the other Permanent Members of the Security Council currently have the capacity to launch nuclear missiles at the UK, and strengthening non-proliferation may be the best way of maintaining this situation. There is no credible scenario for being threatened by any other state within our region. With the end of Empire there is limited possibility of Britain being involved in unilateral confrontation—let alone nuclear confrontation—outside our region. Any involvement outside our region is liable to be as part of UN, or NATO or—at least—as an ally of the USA. In which case any state considering threatening the UK with nuclear attack would have to take account not only of the immense political consequences, but the deterrence of the largest conventional and nuclear forces in the world.

2.3.5 The vast change in the strategic context in which the UK Nuclear Deterrent should now be viewed has been judiciously expressed by Professor Michael Clarke (commenting on Sir Michael Quinlan’s observation^{xxiii} that the “case for a degree of nuclear independence is manifestly less strong now than it used to be” when decisions were taken in the 1980s, and that there will be “an important and challenging debate to be had” when replacement is considered):

2.3.6 “The most obvious difference between 2008 and 1980, and even more between 2008 and 1963, in the “debate to be had” is that the rationale for a strategic nuclear deterrent/that is, a weapons system capable of crippling even a large country in strikes on its homeland/is increasingly weak. A world dominated by a single superpower hegemon, whose overwhelming nuclear superiority represents much less than its full capacity for such superiority, is not a world which gives minor players much of a role in strategic deterrence. It is scarcely conceivable (even as a long-term defence planning assumption) that other known nuclear powers such as India, Pakistan, Israel or North Korea, or for that matter a near-nuclear power such as Iran, could become a strategic threat to the UK homeland (in isolation from other traumatic events), whatever British interests might be threatened abroad by such actors in some unforeseen circumstances. The essence of a case for a genuinely strategic deterrent rests on the danger of the UK being drawn into a nuclear crisis between its ally the US, and perhaps Russia or China; or else somehow being involved, perhaps with France, on behalf of the Europeans to confront a resurgent Russia making nuclear threats in ways that question our survival, and in the absence of US involvement. In principle, such circumstances could arise/as indeed could circumstances in which the US turns vengefully and coercively on its former allies/but none of these existential possibilities are worth much of the time of a policy planner, still less a politician; and as Sir Michael Quinlan implies, they would be unlikely to attract the resources necessary to hedge against such exotic scenarios when the next major financial commitments have to be made.”^{xxiv}

2.3.7 Both Quinlan and Clarke seem to imply that if the UK did not already have a strategic nuclear deterrent, we might be unlikely to develop one now. Political inertia is scarcely an adequate basis for such an important decision. If Britain needs an independent SND, then presumably the same would apply to, say, Italy or Germany. Indeed if the UK, which faces no current relevant external threat, requires its own SND, what are the implications for Iranian strategists? They know that influential figures in two nuclear powers—Israel and the USA—are openly advocating attacking their country. Westminster’s decision is unlikely to have key influence in Tehran.^{xxv} However, more generally it can be either a helpful or unhelpful factor at a crucial time for the survival of the non-proliferation regime, and the maintenance of that regime could be decisive in determining which states “develop nuclear weapons capabilities by 2025.”^{xxvi}

2.3.8 The probability of some of the future risks against which it is suggested the UK might require a nuclear deterrent should be weighed against the probability of some of the risks if the non-proliferation and disarmament regime breaks down: “arms competition between China and the United States (not to mention the risk of a hot war over Taiwan); nuclear crises in the Middle East and South Asia; a chain reaction of

proliferation following the erosion of the NPT; the spread of less sophisticated nuclear weapons technology and command and control systems; a continuing trend to the “conventionalisation” of nuclear weapons as complacency grows with the fading of the memory of Hiroshima and the weakening of the power of the nuclear taboo; new opportunities for private enterprise nuclear weapons entrepreneurship; crisis naivety rather than crisis management skills; new threats of spectacular nuclear terror; and on and on.”^{xxvii}

2.4 Other strategic issues

2.4.1 Britain’s permanent membership of the UN Security Council is based on our role in World War 2, and not our subsequent acquisition of nuclear weapons. Japan and Germany are not receiving less consideration as potential new Permanent Members of the UNSC than India, because they have not developed nuclear weapons. There is no rush to accord that status to Israel, Pakistan or North Korea.

2.4.2 Nye Bevin’s “naked in the conference chamber” is of doubtful current relevance. For decades the major arms reduction talks have been bilateral—USA and USSR/Russia—or when multilateral have included non-nuclear weapons states. It is unlikely that a UK decision to replace or not replace Trident would greatly affect the extent of UK influence in arms control negotiations or other international meetings, which depends more on an ability to co-operate with other states or groups of states.

2.4.3 The UK should be careful of parochially over-estimating its world role. On the one hand those advocating disarmament initiatives can exaggerate the likelihood of other countries following Britain’s example. On the other hand, claims that French nuclear weapons kept the peace of the world during the Cold War tend to be viewed sceptically in the UK. Similar claims for the British deterrent may seem just as dubious abroad. Perhaps British and French nuclear forces were an irrelevance in a deterrent balance of terror between the two superpowers. Another viewpoint was expressed by Michael Portillo,^{xxviii} who while remaining convinced that that the UK deterrent was relevant during the Cold War, doubts if it is now.

2.4.4 The independence of the UK SND from the USA, in various respects, is a subject of strong debate.^{xxix}

2.4.5 The effects either way of decision on UK SND on US-UK relations would be limited. Perhaps reflecting 2.4.3, it is largely a matter of comparative indifference across the political spectrum in the USA. Because of 2.4.4 the effect on UK dependency on the US is difficult to predict.

3. TIMETABLE FOR DECISION-MAKING

3.1 Practical Limits

3.1.1 John Reid has said: “It is not absolutely essential the decision is taken during this Parliament but it would be highly desirable in my view.”^{xxx}

3.1.2 As Dr Reid indicated decision during this Parliament is not essential. Warheads can be refurbished every 12 years, the D5 missile system is expected to available on lease from the US “into the 2040s”,^{xxxi} onshore infrastructure can be maintained. It is only the submarine hulls which were expected to have a life expectancy of 25–30 years, but since then time at sea has been reduced. Deep diving causes the main stress on the hulls, but this is not an operational necessity in times of reduced tension, and if it were restricted within such requirements as testing and training, their durability could be significantly extended. If a replacement were decided on which was very similar to Trident, the lead time for producing it would be shorter. Commodore Tim Hare, Former MoD Nuclear Policy Director suggests decisions “will not have to be taken for some time yet and certainly not before 2010.”^{xxxii}

3.2 Possible advantages of delay

3.2.1 Deferring a decision could be highly desirable for a number of reasons.

3.2.2 At a time of considerable uncertainty, there would be more opportunity to see how the international situation develops.

3.2.3 Given the UK’s high dependency on the US, if a replacement is decided on, then late decision reduces the risks of late changes in US procurement plans proving costly to the UK once again. If the developing international situation did not justify replacement, then delay would obviously bring greater savings.

3.2.4 Crucially the risk of collapse of the non-proliferation regime could make this a dangerous time to decide to replace Trident. In recent years under Conservative and Labour Governments, the UK has reduced its nuclear weapons and taken other disarmament and confidence building measures, such as de-alerting, de-targeting, reducing patrols, the Comprehensive Test Ban Treaty and the Additional Protocol to IAEA safeguards agreements. This has been in response to perceived reduction in risk with the end of the cold war, but also the UK would claim as a contribution to non-proliferation and multilateral disarmament. Great Britain has gained respect from non-nuclear weapons states for moving in this direction and for its constructive role in non-proliferation negotiations, eg at the NPT review conferences of 1995 and, in particular, 2000. There could be a risk that if at this time the UK appears to effectively commit itself to

retaining nuclear weapons until the middle of the twenty first century, this will be seen as altering the UK's positive policy,^{xxxiii} further proving that the nuclear weapons states are disingenuous about making progress in disarmament and further undermining non-proliferation.

3.2.5 Britain is sometimes accused of having post-imperial delusions of grandeur, obsessed with "punching above our weight". However, an area where we might claim to have punched above our weight, with broad cross-party consensus and international respect, is in taking or supporting initiatives on major world problems, such as climate change, global poverty, and a range of arms control and arms export control measures. There is urgent need to preserve and strengthen the nuclear non-proliferation and nuclear disarmament regime. As has been admitted, we can have limited influence on our own [see above 2.4.3], but if we co-operate with others, including EU partners and—in this case—some of the groupings of non-nuclear weapons states, progress might be made. A natural focus for this would be the NPT Review Conference 2010, and deferring a decision on strategic nuclear deterrent replacement at least until then would give the UK greater credibility and flexibility in negotiation. Given the urgency of the situation, serious consideration should also be given to other proposals, such as Kofi Annan's suggestion of a UN Conference on nuclear weapons, in order to also involve those nuclear weapons states which are outside the NPT.^{xxxiv}

3.2.6 Delaying the decision could permit the Government to establish an independent inquiry—or even Royal Commission, if thought appropriate—to fully assess all aspects of the decision on SND in the post Cold War situation. Parliament could also have time to consider thoroughly all the issues. Since Defence is increasingly foreign policy led, and in a globalised world national security often relates to the common security of the international community, the Defence Select Committee might wish to consider a major joint inquiry with the Foreign Affairs Select Committee. Perhaps 1955 set an interesting precedent for debate in Parliament [see 1.4 above].

3.3 Summary and Conclusions

3.3.1 It is not technically necessary to take a decision during this decade.

3.3.2 Because of uncertainties in the international situation, and possibly on economic grounds there could be advantages in deferring a decision.

3.3.3 Given the parlous state of the NPT and the whole nuclear arms control regime, there are strong grounds for delaying a decision at least until the conclusion of the NPT Review Conference 2010.

3.3.4 During that time the UK should make strenuous, co-operative diplomatic efforts to revive the NPT and the whole nuclear arms control and multilateral disarmament regime.

3.3.5 That time could also be used for Government and Parliament to undertake a comprehensive review of the relevance of the UK SND in the post Cold War world.

REFERENCES

ⁱ J Reid, Oral Evidence, Defence Select Committee [01/11/2005], Q2.

ⁱⁱ J Reid, Oral Evidence, Defence Select Committee [01/11/2005], Q5.

ⁱⁱⁱ "The Strategic Defence Review", though stating that there had been "a rigorous re-examination of our deterrence requirements", did not seek to give a detailed analysis of the strategic relevance of the UK nuclear deterrent, and indeed Essay 5, Para 5 bases the requirement for the SND on the Labour Government's 1997 General Election Manifesto rather than strategic analysis.

^{iv} In responding to James Arbuthnot at Liaison Committee on 7 February 2006, Q275–277, [Uncorrected transcript]. The following caveat applies to all uncorrected Committee transcripts. "Any public use of, or reference to, the contents should make clear that neither witnesses nor Members have had the opportunity to correct the record. The transcript is not yet an approved formal record of these proceedings."

^v Though the threat then may have seemed less complex, the consequences of major conflict would have been absolutely catastrophic. As the Cuban missile crisis showed, the risks were far too great. The probability of war occurring through accident, misunderstanding or design was too high to provide indefinite security.

^{vi} In March 1963, President J F Kennedy expressed concern that by the early 1970s there might be "15 or 20 or 25" nations with nuclear weapons. While retrospectively in 2004, George Bunn, one of the US negotiators of the original NPT, claimed that without the Treaty "30–40 countries would now have nuclear weapons".

^{vii} Liaison Committee, [Uncorrected transcript], 7 February 2006, Q296.

^{viii} Foreign Secretary Robin Cook in oral evidence to the Foreign Affairs Select Committee, FASC Report on "Weapons of Mass Destruction", 25 July 2000, pxxxvi.

^{ix} M McGwire, "The rise and fall of the NPT: an opportunity for Britain", *International Affairs* 81, 1 (January 2005), pp 115f.

^x Published in *International Herald Tribune*, 13 February 2004.

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- ^{xi} The National Security Strategy of the United States of America, 2002, etc.
- ^{xii} Ambassador John Freeman, Head of UK Delegation to the 7th Review Conference on the Treaty on the Non-Proliferation of Nuclear Weapons, NY, May 2005, para 4.
- ^{xiii} "A more secure World", Report of the High-level Panel to UN Secretary-General, p39, para 111.
- ^{xiv} Ambassador John Freeman, 7th NPT Review, para 3.
- ^{xv} Speech 19 January 2006, q.v. reports *Washington Post*, Associated Press, *FT*, *Guardian*, *Independent*, Carnegie EIP, etc.
- ^{xvi} Prime Minister's Questions, 19 October, 2005, Column 841, Q3 [Responding to Paul Flynn].
- ^{xvii} Liam Fox, "Is there a sound political rationale for the UK retaining its nuclear weapons?" The Future of Britain's Nuclear Weapons: the experts debate the issues. Current Decisions Report. Oxford Research Group. March 2006. p.17.
- ^{xviii} Liam Fox, Making Sense of the Special Relationship, The Heritage Foundation, USA, 16 February 2006.
- ^{xix} "There is no comparison between the strategic destructive power of nuclear weapons on the one hand and of chemical and biological weapons on the other". Michael Clarke, Does my bomb look big in this?, *International Affairs*, January 2004, p 57. This point has been made repeatedly over the years by many and varied authorities, from the US National Academy of Sciences to the Butler Report, but merits further repetition in the light of recent history and continuing sensationalist reporting.
- ^{xx} Geoff Hoon, Oral Evidence, Defence Select Committee, 20 March 2002, Subsequently on Jonathan Dimbleby programme 24 March 2002, and see also Defence Questions, 29 April 2002, Q13, Columns 665f.
- ^{xxi} Defence Questions, 15 July 2002, Columns 10f, cf. Early Day Motion 1707 [Session 2001–02], (23.07.2002).
- ^{xxii} "The Future Strategic Context for Defence", MoD, February 2001, p19, para 89.
- ^{xxiii} Sir Michael Quinlan, "Weapons of Mass Destruction: threat and response", inaugural lecture in the Quinlan Lecture Series, International Policy Institute, King's College, London.
- ^{xxiv} Michael Clarke, Does my bomb look big in this?, *International Affairs*, January 2004, p 56.
- ^{xxv} Though the significance of Britain's role in the difficult and delicate E3 diplomacy should not be forgotten.
- ^{xxvi} From the terms of reference of this Defence Select Committee inquiry. [Cf 2.1.2 above and Endnote 6, as with past predictions, whether the more pessimistic or optimistic forecasts the Committee receives on this are fulfilled, must surely depend on the robustness of the non-proliferation regime.]
- ^{xxvii} Ken Booth, "Debating the future of Trident: who are the real realists?" The Future of Britain's Nuclear Weapons: the experts debate the issues. Current Decisions Report. Oxford Research Group. March 2006 p 77.
- ^{xxviii} Michael Portillo, Does Britain need nuclear missiles? No. Scrap them, *Sunday Times*, 19 June 2005.
- ^{xxix} Qv, eg, for opposing views on some aspects of independence, Dan Plesch, "Britain's independent deterrent is purely a political myth", *The Independent*, 31 October 2005; Tim Hare, "Should the decision on Trident replacement be a subject of public and parliamentary debate, and can it be influenced?" The Future of Britain's Nuclear Weapons: the experts debate the issues. Current Decisions Report. Oxford Research Group. March 2006. p 64; and cf. Ken Booth, *Ibid*, p 81.
- ^{xxx} J Reid, Oral Evidence, Defence Select Committee [01/11/2005], Q5.
- ^{xxxi} MoD Memoranda to this inquiry, Annex B.
- ^{xxxii} Tim Hare, *Ibid*, p 61.
- ^{xxxiii} "But these positive steps will be reversed if we now charge off in the opposite direction by ordering a brand-new nuclear system." Robin Cook, "Worse than irrelevant", *Guardian*, Friday 29 July 2005.
- ^{xxxiv} Referred to by Ambassador Jayantha Dhanapala, then UN Under Secretary-General for Disarmament Affairs, "Eliminating Nuclear Arsenals: the NPT pledge and what it means", Address to a Joint Meeting of the All-Party Parliamentary Groups on Global Security and Non-Proliferation, World Government and the Parliamentary UN Group, 3 July 2000.

Memorandum from Professor John Baylis

1. INTRODUCTION

1.1 This paper focuses on a number of key questions and issues relating to the future of the British nuclear deterrent. In line with the issues to be discussed in the first inquiry to be held by the House of Commons Defence Committee the paper considers the timing of the decision on a possible replacement for Trident, the kinds of threats the deterrent is designed to deal with, how these threats might change in the period up to 2025, and the range of states and non-state actors that might acquire nuclear weapons in the same time period. There is no discussion of the alternative options that might be considered. It is assumed that this will be the subject of a separate inquiry.

2. THE TIMING OF THE DECISION

2.1 The Defence Secretary, John Reid, made it clear in his statement to the House of Commons on 4 July 2005 that: “Decisions on any replacement of the United Kingdom’s nuclear deterrent are likely to be necessary in the lifetime of the current parliament.”³¹ This statement appears to emerge from the fact that the first Trident submarine (Vanguard) entered service in late 1994 and has a projected lifespan of 30 years. If this is assumed to be correct, Vanguard will be due for de-commissioning in 2024. At this point the force as a whole will lose significant credibility as a deterrent because it will no longer be possible to guarantee one submarine on permanent patrol. Given that the timescale for decision to deployment for Trident was 14 years, it is likely that a decision on a replacement will have to be taken by 2010 at the latest.³²

2.2 It could be, however, that the decision is more imminent than that. In his statement on 4 July 2005 John Reid said, not only that it was the government’s intention to retain the minimum nuclear deterrent, but that the present force would last between “10 and 20 years”.³³ If the lowest of these estimates turned out to be true Trident submarines might need to be de-commissioned from 2015. If this were so, it would probably already be too late to develop a wholly new force. Under circumstances such as these, the government’s options would be constrained significantly, and might have to involve extending the life of the Trident system.

2.3 If however, as seems more likely, Vanguard can be kept in service until at least 2024, the government has two to three years to consider the various options available in detail before coming to a decision. Given that the next election could be in 2010, it would seem prudent that a decision should be made sometime in 2008 or 2009.³⁴ In part this might be dictated not only by domestic political circumstances in Britain, but also the next American election. If it is assumed that the present Bush administration might be favourably disposed towards providing Britain with a follow-on to Trident, it might make sense for the government to secure a deal before a new President takes office. Given that the US Presidential election is in November 2008, this might suggest the need for a decision by 2007 or early 2008.

3. THE NUCLEAR DETERRENT AND THREATS TO NATIONAL SECURITY

3.1 Public statements about the role of nuclear weapons in countering threats to British national security tend to be unspecific. The Defence White Paper of 2003, *Delivering Security in a Changing World* argues that:

“the continuing risk from the proliferation of nuclear weapons, and the certainty that a number of other countries will retain substantial nuclear arsenals mean that our minimum nuclear deterrent, currently represented by Trident, is likely to remain a necessary element of our security.”³⁵

The White Paper also argues that nuclear weapons remain the ultimate guarantor of the UK’s national security. What this suggests is a government belief that nuclear weapons continue to have significant utility, both in security and political terms. Although the Trident force is no longer targeted against any particular state, there appears to be a belief in the value of “existential deterrence”. Despite the end of the Cold War and the progress made in establishing a new relationship with Russia, this may well reflect a judgement, in some quarters, that Russia remains a major nuclear power whose future direction is uncertain. For those whose responsibility it is to think in terms of worst-case scenarios, concerns about Chinese nuclear weapons and the possibility of changes in regime in other nuclear powers no doubt also justifies the need for “a just-in-case” deterrent capability.

3.2 The emergence of terrorist groups, who appear to be quite prepared to inflict maximum damage and kill thousands of people in the name of their cause, also raises the question of whether nuclear weapons have any role to play in countering such threats to national security. In January 2006 President Chirac announced that French nuclear forces had already been reconfigured to allow them to destroy the “power centres” of

³¹ HC Deb 4 July 2005.

³² See Tim Youngs and Clair Taylor, “Trident and the future of the British Nuclear Deterrent”, notes compiled for the benefit of Members of Parliament, House of Commons, 5 July 2005.

³³ HC Deb 4 July 2005.

³⁴ The decision to opt for Trident was complicated in 1979–80 by the change from Labour to Conservative government.

³⁵ “Delivering Security in a Changing World”. CM 6041, December 2003.

any state which sponsored a major terrorist attack on France.³⁶ The clear message was that nuclear deterrence had a role to play in the “war against terrorism”. States that sponsored and directly supported terrorist groups were warned that they risked a nuclear attack. The British government has not made a similar declaration but it would be surprising if debates about the need for nuclear weapons in such an anti-terrorist role had not taken place amongst defence officials.

3.3 There has been some speculation in the press that new facilities have been built at Aldermaston in order to develop a new generation of nuclear weapons that could be used in a tactical role.³⁷ This follows speculation that the United States is developing “smaller and more specialised nuclear warheads that could be used against hardened or underground targets, perhaps to destroy chemical or biological weapons agents in the possession of so-called rogue states”, that might be linked to organisations like Al Qaeda. The government, however, has dismissed these rumours, arguing that the work being undertaken was designed to ensure the reliability and safety of British nuclear weapons.³⁸ It remains clear, however, that the continuing close nuclear partnership with the United States and on-going discussions on nuclear matters with France, means that the government intends, at least, to keep its options open on the question of developing nuclear weapons which could, under certain circumstances have a role to play in the “war on terrorism”. Its approach, however, may well be more ambiguous than either that of the US or France.³⁹

3.4 It is, of course, also clear that the notion that a new generation of either strategic or tactical nuclear weapons is necessary because of an uncertain future, will be opposed by various sections of society. Many nuclear opponents will agree with the sentiments expressed by the back bench Labour MP, Paul Flynn, when he argued that:

“To have a nuclear deterrent now—where these Trident submarines wander the oceans with missiles aimed at nothing—is a meaningless proposition . . . I cannot think of any conceivable use that (British) nuclear weapons could have . . .”⁴⁰

There are also those who argue that “nuclear weapons are of no help when it comes to responding to terrorism” and there is concern that a new generation of nuclear weapons will undermine Article 6 of the Non Proliferation Treaty.⁴² What this suggests is that in the run-up to the decision, as in the past, there is likely to be a lively public debate and a rejection in some quarters of the argument that there are conceivable threats that require a continuation of a British nuclear deterrent.

4. NUCLEAR PROLIFERATION IN THE PERIOD UP TO 2025

4.1 The outcome of the public debates about future threats depends, in part at least, on the perception of likely nuclear proliferation over the next 20 years. The problem is that past projections of nuclear proliferation, particularly those in the 1960s, have often proved to be somewhat inaccurate. That difficulty, however, should not prevent an informed debate about the most likely patterns of nuclear (as well as chemical and biological) weapons proliferation.

4.2 One useful source for this debate is *The Lugar Survey On Proliferation: Threats and Responses* published in June 2005.⁴³ This report is based on 85 responses to a Survey on the Proliferation of Weapons of Mass Destruction. The responses came from a wide range of international experts from a variety of fields, including scholars, policy makers, diplomats and technicians. In particular, they were asked about nations that would be added to the nuclear club in the next five, 10 and 20 years and the risks of nuclear, biological, chemical and radiological attack during the same time periods. The final Report was produced by Senator Richard Lugar, the Chairman of the US Senate Foreign Relations Committee. Senator Lugar has a respected reputation on matters relating to the proliferation of weapons of mass destruction.

4.3 What follows highlights some of the findings of this poll of experts.

- “There was broad agreement within the group that nuclear weapons will proliferate to new countries in the coming years. Estimates of how many countries would be added to the nuclear club over the next five and 10 years were extremely consistent. Large majorities judged that one or two new nuclear nations would be added during the next five years and that two to five would

³⁶ *The Independent*, 26 January 2006.

³⁷ *The Observer*, 16 June 2002.

³⁸ HC Deb 17 June 2002.

³⁹ Ambiguity for deterrent purposes has long been a feature of British nuclear doctrine.

⁴⁰ Quoted in Gwynne Dyer, “British Nuclear Follies”, <http://www.gwynnedyer.net/articles/Gwynne%20Dyer%20article-%20Britain's...>

⁴² See BASIC Report, “New Report on US-UK nuclear weapons collaboration: Shining the torch into the darker recesses of the ‘special relationship’”, in <http://www.basicint.org/pubs/Press/040616.htm>

⁴³ *The Lugar Survey on Proliferation Threat and Responses* by United States Senator Richard G Lugar, Chairman, Senate Foreign Relations Committee, June 2005 <http://lugar.senate.gov> Most reports on the future spread of weapons of mass destruction argue that the chances of chemical and biological weapons proliferating are much greater than nuclear weapons. For information about which states are likely to have such capabilities see *A Chemical Weapons Atlas* By E J Hogendoorn, *Bulletin of the Atomic Scientists* September–October 1997 Vol 53, No 5; *Chemical and Biological Weapons: Possession and Programs Past and Present*; “The Specter of Biological Weapons” by Leonard A Cole *Scientific American* December 1996; Defense Nuclear Agency, *Biological Weapons Proliferation* (Ft Detrick, Md: US Army Medical Research Institute of Infectious Diseases, April 1994); and *Proliferation of Weapons of Mass Destruction: Assessing the Risks* Office of Technology Assessment OTA-ISC-559, 1994.

be added during the next 10 years. Answers diverged somewhat when the group was asked to estimate how many nuclear states would emerge over 20 years, but almost three quarters estimated a number between four and 10.”

- The average estimate of a nuclear attack occurring “somewhere in the world” in the next five years was 16.4%, rising to 29% in the next 10 years.
- The estimates of the risks of a biological or chemical attack during the same periods was judged to be comparable to, or slightly higher than, the risk of a nuclear attack. The risk of a radiological attack, however, was seen as significantly higher. The average risk was 27% over the next five years and as high as 40% over the 10 year period.
- The survey responses suggested that the estimated combined risk of a WMD attack over five years is 50% and over a 10 year period it was as high as 70%.
- It was argued that there was also, “strong though not universal, agreement that a nuclear attack is more likely to be carried out by a terrorist than by a government in the next 10 years.”
- “There was a split 45% to 55% on whether terrorists were more likely to obtain an intact working nuclear weapon or manufacture one after obtaining weapons grade nuclear material.”
- Perhaps not surprisingly one of the most immediate concerns amongst those polled was the nuclear ambitions of North Korea and Iran. One participant noted that Iran’s programme “will have a highly destabilising impact on the region, and accelerate similar efforts by Egypt, Syria, Saudi Arabia, Algeria and other regimes.”
- Senator Lugar himself argues that the findings of this Survey reinforce the need to “strengthen non-proliferation efforts, improve safeguards around existing weapons and materials, bolster intelligence gathering and interdiction capabilities, and expand international co-operation in dealing with a threat that should deeply concern all governments and peoples.” The implication of this is that if these measures can be introduced the scale of the threat from the proliferation of weapons of mass destruction can be reduced. To what extent this might be possible is not discussed. It should be noted, however, that the utility of the Non-proliferation treaty appears to be in significant decline.

5. CONCLUSION

5.1 These estimates no doubt can, and will, be questioned given the uncertainties and assumptions surrounding any attempt to predict the future. What is clear, however, is that although UK policies will have some impact on the process of proliferation, that impact will be very limited indeed. This is not to say that the government should not play a significant role in trying to stem the tide of proliferation. Clearly it should. No doubt, a decision to develop a new generation of nuclear weapons or to extend the life of the Trident force, will be seen by some states and non-state actors (as well as domestic opponents of nuclear weapons) as hypocritical. It has to be accepted that such a decision may in itself in some ways contribute to proliferation (although the reasons why states acquire weapons of mass destruction are complex and mostly unrelated to what a British government might decide). Such unintended outcomes, however, must themselves be set against a broader understanding of what is in the national security interest.

5.2 Given that it is likely that a decision on the future of Trident is likely to be made sometime in the next three years, it is important that there is a comprehensive public debate about how national and international security interests are enhanced or undermined by a decision to maintain the British minimum nuclear deterrent, as well as by the more technical issue of what form that deterrent force might take.

8 February 2006

Memorandum from Dr Jeremy Stocker⁴⁴

Decisions on whether to replace Trident are not needed [during] this Parliament but are likely to be required in the next one.⁴⁵

1. Britain’s third-generation nuclear deterrent system, currently in service, is based on American-supplied *Trident* missiles with British-built warheads and carried in British-designed submarines. Developed during the final decade of the Cold War, *Trident* entered service in the post-Cold War 1990s. It is now the UK’s sole nuclear weapons system. With an anticipated operational life of about 25 years a replacement, if there is to be a replacement, will be needed by the early 2020s. A decision on whether to remain a nuclear power, and if so using what kind of system, will be politically controversial and will carry substantial cost implications.

⁴⁴ Dr Stocker is currently researching the future of the UK nuclear deterrent for the International Institute for Strategic Studies (IISS). The results of the study are due to be published in 2007.

⁴⁵ Cm 6041-I *Delivering Security in a Changing World: Defence White Paper* London: TSO, December 2003 para 3.11.

2. This decision will be important within two wider contexts. Firstly, there is the UK's overall strategy for dealing with the threats to British security and worldwide interests posed by Weapons of Mass Destruction (WMD). Second, there are international efforts to halt and contain the continuing proliferation of nuclear weapons and in particular Britain's own obligations as a Nuclear Weapons State under the terms of the Non-Proliferation Treaty (NPT).

3. Future decisions about the UK strategic deterrent will, for the first time, be taken outside a Cold War context. Britain no longer needs to deter a hostile, nuclear-armed superpower. Instead, Britain has to deal with the greater uncertainties of the "Second Nuclear Age".⁴⁶

4. In the past Britain's need for nuclear weapons was predicated on a single operational requirement: to deter a much larger, hostile, nuclear-armed superpower, the Soviet Union. British policy was the deterrence of the strong by the weak. The essence of British deterrence was the UK's ability to inflict "unacceptable damage", which in practice meant hitting Moscow. The "independent" deterrent was also as much about influencing US actions as it was Soviet. Though retaining the ability to act, *in extremis*, alone, Britain's policy was to influence the ultimate guarantor of the country's political independence and physical survival, the United States.

5. The British experience demonstrates just how challenging, technically and financially, efforts by the weak to deter the strong may be. This lesson has enduring relevance for other, emerging nuclear states. Also clear from Britain's past record is that effective nuclear deterrence is at least as much about delivery systems as it is the warheads themselves.

6. With the Soviet threat removed, Britain's security is today assured to a degree probably unprecedented in its history,⁴⁷ despite current concerns over terrorism. No prudent statesman, however, would assume the indefinite continuation of that condition. In the meantime, risks and uncertainties persist in a more volatile, if generally less threatening, world. This is especially so in terms of the proliferation of WMD.

7. It is clear that Britain is in future unlikely to need the level of deterrence required in Cold War days. Instead, future deterrence needs may be two-fold. First, the deterrence, on more equal terms than before, of either a resurgent and hostile Russia or a growing and bellicose China. Neither scenario appears imminent but could become a reality within the lifetime of a new deterrent system.

8. Second, in a reversal of the Cold War position, continuing WMD proliferation means that Britain may need to deter the weak rather than the strong. The strategic implications of this reversal are profound and hitherto little-discussed, and this requirement has been given added salience by recent Iranian nuclear activities. Whether nuclear weapons can be used to deter all WMD, or only nuclear threats, is unclear. British policy-making may have something to learn here from the American experience, whose strategic relationship with China has always been, and continues to involve, the deterrence of the weak(er) by the strong.

9. The proliferation of nuclear weapons over the last half-century has been a much slower and more gradual process than many analysts previously expected. Nevertheless, a world in which nuclear weapons are becoming, if not more numerous, at least more widely distributed, is one in which an established nuclear power is unlikely to be prepared to give up its own capability.

10. Also of concern is *qualitative* proliferation by existing nuclear weapons states, especially in terms of delivery systems. Britain itself has been with range of Russian (formerly Soviet) missiles for decades. Within the life of a successor to *Trident*, several other states including (but possibly not only), China, North Korea, India, Pakistan and Iran are likely to acquire nuclear-armed missiles with sufficient range to reach western Europe.

11. The potential acquisition of WMDs, including nuclear devices, by non-state actors is also a growing concern. However, the relevance of a threat of nuclear retaliation to this form of attack is highly questionable, in the absence of an identifiable "return address".

12. Despite its own longstanding possession of nuclear weapons, Britain is an enthusiastic supporter of measures to prevent their further proliferation. Success in these means reduces the number and scale of threats that the UK's own nuclear forces may have to deter. Recent non-proliferation agreements such as the Comprehensive Test Ban and engagement in the (unsuccessful) 2005 Review of the Non-Proliferation Treaty are essential elements of the UK's own policy response to others' possession of nuclear weapons. These agreements also place further restrictions on Britain's own nuclear activities.⁴⁸

13. Another issue related to the future of nuclear deterrence is ballistic missile defence (BMD). Cold War strategic logic dictated that deterrence and active defence were mutually exclusive, a view which was adopted more resolutely by the UK than either of the superpowers.⁴⁹ Today's circumstances make for an altogether

⁴⁶ Colin S Gray *The Second Nuclear Age* Boulder CO: Lynne Rienner, 1999.

⁴⁷ Michael Clarke "Does my bomb look big in this? Britain's nuclear choices after Trident" in *International Affairs* Vol 80 no 1 January 2004 p 49.

⁴⁸ MoD Memorandum *UK's Strategic Nuclear Deterrent Annex A* 20 January 2006.

⁴⁹ For fuller details of the UK's past policies towards BMD and its relationship to nuclear deterrence, see the author's *Britain and Ballistic Missile Defence 1942–2002* London: Frank Cass, 2004.

different approach. There is a growing awareness that a limited defence against small-scale missile threats may raise the retaliatory threshold, thereby enhancing deterrence credibility. Both the US and the NATO alliance are developing some measures of active defence against ballistic missiles.

14. Within the MoD, the future deterrent and BMD are both under policy review. There is, however, a “firewall” between the two activities. This reflects the historical antipathy between them. As both subjects are potentially controversial and expensive, it also makes some political sense. But strategically the two cannot be so divided. UK policy on each needs to inform the other. Both, together with other non- and counter-proliferation policies, need to be part of an overall strategy for dealing with future nuclear threats. This makes responses to nuclear proliferation a foreign policy as much as a defence policy issue.

15. The most fundamental decision for a British government to take is, of course, whether to remain a nuclear weapons power at all. That successive governments, of either major party, have chosen to do so may be a strong indication for the future, but retention of the deterrent is not a foregone conclusion. It is unlikely, however, that the UK would choose to leave the nuclear “club” when other states are joining, or actively seeking to join. Nor would the UK wish to see France become the EU’s only nuclear power. The British government has already committed over £1 billion to upgrading the Atomic Weapons Establishment (AWE) at Aldermaston.⁵⁰

16. Any decision to give up nuclear weapons would, for all practical purposes, be irrevocable. Were Britain to disarm in this way it would take a dramatic deterioration in the international security scene to force a reversal of policy. Even given the retention of expertise (itself by no means easy in the absence of an actual programme on which to work), the reconstitution of a nuclear capability, including an appropriate delivery system, could never be achieved sufficiently quickly for it to be an adequate response to the changed strategic circumstances that might make it necessary in the first place.

17. This may provide the greatest single rationale for retention of the deterrent. It is unlikely that in today’s circumstances the UK would seek to acquire nuclear weapons for the first time. But having gained that capability, if it can be retained at proportionate cost it will probably seem unwise to give it up, given the need to hedge against a highly uncertain future. Whatever follows *Trident* is likely to remain in service until the second half of the century.

18. Future deterrence requirements may be a good deal less demanding than when the Soviet Union was the potential deterree. The UK will therefore be able to re-examine options previously discarded as inadequate. A large, submarine-launched missile may not be required, though alternative platforms for the *Trident* missile system have already been studied.⁵¹ The phasing-out in the 1990s of the UK’s other nuclear systems like the *WE 177* free-fall bomb and the cancellation of an air-launched cruise missile could be seen with the benefit of hindsight as a mistake, as *Trident* may be a somewhat blunt (and therefore less credible) instrument with which to address lesser and more diverse nuclear threats in the future.

19. During the 1990s, in response to the withdrawal and cancellation of these other nuclear systems, a “sub-strategic” role for *Trident* was announced. Little further about this has been revealed officially but it is clear that in the sub-strategic role a single, reduced-yield warhead is carried. *Trident* submarines now deploy with fewer missiles than the sixteen they can carry, with perhaps a third of the total having “sub-strategic” single warheads and two thirds a full multi-warhead “strategic” configuration.

20. This provides an option for a more limited retaliatory response than a full “strategic” strike of several full-yield (approximately 100 kt) warheads. Any use of nuclear weapons must, however, be regarded as fully strategic in both intent and effect. But the perceived need for a range of nuclear responses, albeit from a single system, must be a factor in determining what is to follow *Trident*.

21. The UK’s nuclear “special relationship” with the United States is likely to hold the key. “Piggy-backing” on US decisions and programmes must be highly attractive if only on cost grounds. The nuclear relationship with the US may also be an end in itself as it furthers the habit of close cooperation and consultation. Whilst the ability of any foreign government to influence the United States, especially in vital matters such as nuclear weapons, should not be over-stated the particular closeness of the Anglo-American “special relationship” is highly valued in London.

22. The United States is already committed to a life-extension programme for its *Trident* missiles (a new D5A version), and similarly for its 14 remaining *Ohio*-class ballistic missile submarines (SSBNs).⁵² Improvements are also being made to the re-entry vehicles (RVs) that carry the warheads themselves.⁵³ The UK shares a common pool of *Tridents* with the US and, at a price, would have access to life-extended missiles. Submarines are a different matter. The UK designs and builds its own boats, which are subject to a different safety and regulatory regime (noting that they are themselves nuclear-powered). This probably precludes an American-style refurbishment.⁵⁴ Britain may, therefore, need to build new submarines, most

⁵⁰ Ministry of Defence Press Notice 146/2005 19 July 2005.

⁵¹ Hansard 30 June 2004 col 358W.

⁵² Lee Willett “Astute, Trident and SSGN: Land Attack for the Royal Navy Submarine Service” in RUSI Defence Systems Vol 8 No 1 Summer 2005 pp 105–6.

⁵³ Norman Polmar “Strategic Submarine Progress” in US Naval Institute Proceedings Vol 131 No 10 October 2005 p 85.

⁵⁴ Remarks made at RUSI conference on *The Future of Strategic Deterrence for the UK* London, 6 July 2005.

likely a “stretched” version of the new *Astute*-class attack boats which are nuclear-powered but conventionally-armed. This in turn may risk the new submarines having life remaining when the missiles are finally retired in around 2040.

23. The “stealthy” invulnerability to pre-emptive strike of a submarine-based deterrent no longer has the salience it did during the Cold War—but might still be a prudent hedge against the future. Additionally, the long range and multiple warheads of the *Trident* system may exceed the UK’s “minimum” deterrence needs—though that was also true when the system was first acquired.

24. On the other hand, the mobility of the missile submarine was never fully exploited by Britain during the Cold War, as operating areas were relatively close to the UK itself. In a more diverse and uncertain nuclear future the ability to move the launch platform, unseen, around the globe may have a new utility. A land-based system, whether ground- or air-launched, has far less flexibility in this regard due to the enormous, and probably insurmountable, difficulties inherent in placing nuclear weapons on foreign soil or securing over-flight rights.

25. A submarine-launched nuclear-armed cruise missile might be an attractive alternative. Each missile is considerably cheaper than a *Trident* yet can carry an adequate (single) warhead. Conventionally-armed cruise missiles are already carried in attack submarines (SSNs). Cruise missiles suffer from several disadvantages, however. Flying through the atmosphere instead of near-space they are slower and of shorter range, providing neither the immediate responsiveness nor strategic reach of the ballistic missile. They are also more susceptible to interception by air defences, especially as “unused” *Trident* RVs act as decoys which a cruise missile has neither space nor weight allowance to carry.

26. If cruise missiles were used to carry either conventional or nuclear warheads their launch, if detected, could send dangerously ambiguous signals which, in some scenarios, might result in a nuclear retaliation to a conventional attack. Proposals for “hybrid” nuclear- and conventionally-armed submarines serve only to reinforce this ambiguity.

27. Estimates of costs for a *Trident* successor can, at this stage, only be speculative and depend, crucially, on the final selection of an actual system. The UK is able to draw on both its existing nuclear legacy and its cooperation with the United States to minimise costs. Whatever configuration is chosen it will probably, like the original *Trident* acquisition, constitute a major weapons procurement spread over at least a decade but not of a scale exceeding other big programmes such as the Eurofighter *Typhoon*. Interestingly, *Trident* (and *Polaris* before it) were two of the few major weapons procurements to come in on time and under budget.

28. Just as a public debate is emerging about the future of the UK’s nuclear weapons, a parallel debate is beginning about the future of civil nuclear power in the light of concerns about global warming and the security of future energy supplies. This is relevant because ballistic missile-firing submarines, together with the smaller attack boats, are all nuclear-powered. With a total planned force of just 12 submarines (four SSBNs and eight SSNs) the British submarine force may barely be large enough to sustain a viable nuclear submarine building capacity. This will especially be so if, despite renewed calls for them, a new generation of civil nuclear power stations is not constructed. As older stations are decommissioned, the Royal Navy might, in future decades, face the prospect of being the UK’s only operator of nuclear reactors. It would therefore have to shoulder the entire burden of the whole nuclear safety and regulatory regime.

29. Any decision, even to simply extend the life of the *Trident* system, will force a public re-examination of all the political, diplomatic, strategic, economic, legal and moral dimensions of the “Second Nuclear Age”. Beyond the statement that Trident is “. . . the ultimate guarantee of the United Kingdom’s security . . .”⁵⁵ government has said little about the deterrent mechanisms foreseen for the UK nuclear force since the end of the Cold War. The decision to retain a nuclear capability appears, in principle, to have been taken.⁵⁶ But the issue may be as much about nuclear reactors and missile delivery systems as it is about nuclear weapons themselves. And while little has been said in the last 15 years about deterrence postures and requirements, these subjects will necessarily have to be addressed both in determining policy and justifying it in public.

8 February 2006

Memorandum from Dr Julian Lewis MP

EXECUTIVE SUMMARY

1. The purpose of the British nuclear deterrent remains what it had always been: to minimise the dreadful prospect of the United Kingdom being attacked by mass-destruction weapons. It is not a panacea and it is not designed to deter every type of threat. Nevertheless, the threat which it is designed to counter is so overwhelming that no other form of military capability could possibly prevent it. The possession of the deterrent may be unpleasant, but it is an unpleasant necessity the purpose of which lies not in its actual use

⁵⁵ Cm 3999 *The Strategic Defence Review Supporting Essay* London: TSO July 1998 p 5–1.

⁵⁶ Tony Blair interview with Jeremy Paxman, BBC 1 20 April 2005.

but in its nature as the ultimate “stalemate weapon”. As the next generation of the nuclear deterrent will, if approved now, be deployed from about 2020 until about 2050, it would be reckless in the extreme to assume that no threat could arise to the United Kingdom, so far in the future, from a nuclear-armed adversary who would need to be deterred.

CHANGING TIMES AND CHANGING THREATS

2. Many of the people who oppose Britain’s retention and replacement of nuclear weapons in the 21st century also advocated unilateral nuclear disarmament, despite the level of the Soviet threat, during the Cold War. There are, however, significant numbers who believe that what was necessary then no longer applies now. This brings us to the central problem of predictability.

3. From time to time wars break out in circumstances which were anticipated; but, more often than not, they arise totally unexpectedly. The Yom Kippur War in 1973 took even hypersensitive Israel by surprise. The Falklands War, nine years later, took Britain by surprise. The invasion of Kuwait in 1990 took everyone by surprise. And the attacks of 11 September 2001 took the world’s only superpower by surprise. There was nothing new in any of this—as a detour into the archives strikingly illustrates: from August 1919 until November 1933 British foreign and defence policy was hamstrung by a prediction that the country would not be engaged in a war with another major Power for at least a decade. This had a dangerously adverse effect on necessary rearmament when the international scene darkened. Arguing against the continuation of this so-called “10 Year Rule” in January 1931 when Secretary of the Committee of Imperial Defence, Sir Maurice Hankey, observed:

“As a nation we have been prone in the past to assume that the international outlook is in accordance with our desires rather than with the facts of the situation . . . We are also apt to forget how suddenly war breaks out. In 1870, a fortnight before the event, we were not in the least expecting the outbreak of the Franco-Prussian War. The same was true in 1914. A fortnight after the murder of the Austrian Archduke, a debate took place in the House of Commons on foreign affairs. The European situation was hardly referred to at all. More attention was given to the preparations for the next Peace Conference! . . . There was no statement made on the subject of the European crisis in Parliament until July 27 . . . We really had, at the outside, not more than 10 days’ warning . . . How foolish a Government would have looked that had reaffirmed an assumption of 10 years of peace during the early part of 1914!” (CAB21/2093: 19/10/201, The Basis of Service Estimates, 9 January 1931.)

4. The lesson of history is that the onset of armed conflicts is inherently unpredictable. This is why it makes sense to keep in being an army, a navy and an air force during long periods of peace. The same applies *a fortiori* to the nuclear deterrent. Investment in armed forces in apparently peaceful times is analogous to the payment of premiums on insurance policies. No one knows when the accident or disaster may happen against which one is insuring: if one did, one could probably avoid it and save oneself the cost of the premiums! It is rare indeed, in terms of international politics, that one can rule out the recurrence of a major military threat from any quarter just because it has receded from a particular potential enemy.

5. With the benefit of hindsight, the Second World War is often regarded as a disaster predetermined by mistakes made at the end of the First World War. Yet, in the decade of the 1920s, there was so little sign of an obvious enemy that each of Britain’s three Armed Services prepared its hypothetical contingency plans against an entirely different potential enemy. In those days, the choice of possible enemy would seriously affect the nature of the defence policy designed to meet the threat. Fortunately, the British strategic nuclear deterrent is less dependent than conventional armed forces upon the correct identification of the enemy in advance. Any country which emerges as a potential aggressor with mass-destruction weapons, in the next three or four decades, will be vulnerable to retaliation from Trident or its successor. And this is the sort of time-scale which we have to consider.

6. Each generation of the strategic nuclear deterrent functions for a period of 30 years or more. The actual replacement of the Trident system, if it occurs, will not even begin for at least another 15 years. No-one can possibly foretell what dangers will face us between the years 2020 and 2050, just as the threats facing us today would have seemed bizarre to politicians and military planners at the height of the Cold War in the 1980s. During periods of peace, democratic states naturally tend to scale down their conventional fighting services, but they try to do so in a way which is reversible should the international scene darken. This option does not apply to the nuclear deterrent, which has always been set at the minimum level regarded as essential for credibility. Just as it makes sense to keep minimum conventional forces in being as an insurance policy against unpredictable future conventional threats, the same applies all the more strongly to a minimum strategic nuclear deterrent. There can be no more assurance that a nuclear or major chemical or biological threat will not arise in the next half-century than that major land, sea or air threats will not have to be faced. If it is right to insure against the latter, it is essential to insure against the former.

A NECESSITY BUT NOT A PANACEA

7. Apart from those who have always opposed British nuclear weapons, irrespective of the level of threat, some politicians, some churchmen and commentators, and even some military figures who used to support it, have now changed their minds. This is primarily because the Cold War is over, America appears to be the dominant world power, and the principal threats today emanate from rogue regimes and stateless terrorist groups. Let us consider each of these in turn.

8. First, the ending of the Cold War removes the danger of nuclear confrontation with Russia for as long as that country continues to tread, however hesitantly, the democratic road. Indeed, it is striking to note that many prophets of nuclear doom during the 1970s and 1980s have been all but silenced by the change in East-West relations, even though enough nuclear weapons remain in US and Russian hands to destroy the world's main population centres with many warheads to spare. This illustrates the fact that it is not the weapons themselves which we have to fear but the nature of the governments that possess them. As soon as Russia turned away from totalitarianism, the main concern about her nuclear arsenal shifted from those devices under the control of the Kremlin to those which might leach out from Russian stockpiles and fall into the hands of other regimes which remained more hostile.

9. One concept which advocates of nuclear disarmament have traditionally ignored is the propensity for dictatorships to go to war with dictatorships, and for democracies and dictatorships to clash, whilst few—if any—examples exist of democracies attacking each other. This suggests that it is quite right to have fewer qualms about the possession of deadly weapons by democracies, though regarding their possession by dictatorships as wholly unacceptable. There is no comparison between the two, and it is a constant failing of the disarmament lobby to try to project values of reasonableness, tolerance, goodwill, and peaceful intent onto states under the control of despots, fanatics and dictators.

10. The ending of the Cold War rightly caused a reduction in international tension; but the impossibility of predicting the emergence of future conventional and nuclear threats means that the permanent dismantling of our nuclear deterrent cannot possibly be anything other than a reckless gamble.

11. Secondly, the current period of America's solo superpower status in no way diminishes the case for an independent British deterrent. Nuclear weapons, by their very nature, have devastating potential even in very small numbers. Quite apart from the prospect of unpredictable major threats in the longer term, the current enmity towards Britain by near-nuclear regimes like Iran suggests that unilateralism would be fraught with danger. It used to be pointed out that the British Polaris fleet had done nothing to deter Argentina from invading the Falkland Islands. Certainly, there was never a prospect of democratic Britain threatening to use its ultimate weapon except in response to a mortal threat against the cities of the United Kingdom. What would have been the case, though, if the Argentine junta had possessed even a few atomic weapons or other mass-destruction devices? Without a nuclear force of her own, would Britain have dared to respond conventionally to the occupation of the Islands by a nuclear-armed military junta?

12. Time and again the United Kingdom and the United States have stood side by side in international conflicts. If this pattern continues, the prospect could arise of a nuclear-armed enemy regarding it as safer to threaten or attack the smaller of the two Allies. The danger would then arise of a possible miscalculation by an aggressor thinking that the US would not respond in kind to an attack with mass-destruction weapons on British cities. If this were a miscalculation, the attacker would discover it only when it was too late, instead of having been deterred at the outset by the knowledge that Britain could respond in kind on her own behalf.

13. These considerations clearly bear on the third issue—that of rogue regimes. Several of them are already nuclear powers or on the verge of becoming so. The notion that they will abandon such a course indefinitely in response to unilateral British nuclear disarmament is totally unrealistic. Those who subscribe to it continually make the error of projecting civilised values onto extremist governments who hold them totally in contempt.

14. Turning, fourthly, to the current emergence of non-state terrorist groups, it is absolutely correct that strategic nuclear weapons are of no relevance whatsoever. Neither are aircraft carriers, main battle tanks, guided-missile destroyers or any other heavyweight military equipment. The presence of a serious terrorist threat is clearly an argument in favour of expanded counter-insurgency forces and security and intelligence services. It is no argument at all for the abolition of those military capabilities which are designed to meet other types of threat which this country has faced in the past and may well face again in the future.

NUCLEAR PROLIFERATION

15. Does proliferation make Britain's continued possession of nuclear weapons unethical? There might be a case for arguing this if it could be shown that there were a causal link between our continued possession of a strategic nuclear deterrent and the decision of one or more named countries to acquire nuclear weapons. During the Cold War era, the proliferation argument was often used by one-sided nuclear disarmers in their campaign against Polaris, Trident and the deployment of cruise missiles. Yet, whenever asked to name a specific nuclear or near-nuclear country which would be likely to abandon its nuclear ambitions if we

unilaterally renounced ours, the CND and its fellow-travellers were notably unforthcoming. Countries make the decision whether or not to seek to acquire mass-destruction weapons according to hard-headed calculations of their own strategic interests. A quixotic renunciation by democratic Britain is not very likely to encourage any undemocratic state to follow suit. On the contrary, it is more likely to encourage any such state which views Britain as a potential enemy to redouble its efforts to join the WMD club, given that we would no longer have the means to threaten retaliation against nuclear, biological or chemical aggression.

16. What does the Non-Proliferation Treaty actually commit the United Kingdom to do? Article VI of the NPT is often referred to, but seldom quoted in full. This is what it states:

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

17. There are thus three obligations, only the first of which is time-limited. This is to end “the nuclear arms race” at “an early date”. Given that the United Kingdom—and, for that matter, France and China—have never engaged in a nuclear arms race, their policy of each having a minimum strategic nuclear deterrent does not fall foul of this provision. None of these countries has ever sought to match the nuclear stockpiles of Russia or the United States. Each has been content to possess a much smaller nuclear capability, provided that it is adequate to threaten an unacceptable level of retaliation if attacked. The same would apply to any replacement system for Trident.

18. It is true that Article VI aspires to both “nuclear disarmament” and “a Treaty on general and complete disarmament” as well—but this is nothing more than an aspiration for the indefinite future. What it amounts to is nothing less than a world completely disarmed of all weapons of every description “under strict and effective international control”. This utopia would require several things to happen: the creation of a World Government; the establishment of foolproof methods of preventing clandestine rearmament; and, above all, a revolution in the minds of men so that warfare became redundant. As my Parliamentary colleague, Michael Ancram, observed when Shadow Defence Secretary:

“Nothing in the Article requires worldwide nuclear disarmament to be achieved prior to worldwide conventional disarmament. This is just as well: to abolish all nuclear weapons in a world left bristling with all sorts of other deadly armaments would be to make the world safe again for the disastrous conflagrations which killed millions between 1914 and 1918 and between 1939 and 1945.”

CONCLUSION

19. No-one can foretell what threats this country will have to face between 2020 and 2050. Some may be threats at a level, or from a non-state actor, against which a strategic nuclear deterrent would be irrelevant. Others may consist of mass-destruction weapons in the hands of hostile and potentially aggressive regimes. Against the latter, no amount of conventional military power can hope to be effective. The United Kingdom has never sought to match such regimes warhead-for-warhead. Our policy of minimum strategic deterrence is both potent enough and flexible enough to make any potential enemy with assets to lose think long and hard before daring to use mass-destruction weapons against us.

20. The reason for this was elegantly explained by one of Britain’s leading defence scientists before the first atomic weapon had even been tested. In a top secret report for the Chiefs of Staff in June 1945, Professor Sir Henry Tizard wrote that the only answer which he and his colleagues could see to the atomic bomb was to be equipped and able to use it in retaliation:

“A knowledge that we were prepared, in the last resort, to do this might well deter an aggressive nation. Duelling was a recognised method of settling quarrels between men of high social standing so long as the duellists stood 20 paces apart and fired at each other with pistols of a primitive type. If the rule had been that they should stand a yard apart with pistols at each other’s hearts, we doubt whether it would long have remained a recognised method of settling affairs of honour.” (CAB 80/94: COS(45)402(0), Future Development in Weapons and Methods of War, 16 June 1945.)

Memorandum from Medact

CURRENT THREATS TO THE SECURITY OF THE UNITED KINGDOM

1. Successive governments of the United Kingdom have made it clear on a number of occasions that they do not see UK Strategic Nuclear Deterrent (SND) as a weapon for fighting wars, but as having a fundamentally political role in deterring major strategic military threats (*Strategic Defence Review 2002*). However, they have not to date specified the threats which the SND is designed to combat. Constant repetition of terms such as “Rogue States” and “Axis of Evil”, playing on fear and national superiority, are being used by politicians and others to try to persuade people to accept it as necessary, and therefore permissible to threaten or use drastic measures in the case of certain countries such as Iraq, Iran, North Korea and others.
2. We surmise that possible threats which the UK SND is intended currently to combat include:
 - (i) Declared Nuclear Weapon States (Russia, China, France, United States).
However, the US and France are close economic allies of Britain. Russia is presently not a threat and Britain is far outside the range of China's missiles.
 - (ii) Non-signatories to the Non-Proliferation Treaty (NPT) (India, Pakistan, Israel) and non-adherents to the NPT (Iran, North Korea). However, India and Pakistan are not a threat to the UK, and Israel's missile range extends only to the Balkans and the Middle East. Britain is outside the range of the postulated North Korean missiles and it will be many years before Iran could become a credible nuclear threat to the United Kingdom.
 - (iii) Biological and Chemical Weapons.
The 1996 Advisory Opinion of the International Court of Justice stated that any use or threat of use of nuclear weapons must be in accord with international humanitarian law, and any breach would constitute a war crime (see below). Biological and Chemical weapons do not constitute a threat to the very survival of the state of Britain and therefore the use or threat of use of nuclear weapons in response to these would be illegal.
3. We suggest therefore that the agenda for the further development of UK SND is not to deter potential threats but to secure its vital interests (trade, investments and access to resources). The size of the UK SND would then be “the minimum necessary to deter any threat to our vital interests” (*Strategic Defence Review 1998*). Basing security decisions on a hidden agenda militates against the trust and transparency essential for fostering effective international negotiations on nuclear proliferation.

CHANGING CONTEXT OF FUTURE THREATS TO THE SECURITY OF THE UNITED KINGDOM

4. The possibility exists that over the next 25 years an increasing number of signatories to the NPT may fail to honour their commitments under the Treaty.

The UK/US Trident system has been transformed from a system of exercising control over Russia, to a system for exercising control around the world by its technical development to a system capable of carrying out limited strikes anywhere.

The postulated development and deployment of the Trident system is a direct threat to cooperation by non-nuclear nations in adhering to their commitments under the NPT and is fuelling nuclear proliferation.

5. We are faced with a critical decision.
 - (i) Either to upgrade/replace the Trident system to counter new threats, with the result that a nuclear exchange is likely to occur in the future;
 - (ii) Or to take the lead to defuse the nuclear arms spiral at this point by taking a decision not to replace the current system, abandoning plans to develop new nuclear weapons, sequestering nuclear warheads in dispersed land based silos and working together with other states to strengthen and comply with existing disarmament measures.

A decision by Britain to upgrade or replace the Trident missile system in whatever form will increase the likelihood of nuclear proliferation by NPT signatory states, thereby increasing, not decreasing, threats to our security and producing the very effect which it is intended to prevent.

6. Current arguments used in support of replacing the UK SND include:
 - (i) Britain's nuclear weapons will never be used but are necessary for political reasons;
 - (ii) It provides the strategic defence of Britain by deterring a nuclear capable adversary;
 - (iii) It is needed as a counter to blackmail;
 - (iv) It is needed as a bargaining counter in multilateral disarmament agreements.

These arguments have also all been used explicitly by non-parties to the NPT that are now openly nuclear-armed (India, Pakistan), and implicitly by North Korea, Iran and Israel.

7. It has also been claimed that nuclear weapons status is needed to ensure that the UK continues to have a permanent seat on the UN Security Council. However, the UN Charter clearly does not specify that nuclear weapon capability is required for a permanent seat on the SC. When the UN was founded there was only one nuclear-weapon state, namely the US. Several non-NWS could become permanent members under Kofi Annan's current proposals for UN reform.

8. But there are strong health, humanitarian, economic, political and legal reasons for not replacing Trident:

- (i) We were reminded last year, by the 60th anniversary of the Hiroshima and Nagasaki bombings, of the appalling destructive power of nuclear weapons of far smaller yield than Trident or any likely successor. Nuclear weapons are indiscriminate: in the words of Dr Ron McCoy, Co-President of International Physicians for the Prevention of Nuclear War, to the NATO Assembly in Rome last year, "Nuclear weapons are designed to incinerate people". As the British Medical Association pointed out ²³⁵⁷ years ago, no adequate medical response to their use is possible.
- (ii) Recent experiences with the tsunami, hurricane Katrina (in a highly developed country) and the Punjab earthquake, show the magnitude of major humanitarian catastrophes even without the additional hazard of major radioactive fallout, which might prevent rescue work altogether. Long-term, fallout from nuclear weapons causes cancer and leukaemia and may well cause genetic change in future generations.
- (iii) In its July 1996 Advisory Opinion, the International Court of Justice stated that any use or threat of use of nuclear weapons that did not accord with international humanitarian law would be a breach of international humanitarian law, and as such would constitute a war crime. We cannot, however, imagine any possible use of Trident or its successor that might be feasible under this remit in today's world.
- (iv) Nuclear weapons would not be effective in deterring or responding to attacks or threats of attacks by non-state actors.
- (v) Estimates of the cost of a replacement which range from £10 billion to 25 billion and, according to a recent statement by Defence Secretary Dr John Reid, work at Aldermaston to maintain Trident will cost £1 billion over the next three years. These sums could be far better spent on essential health and social services at home and development aid, expanding conflict prevention measures and protecting the environment worldwide. Such measures would be a more positive contribution to our security.
- (v) Replacing the UK SND would send the very worst possible message to non-signatories to the NPT, not least Iran, and other states contemplating breaching or leaving it. In his statement to the recent NPT Review Conference, Ambassador John Freeman stated that:

[para 18] We re-affirm our unequivocal undertaking to accomplish the total elimination of nuclear arsenals leading to nuclear disarmament. We continue to support the relevant disarmament measures contained in the 1995 Review Conference decision and in the 2000 final Document. We continue to believe that all reductions in nuclear weapons levels, whether achieved unilaterally, bilaterally or multilaterally, are a valuable contribution to the final goal of global nuclear disarmament. We continue to emphasise that our nuclear weapons are for deterrence only and have a political role—not a military one.

9. RECOMMENDATION

Page 9 of the brochure *Strengthening Non-Proliferation* produced for the NPT Review Conference begins with the statement that: "The United Kingdom is fully committed to its disarmament obligations under Article VI of the Nuclear Non-Proliferation Treaty". The ICJ Opinion of July 1996 was unanimous that there exists under international law an *obligation* to pursue nuclear disarmament in all its aspects [our emphasis]. Replacing the UK SND with a new nuclear weapons system would be a clear breach of Article VI of the NPT.

We suggest that a far more constructive political message, giving a clear moral lead, would be sent to other nuclear-weapon states and potential proliferators by a UK statement that it would not replace the UK SND but instead would take steps to phase it out.

28 February 2006

Memorandum from Scottish Campaign for Nuclear Disarmament

1. The nuclear weapons deployed on Vanguard Class submarines today are not in service because of specific or generic threats to the United Kingdom. Britain has nuclear weapons not because of a conscious decision that they are needed, but because there has been no thorough review of nuclear policy since the end of the Cold War. Scrapping Trident was not an option in the Strategic Defence Review of 1998.

⁵⁷ The Medical Effects of Nuclear War (1983) Report of the British Medical Association's Board of Science and Education.

2. The Trident system was purchased because of concern about a threat from the Soviet Union. The main danger was seen as an assault by Soviet conventional forces. The US sold Trident on the understanding that Britain would substantially upgrade its conventional forces.⁵⁸ The agreement was also linked to approval of plans to expand the American base in Diego Garcia.

3. The focus of Defence policy today is on “terrorism”. Al Qaeda are more likely to provoke a nuclear attack than to be deterred by the threat of one. The claim that nuclear weapons might be used against a country supplying nuclear weapons to terrorists is also flawed. Such an assault would be based on the judgement of the same intelligence agencies which missed Iraq’s destruction of all its chemical and biological weapons.

4. There is a real danger of proliferation. But it is wrong to claim that this is a new problem that has replaced the threats perceived during the Cold War. Nuclear proliferation, as it has been seen in the past, was almost entirely a by-product of East-West tension. The idea that American, NATO and British nuclear weapons have a role to play in countering proliferation is a myth created in the early 1990s to rationalise the continued retention of substantial nuclear arsenals.

5. Most of the member countries of the United Nations have concluded that there are no substantive benefits from the possession of nuclear weapons, certainly none that justify their enormous cost. For most nations the taboo on nuclear use has been strengthened over time. If a British government were to order the use of nuclear weapons against a country that had recently acquired or sought to develop the bomb the domestic and international political repercussions would be immense. The radiological and political fallout would be catastrophic. Consequently any threat to launch such an attack would not be credible. This is most clearly seen in the pretence that Britain might make a nuclear response to a chemical or biological attack. Because nuclear weapons are so much more destructive this would be an unacceptable escalation.

6. The Foreign Office has described its effort to tackle Weapons of Mass Destruction in the following terms—“Our work over the year has focused on implementing existing multilateral treaties, which are the cornerstone of international counter-proliferation efforts”.⁵⁹ This should remain the focus of efforts to tackle proliferation in future decades. A key part of this is Britain’s commitment 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 control.”⁶⁰ This legal undertaking should form the bedrock of the review of the future of British nuclear weapons.

7. During the Cold War Britain was presented as a second centre of nuclear decision-making, so the potential to use nuclear weapons independently was deliberately exaggerated. Today the Ministry of Defence conceals the extent to which Trident is operationally dependent on the United States. This has distorted political debate, which is often based on a false premise of independence.

8. The Mutual Defence Agreement and the Polaris Sales Agreement severely constrain the circumstances in which British nuclear weapons can be used. The dependence on American hardware and software is a further restriction. It is conceivable that British nuclear weapons could play a small role in an American nuclear assault. They could also be used as a proxy, in place of US weapons. But a genuinely independent nuclear attack is not a real option.

9. It is extremely unlikely that the world will return to a situation resembling that of the 1970s. Even if it did, Britain’s possession of nuclear arms would only contribute to the dangers of nuclear Armageddon. America and Russia are expected to substantially reduce their nuclear arsenals. American forces are likely to be much more capable than their Russian counterparts. There is no significant prospect that Russian conventional forces will be a major threat.

10. The nuclear triangle of India, Pakistan and China is a cause of concern. Israel’s possession of nuclear weapons is a danger and encourages proliferation. But none of these countries has nuclear weapons in order to threaten Britain.

11. It is possible, but by no means inevitable, that in 2025 there will be nuclear-armed nations in the world. It is extremely unlikely that any of these countries will retain or acquire nuclear arms in order to attack or threaten Britain. British nuclear weapons do not and will not make a positive contribution to tackling the issues arising from the nuclear arsenals of India-Pakistan-China or the Middle East. These countries use Britain’s possession of nuclear weapons to counter the international community’s attempts to persuade them to disarm. They echo the language that we use—India talks of its “minimum deterrent”. The current debate on British nuclear weapons is reported in Asia and the Middle East. Britain’s nuclear capability is a factor in the retention of these arsenals—but it plays no role in countering them.

12. In 1996 the International Court of Justice came close to saying that it would be illegal to threaten to use nuclear weapons in all circumstance. Replacing Trident cannot be logically consistent with the Advisory Opinion. If the Opinion is followed then a threat to use nuclear weapons could only be considered when the survival of Britain as a state was at risk, not in other circumstances when vital or supreme national interests

⁵⁸ Memorandum from Jim Thomson for Zbigniew Brzezinski on US and French Nuclear Programs with attached drafts of letters to be exchanged, National Security Council 29 May 1980. Declassified 12 February 1999.

⁵⁹ Strategic Priorities, Foreign and Commonwealth Office.

⁶⁰ Non Proliferation Treaty Article VI.

were at stake. Even then the threat might well be contrary to the rules of international law.⁶¹ There is only the possibility of legality in a narrow set of circumstances that are very unlikely to arise. The use of British weapons to bolster an American nuclear strike would almost certainly not comply with these restrictions.

13. Behind the gloss of “deterrence” is a threat to use indiscriminate Weapons of Mass Destruction. An essential element of deterrence is that we are prepared to create the impression that a Prime Minister might irrationally and vindictively launch nuclear missiles, knowing that this would result in the deaths of very large numbers of civilians.⁶²

14. In assessing the future strategic situation consideration should be given to the Scottish factor. A recent opinion poll indicated that 78% of Scots were opposed to buying new nuclear missiles to replace Trident.⁶³ There are substantial pressures for independence. Whether or not this is achieved it is likely that the Scottish Parliament will acquire more power in future decades.

15. On 26 April 1974 Henry Kissinger discussed plans for Chevaline with the British Cabinet Secretary, Sir John Hunt. They agreed that the £1 billion upgrade to Polaris would be kept secret. Sir John said “We will say nothing. If there are leaks or gossip that Ministers have to answer, we will say something banal about taking all steps necessary to maintain the credibility of an independent nuclear deterrent”.⁶⁴ There is a need to challenge the banal language which today conceals both the modernisation of Trident and the irrationality of British nuclear policy.

16. Britain should not replace or upgrade Trident. We should discourage proliferation and enhance the nuclear taboo by dismantling the nuclear weapons currently in service.

6 March 2006

Memorandum from Dr Eric Grove

1. The reason that the future of the British nuclear deterrent is now an issue is a direct result of the expected service lives of the “Vanguard” class nuclear powered ballistic missile firing submarines (SSBNs). On current plans these are expected to be in need of replacement after 25 years, in other words between 2019 and 2024. Given the snail-like pace of current defence programmes, decisions thus have to be taken soon if a replacement platform and/or system are required to take over by then. This paper questions this assumption and argues that a decision to replace the basic architecture of the current nuclear force may not be required for another two decades or so.

2. Currently the United Kingdom leases a portion of the US stockpile of D-5 missiles. It might be questioned whether this arrangement will continue for the next two decades, but, given the current very close strategic partnership between the USA and the UK and the assumption of a semi-permanent close transatlantic relationship that underpins the entire defence programme, this can probably be taken as a given. D-5 missiles will be available until 2042, thanks to the Life Extension(LE) programme being undertaken. New financial arrangements would be required. In 2002 the Government said it had no plans at that time to purchase the new missiles, but such a programme would not be too financially onerous compared with other replacement options. The provision of missiles is thus not a serious problem. Commonality with the Americans would be maintained and the key argument for Britain going for D-5 in the first place vindicated.

3. The controlling factor is the life span of the submarines to carry the missiles. The key point on this issue is whether this is governed by safety standards or by practical safety. British nuclear submarines are part of a very rigorous safety regime that is more integrated with civilian standards than the system that governs the more autonomous United States Navy. The latter seems not to be as conservative as the Ministry of Defence in considering the life-span of its SSBNs.

4. The US Navy is now planning on a service life of 45 years for its “Ohio” class SSBNs, almost twice that of the British “Vanguards”. The American boats are having their reactors re-cored as part of an impressive “service life extension programme” (SLEP). This would seem to be an attractive option for the United Kingdom also; it is at least worthy of detailed investigation. SSBNs have relatively easy lives compared to SSNs and their hulls should not have suffered too much strain. Work to strengthen them to extend their life span on the American pattern should not be too expensive. Similarly the more modern British reactor designs have a longer expected life; the latest cores are expected to last 25 years.

⁶¹ The President of the Court made it clear that the lack of a clear decision in the case where the very survival of the state was at stake should not be interpreted as a “half-open door to recognition of the legality of the threat or use of nuclear armaments” President Bedaoui, Advisory Opinion on the Legality of the Threat or use of Nuclear Weapons, International Court of Justice, 8 July 1996.

⁶² The need to present irrational and vindictive impression was revealed in The Essentials of Post War Deterrence, US Strategic Advisory Group, 1995.

⁶³ System Three poll April 2005.

⁶⁴ White House Memorandum of Conversation 1.25–2.45 pm, 26 April 1974, Eighth Floor Dining Room, Department of State. Declassified 1 August 2000.

5. The combination of “SLEP-ed” Vanguards carrying D-5LE missiles would keep the highly credible and flexible Trident force operational until about 2040. Reports that somehow submarines will be more detectable in the 2020s and 2030s should be treated with considerable reserve. The SSBN remains relatively the least vulnerable platform and the ballistic missile relatively the most effective nuclear delivery means in all foreseeable technological circumstances. The blurring of nuclear with other platforms and systems should be avoided for strategic and crisis management reasons.

6. Aldermaston could continue its current work on “Reliable Replacement Warheads” for British Trident with perhaps further new developments (eg more yield options) to exploit improvements in D-5LE’s guidance. The SLEP work would also help maintain Britain’s nuclear submarine infrastructure.

7. Conclusion. Given American plans to keep the Trident D-5 force operational until the 2040s there is no pressing need to abandon or replace Trident D-5 as Britain’s nuclear force. A British service life extension programme (SLEP) for the “Vanguards” should be as practical as it is for the American “Ohios” and there is no reason to believe that access to life extended D-5s would be denied. This would mean that decisions on any “replacement for Trident” can be delayed until about 2025.

6 March 2006

Memorandum from British American Security Information Council (BASIC)

THE STRATEGIC CONTEXT

1.1 The nexus between terrorism and weapons of mass destruction, and the possibility of access to such weapons through failed states or “rogue” regimes, is the dominant strategic context or world-view. Maintaining overwhelming superior military capabilities against any potential opponent remains the dominant US-led Western response.

1.2 There are important transatlantic differences between perceptions of future threats and how to respond to them.

1.3 It is universally acknowledged that nuclear weapons provide no security against independent non-state actors, such as terrorist organisations, threatening strategic attacks.

1.4 The recognition of the non-military nature of many future threats is not yet adequately matched by the response, which remains reactive and dominated by military instruments. Nuclear weapons provide no contribution to the necessary international actions to address these issues.

1.5 The crux of the present debate is between those who have faith in collective security provided by international organisations (NATO, EU, OSCE and the United Nations) combined with conventional national military and policing resources, and those who consider that, ultimately, Britain’s security can only be guaranteed at the national level, including retention of a nuclear insurance policy against possible and undefined future threats.

1.6 A key underlying assumption of the British government is that the multilateral global non-proliferation regime is unable to deter hostile states or terrorists from acquiring WMD. But while today’s proliferation challenges are real and acute, the track record in uncovering, confronting and reversing proliferation with established tools is actually quite strong.

1.7 Nuclear weapons remain the gravest danger and our most urgent task is to head off this danger by strengthening the nuclear non-proliferation treaty (NPT) and expanding and accelerating implementation of Cooperative Threat Reduction Programmes.

1.8 Replacing Trident effectively entails permanent possession and therefore an abrogation of our treaty responsibilities and sends a clear message to aspirant nuclear powers that the UK continued to attach strategic and political importance to nuclear weapons. It would encourage states with far greater and immediate strategic threats to their vital interests and territorial integrity than the UK to go down the nuclear route.

1.9 The extent to which Britain becomes vulnerable to future shocks in the international system, or from terrorists armed with unconventional weapons, depends less on the possession of nuclear weapons, than on the reliability of our collective security arrangements: the US-UK bilateral relationship and our membership of regional security organisations (NATO and OSCE), the EU, United Nations and other global frameworks (such as the Commonwealth). These arrangements are robust and provide a formidable non-nuclear insurance policy.

TIMETABLE FOR DECISION-MAKING

1.10 The timing of any decision over replacement will be determined by the expected life of the current system and the lead-time for deploying any new system. The current system involves a number of components, but the determining factors are the submarine hulls and the missiles.

1.11 We assume that the favoured option will be a replacement like-for-like. That is to say, that it will be based upon a US submarine-launched ballistic missile delivery system, requiring similar features to the existing system, although components would use state-of-the-art technology. There are very good reasons for this assumption.

1.12 Past experience shows that many of the irrevocable steps towards new nuclear weapons are taken well before any formal decision is put before Parliament. We recommend that before any decision is taken the Government undertake a comprehensive Strategic Security and Defence Review.

1.13 The decision as to whether to replace Trident could be delayed for at least a further 10 years until 2019.

BASIC

The British American Security Information Council (BASIC) is an independent research organisation that analyses government policies and promotes public awareness of defence, disarmament, military strategy and nuclear policies in order to foster informed debate. BASIC has offices in London and in Washington and its governing Council includes former US ambassadors, academics and politicians. Further information is available on our website: <http://www.basicint.org>

1. THE STRATEGIC CONTEXT*Terrorism is a dominant factor in current strategic calculations*

2.1 The collapse of the Soviet Union and the end of the Cold War left the United States as the sole hegemonic power, and smaller regional powers and non-state actors competing for influence in a diverse and fluid security environment. This competition for power has thrown up a range of “new” and “asymmetric” military threats. Of these threats, as the 2003 Defence White Paper recognises, “international terrorism and the proliferation of WMD represent the most direct threats to our peace and security”.⁶⁵

2.2 It is also important to recognise that there is a clear link between how we deal with today’s threats and the type of strategic environment we will face in the future. For example, if we plan and prepare for a “Long War” against international terrorism, using policies that inflame the very root causes of terrorism, then the future strategic environment is likely to be dominated by “catastrophic terrorism”.

2.3 Strategic circumstances and political goals have changed markedly since the end of the Cold War, largely as a result of US security leadership. The US *National Security Strategy* released in September 2002 redefined the threat to US security as the nexus between terrorism and weapons of mass destruction, and the possibility of access to such weapons through failed states or “rogue” regimes. Other parties to the transatlantic alliance have also begun to endorse this emerging world-view. For example, in the foreword to the 2003 UK Defence White Paper, the former Secretary of State for Defence, Geoff Hoon, states that “the threats posed by international terrorism and the proliferation of weapons of mass destruction are starker, as are the risks to wider security posed by failed or failing states”.

2.4 Looking back at the last four years, has the link between terrorism, weapons of mass destruction (WMD) and failed states been established with undue haste? The attacks of 9/11 involved no “WMD” and the use of “WMD” by terrorists (eg sporadic attacks using anthrax and sarin) has had a limited effect. One of the most controversial issues during the Cold War was the deliberate and continuous inflation of the Soviet threat by the US military that allowed for the emergence of a US “war economy”, with wide sections of the community directly dependent on a high rate of defence spending, playing upon the ongoing atmosphere of fear; fear of the Soviets and of universal nuclear immolation. There continues an obsession with maintaining overwhelming superior capabilities against any potential opponent, a posture that inevitably drives arms races and consequent insecurity.

2.5 Fast-forward 25 years, and the now seemingly “permanent war economy” of the United States has spawned a defence budget of \$522 billion in 2006 (48% of global military expenditure, and alongside spending by the UK, France and Germany amounting to 60%).⁶⁶ Fear of terrorism has supplanted fear of communism in the American heartlands; and nuclear mutual assured destruction (MAD) has morphed into the chilling threat of biological, chemical and even nuclear weapons, the trinity of so-called WMD, in the hands of “rogue states” or non-state actors (terrorist groups). This, in turn, has given rise, under the rubric

⁶⁵ “Delivering Security in a Changing World”, Ministry of Defence, Cm 6041-1, December 2003, p 4.

⁶⁶ US defence spending amounts to 48.2% of global spend, when it includes budgeted military operations in Iraq and Afghanistan and DoE nuclear weapons development. Reference: Centre for Arms Control and Non-proliferation, US Military Spending vs the World, website accessed March 2006: <http://www.armscontrolcenter.org/archives/002244.php>

of counter-proliferation, to a doctrine of waging preventive war (often mistakenly referred to as “pre-emptive war”), striking emerging threats before they emerge. The UN High Level Panel Group points out that this is a doctrine indistinguishable from outright aggression and has no legal justification.

2.6 There are important transatlantic differences between perceptions of future threats and how to respond to them. The EU Security Strategy, formally adopted by the member states in December 2003, asserts that, “Europe has never been so prosperous, so secure nor so free. The violence of the first half of the 20th century has given way to a period of peace and stability unprecedented in European history”. In contrast, the introduction to the US National Security Strategy states that:

“Defending our Nation against its enemies is the first and fundamental commitment of the Federal Government. Today, that task has changed dramatically . . . shadowy networks of individuals can bring great chaos and suffering to our shores for less than it costs to purchase a single tank. Terrorists are organised to penetrate open societies and to turn the power of modern technologies against us”.

2.7 Nonetheless, threat perceptions are converging, evidenced by the EU document identifying terrorism, proliferation of WMD and failed states and organised crime as “three key threats”, which are “more diverse, less visible and less predictable” than the “now improbable threat of large scale aggression against any member state”.⁶⁷

2.8 It is universally acknowledged that nuclear weapons provide no security against independent non-state actors, such as terrorist organisations, threatening strategic attacks. Tony Blair has himself highlighted this: “I do not think that anyone pretends that the independent nuclear deterrent is a defence against terrorism”.⁶⁸ Nuclear deterrent postures are also problematic even against those asymmetric threats strongly linked to states. This is because, to be credible, threats of retaliation require clear proof of guilt by association, and a willingness to inflict large-scale casualties against populations that may not themselves be aware of any such links.

2.9 Alongside these new and asymmetric military threats the post-Cold War era has also seen the emergence of a range of non-military challenges that further threaten the stability and security of the international community. It is a welcome development that the UK government is beginning to place more importance on “soft” security issues, such as population pressure, environmental stress, energy supplies, and weak or failed states. However, this recognition of the non-military nature of many future threats is not yet adequately matched by the response, which remains reactive and dominated by military instruments.⁶⁹

2.10 Nuclear weapons provide no contribution to the necessary international actions to address these issues. Indeed, a strong case can be made that British possession weakens our ability to respond, because our capability to launch a nuclear attack on anyone without warning undermines trust in both directions.

2.11 The end of the Cold War has also brought opportunities for countries to operate collectively to overcome conflict and to promote democracy and freedom. This is an approach clearly acknowledged in the Foreign and Commonwealth Office’s (FCO) 2003 Strategy White Paper, which noted that the UK’s “security and prosperity depend on the willingness of other states to cooperate in an international system based on the rule of law and shared principles.”⁷⁰ If the British government is to play a leadership role in a global project building stability, peace, sustainability and a world order based upon the universal observance of international law a review of all its policies to ensure consistency with such a project is required.

2.12 It is with these strategic and non-military challenges in mind; and the UK government’s ability to successfully meet these challenges in line with published policy objectives and strategies, that the future of the UK’s strategic nuclear deterrent must be evaluated and assessed.

Nuclear proliferation—what does the future hold?

2.13 As the 2003 Defence White Paper notes “There are currently no major military threats to the UK or NATO”⁷¹ and “. . . it is now clear that we no longer need to retain a capability against the re-emergence of a direct conventional strategic threat to the United Kingdom or our allies.”⁷² However, in Trident the UK continues to retain a “defensive” nuclear deterrent. This deterrent is not targeted and as such is retained

⁶⁷ “A Secure Europe in a Better World—The European Security Strategy”, drafted under the responsibilities of the EU High Representative Javier Solana and approved by the European Council held in Brussels on 12 December 2003, available at: http://europa.eu.int/index_en.htm

⁶⁸ Prime Minister’s Questions, 19 October 2005, Column 841, Q3 [Responding to Paul Flynn, MP].

⁶⁹ These challenges by no means went unrecognised during the latter half of the 20th century but they were invariably forced to take a back seat to traditional perspectives that viewed security as being directly proportional to military capability. The genesis of a more comprehensive approach to security was reflected in the 1980 Brandt Report which drew the unequivocal conclusion that “while hunger rules peace cannot prevail. He who wants to ban war must also ban mass poverty.” *North-South: A Programme for Survival*, Report of the Independent Commission on International Development Issues, Cambridge MA: MIT Press, 1980, p 6.

⁷⁰ “UK International Priorities”, Foreign and Commonwealth Office Strategy White Paper, Cm 6052, December 2003, p 34.

⁷¹ “Delivering Security in a Changing World”, Ministry of Defence, Cm 6041–1, December 2003, p 7.

⁷² “Delivering Security in a Changing World”, Ministry of Defence, Cm 6041–1, December 2003, p 11.

as a political rather than military tool in the immediate term. This is confirmed by Tim Hare, the former MoD Director for Nuclear Policy thus: “... nuclear weapons ... have no function as war fighting weapons or to achieve lesser military objectives.”⁷³

2.14 Thus, with the demise of the Soviet Union it is widely accepted that Trident has no military or deterrence role today. The argument for Britain’s continued possession of nuclear weapons lies in future uncertainty. The crux of the present debate is between those who have faith in collective security provided by international organisations (NATO, EU, OSCE and the United Nations) combined with conventional national military and policing resources, and those who consider that, ultimately, Britain’s security can only be guaranteed at the national level, including retention of a nuclear insurance policy against possible and undefined future threats. Unpredictable future shocks to the international system are a certainty. However, it is important that strategic planners are not over-influenced by highly unlikely and bizarre future threat scenarios, particularly if the insurance policy itself is expensive and presents its own dangers.

2.15 So what are the threats? Weapons of mass destruction (WMD) are constantly in the news these days. The war against Iraq was premised largely on the concern that Iraq already had a large and growing stockpile of unconventional weapons and would not be easily deterred from using them. Efforts to stop North Korea’s acquisition of nuclear weapons have made little progress. Concerns are mounting about the nature of Iran’s nuclear programme. And recent revelations that Pakistani scientists were illicitly selling nuclear weapons technology within a far-reaching black market has reduced confidence in existing efforts to contain proliferation.

2.16 A key underlying assumption, especially among the current US administration and some of its allies (including the British government), is that the multilateral global non-proliferation regime is unable to deter hostile states or terrorists from acquiring these weapons.⁷⁴ This alleged failure is said to be partly due to the unwillingness of the international community to take action against treaty violations and non-compliance, and partly due to the changed nature of the threat, post 9/11. Critics also argue that developments in technology and globalisation trends exacerbate these defects and threaten to render current treaties unenforceable and/or unverifiable.

2.17 But for all their faults, the existing arms control treaties are vital to stopping the most dangerous states and groups from acquiring the most dangerous weapons. Moreover, the critics often downplay the many non-proliferation successes, and avoid the Bush administration’s role in undermining international attempts to strengthen some of these treaties. Nonetheless, there is general acceptance that the Cold War international arms control treaty-based system has its shortcomings, and a number of new counter-proliferation measures (such as the IAEA’s Additional Protocol and the Proliferation Security Initiative) to address the new challenges have been added to the existing non-proliferation toolbox.

2.18 The threats posed by nuclear weapons, especially non-deployed nuclear warheads, and their fissile materials (plutonium and highly enriched uranium) are well documented. The nuclear stockpile continues to grow dramatically: in 1982, the amount of nuclear material under IAEA safeguards was 18,578 (measured in units of “significant quantity”)⁷⁵ by 2002 this had arisen to 123,320 (an increase of 564%). During the same period, the number of IAEA Inspectors in the Department of Safeguards rose from 358 in 1982 to 542 in 2002 (an increase of 51%). Thus, the need to control and reduce the global stockpile of warheads and fissile material, which terrorist groups could steal or acquire on the black market, and to increase the resources available to those tasked with international control should be a core priority for the UK government.

2.19 Nuclear weapons remain the gravest danger and our most urgent task is to head off this danger. Strengthening the NPT and expanding and accelerating implementation of Cooperative Threat Reduction Programmes offer the best route to this end. Since its inception in 1968, the NPT has been the main legal framework for preventing the proliferation of nuclear weapons to additional states. There are only five recognised nuclear weapons states, and four states with the non-recognized nuclear weapons capability outside the NPT. Without the NPT, there could have been at least 28 additional states with nuclear weapons. This alone is a significant achievement. Several states, including South Africa, Belarus, Ukraine, Kazakhstan, Brazil, and Argentina have voluntarily given up their nuclear weapons programmes. Libya has recently become another convert.

⁷³ Hare, T, “What next for Trident?”, RUSI Journal, April 2005, p 30. Also see the statement made by Ambassador John Freeman, Head of UK Delegation, to the Seventh Review of the Treaty on the Non-Proliferation of Nuclear Weapons, May 2005 in which he stated that the UK’s nuclear weapons “have a political role—not a military one.” Available at <http://www.fco.gov.uk/ukdis>

⁷⁴ The regime consists of: The Nuclear Non-Proliferation Treaty (NPT), the Chemical Weapons Convention (CWC), the Biological Weapons Convention (BWC), the Comprehensive Test Ban Treaty (CTBT), their international secretariats and governing bodies, a number of other treaties, and various other international arrangements designed to limit the spread of critical materials for the production of WMD.

⁷⁵ A “significant quantity” of nuclear material sufficient to make a nuclear explosive is defined by the IAEA as 25 kilograms of high-enriched uranium-235, 8 kilograms of uranium-233, or 8 kilograms of plutonium-239.

2.20 There are now four regional nuclear weapon-free zones, which cover virtually the entire southern hemisphere, not to mention treaty regimes that prohibit the stationing of nuclear weapons on the seabed, in Antarctica, in orbit or on the moon and other celestial bodies, or the testing of such weapons at sea, in the atmosphere, or in space. Thus, while today's proliferation challenges are real and acute, the track record in uncovering, confronting and reversing proliferation with established tools is actually quite strong.

2.21 Safeguarding the weapons complex of the former Soviet Union to prevent proliferation of nuclear, as well as chemical and biological materials, has been a neglected priority. Russia is thought to have enough surplus nuclear weapons material to make at least 60,000 nuclear warheads (in addition to an estimated arsenal of approximately 5,000 deployed strategic nuclear warheads and an even more dangerous an unknown number of tactical nuclear weapons, estimated at approximately 3,400). In the absence of reliable systems to safeguard and account for this huge stockpile, much of this material is highly vulnerable to theft or diversion to terrorist and "rogue" states.

2.22 A pessimistic future scenario would see continued and possibly accelerated nuclear and other WMD proliferation and an increase in the number of "countries of proliferation concern" (ie countries with an active overt or covert WMD programme and a recent history of supporting international terrorism, or the potential to do so in the future as a result of state failure or regime change). Such a list of countries might include North Korea, Pakistan, Iran, Iraq, Sudan, Somalia, West Africa, Malaysia, Yemen and Saudi Arabia.

2.23 But an optimistic scenario would see a strengthening of the non-proliferation, compliance and disarmament functions of the NPT⁷⁶ and in turn, clear and unambiguous progress on implementing nuclear disarmament, measures to "roll back" nascent nuclear weapons capabilities (as in North Korea and Iran) and to engage the three non-NPT nuclear weapon states (India, Pakistan and Israel) in the process of non-proliferation. Such a scenario will only be possible if those governments with power in the international system choose to use apply their political will to promoting positive outcomes.

2.24 Britain's nuclear insurance policy is premised upon Cold War deterrence theory. This theory may be a poor guide to future hostilities with new nuclear powers or "rogue states". It would represent seriously flawed thinking, therefore, for the UK to adopt a new nuclear weapon system based upon old paradigms of deterrence since there would be no guarantee that it was fulfilling the strategic role that it had been commissioned for.

The likely impact of Trident replacement on nuclear non-proliferation

2.25 The UK government continues to state its unequivocal support for the NPT and "the total elimination of nuclear arsenals leading to nuclear disarmament."⁷⁷ Any replacement system for Trident based upon the belief that the UK needed to maintain an insurance policy against possible future threats would logically entail permanent possession and therefore an abrogation of our treaty responsibilities. Replacing Trident would send a clear message to aspirant nuclear powers that the UK continued to attach strategic and political importance to nuclear weapons. It would not only legitimise nuclear weapon possession but it would encourage states with far greater and immediate strategic threats to their vital interests and territorial integrity than the UK to go down the nuclear route. The message is simple: if we continue to attach a strategic rational to nuclear weapons then others will do so too and will continue to covet them.

2.26 It is frequently stated confidently that the UK's nuclear arsenal has no impact upon other countries' calculations, that the UK is generally perceived positively and is no threat. It is important to test such assumptions with target audiences outside the UK, rather than simply assert them. In a recent PIPA World Public Opinion poll it emerged that Britain is not universally perceived as a positive influence upon the world, and appears low down in the European list.⁷⁸ These views are particularly negative in the Middle East amongst states of proliferation concern. A combination of current British military involvement in the region and a legacy of intervention, often in support of authoritative regimes, undermines Britain's reputation; it would not be surprising if British nuclear weapons do have very real influence over local attitudes to the legitimacy and saliency of nuclear weapons acquisition by local governments, even if those governments have little immediate fear of a British nuclear strike. Such fears can be created by Defence Secretaries pointing to the possible use of British nuclear weapons to prevent the use of chemical or biological weapons against British forces in the region.

⁷⁶ See BASIC's concrete, achievable recommendations to this end in a series of briefings prepared for the 2005 NPT Review Conference: "Breakthrough or Bust in 05?" at: <http://www.basicint.org/npt/index.htm>

⁷⁷ Ambassador John Freeman, *Op Cit.*

⁷⁸ See Program on International Policy Attitudes: http://www.worldpublicopinion.org/pipa/articles/home_page/168.php?nid=&id=&pnt=168&lb=hmpg1#Britain

The long-term stability of Britain's collective security arrangements

2.27 The extent to which Britain becomes vulnerable to future shocks in the international system, or from terrorists armed with unconventional weapons, depends less on the possession of nuclear weapons, than on the reliability of our collective security arrangements. The principle elements of these are:

- The US-UK bilateral relationship;
- Regional security organisations: NATO, EU and OSCE; and
- The United Nations and other global frameworks (such as the Commonwealth).

The US-UK Special Relationship

2.28 A dramatic deterioration in the relationship with the United States to the point where a future US President would cease to have any interest in threats to UK security is highly unlikely. Even with dramatic and unpredictable changes in the political make-up on one or both sides of the Atlantic it is difficult to see a major change in the relationship given the scope and depth of US-UK interdependence (at economic, political, military and cultural levels).

2.29 It is also important not to make the mistake of seeing the nuclear alliance as a foundation stone of the relationship, but rather the result of it. If Britain were to withdraw from the nuclear weapons business but remain a close ally in other respects, the impact within Washington would be minimal. Indeed, there has not always been strong support within previous US administrations for an independent UK deterrent, and some in Washington may welcome such a move.

2.30 Indeed, if the relationship were to deteriorate it could have a severe impact upon the UK's ability to deploy a deterrent. As described in greater detail later in this evidence, the UK's Trident system, and in all likelihood any follow-on system, is greatly dependent on the US not only for its acquisition but also maintenance, in particular in the use of the joint missile pool. This dependency is itself reliant upon a strong bond between the two countries.

NATO, EU and OSCE

2.31 Under current NATO rules any serious military threat that materialised against the UK would undoubtedly be considered as a threat against NATO as whole and as such would invite a collective military response from NATO. As part of NATO it is difficult, even in 30 years time, to see a scenario that required a unilateral UK nuclear response, as opposed to a collective NATO conventional military response. It is also difficult to envisage a peer competitor to NATO that will come even close to challenging NATO's conventional military supremacy in the next 30 years.

2.32 Similarly, the EU and OSCE are uniquely placed to deal with the conditions that breed terrorism in Europe, and for preventing the emergence of other "soft" security threats (including organised crime, the illegal arms trade, political repression, refugee flows and the denial of human rights). By advocating a comprehensive approach to security and by seeking to defuse conflicts before they erupt, the EU and OSCE are enhancing Britain's security in a more agile and far less expensive way than nuclear weapons ever could. An expanded OSCE role in Central Asia and the Caucasus in particular would be an effective means of dealing with both the threats of radical Islam and political and economic instability.

United Nations and The Commonwealth

2.33 In the wake of the Iraq war and the bombing of the UN headquarters in Baghdad, the legitimacy and relevance of the United Nations as a forum for handling matters of international peace and security is being increasingly questioned. However, the United Nations remains essential to securing a world order that respects both human rights and international law. The Report of the Secretary-General's High Level Panel on Threats, Challenges and Change is an almost ideal vision for a flawed system.

2.34 It can be argued that the reforms suggested in the document are based on an assumption of how responsible states ought to be acting, not how they are acting in the modern era. The United Nations is at a critical juncture. The commitment of individual member states to an optimism and multilateralism that many think lost is the only way to ensure the future of the UN in the 21st Century and enhance the security of medium-sized powers like the UK.

2.35 The UK exerts considerable power and influence in the international political, economic and military arena through its permanent membership of the UN Security Council and membership of other important international organisations, such as the G8, the OSCE and NATO. Britain also has highly developed and distinct global partnerships and cooperation agreements, largely through the EU and the Commonwealth.

2.36 Britain is well placed to take a strong leadership role on the issue of UN reform and should use its privileged position as a permanent member of the Security Council to carry forward a progressive agenda. If it were to do so from a position of having been the first of the P5 to relinquish nuclear weapons, its moral authority and political capital within the UN would present enormous opportunities.

2.37 The distribution of power and states' capabilities would need a major revolutionary upheaval for the emergence of a nuclear threat directed against the UK independently of other European or transatlantic allies. If the UK is to take such a possibility seriously it would be better to delay a decision on replacement until it were necessary (see section on timing below).

2.38 Since the end of the Cold War, arms races have generally occurred within a regional context and in response to a specific regional threat or a general build up in regional tensions. The UK faces no regional conventional or nuclear threat that would suggest the need for a new strategic deterrent, nuclear or otherwise. The strategic partnership that is developing between NATO, the EU and Russia, along with NATO's expansion to include former Warsaw Pact countries, combined with the conflict prevention work of the OSCE and EU, further diminishes the likelihood of a major military conflict within Europe or a major military threat from outside of Europe. The acquisition of nuclear weapons by states such as India, Pakistan and North Korea, and the nuclear designs of states such as Iran, is taking place first and foremost, in a regional context. Such developments are undoubtedly a major international security concern, in part because of their implications on international non-proliferation regimes, but they are unlikely to represent a direct military threat to UK security.

3. TIMETABLE FOR DECISION-MAKING

3.1 The British nuclear deterrent is currently made up of four elements:

- (i) Around 200 warheads;
- (ii) 58 missiles (the "delivery system"), leased from a common pool of US Trident D5 missiles, maintained and regularly refurbished by the United States;
- (iii) Four Vanguard-class submarines (the "platform"); and
- (iv) The support infrastructure mainly consisting of:
 - Aldermaston, where warheads are developed, constructed, refurbished and decommissioned;
 - Burfield, where the warheads are assembled and taken apart;
 - Faslane, where the submarines are based;
 - Coulport (near to Faslane), where warheads and associated materials are maintained and stored;
 - Devonport, where the submarines are refitted;
 - Derby, Rolls Royce, where the reactors and fuel rods are constructed; and
 - Principal command and control facilities: MoD Main Building in Whitehall; Chief of Joint Operations, the Permanent Joint Headquarters in Northwood; and Commander in Chief Fleet, Portsmouth.

3.2 We assume that the favoured option will be a replacement like-for-like. That is to say, it will be based upon a US submarine-launched ballistic missile (SLBM) delivery system, requiring similar features to the existing system, although components would use state-of-the-art technology. The SLBM system offers a solution that is stealthy, has maximum range (up to 11,000 km depending upon payload), delivers the warhead extremely rapidly (in less than an hour depending on the range) and reliably, and with minimal opportunities for interception. It is difficult to see any other system delivering similar capabilities.

Warheads and infrastructure

3.3 The warheads undergo regular maintenance within the UK in a system that could continue for several decades with confidence. There may be relatively minor requirements to renew certain components, and it may be necessary in future, for example, to start purchasing our tritium from the United States. The support infrastructure, and the command and control facilities also require regular maintenance, and occasional renewal, but the current facilities are adequate for the task of maintaining the sea-based deterrent for some decades. It is still openly debated whether the decision announced in the summer of 2005 of major investment in Aldermaston was motivated by safety and stockpile stewardship, or rather to develop the capability for research into new or modified warheads for any future system. That investment has been committed in any case, irrespective of any future decisions.

Missiles

3.4 The US Navy has been acquiring critical components for some 15 years at a minimum level sufficient to maintain production lines and build up its spare parts stock. Production started in 2002 for an additional 115 missiles as part of the Life Extension Programme (LEP). The US Department of Defence (DoD) plans to continue purchasing new D5 missiles until 2013. Some 300 of the missiles within the US pool will soon undergo an upgrade, or LEP, to replace the guidance system and some of the critical missile electronics and rocket motors. The main elements of the LEP are:

- New arming and fusing subsystem for some of the W76 warheads for more accurate ground-burst capability. The subsystem used by the UK is based upon a US design, and is almost certainly purchased from the US. However, there is no link to the common missile pool, and the UK's current subsystems could be maintained without replacement, as the UK policy of minimum deterrence should not require a ground-burst capability.
- Equipping guidance systems with GPS and “three-axis flat system” for steering the re-entry vehicles. This is a significant upgrade designed to increase accuracy, but would also not be needed for a UK minimum deterrent.
- Upgrade and life extension to guidance system. Production for the D5's Mark 6 guidance system, which uses technology that is now outdated, ended in 2001. The US Navy intends to include a new guidance system using updated technologies as part of the LEP. It is currently unclear when a British decision would be needed on whether to cooperate in such an upgrade, and indeed how much it would cost.
- Refurbishing of the solid-fuel propulsion motors. The US DoD contract with Alliant Techsystems for the production of new solid propulsion systems, the only critical upgrade that would require UK involvement to continue its participation in the pool system, is worth \$71.5 million.

3.5 The UK may soon need to make a decision as to whether it chooses to be involved in the US LEP. Given the paucity of publicly available information, providing an independent assessment on this point presents a challenge. In the past, however, when the UK was procuring the original Trident D5 missiles, there was a subsidy provided to the British government in return for flexibility over the timing so that missile production lines were optimised. It could be that in the case of this current life-extension proposal an early decision is required to be taken by the British government in order that there is no ambiguity and production lines can be planned with maximum efficiency. However, the LEP is not a complex production line in quite the same way as the original procurement was.

3.6 If the UK were to engage in a minimum life extension programme for the missiles (within the strategic system's existing budget) to extend our current arrangement with the US Navy beyond 2040, and to replace critical components that required updating for redundancy reasons, this would leave the submarines as the element of the system determining the life expectancy of the whole.

Boats are the weakest link

3.7 The submarines are complex pieces of kit requiring regular maintenance and occasional overhaul. The first UK Vanguard-class submarine, HMS Vanguard, commissioned in 1994, underwent its first refit between 2002 and 2005. The two essential and primary components affecting longevity are the hull and the reactors. But it is the hulls that will determine the life expectancy of the submarines, and by extension, the current Trident system as a whole. When they were constructed the hulls were designed to last 30 years.

3.8 The original procurement of the submarines took 14 years from the then Prime Minister Margaret Thatcher's decision to acquire Trident in 1980 and the commissioning of the first boat (HMS Vanguard) in 1994. The working assumption is therefore a lead-time for any replacement of 15 years. With the 30-year life expectancy outlined in the 1998 Strategic Defence Review, HMS Vanguard is due to leave service in 2024, so a decision is said to be required by 2009 or before the end of this Parliament. It is difficult to be more specific as we are unclear exactly what form a replacement will take.

3.9 This timetable was first alluded to in the 2003 Defence White Paper (that referred to a decision needed in the next Parliament), and has been confirmed by government officials since. The most recent statement (and equally the most equivocal) was made by the Defence Secretary to the House of Commons Defence Committee on 1 November 2005, when he said: “It is not absolutely essential the decision is taken during this Parliament but it would be highly desirable in my view.” (uncorrected evidence) This confirmed the UK government's view that it intended to make a decision in this Parliament, but also holds out the possibility of delay.

Delaying the decision

3.10 If there were a chance to extend the lifetime of the boats and therefore the current system and delay the decision there are good reasons to do so.

Mesling in with the US

3.10.1 Thanks to the US Navy's Service Life Extension Programme (SLEP), the oldest US Ohio-class submarine is not now due to retire until 2029, and it would be safe to assume that any replacement system will not be deployed much before this. If the British government were to maintain its current course of looking to deploy a replacement to Trident by 2024, using American missile technology, that replacement would likely need to rely upon D5 missile technology, or some variant, that may be phased out by the Americans in the early 2040s.

Strategic flexibility

3.10.2 A delay would allow the MoD to maintain greater flexibility in future choices without commitment, while having a better idea of future strategic requirements. The Committee will already be grappling with the problem of predicting uncertain future threats in 20–30 years time to Britain's vital interests; such an exercise is fraught with dangers of over- or under-estimating—such threats; dangers that multiply by several factors the longer we look into the future. A delay would give the MoD (and other government ministries) more options for realistically assessing and thus combating and preventing future threats without being tied into a particular system. It could also give a future government the chance to encourage further progress towards disarmament by downsizing or not replacing the deterrent should the international security environment allow it.

Financial savings

3.10.3 With the MoD under budgetary pressures which the Committee has already noted with concern elsewhere, it can ill afford to be planning additional spend on a replacement system, that has no military function, at this time.

Impact upon proliferation and the global security system

3.10.4 As stated above, the NPT has been up until now extraordinarily successful in slowing the proliferation of nuclear weapons when commentators in the 1960s believed it was doomed to failure. In 1995 and 2000 the Review Conferences agreed important principles that led to optimism and international cohesion. The future today, however, looks bleak again. Warnings before last year's NPT Review conference that the system was in danger of unravelling came from NGOs, the High Level Panel Group, and from the UN Secretary General. Those warnings went unheeded and we are witnessing increased dangers of breakout. If a second-tier nuclear weapon state such as Britain, without immediate threat, reversed its previously positive moves towards disarmament and gave clear saliency to indefinitely continuing its nuclear deterrent by making an early decision to replace Trident—before the 2010 RevCon—it could have a disastrous and irrevocable impact.

Encouraging debate

3.10.5 A delay would enable the full official debate that this issue deserves and has never until now received. Defence Secretary John Reid has called for a national debate on what system should replace Trident; but the MoD is refusing to answer any requests for information on the subject. The House of Commons' Library briefing on the future of British nuclear weapons in July 2005 neglected to consider one important option ie not to replace Trident. This reflects a belief that this government will not consider this option, despite Britain's clearly stated aim to achieve the complete elimination of nuclear weapons, and the government's international legal obligation to make progress towards this objective.

However, when questioned by the Defence Committee on 1 November 2005 the Defence Secretary stated that the government's manifesto commitment to retain the deterrent was for the lifetime of the current system, and that all assumptions would be questioned in considering its replacement. Members of Parliament have an important role to play in ensuring that the decision-making process is open, informed, transparent and accountable. We recommend that before any decision is taken the Government undertake a comprehensive Strategic Security and Defence Review. This review would be foreign policy led and would assess UK security objectives, priorities, policy and planning and explain how nuclear weapons might fit into the broader strategy. The Defence Select Committee could also recognise that this is an issue that needs to consider the foreign policy context and invite the Foreign Affairs Committee to join it in future inquiries into the decision.

Reasons to be optimistic on life expectancy

3.11 The 30-year life expectancy was predicated on Cold War operations. These envisaged two boats being out to sea at any one moment, underwater for months on end, thus placing significant strain on the hulls. With the end of the Cold War the 1998 Strategic Defence Review relaxed the readiness of the submarines, and the UK now has only one boat on patrol at any given time. This alone halves the time at sea for each submarine and must significantly increase the life expectancy of each of the hulls. It also means that towards the end of the life of the submarines, assuming Britain maintains a minimum deterrent posture with only one boat out at a time, there will be greater redundancy built in to the system and there will be less dependency upon the reliability of all submarines.

3.12 Additionally, without any current imminent threat to the submarines, other operational adjustments could be made (for example the boats spending more time above water) that would further extend their lives.

Strategies to reduce lead times

3.13 In the Trident system we have a gold-standard system, which, with modifications and upgrades, could easily fulfil the deterrent task determined by the government for the indefinite future. Although other options inevitably need to be considered, if it is to be replaced, a like-for-like replacement with modifications remains by far the most serious option open to the MoD. This would not require a 15-year lead-time. Each copy replacement for the Vanguard-class submarines are estimated to cost around £2 billion, and take five years to construct.

4. CONCLUSIONS

4.1 It is our assessment that the strategic environment, both current and in the foreseeable future, does not warrant a decision to replace Trident. British nuclear weapons are simply not a credible deterrent against the mainly non-military threats that we are faced with, or indeed from the nuclear forces of any countries or non-state actors likely to seek nuclear weapons in coming years. It would be extraordinarily damaging for a British Prime Minister to use or even contemplate using a nuclear weapon. Beyond the immediate casualties and radioactive fallout, it would destroy the invaluable international nuclear taboo and place Britain at grave risk (not least of immediate retaliation—including from terrorists). And yet for a deterrent to be credible Britain needs to be ready and willing to be an agent of such an outcome.

4.2 Britain's energies need to focus upon ensuring countries like Iran do not acquire nuclear weapons, and our most effective way of doing that is to lock all countries into their existing commitments under the international non-proliferation regime. There are 183 other countries that manage to exist without nuclear weapons, many of which face much greater military threats to their territory than Britain. They understand that it is in everyone's interests to halt proliferation and promote disarmament.

4.3 The weakest link of Britain's Trident nuclear weapon system is the 30 year expected lifetime of the hulls of the submarines. The oldest, HMS Vanguard, can therefore last until 2024. Last time it took 14 years from an initial decision to first launch. The suggestion that a lead time of 15 years will be needed this time, thereby requiring a decision to replace by 2009, does not survive detailed examination and makes a mockery of the undoubtedly level of military-industrial expertise that the UK enjoys.

4.4 The submarines' expected lifetimes are based upon regular deep dives and long periods under sea evading Soviet detection. UK submarines are now off hair-trigger alert and as a result spend longer periods on the surface or on shallow dives. This can be expected to extend the life expectancy of the hulls significantly. In any case, if the UK is simply to build more replacement submarines it will not need the same lead-time as the original Trident purchase. Modified submarines could be built in the space of five or six years from any initial decision to replace.

4.5 The decision as to whether to replace Trident could be delayed for at least a further 10 years until 2019.

7 March 2006

Memorandum from World Disarmament Campaign

1. We would question certain aspects of the basic terminology, which to some extent pre-empt the whole debate. In particular, nuclear weapons are always referred to as the "Nuclear Deterrent". We would challenge this. "Deterrence" may be a function of a weapon, but it cannot logically define the weapon itself. Any weapon *may* be a deterrent in particular circumstances, but to assume that it will always be so by virtue of its mere existence, as is implied by the conventional terminology, depends on many assumptions that in our view cannot be justified.

2. The Committee is to consider "the threats which the strategic nuclear deterrent is currently intended to combat". But the government has always refused to spell out these alleged threats when asked, relying on vague statements about the unpredictability of the future, and therefore the need to prepare for a worst case scenario. Although there is much turmoil and conflict in the world, we see no evidence that there is any direct threat to the security of the realm that could conceivably be deterred by nuclear weapons. We believe it is recognised even among the supporters of nuclear weapons that since the "end of the cold war" there is no threat from Russia, and it has been stated that the Trident nuclear missiles are not targeted on Russia, although what they are targeted on is never disclosed. While proliferation, both that which has already happened and possible future, is a serious concern for the whole world, it still does not constitute a direct threat to this country. And, again, we cannot see that our possession of nuclear weapons in any way influences the countries which have or wish to have nuclear weapons. The nearest to a nuclear conflict that has occurred since the end of the cold war is the stand-off between India and Pakistan over Kashmir. Outright war has been avoided so far, and relations have improved to some extent, but it remains a potential flash-point. Similarly, the Middle East is a powder keg. Israel's nuclear weapons, although not explicitly admitted by the Israeli government, are universally believed to exist and constitute a major destabilising factor in the region. Should Iran or any Arab countries obtain nuclear weapons, that would be a recipe for disaster, but none of these would be targeted on the UK. It is difficult to see in what way Britain's nuclear

weapons contribute to preventing this development. The same argument applies to North Korea. While it is deplorable that North Korea has withdrawn from the NPT and developed its own nuclear weapons, it has never been suggested that these are—or indeed could possibly be—aimed at the UK.

3. The question of the Nuclear Non-Proliferation Treaty and nuclear disarmament as such appears to be outside the terms of reference of this particular stage of the Defence Committee inquiries, but the real answer to proliferation and the resulting dangers is to pursue the “negotiations in good faith” called for in Article VI of that treaty, towards the total elimination of nuclear weapons. There are no such negotiations taking place at present. Indeed, in all the 36 years since the NPT came into force, there have never been serious negotiations aimed at achieving this end. Some achievements have been made in limiting and reducing the numbers of weapons, but total elimination has never been on the agenda. The Draft Nuclear Weapons Convention, which already exists and is recognised as an official UN document, would provide a sound basis for those negotiations if the recognised nuclear weapon powers took their obligations under Article VI seriously. However, the UK government claims that it is meeting its obligations because it has reduced its nuclear capability to a “minimum deterrent”, represented by a single nuclear weapon system, with a nuclear explosive power reduced by 70% since the end of the Cold War. That 70% itself is questionable, given technological developments such as increased accuracy and “efficiency” of current weapons compared with their predecessors. But quibbling about precise numbers is irrelevant to the main issue. Some 200 warheads each with an explosive power 8-10 times that of the Hiroshima and Nagasaki bombs can hardly be described as being significantly near to the goal of zero. If these wider issues are to be considered by the Committee at a later stage, we should wish to contribute further evidence on this.

4. The real threat, not to the security of the realm, but to human security everywhere, is terrorism. That nuclear weapons are no defence against terrorism has been argued so many times by so many authorities and so cogently that there is no need to repeat the arguments here. It should be self-evident that “deterrence”, whatever merit it may have in relation to potential conflict between states, is totally irrelevant to this particular threat by non-state actors. How to respond to terrorism, and in particular the alternatives to the current “war on terror”, are outside the scope of this inquiry, but certainly we believe that nuclear weapons have no useful part to play in protecting the people of the world from terrorist attacks.

5. The final question for this stage of the inquiry is the timing of the decisions on Trident replacement. If, as we believe, the only defensible decision is not to replace any part of the Trident nuclear weapon system, then the decision could be made almost immediately. Indeed, the sooner that decision is made the better. Then there would be the maximum time to plan for the future of any workers, communities and facilities affected by the decision. This would apply especially to the shipyards in Barrow and their workers, who currently have valid concerns about their future. However, we believe that those concerns cannot in any way justify the ordering a new generation of nuclear weapon submarines, or even be a supplementary argument for a more general case for Trident renewal (which we reject, of course, in any case).

6. However, if the Committee and the government do not accept the argument presented here the decision must be put off as long as possible in order to have the fullest possible debate and consultation about this vital issue. That debate must be based on the fullest information about all aspects of the decision. This would include, *inter alia*, the UK’s obligations under international law, full details of perceived threats and the envisaged response, total costs, implications for security, for example of nuclear materials in transit and the relation between any new nuclear weapon programme and the civil nuclear energy industry. (e.g., How much would a new nuclear weapon programme contribute to the intractable problem of nuclear waste disposal?) We do not believe that the general public is currently sufficiently aware of all these aspects to engage meaningfully in the debate, and they must be able to if the government’s professed desire for a full and open decision-making process is to be achieved.

6 March 2006

Memorandum from Aldermaston Women’s Peace Campaign

1. BACKGROUND

AWPC has campaigned against the production and deployment of nuclear weapons at AWE Aldermaston for the last 20 years, and maintains a regular presence at AWE Aldermaston, through holding a monthly peace camp and by monitoring activities on the site.

2. TERMS OF REFERENCE

2.1 The present inquiry sets out to focus on the strategic context and the timetable for decision making with regard to “the future of the UK’s strategic nuclear deterrent.” With regard to the first subject of this inquiry, AWPC has no comments to make, except to state that we are completely opposed to the development of further nuclear weapons systems, or the modification of extant systems; both options would be in contravention of our international obligations under the Nuclear Non-Proliferation Treaty; are immoral and make no economic sense.

2.1 The Committee has called for evidence to inform a democratic debate about the future of nuclear weapons production and “to consider the timetable in which these decisions will have to be taken and implemented”.

2.2 It has been asserted, by the Prime Minister and the Secretary of State for Defence, that no decision has so far been made, to date, with regard to the replacement of the current weapons system. We will present evidence relating to developments at AWE Aldermaston, which suggests that decisions have already been made, which would facilitate the development of a new generation of nuclear weapons, without parliamentary and public scrutiny.

2.4 This submission seeks to inform the Defence Select Committee as the democratic scrutiniser of the MOD, so that they may report back to Parliament and the electorate on current policies, and operations at AWE Aldermaston.

3. TIMELINE: BACKGROUND

3.1 The interlinked timelines briefly set out below show that decisions to produce new weapons have already been made, and that the “new build” at AWE Aldermaston—as outlined in AWE ml’s⁷⁹ 2002 Site Development Strategy Plan (SDSP)—is “dual capable”. Although the government may argue the “new build” outlined below is necessary in the 21st Century to update a decrepit establishment and to maintain extant systems, the new build is such that it will also provide research, design and test capability for the development of new nuclear weapons.

3.2 We believe the decisions to release government funding and enter into contracts with private contractors at AWE Aldermaston have not been made merely to support the continuation of “stockpile stewardship”. The size of these contracts indicates far greater investment than is necessary for mere maintenance.

3.3 All the evidence submitted below is gathered from the public domain, and from AWPC’s observations; other evidence, which cannot be corroborated, has not be cited. In this context, we would remind the Committee that the contracts awarded by the government to AWE ml in 2000 and 2003 contained confidential information that even ministers were not privy to.

3.4 *Planning Applications under the NoPD Procedure.*

All applications by the MoD, or Defence Estates on behalf of the MoD, for new buildings at AWE Aldermaston (detailed) below have been submitted as a series of separate Notices of Proposed Development (NoPD) under DoE CIRCULAR 18/84, in which developments on Crown Land are carried out outside the normal planning process. They are submitted to the West Berkshire District Council (Eastern Area) Planning Committee.⁸⁰ (WBDC.)

3.5 Although it is not the subject of this present inquiry, AWPC notes that the Ministry of Defence has, despite assurances in parliament and the WBDC to the contrary, flouted the planning process by failing to adhere to the government’s own guidelines, makes a mockery of the safeguards called for by the government and the courts, including by:

- (a) Denying that the developments are a “major project”, which would be subject to a public inquiry;
- (b) Presenting WBDC with as a series of applications for a series of buildings, as if they were unrelated applications, rather than an application for the totality of developments envisaged in the SDSP;
- (c) Presented applications for new facilities as replacements for existing facilities
- (d) Failing to present information requested by WBDC, and required under planning guidelines.

4. TIME-LINES FOR SITE DEVELOPMENT—PLANNING APPLICATIONS—AWARD OF CONTRACTS

1998

Government publish Strategic Defence Review, which states, “Following ratification by the UK government of the comprehensive Nuclear Test Ban Treaty, the maintenance of Trident and the capability to build a successor will have to be achieved without conducting nuclear tests . . . These are the main drivers for the future development of the Aldermaston site”

⁷⁹ AWE ml, comprising British Nuclear Fuels (BNFL), Lockheed Martin and Serco, runs AWE Aldermaston on behalf of the government, under a government-owned, contractor-operated site. The government hold the golden share in AWE plc.

⁸⁰ The Planning Committee may either approve the developments or raise objections by referring the NoPD back to the originating Department, which may then refer the application to the Minister for the Environment, Transport and the Regions, who has the power to initiate a non-statutory public inquiry. The Planning Committee cannot refuse a NoPD.

2000

MOD award 10-year contract valued at £2.3 billion to run AWE to AWE ml, a consortium of Lockheed Martin, BNFL and Serco.

2002

AWE ml in July publish Site Development Strategy Plan, outlining plans to build *inter alia*, a laser (Orion) hundreds of thousands of times more powerful than the current HELEN laser, and which enables the testing in materials in conditions replicating a nuclear explosion;⁸¹ a new supercomputer, a hydrodynamics facility, materials testing and other laboratories.

2003

- January: MOD extends AWE ml's contract to 25 years, with increase in value to £5.3 billion.
- October: NoPD for the ORION "replacement" laser submitted to WBDC.
- December: NoPD withdrawn in the face of legal challenge from local resident.
Defence White Paper confirms decision on Trident replacement will be taken in next parliament.

Contracts awarded during 2003 include:

- RPS Group PLC, awarded a contract running from 2003–08, in part to support AWE in planning applications. *AWPC comments: This makes clear that AWE ML intend to continue with piecemeal applications which hide the true nature and extent of the "new build" at AWE Aldermaston* (www.rpsplc.co.uk).
- Anisa Group (computing). Contract runs 2003–06; On 22 April 2003 completed the first of four project milestones.
- Synstar contract running 2003–10, (with the option to extend to second and third stage); computing infrastructure services £14.96 million
- Emcor—2003–08, £30 million (building management)

2004

23 April: NoPD re-submitted for ORION laser, described by AWE as a replacement for the HELEN laser, but advertised by AWE as being infinitely more powerful;

[*AWPC Comment: thus not a replacement but a different facility altogether, and not in compliance with the NoPD procedure.*⁸²

23 June: Outline planning approval for ORION approved by WBDC.

[*AWPC comment: no Transport Plan or Environmental Impact Assessment (EIA)*⁸³ submitted: AWE promise that these will be made available to WBDC]

6 August: NoPD submitted for the "erection of a high explosives fabrication facility" at AWE Aldermaston, withdrawn four days later

2005

24 February: WBDC grant planning permission for two IT buildings and one office building, but resolve to write to the Secretary of State urging that an EIA be undertaken for the developments as a whole.

[*AWPC Comment: no such EIA has been produced to date.*]

Golder Associates begin working on Orion site.

July: MoD Press Release announces an increase in expenditure of £350 million in the next three years to "upgrade facilities" at AWE Aldermaston and Burghfield.

⁸¹ Similar facilities are built, or being built in France and the USA, as part of their weapons development programmes.

⁸² Existing Operational Use and Orion

The Local Berkshire Plan allows in principle that approval for planning may be given at sites like AWE Aldermaston for buildings which are essential for existing operations. The Orion laser facility is also intended for general scientific use, not restricted to use for AWE ml and nuclear weapons technology, and is therefore a change of use and a new development, thus falling outside the remit of WBDC Local Plan. Indeed, there had been discussion about siting Orion at the Rutherford Laboratories.

⁸³ Environment Impact Assessment

To date AWE ml have not provided an EIA for their proposed and actual developments, though they purport to have provided the equivalent in "Strategic Sustainability Appraisal". However, the document provided does not cover the same issues to the same depth as is required by an EIA.

August: Special intervention notice given to Office of Fair Trading by SoS for Trade & Industry after the proposed acquisition by Lockheed Martin (part of AWE ML) of INSYS.⁸⁴

- Start date for M W Zander's £20 million contract for Orion construction.
- September: Secretary of State for Defence announces public debate on the future of UK's nuclear deterrent.
- 21 September: WBDC approve construction of two new modular office accommodation buildings at AWE Aldermaston.
- October: Secretary of State confirms that AWE's budget is expected to increase further to a total of £1.5 billion for the financial years 2005–07 and 2007–8 (£750 million per annum);
- September 26: NoPD for two modular buildings and electricity substation submitted to WBDC.
- preparatory work on ORION site clearly visible; 20 or 30 vehicle movements a day observed.
- November: Major Design House contract awarded to WS Atkins "in support of the ongoing programme of modernisation and refurbishment at the AWE sites in Berkshire. In particular, Atkins will be driving forward the development of major new 'high nuclear' complex research and processing facilities at AWE's sites".
- <http://www.atkinsglobal.com/news/25360/5801899>—Internet
- 23 November: WBDC consider reserved matters for Orion NoPD, but defer approval due to AWE's failure to provide information requested in February, including an EIA.
- 16 November AWE publish updated Site Development Plan (see <http://www.awe.co.uk/main-site/news/articles/NI—2005—031.html>)

2006

January

- Article in *AWE Today*—AWE's in-house magazine—states that the new developments . . . "will make AWE one of the largest construction sites in the UK—similar in scale to the Terminal 5 project at Heathrow". Transport plan reportedly still being consulted on.
- AWE Aldermaston purchased Cray XT3(TM) supercomputer costing over £20 million and one of the world's largest supercomputers.
- Balfour Kilpatrick joined by Symonds Group (consultants) to form an alliance which has been applied to Balfour's long term presence at AWE: "a comprehensive future programme is now in place with new projects running into billions of pounds".

25 January: ORION Reserved matters considered for the second time, members having nee provided with a "Strategic sustainability appraisal", instead of the requested EIA. ORION approved as a separate building application rather than as part of a wider development, despite the WBDC recognising that this application was "just the beginning of a 20 year programme of development on the site, and that it would have a considerable impact on the area."

February

- Anders Elite (recruitment agency) advertises for building contractors at AWE Aldermaston: "the framework, at the Aldermaston Atomic Weapons Research Facility, represents around £10 million of building works a year, currently. The agreement should be renewed in three years, with a view to the value of works rising to £20 million a year, and we are optimistic that the agreement will be extended to twenty years".

March

- 151 posts currently advertised at AWE Aldermaston including job advertisements for computing positions, including one specifically for hydrodynamics, a facility yet to be brought to the Planning Committee.

⁸⁴ INSYS are a significant supplier of special weapon technology to the Nuclear Weapons Integrated Project Team (Defence Procurement Agency). The MoD expressed concern that Lockheed Martin could influence INSYS in ways that could prejudice National Security and sought intervention under the Enterprise Act 2002 with the result that the merger went ahead but with Lockheed agreeing to certain undertakings. This makes a further mockery of the argument in favour of upgrading AWE in order to maintain strategic capability "independently of other nations".

5. CONCLUSIONS

5.1 These brief timelines show that substantial work has already commenced on the AWE site, and the government is investing heavily in the infrastructure at AWE.

5.2 There has been a complete lack of transparency with the public, and in parliament about the nature of the new developments at Aldermaston.

5.3 This has also been seen in the NOPD process, in respect of the local planning authority, with whom the MoD, Defence Estates and AWE ml, have been less than honest.

5.4 We believe that the WBDC has been used to legitimise decisions *post-facto*, and approve developments that have already begun, without being provided with adequate information on which to make a decision, and without complying with the government's own guidelines; we hope that the DSC will not be used in the same manner.

6. RECOMMENDATIONS

6.1 That the Defence Select Committee makes its own enquiries into the timeline of developments that have already taken place at AWE Aldermaston since 2000, including details of budgets, contracts, planning approvals, and makes this information public.

6.2 That the DSC request clarification from the government, and in particular, the Minister of Defence, on expenditure at AWE to date, and makes this information public.

6.3 That the DSC request that the MoD provide details of all building work planned at AWE Aldermaston between 2006 and 2010, including the start and completion dates of all works, and the estimated budget—including the additional staffing costs—for these developments to become fully operational.

7 March 2006

Memorandum from the Nuclear Information Service

CIVIL AND HUMAN RIGHTS FAILURE

- The secrecy surrounding Trident threatens democracy. The UK public cannot make informed decisions when they do not have the facts.
- Unlawful detention of protesters when convoys go by.
- Unlawful arrests of protesters.
- Excessive use of force by police to hold protesters.
- Denial of the right to freedom of assembly and association to prevent demonstrations against convoys and around bases.
- Denial of the right to freedom of expression when convoys go by.
- Denial of freedom of movement when convoys go by.
- Citizens opposed to Trident are subject to surveillance.
- Trident convoys on highly congested roads expose other road users to nuclear risk.
- In the event of an accident, citizens will be under virtual martial law.

II DELIVERY SYSTEM FAILURE

- Trident submarines in port are a constant terrorist target.
- The deployment of Trident at sea belongs to a previous cold war age.
- Recruitment of submariners has become more difficult: the risks are now greater, more understood & nuclear credibility is more questionable.

III DIPLOMATIC FAILURE

- The threat posed by Trident, and the strain placed on it as an overwhelming weapon, denies Britain the opportunity for real dialogue & co-operation between states.
- Britain can never be trusted to negotiate in good faith because it is non-compliant with the non-proliferation treaty (NPT).
- Misreading of another states' intentions cannot be corrected after Trident is used.
- A diplomatic solution to conflict will not be possible after the use of Trident.

- Trident discredits Britain's international standing by claiming diplomatic superiority from an unusable weapon.
- Trident supports the view that such military might brings security.

IV DISARMAMENT FAILURE

- Trident prevents Britain complying with its non-proliferation treaty obligations.
- No state contemplating a nuclear weapons programme will take notice of the NPT since the five nuclear weapons states remain in breach of the treaty.

V DOMESTIC SECURITY FAILURE

- Trident is a prime target.
- Security against terrorist attack at any point in the nuclear cycle has become a critical risk.
- Theft of nuclear materials is a constant risk.
- The Atomic Weapons Establishment (AWE) Aldermaston and Burghfield nuclear weapons sites are not secure.
- Trident undermines the objective of maintaining security by public consent and co-operation.

VI ECONOMIC FAILURE

- The high cost of Trident has led to deep financial cuts to conventional forces for security and peace keeping.
- Defence spending on Trident is disproportionate to the security provided.
- Trident creates financial costs in environmental and security terms.
- Trident adds to long-term public health care costs.
- In the event of a nuclear accident, the country may never recover financially.

VII ENVIRONMENTAL FAILURE

- Devastating long-term environmental damage has been done by nuclear fuel reprocessing to produce weapons grade plutonium for Trident.
- Background radiation is continually raised by the servicing of Trident warheads, adding to existing radioactive fall-out from nuclear weapons' use, testing, production, deployment and decommissioning.
- Contaminated sites at AWE Aldermaston and Burghfield, UKAEA Sellafield and others must be monitored and secured for ever.
- The servicing and operation of Trident continues to add unnecessarily to the legacy of nuclear waste & contamination.
- No solution has been found to the safe storage of Trident nuclear waste: warheads, reactors, and production plant.
- In the event of a nuclear accident, the environment might never recover.
- Trident is allowed to trump long-term environmental dangers.

VIII INDEPENDENT STATUS FAILURE

- Britain's reliance on the United States for missiles and satellite targeting for Trident confuses the notion of an independent weapon.
- Trident is an American weapon with dual control.

IX INTERNATIONAL SECURITY FAILURE

- Trident does nothing to enhance Britain's security.
- Trident poses the deepest and widest security and safety risk to the people of Britain and the world.
- As a security system for the 20th Century, trident no longer addresses 21st Century risks.
- Although Trident is no longer believed to provide "ultimate security", its existence forecloses on any other view of what security actually entails.
- Trident is not a solution to state or non-state, local or global threats.

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- Reliance on all consuming fire-power precludes any other concept of security or any other means of achieving it through cooperation.
 - Trident is Britain's ultimate problem.
 - Any use of Trident could be the beginning of the end of life on Earth.
 - Nuclear weapons have failed to protect the peoples of the Earth: east, west, south and north.

X LEGAL FAILURE

- Trident breaches international humanitarian and environmental law.
- Trident is a weapon of genocide, violating international, treaty and domestic law: the Geneva convention, the genocide convention and the genocide act.
- The threat or use of Trident cannot ever be justified.
- The criminality of Trident subverts the rule of law, nationally and internationally.

XI MILITARY FAILURE

- Trident can never be used.
- If Britain launched Trident, a reciprocal attack would annihilate the people claimed to be protected.
- Escalation could lead to a global nuclear winter.
- Trident has a lead role in the arms race.
- No military commander wants nuclear weapons, it is a few politicians that do.

XII PRODUCTION FAILURE

- The AWE Trident sites are a constant target.
- The AWE Trident sites pose a constant risk of nuclear accident.
- Further production is not necessary to meet existing policy commitments, yet AWE is set to develop facilities for future research & nuclear testing.
- Producers of Trident breach international law: icj 1996 & by reflection, domestic customary human right law.
- Producers of Trident breach NPT treaty law between governments.
- Producers of Trident subvert the rule of law.

XIII SAFETY FAILURE

- Nuclear transport is the weak link in the chain of safety and security risks.
- Serious and fatal accidents to the public have occurred on the roads.
- Ministry of Defence police have been killed and injured escorting Trident convoys.
- Accidents at AWE have caused contamination of workers and prosecution of the operator.
- The constant risk of contamination, criticality and fatal accidents due to human error, mechanical or computer failure at AWE is unacceptable.
- AWE report raised levels of kidney and stomach cancers in their workforce.
- No data is available for the cause of death of AWE retired workers. Many local people consider cancers are work-related.
- Neighbouring communities to nuclear sites and convoy routes suffer the constant risk of a nuclear accident.
- AWE sites create an accumulation of radioactive contamination in ground water, water courses and soil.
- Local authorities are obliged to be prepared for nuclear accidents on military sites and during transport of weapons.
- Submarine accidents in training, exercise and operation have occurred.

XIV TRANSPORTATION FAILURE

- Highways and motorways are not designed, built and operated to protect nuclear weapons.
- Weapons cannot be transported in secret in a democracy.

- Weapons out on the domestic highways are in a totally unfamiliar environment and are therefore vulnerable.
- Trident convoys are beyond the control of fixed-site operators.
- Warhead carriers are not radiation-free.
- Nuclear transport is the weakest link in the chain of security and safety risks.

THE FAILURE OF TRIDENT

Conclusion

In order for Britain to build a humane, legal, sustainable, reliable security structure it must:

- I Renounce the threat and use of Trident.
- II Remove nuclear warheads from submarines.
- III Return Trident missiles to the United States of America.
- IV Systematically decommission warheads and submarines.
- V Decommission production plant at AWE Aldermaston.
- VI Close AWE Burghfield assembly plant.
- VII Commission further research on decommissioning, safe storage and verification at AWE Aldermaston.

Britain can then take the lead in disarmament: morally, diplomatically, legally and economically.

As with its abolition of the slave trade, Britain should abandon worn-out rhetoric and establish a real ethical foreign policy. Peace and security is based on co-operation, respect for others, justice and law.

To remove this heavy nuclear burden will take courage. To share the responsibility for humanity cannot include the irresponsible option to press the nuclear button.

To keep nuclear weapons until they are used is weakness and self-destructive.

To keep nuclear weapons now is to confuse security with power.

To keep nuclear weapons now will continue to create and sustain the arms race.

To be a power for good is within our control.

To use power to launch genocide beyond our control is not only evil but beyond intellectual reason.

28 February 2006

Memorandum from the Nuclear Free Local Authorities (NFLA) Steering Committee

INTRODUCTION

1. The NFLA Steering Committee has the support of 72 Local Authorities throughout the UK including the City Councils of Glasgow, Edinburgh, Leeds, Manchester and the Greater London Authority. Throughout its 25 year existence the NFLAs have campaigned for the abolition of nuclear weapons believing it to be in the interests of the communities they serve.

PROLIFERATION

2. NFLAs are concerned about the implications of nuclear proliferation and believe current UK Government policy fails to send clear and consistent messages to the international community regarding this. The Government asserted in its 2003 Defence White Paper that it was “committed to working towards a safer world in which there is no requirement for nuclear weapons.” The Government regularly asserts its commitment to the articles of the Nuclear Non Proliferation Treaty (NPT). At the NPT Review Conference in May 2000 it agreed to an “unequivocal undertaking by all the nuclear weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament.” Yet the Government now chooses to open a debate about maintaining a strategic deterrent beyond Trident. Raising the question now of whether and if so how to maintain the UK nuclear deterrent beyond Trident sends a message to the wider world that the UK is insincere in its commitment to nuclear non proliferation.

3. Between now and 2008 the Government has committed £1.5 billion to the development of the Aldermaston plant to maintain the operability of the current nuclear weapons stockpile and keep the door open for a new nuclear weapons programme. This development will not go unnoticed in States accused by the UK Government of having nuclear weapons aspirations.

4. In 2004 the Government renewed for a further 10 years the 1958 Agreement with the USA for *Cooperation on the Uses of Atomic Energy for Mutual Defense Purposes*. Again, this will not go unnoticed overseas. It sends another signal to the international community that the UK does not take its non-proliferation obligations seriously.

NUCLEAR REPROCESSING

5. A continuing Government commitment to supporting nuclear fuel cycle services, through public funding via the newly created Nuclear Decommissioning Authority (NDA), must also be viewed in its strategic context. UK Government diplomatic engagement with other States, where there is concern about nuclear aspirations, is unlikely to carry any moral force because we seek to deny to others what we seek for ourselves. The same is true of all countries that possess nuclear fuel cycle facilities but seek to deny them to other States.

6. The NFLAs in response to the recent public consultation by the Nuclear Decommissioning Authority on its Draft Strategy urged an open and transparent public consultation on the future of the THORP reprocessing plant at Sellafield that is currently closed due to an accident and now several years behind its reprocessing schedule. In our view, the proliferation implications of plants like Sellafield must be weighed more seriously by Government.

SELLAFIELD MOX PLANT

7. Completion of the current UK spent fuel reprocessing programme will give rise to a UK plutonium stockpile around 100 tonnes. NFLAs have submitted to the Committee on Radioactive Waste Management that this plutonium be declared a waste form and taken into account in future UK radioactive waste management policy. Additional plutonium has been separated through reprocessing spent fuel from overseas. Overseas plutonium is now being converted to MOX fuel for return to countries of origin. NFLAs consider this to be a serious proliferation danger, providing weapons usable material to several countries, and risking theft and diversion during transportation by organised sub-state groups.

NFLAs, in response to the NDA's consultation on its Draft Strategy, urged that the case for continued operation of the Sellafield MOX Plant be openly and transparently justified. In our view Government must weigh more seriously how the activities it permits are viewed from overseas. In our view, an international plutonium trade operated out of the Sellafield site invites nuclear proliferation.

BURDEN OF RISK

8. The costs to the UK do not end here. The infrastructure developed to maintain the UK's nuclear weapons programme and nuclear fuel cycle programmes significantly contribute to the burden of radioactive waste that will require management for generations to come. Transportation of warhead components between Aldermaston, Berkshire, and Coulport on the Clyde estuary, and transfers of spent nuclear fuel by rail from nuclear stations to Sellafield imposes a burden of risk on all the communities through which such transports pass. In a "post 9/11" world these burdens are increased by the potential for terrorism.

ILLEGALITY

9. The International Court of Justice in 1996 delivered an advisory opinion that generally in international law the use or threatened use of nuclear weapons is illegal because these weapons are indiscriminate and grossly disproportionate in effect. What is known of the US *Doctrine for Joint Theater Nuclear Operations* shows nuclear targeting includes communications infrastructure and industry. Such targets will be predominantly located in centres of civilian population. It is understood that UK nuclear targeting is integrated into US and NATO nuclear strategy. If this is the case then UK nuclear weapons will also be targeted on centres of civilian population. As the experience of Hiroshima and Nagasaki informs us, this is a truly appalling prospect.

CONCLUSION

10. The NFLAs consider there is a serious disjunction between stated Government policy and its deeds. This disjunction will be recognised in the wider world and exploited by those who would seek a nuclear weapons capability. The same is true of all States that possess nuclear weapons but call for nuclear restraint. The NFLAs wish to see a strong Government policy commitment towards nuclear non-proliferation underwritten by our deeds. A Government commitment not to extend the strategic nuclear deterrent beyond the life of Trident could be the starting point for a much wider review of foreign policy and the active leadership role the UK Government can play in securing a safer future.

Memorandum from the UK Mayors for Peace Working Group

1. The UK Mayors for Peace Working Group seeks to promote amongst UK local authorities the policy work of international Mayors for Peace, led by the Cities of Hiroshima and Nagasaki. A list of current UK members is annexed. Worldwide membership of Mayors for Peace is currently over 1,100 towns and cities in 112 countries.

2. Mayors for Peace oppose the development of nuclear weapons by any state or group. Mayors for Peace believe nuclear weapons destabilise international security. It seeks to uphold the Nuclear Non Proliferation Treaty and believes the Nuclear Weapon States that are party to that Treaty must fulfil their nuclear disarmament obligations under Article 6. This is the only way to curb nuclear proliferation and is an essential pre condition for global security.

3. To fulfil their obligations under the Nuclear Non Proliferation Treaty, international Mayors for Peace urge the Nuclear Weapons States to negotiate in good faith an agreement by 2010 that will map the path to nuclear weapons abolition by 2020. Such negotiations must be extended to include states outside the NPT that possess a nuclear weapons capability. This is the approach to future security that the UK Mayors for Peace Working Group urge the UK Government to adopt. Any UK Government commitment to extend the life of the Trident system, or acquire a new strategic nuclear deterrent capability through to the mid 21st Century, would further undermine the NPT, fuel further nuclear weapons proliferation, and decrease global security.

4. Mayors for Peace consider the NPT is already under huge strain as a result of bad faith by the Nuclear Weapon States towards their Article 6 obligations. It is appalling that, 60 years after the devastating nuclear bombing of Hiroshima and Nagasaki, no functioning international forum exists for the multilateral negotiation of steps to reduce and eliminate nuclear weapons. In fact the trend is in the opposite direction.

5. In our view Britain is well placed to help slow and reverse this ultimately disastrous trend. Nuclear weapons serve no legitimate military purpose for the UK and a decision by Government not to commit to a nuclear deterrent capability beyond Trident would send a very strong signal to the international community that our foreign policy would, in future, be directed towards the strengthening of international institutions that promote mutual security in a nuclear weapons free world.

6. Mayors for Peace, as a network of towns and cities, are mindful of the remarks by the UN Secretary General, Kofi Annan, to the 7th NPT Review Conference last May. He warned that if a nuclear catastrophe were to take place: "... As shock gave way to anger and despair, the leaders of every nation . . . would have to ask: How did it come to this? Is my conscience clear? Could I have done more to reduce the risks by strengthening the regime designed to do so?"

7. It is our view that the UK can do more to strengthen the NPT. It can lead by example. It can renounce nuclear weapons and in so doing acquire huge international moral authority to broker further international agreements on nuclear weapons reduction and elimination. The UK nuclear weapons development infrastructure could be reassigned to support a new global role as an honest broker for multilateral nuclear disarmament. The UK could become an international centre for work on nuclear weapons verification and international confidence building.

8. Thus far the Government has offered only the flimsiest of justifications for considering the maintenance of a nuclear weapons capability beyond Trident. Effectively the Government says it is a necessary precaution in an uncertain world. Mayors for Peace believes that future uncertainty in part results from the malaise that nuclear weapons have created. Our future is more secure without them than with them. Expenditure and creative skill devoted to nuclear weapons is expenditure and creativity lost to the real challenges of the 21st Century: reversing environmental degradation, and increasing economic security and human rights for all. In our view, tackling the inequalities that fuel international grievances provides the best prospect for global security, and a reduction in global violence that spills onto the streets of our towns and cities.

7 March 2006

Annex

<i>United Kingdom (35 Towns and Cities)</i>		
Bala	Bath	Belfast
Bradford	Brighton and Hove	Bristol
Cambridge	Chester	Coventry
Dudley	Edinburgh	Glasgow
Gwynedd	Kirklees	Lambeth
Leeds	Lincoln	London
Derry	Manchester	Medway
Middlesbrough	Mold	Newport
Northampton	Norwich	Oxford
Ramsgate	Rotherham	Sheffield
Shetland Islands	Slough	South Ayrshire
Stroud	Strabane	

Memorandum from The Methodist Church

THE INTERNATIONAL CONTEXT

Since the end of the Cold War and the break up of the Soviet Union, the context in which the UK should consider its nuclear deterrent has changed. There is no longer the ever-present fear of a nuclear attack on the UK which was there in the 1960s and 70s.

35 years ago when the NPT was signed, it was feared that 20–30 states might acquire nuclear weapons. In the event, besides the original five states, only three more—India, Pakistan and Israel—have nuclear weapons, although there are current concerns about North Korea and Iran. With this in mind we would caution against a commitment in principle to the retention of the UK nuclear deterrent beyond 2025 on the basis of perceived future threats.

NEW THREATS TO SECURITY

The Strategic Defence Review recognises that combating terrorism is our highest peacetime priority. The UK independent nuclear deterrent makes no positive contribution in this area. The 2005 UN General Assembly has adopted resolutions to address terrorism recognising the importance of co-ordinated international action in this area. There is particular concern about the prospect of nuclear material falling into the hands of terrorist groups. Member states are urged to ensure the security of stocks of fissile material and the International Atomic Energy Agency (IAEA) have called for all fissile material to be brought under multilateral control and for global stocks of such material to be reduced. Progress in this area requires strong multilateral cooperation and further support for the processes of the IAEA and NPT. Further measures on disarmament on the part of nuclear weapons states would help towards building confidence in a framework for multilateral efforts in countering terrorism.

The FCO strategy states that our ability to project armed force to be a key instrument of our foreign policy. In addressing contemporary security threats the concept of collective security is crucial. The FCO expects the UK to play a leading role in establishing a clearer consensus on principles justifying the use of force for humanitarian purposes, conflict stabilisation and timely action against terrorism or threatening WMD capabilities. It is difficult to see a role for an independent nuclear deterrent in projecting armed force within this framework. One might argue that our strategic weapons empower us in addressing the issues of WMD in other states, however this is contradicted by the fact that the six party negotiations with North Korea do not include Britain or France and the three countries leading negotiations with Iran include Germany. In summary, we conclude that in seeking to maintain military dominance with regard to contemporary threats to national security there is no contradiction in having diverging strategies for strategic and conventional forces.

IMPLICATIONS FOR THE FUTURE OF TRIDENT

The Methodist Church welcomes the significant moves UK Government has already made in reducing the size and readiness of the UK nuclear weapons. We recognise that it has said that it is committed to keeping the nuclear deterrent for the foreseeable future, but the Memorandum also makes clear that Trident can be continued until 2025. The world is changing fast enough that this takes us past the foreseeable future.

We believe that in the light of its commitment to peace-building and its obligation to seek nuclear disarmament under the NPT, the Government should not move to replace Trident at present because:

- it would send a perverse signal to the rest of the world, seriously undermining the Government's non-proliferation agenda;
- it would cause other states, both those who already possess nuclear weapons and those who do not, to re-assess their own nuclear capability in the light of the UK Government's clear intention to maintain a nuclear capability;
- current threats to the UK cannot be addressed by nuclear weapons;
- initial fears about the number of states which might acquire nuclear weapons have proved to be unfounded;
- there has been insufficient opportunity for public debate within the UK on this issue.

While many of our members advocate it, we recognise the political and practical difficulties of unilaterally abandoning the UK's nuclear weapons in the immediate future. However, in the current world context, we believe that nuclear disarmament in 20 years time is a real possibility; we urge the Committee to recommend that the Government does nothing now to make that possibility more remote. Rather we should look to encourage a wider public debate and revisit the decision on Trident in the light of the next NPT Review conference in 2010.

Memorandum from Professor William Walker

1. The reasons behind the UK's decisions to acquire and maintain nuclear weapons have never been straightforward. They have included the desires to maintain the "special relationship" with the US, influence its strategic decisions and act as its bridge into Europe and NATO; to buttress the UK's international prestige and its position in the club of great powers inside and outside the UN Security Council; to influence arms control processes and outcomes; and to avoid a French monopoly in nuclear weapons in Europe. Taken together, these concerns have been more influential, in my view, than the perceived need for nuclear capabilities to deter threats from other states.

2. This is likely to remain the case. Indeed, it would be hard to justify the retention of a nuclear force on strategic military grounds alone. Among the eight or nine nuclear armed states, with the possible exception of France, the UK arguably has least cause for concern about future military attack from a well armed foe. This situation seems likely to continue, given the UK's geographical position on the safe fringe of a relatively stable region, unless there is some fundamental breakdown of order on the European continent. Although UK forces stationed abroad might face chemical or biological threats, it is doubtful whether nuclear weapons could or should play much part in deterring an attack using them.

This said, there are obvious questions to be asked over the future strategic relations between the UK and its allies and Russia and, at a greater distance, China and India. There are also questions, of a rather different sort, over strategic relations with states in the Middle East. It is always possible to construct worst-case scenarios. Equally, it is possible (and easier in my view) to construct scenarios in which nuclear weapons will be irrelevant to the UK's political and security relations.

3. UK nuclear forces have long been "committed to NATO", whatever that may mean. Consideration of their future utility therefore depends on NATO's future, the contexts in which NATO operates, and its military strategies and nuclear doctrines. Their utility also depends on the direct or indirect role of nuclear weapons in the protection of members states of the European Union, and on the degree to which the United States or possibly France might be willing and trusted to provide extended deterrence. Decisions on the UK's defence are therefore inescapably decisions on the defence of Europe.

4. There has been much comment recently on the non-proliferation regime reaching a "tipping point" beyond which controls over the spread of nuclear weapons will be all but lost. Anxieties are currently being fuelled by difficulties over Iran and North Korea, the evident ease with which actors have gained access to enrichment technology and nuclear weapon designs, the inability to make any progress in multilateral arms control, and the damage being inflicted on the NPT by the US-Indian rapprochement among other things. There is talk of the NPT collapsing or becoming irrelevant. Although the situation is unquestionably serious, it is not yet calamitous. The non-proliferation norm is proving remarkably durable, and only a small number of states appear interested in dabbling with nuclear weapons. The outlook would be improved, above all, by a shift in the US away from policies which, in recent years, have placed undue emphasis on coercion and have been profoundly disrespectful of international law and institutions. The NPT-centred international nuclear order has rested upon notions of reciprocal obligation and mutual restraint which appear to mean little to the current US administration.

5. In consequence, predictions that the UK may be faced by 20 or 30 nuclear armed states in coming decades seem unduly alarmist, even if it is not possible to dismiss them out of hand. My expectation is that a change of US administration, the combined interests of great powers (in particular) in preventing further weapon proliferation and in moderating their rivalries, the continuing resilience of treaties and other institutions despite recent setbacks, and the need to establish a more stable political and regulatory environment for civil nuclear trade, will bring about a strengthening rather than weakening of the international nuclear order over the next decade or so. It is of course possible that further deterioration will occur, but fear of it may encourage still greater efforts to buttress the security order.

6. My assumption is that the UK's obligations under the NPT and other international treaties and agreements will be addressed in another Inquiry. Suffice to say that replacement of Trident will not be easy to justify internationally under the NPT's Article VI and the agreements reached at the 1995 and 2000 NPT Review Conferences. In addition, the UK would not be sending welcome signals if, as is widely observed internationally, the threats to its security are not exceptional. If the UK needs nuclear weapons, does not every state need nuclear weapons?

7. Since the conclusion of the US-UK Mutual Defence Agreement in 1957–58, the UK's acquisition and deployment of nuclear weapons have depended substantially on transatlantic exchanges of materials, equipment and know-how. Although the costs of maintaining the deterrent have been reduced as a result, the political and strategic advantages have long been questionable. There is little evidence, certainly in the public domain, of UK influence over US policy and strategy, especially in recent years. US constraints on the freedom of action of successive UK governments and political leaders seem more tangible, despite little again being revealed in public. Concerns that the US might withhold future nuclear assistance, or become more grudging in its provision, have naturally discouraged governments from taking independent lines on foreign policy and arms control. It should worry us that the US government's hold over UK policy could increase if Trident replacement brings fresh reliance on US supplies of nuclear material. The US-UK Mutual Defence Agreement has also acted as a barrier to technical and strategic cooperation with France, closing off another possibility for cooperation.

8. The opportunity costs for British armed forces of allocating substantial resources to a new strategic nuclear system will have to be considered. The full cost of sustaining an operational nuclear deterrent is often underestimated. My impression is that the nuclear Navy is regarded in several military quarters as an indulgence. It is also rather forlorn and detached in Scotland from the main centres of influence and activity in southern England. Might resources that are currently locked up in sustaining the nuclear deterrent, and that will be required for its replacement, be put to better purposes by the Navy and the other armed forces, given the changed security environment and the missions that they are now called upon to perform?

9. The technologies of nuclear warheads and delivery systems are comparatively mature. The most important advances in warfare, on land and sea and in the air and space, are coming from developments in conventional military technologies and associated civil systems. Again, might resources be better deployed supporting R&D in these areas?

10. The threats from nuclear terrorism have to be taken seriously. Yet they are often exaggerated. It is still very difficult and expensive for a non-state actor to assemble a workable nuclear device without detection, and the advantages to all but a very few terrorist groups of resorting to nuclear weapons are questionable. There are other easier and less costly means of creating a “weapon of mass effect”, as 9/11 has shown. Radiological weapons are a more plausible threat, but they are not easily controlled and the consequences of their usage are likely to be much less serious than explosive devices. How the UK’s nuclear weapons might be used to deter attacks from terrorist groups, or to deter attacks by such groups on behalf of disaffected states, is hard to imagine. For one thing, the threats of death and injury to civilians from the use of nuclear weapons for such purposes would probably be unconscionable.

11. The future terrorist threat to nuclear bases and deployed forces is slight if appropriate measures are taken to protect them. There is vulnerability, however, in the transfer of warheads from Aldermaston/Burghfield to and from Coulport/Faslane along public highways which pass through or near to urban areas (most prominently Glasgow). A well aimed car or truck bomb could deliver quite a political shock. In general, public support for the nuclear deterrent depends heavily, especially in Scotland, on the absence of any serious accidents or other events that would lay bare the risks to public safety associated with nuclear weapons.

12. All told, I remain sceptical of the benefits that will accrue to the UK from the continued possession of a nuclear deterrent. I recognize, however, that it is a complicated decision involving the weighing of many advantages and disadvantages, only some of which have been discussed here, in conditions of uncertainty over the future security environment. Abandoning the deterrent would also take considerable political courage and statesmanship.

16 March 2006

Memorandum from the Keep Our Future Afloat Campaign (KOFAC)

PART A: EXECUTIVE SUMMARY

- (i) The “Keep Our Future Afloat Campaign”, (KOFAC), is a trade union-led lobby Campaign”. The CSEU, Amicus and GMB are the lead unions involved.
- (ii) KOFAC was launched in April 2004 in response to a further round of large scale job losses associated with completion of HMS Bulwark in June 2004 at the BAE SYSTEMS owned Barrow shipyard in north west England.
- (iii) KOFAC focuses on:
“sustaining and growing jobs in naval shipbuilding in NW England”.
- (iv) In the context of the Defence Industrial Strategy, design work on a submarine based system needs to commence at Barrow in advance of the decision on whether to replace the existing deterrent. This requirement is driven by the long duration of the concept through detail design process and in order to help sustain the design skills base at Barrow.
- (v) The Trident submarine/deterrent programme was the largest ever UK defence procurement project of the 20th Century, it was delivered on time and within budget, with a major component, the submarine delivery system designed and built at Barrow-in-Furness shipyard.

PART B: CONCLUSIONS

- (i) In developing the evidence, KOFAC has taken account of the role of the Barrow shipyard and the trade unions role in developing the Vanguard class, submarine based, deterrent in the period 1980 to 2001, recent research in USA, and the Defence Industrial Strategy (DIS) of December 2005.
- (ii) The UK possesses the minimum effective deterrent in the present circumstances deployed in the most stable configuration: continuous at sea deference.⁽¹⁾

(iii) The British strategic nuclear deterrent consists of four Vanguard class “Trident” submarines, each able to carry 16, Trident D4 missiles. They are deployed with up to 48 warheads. One boat is normally at sea at any one time. The designed operational life of the British built submarines is 30 years.⁽²⁾ It might be possible to extend their design life. The submarines became operational between 1994 and 2001. Replacement boats will therefore be needed from 2024, based on a similar design and build period required for Vanguard.

(iv) A significant number of nations have either acquired or wish to acquire a nuclear capability, the UK needs a strategic deterrent to counter potential threats from a range of sources. As strategic submarines are largely invulnerable to detection/attack and probably offer the best operational means of carrying a strategic deterrent we favour a submarine based system.

(v) Budget availability, affordability will be major factors influencing procurement options for a submarine based strategic deterrent.

⁽¹⁾ Paul Schulte, Director of Proliferation and Arms Control, Ministry of Defence speech at 50th Pugwash Conference, Queens College, 5 August 2000, in “*Britain and Nuclear Disarmament: Record Realities and Opportunities*”, Ministry of Defence (2000).

⁽²⁾ Strategic Defence Review, Ministry of Defence (1998). “*We need to ensure that it (Trident) can remain an effective deterrent for up to 30 years*”.

PART C: DISCUSSION

The Keep Our Future Afloat Campaign (KOFAC)

1. The “Keep Our Future Afloat Campaign” (KOFAC), launched in April 2004, has the support of the CSEU, Barrow Borough and Cumbria County Councils, Furness Enterprise and Northwest Development Agency. In September 2004 the then Secretary of State for Defence the Rt Hon Geoff Hoon MP described the lobby as “*one of the most effective defence lobbies he had come across*.” More recently the Rt Hon Alun Michael MP, Minister for Industry and the Regions on 13 December 2005 said “*this (KOFAC) type of approach by management, trade unions and the local authority is very powerful*”.⁽³⁾

2. KOFAC aims⁽⁴⁾ to:

- Sustain and grow jobs in naval shipbuilding in north west England.
- Secure full utilization of the unique assets found in the Northwest region’s naval shipbuilding industrial base—the shipyard at Barrow and a supply chain of 1,700 companies.
- Sustain the 60% of UK naval ship/submarine design capability, which is located, in Barrow.

3. Barrow was a focal point for the current strategic deterrent’s development, having designed and built the four Vanguard class submarines that make up the delivery system between the announcement of the order for the lead ship Vanguard on 4 April 1986 and 2001 when the fourth boat was completed.

Outline of the KOFAC Submission

4. KOFAC offers views on:

- “*The strategic context and timetable for decision making*”.
- “*Threats which the strategic deterrent is currently intended to combat, how this might change over the next two decades (by 2025) and how this might affect the strategic context in which decisions on the UK deterrent will be made*”.⁽⁵⁾
- “*The timetable in which decisions will have to be taken and implemented*”⁽⁵⁾ if the capability to design the required submarine is to be retained.
- Recent work by Rand Europe⁽⁶⁾ for the Ministry of Defence on timing of the start of design work for a replacement submarine.

⁽³⁾ Note of meeting with DTI Minister for the Regions, *Keep Our Future Afloat Campaign* Secretariat, December 2005.

⁽⁴⁾ *Keep Our Future Afloat Campaign* pamphlet, September 2005.

⁽⁵⁾ Select Committee terms of reference, 20 January 2006, House of Commons, Operational Note.

⁽⁶⁾ *The United Kingdom’s Nuclear Submarine Industrial Base*, Volumes 1–3, 2005, Rand Europe, ISBN 0-8330-3979-8.

The Current Strategic Deterrent System

5. The current deterrent was authorised in 1980.⁽⁷⁾ It was designed and built to counter perceived “cold war” threats at that time from Russia and other nations. At the time the Minister said “*Government regard the maintenance of such a capability as an essential element in the defence effort that we undertake for our own and western security*”.⁽⁶⁾

6. Britain's Trident deterrent which entered service in 1994 is based on three components of the Trident weapon system.
- Four "Vanguard" class nuclear powered submarines "designed solely as a nuclear powered ballistic missile carrier", (*see Table 1 below*).
 - The Trident II D5 delivery system.
 - The warheads.

7. From Parliamentary decision in 1980 to deployment of the first boat, HMS Vanguard with Trident took 14 years (1980–94). 21 years elapsed to completion of the fourth boat.

8. The Vanguard class submarines were all designed and built at Barrow-in-Furness. The design life of each boat is assumed to be 30 years.⁽⁹⁾ Refits include installation of a reactor core designed for the submarine's expected life.

Table 1

THE VANGUARD CLASS SUBMARINE FLEET

	<i>Ordered</i>	<i>Commissioned</i>	<i>Refitted</i>	<i>Live Expectancy Expires</i>
HMS Vanguard	April 1986	1993	2002–04	2023
HMS Victorious	October 1987	1995	2005–07	2025
HMS Vigilance	December 1990	1996	Not scheduled yet	2026
HMS Vengeance	July 1992	1999	Not scheduled yet	2029

Note: Each boat is assumed to have a design life of 30 years.⁽⁹⁾

9. The fleet of four submarines or "boats" was designed to carry 192 warheads (12 per missile). Each submarine has 16 independently controlled missile tubes. The Strategic Defence Review, White Paper (July 1998) Cmnd 3999, paragraph 66–67 reduced the UK's reserve of warheads to 200. It was also announced each submarine would carry a maximum of 48 warheads whilst on patrol.⁽⁸⁾ One submarine is understood to be on patrol at any one time.

⁽⁷⁾ Statement to House of Commons, 15 July 1980 by Secretary of State for Defence.

⁽⁸⁾ "Trident and the Future of the British Nuclear Deterrent", pages 6 and 8, Standard Note SN/1A 3706, page 4, House of Commons debate, 15 July 1980, Column 1235, 5 July 2005.

⁽⁹⁾ "Delivering Security in a Changing World", White Paper, Cm 6041, December 2003.

Government Policy

10. Britain's current nuclear policy is set out in the "Strategic Defence Review White Paper", Cm3999 (July 1998) and "Delivering Security in a Changing World" (Cmnd 6041 of December 2003). Government justify the UK's deterrent capability based on:

"The continuing risk from the proliferation of nuclear weapons and the certainty that a number of other countries will retain substantial nuclear arsenals, mean that our minimum nuclear deterrent . . . is likely to remain a necessary element of our security", adding, "We will . . . continue to take appropriate steps to ensure the range of options for maintaining a nuclear deterrent capability is kept open until that decision point".⁽¹⁰⁾

11. Defence Industrial Policy (2002) identified nuclear technology as a key strategic capability in the domestic manufacturing base of the UK.

12. The Government in its May 2005 Labour Party Manifesto of May 2005, stated, "We are committed to retaining the independent nuclear deterrent".⁽¹¹⁾

13. Subsequently the Secretary of State for Defence on 4 July 2005 added, "Decisions on any replacement of the UK's nuclear deterrent are likely to be necessary in the lifetime of the current Parliament".⁽¹²⁾

14. The Defence Industrial Strategy of December 2005 makes specific reference to a possible "successor to the current Vanguard class" in paragraph B2.63 (*see Appendix B*).

⁽¹⁰⁾ Paragraph 3.11, Delivering Security in a Changing World, Cmnd 6041, December 2003.

⁽¹¹⁾ *The Labour Party Manifesto 2005*, www.labour.org.uk/fileadmin/manifesto_B042005

⁽¹²⁾ House of Commons debate, 4 July 2005, C5.

The Threats Which The Strategic Nuclear Deterrent Is Intended To Combat And How They May Change

“The world in 2030 will not be more predictable than today”.⁽¹³⁾

15. KOFAC considers that a strategic deterrent is still needed and is still likely to be needed from the second decade of this century and beyond. We also consider that a submarine based delivery system holds advantage over land or air based systems.

16. KOFAC agrees with the Royal United Services Institute paper *“Questions for the Debate of the Future UK Strategic Deterrent”* which provides an excellent summary of the issues associated with replacing the current UK deterrent for the Committee’s consideration.⁽¹⁴⁾

17. A significant number of nations now have or are seeking to have a nuclear capability. They include Russia, China, (sometimes referred to aspiring peer group nations to USA), Iran, and what have been described as “rogue states” or “terrorists”.⁽¹³⁾ The Committee’s attention is drawn to several recent studies which have highlighted where nuclear threats could emerge from, these are summarised below.

Russia—in *“Russian Nuclear Forces 2006, Bulletin of Atomic Scientists NRDC Nuclear Notebook”*, pages 64–67 (March to April 2006), by R S Norris and H M Kristensen and *“Russian Nuclear Forces 2005”*, pages 70–72 (March to April 2005), by R S Norris and H M Kristensen. Also in *“The Eurasian Security Environment Testimony”* by Fiona Hill of the Brookings Institution, House Armed Services Committee Threat Panel, 22 September 2005.

China—in *“CRS Report for Congress RL33153 Chinese Naval Modernization: Implications for US Navy Capabilities—Background and Issues for Congress”*, 18 November 2005, and statement by R Kamphausen, Director, National Security Affairs National Bureau of Asian Research USA & House Armed Services Committee on China as Military Modernization.

Rogue States and Terrorism—in *“The Eurasian Security Environment Testimony”* of Fiona Hill of the Brookings Institution, House Armed Services Committee Threat Panel, 22 September 2005 and Ambassador Lindon F Brooks, Under Secretary of State for Nuclear Security, US Department of Energy evidence to House Armed Services Sub-Committee inquiry on Strategic Forces, March 2006.

18. We also note that on 1 March 2006 the Under Secretary for Nuclear Security at the United States Department of Energy said: *“Acquisition of nuclear weapons, WMD capabilities, technologies and expertise by rogue states or terrorists poses a grave threat to the United States and International Security”*.⁽¹⁵⁾

⁽¹³⁾ Ambassador Lindon F Brooks, Under Secretary of State for Nuclear Security, US Department of Energy evidence to House Armed Services Sub-Committee inquiry on strategic forces, March 2006.

⁽¹⁴⁾ *Focus on British Defence Policy and Doctrine: Questions for the Debate on the Future of the UK Strategic Deterrent*, pages 50–57, L Willet, Royal United Services Institute, December 2005.

⁽¹⁵⁾ *Russian Nuclear Forces 2006*, Bulletin of Atomic Scientists NRDC Nuclear Notebook, pages 64–67, March to April 2006, R S Norris and H M Kristensen. *Russian Nuclear Forces 2005*, pages 70–72, March to April 2005, R S Norris and H M Kristensen.

19. Other possible threat scenarios identified range from large scale terrorist acts to potential tensions between Russia and China in the Russian Far East, emergence of extremist terrorist groups in central Asia (see note 12).

Iran—in *“Deter and Contain—Dealing with a Nuclear Iran”*, Testimony of Michael Eisenstadt, House Armed Services Committee, 1 February 2006.

Budgets

20. All aspects of a successor deterrent system has to be considered in the context of UK defence budgets which have remained relatively static at around £6 billion/year⁽¹⁶⁾ (*summarized in Table 2 below*). *“Between 2008–15 the current forward equipment plan is already expected to create a ‘bow wave’ when procurement programmes far exceed available funding”*.⁽¹⁷⁾

21. The Government’s 2004 Spending Review, set the Defence Budget until 2007–08. The Defence budget will increase from £29.7 billion in 2004–05 to £33.4 billion in 2007–08. In real terms (ie after inflation) it represents average annual growth of 1.4%. It will amount to longest period of sustained real terms growth in planned Defence spending (see Table 2 below).

Table 2**THE DEFENCE BUDGET 2004–08****£ million**

	2004-05	2005-06	2006-07	2007-08
Resource Budget	31,370	32,449	32,698	33,018
Capital Budget	6,327	6,880	6,970	7,600
Total Departmental Expenditure Limit (DEL)	29,710	30,888	32,067	33,447

Source: MoD website www.mod.uk⁽¹⁶⁾.

MoD state that, “*The settlement for defence allows us to invest in new capabilities to increase our agility, flexibility and deployability. Providing world-class equipment to our Armed Forces requires major investment, so as well as using these increased resources we are also driving a major efficiency programme to maximise every penny spent on defence.*”

22. The Select Committee may wish to invite MoD to indicate what timelines it has in mind for design work on a submarine-based delivery system given current budgetary pressures and planned naval shipbuilding commitments.

⁽¹⁶⁾ *HM Treasury Spending Review 2004*, Cmnd 5237, July 2004, Page 129.

⁽¹⁷⁾ *Trident and the future of the British Nuclear Deterrent: House of Commons Standard Note SN/1A/3706*, 5 July 2005, page 11.

Procurement Options—Defence Industrial Strategy—Submarine Based Delivery System

23. Timelines for strategic deterrent procurement will depend on budget availability and on which procurement option is chosen. Three options are reported as being under consideration:⁽¹⁸⁾

- Extend in-service life of “Vanguard” class submarine—we would not favour this as it would “*only keep the Trident capability in service for a further 10 years*”.⁽¹⁸⁾
- Procure a direct replacement system—the decision for this would come later than UK is likely to require.
- Procure a brand new capability.

24. KOFAC’s preference is therefore to see MoD procure a brand new capability i this new capability could involve a purpose build submarine or a new multi-role submarine with vertical launch tubes in terms of affordability and delivery of “capability and effect”.

25. In USA a new Trident variant will probably be developed in 2020–42 timeframe. The US replacement procurement decision is likely in 2016, UK needs one by 2010.

⁽¹⁸⁾ *Trident and the future of the British Nuclear Deterrent: House of Commons Standard Note SN/1A/3706*, 5 July 2005, pages 11–14.

Defence Industrial Strategy Policy—Submarine Based Delivery System

26. KOFAC considers a submarine-based delivery system gives UK a strategic advantage over other potential delivery systems. With this assumption, we now turn to the issues of timing being addressed by the Select Committee and set our views in the context of:

- The time needed to develop a submarine-based delivery system,
- the timing of work so as to sustain the necessary design skills base, and
- the UK’s recently adopted Defence Industrial Strategy⁽¹⁾ (*see Appendix B*).

27. The Defence Industrial Strategy⁽¹⁹⁾ (DIS) (paragraph B2.63) specifically states that Government wishes to “*ensure options for a successor to the current Vanguard class deterrent are kept open in advance of eventual decisions likely to be necessary in this Parliament*”.

28. The last strategic deterrent submarine build commenced in 1986. Detailed design began earlier soon after the 1980 decision to invest in the system. Initial concept design work commenced at least four years prior to 1986 in order to prepare for a decision being made. It took 14 years to develop and the programme lasted until 2001, 21 years. Three “Astute” class attack submarines are now being constructed at Barrow-in-Furness. The Defence Industrial Strategy states that future submarine orders depend on affordability and on being able to keep design team domaine expertise together.⁽²⁰⁾ (*see Appendix B, paragraphs B2.62 & B2.63*).

29. KOFAC agrees that it will be necessary for “*MoD and industry to demonstrate an ability to drive down and control the costs of nuclear submarine programmes*” (para B2.63).⁽¹⁹⁾ Significant progress has been made by BAE SYSTEMS at Barrow in driving down overhead costs, (27% have been achieved since 2003) and work is underway to encourage firms who act as suppliers to follow BAE’s example.

30. DIS (paragraph 2.62) observes “*submarine design capability is at risk if long gaps emerge between first of class design efforts*”⁽²¹⁾ (*see Appendix B*). The well documented example of the gap between build of the “Vanguard” and “Astute” classes demonstrates the potential for cost increases and programme delays. Rand Europe emphasise that the UK submarine design base is rapidly eroding.⁽⁴⁾ “*Demand for the design and engineering resources is declining as the design of the first of class nears completion. To sustain the UK’s*

nuclear submarine design expertise, some minimum core of professionals must continuously work in that area".⁽¹⁹⁾⁽²⁰⁾ DIS's proposal for an eight year update of a submarine class design will not employ all the core skills required to sustain a submarine design capability in the UK.

⁽¹⁹⁾ *Defence Industrial Strategy*, Defence White Paper, Cmnd 6697, December 2005.

⁽²⁰⁾ *The UK's Nuclear Submarine Industrial Base*, Volume 1, Sustaining Design and Production Resources, Rand Europe 2005.

⁽²¹⁾ Submarine designers can undertake surface ship design work, but the same is not true in reverse. Design for the tight space constraints of a submarine is a unique skill that needs to be sustained. One way to do this is to allow the skilled submarine design teams to have a core workload of ships and submarine design work, to bridge any workload gaps between submarine design orders.

31. Rand (*see Appendix A*), in advising MoD, indicated if the UK wishes to retain a submarine-based strategic nuclear deterrent, design of a follow-on SSBN class would have to start approximately 15 years prior to the desired in-service date for the replacement submarines. They concluded, "*With retirement of the 'Vanguard' class starting around 2018, the design for a follow-on class would have to begin immediately*".⁽²¹⁾ KOFAC agrees with this conclusion.

32. Rand came to this view after reviewing options for the "Vanguard" class to have a design life of 25 years and 40 years. They concluded "*From a design base standpoint, the most desirable retirement age for the 'Vanguard' class would be 30 to 35 years*" ie 2023–28, adding that, "*Even if the Vanguard class is retired at 30 to 35 years of age, there may still be a period of time when the design core is inadequate. A retirement date that is not optimal for sustaining the design base may have to be chosen for some other reason. How might the design core be sustained through periods of slack demand?*

- *Spiral development of the Astute class.*
- *Continuous work on conceptual designs for new submarine classes, whether or not those classes are ever built.*
- *Design of unmanned undersea vehicles.*"⁽²⁰⁾

33. The DIS proposes a Maritime Industrial Strategy (MIS) by mid summer 2006 (*see Appendix B*). MIS will set out in detail programming of warship and submarine programmes. KOFAC considers the MIS needs to programme concept design work for replacement options to "Vanguard" to be introduced by 2007 in order to help sustain the design capability to develop a submarine based system and achieve the DIS policy quoted above in paragraph 39. We also advocate the MIS should define the specification, capability, and effect it wishes to see delivered and the likely budget available so that industry can assess what is required and present suitable options for "team navy" (MoD and industry) to examine, evaluate and approve.

⁽²¹⁾ *The UK's Nuclear Submarine Industrial Base*, Volume 1, Sustaining Design and Production Resources, Rand Europe 2005.

Conclusions

34. The Trident submarine/deterrent programme was the largest ever UK defence procurement project of the 20th Century, it was delivered on time and within budget, with a major component, the submarine delivery system designed and built at Barrow-in-Furness shipyard. The domaine expertise remains at Barrow to enable MoD to aim for a similar outcome of delivering a follow-on submarine-based deterrent carrying system.

35. Given the number of nuclear capable states, risks of proliferation, and terrorism there is likely to be a continuing need for UK to sustain a strategic nuclear deterrent and invest in a successor delivery system. To maximise its operational effectiveness it should be submarine-based.

36. Timing is a key issue from the point of view of sustaining the capability to design a replacement system, there is strong evidence that design work should commence on submarine-based concept solutions now and in advance of any decision on whether to proceed with a new system "to keep options open" and in order to sustain critical design skills in the UK, especially at Barrow. We note that the cost of undertaking concept design work is likely to be modest in relation to total project cost. Rand indicate, "*Annual investments to sustain a core of submarine-specific design resources involving a core of 200 designers, engineers, and draughtsmen would require annual funding of perhaps £15 million*".

37. MoD should, "*Decide as soon as possible whether there will be a next-generation SSBN class and when it will be designed and built. This decision is needed to inform any further actions to sustain the design base and schedule remaining Astute production to maximise efficiency*".⁽²²⁾

38. Ministers have recently said: "*We need to sustain high-end skills to design and integrate complex warships and maintain them through-life. We need to retain, too, the ability to design, manufacture and support all aspects of submarine capability*". The approach KOFAC advocates will help achieve this objective.

⁽²²⁾ *The UK's Nuclear Submarine Industrial Base*, Volume 1, Sustaining Design and Production Resources, Rand Europe 2005.

APPENDIX A

RAND OBSERVATIONS ON THE NUCLEAR SUBMARINE DESIGN SKILLS BASE⁽¹⁾

“Gaps in design and production can lead to the departure of experience personnel to other industries and to the erosion of defence system production skills.”

“The submarine design base is rapidly eroding. Demand for the design and engineering resources is declining as the design of the first of class nears completion. The number required will be fewer than that needed to sustain a viable nuclear submarine design base.”

“To sustain the UK’s nuclear submarine design expertise, some minimum core of professionals must continuously work in that area. The number required varies with the domain of expertise. The total number required across all domains is approximately 200. The workforce could drop below this critical level in the near future without a new design programme.”

“There are options for sustaining the 200-person submarine design core, the ideal way would be to soon commence the design effort for a new class of submarines. No decision have been made regarding any programmes beyond the Astute class. The current Vanguard SSBN class could begin retiring as early as 2018. Design of a follow-on SSBN class would have to start approximately 15 years prior to the desired in-service date for the replacement submarines. The design for a follow-on class would have to begin immediately. The Astute-class design would have to begin some 10 years in advance of delivery of the first of class.”

“There may still be a period of time when the design core is inadequate in at least some of the specialties required to sustain expertise. How might the design core be sustained through periods of slack demand? There are several possibilities:

- Evolution of the Astute design as more boats are built to take advantage of new technologies.
- Continuous work on conceptual designs for new submarine classes, whether or not those classes are ever built.
- Design of unmanned undersea vehicles.”

“These options could be exercised simultaneously. However, taken together, they could not by themselves adequately sustain a submarine design core.”

“Collaboration with the United States or another submarine-producing country should also be considered. Design work on each country’s submarine programmes could help sustain the other’s design core.”

“A core of 200 designers, engineers, and draughtsmen would require annual funding of perhaps £15 million.”

⁽¹⁾ Rand Europe 2005, Volume 1 of *The UK’s Nuclear Submarine Industrial Base: Sustaining Design and Production Resources*.

APPENDIX B

DEFENCE INDUSTRIAL STRATEGY, PROPOSALS RELATING TO SUBMARINE INDUSTRIAL BASE

B2.62 Submarine design capability is at risk if long gaps emerge between first-of-class design efforts. The 11 year break between the design of Vanguard and Astute undoubtedly led to a loss of capability and impacted on the Astute programme. We now aspire to an eight year drumbeat to sustain the design capability through incremental improvements, both to drive down build costs and reduce subsequent support costs.

B2.63 The submarine design programme will ensure options for a successor to the current Vanguard class deterrent are kept open in advance of eventual decisions, likely to be necessary in this Parliament. Cost-effectiveness will clearly be a key factor in any consideration of potential options, both submarine based and non-submarine based. For submarine-based options it will be very important that MoD and industry are able to demonstrate an ability to drive down and control the costs of nuclear submarine programmes. Industry will be fully engaged in ensuring that design efforts achieve the maximum impact in control of submarine build and support costs, so sustaining the potential for this significant future business and military capability.

In particular, we are developing a stream of work known as the Maritime Industrial Strategy (MIS).

MIS WILL BE AT THE HEART OF DEVELOPING A SUSTAINABLE RELATIONSHIP BETWEEN THE MOD AND INDUSTRY

B2.71 We have been working with industry on the MIS for some time, looking at how we can best tackle these difficult sustainability issues. This work is concentrating on more clearly identifying the likely volume and timing of future business, and defining in greater detail how we plan to maintain the sovereign capabilities we require. This includes defining the Core Work Load in discussion with industry.

B2.73 Under the MIS, we will immediately start negotiations with the key companies that make up the submarine supply chain to achieve a programme level partnering agreement with a single industrial entity for the full life cycle of the submarine flotilla, while addressing key affordability issues. The objective is to achieve this agreement in time for the award of the contract for the fourth and subsequent Astute class submarines in early 2007. This will be matched by the implementation of a unified submarine programme management organisation within the MoD.

23 March 2006

Memorandum from the Women's International League for Peace and Freedom

INTRODUCTION

1. The Women's International League for Peace and Freedom (WILPF) grew from a remarkable gathering of women of different nations—both from Europe and America, from “enemy” no less than neutral countries—in April 1915 at The Hague. From that beginning the League has grown to an organisation of 36 country sections and is a respected Non-Governmental Organisation consulted by the United Nations.
2. Since its formation the League has worked for the abandonment of war as a means of addressing international disputes and has emphasised the consequences to women and children of military conflict.
3. At this crucial time in world affairs, and when the British Government is considering updating its nuclear capability, the United Kingdom Section of WILPF wishes to make its voice heard in the Defence Select Committee's deliberations.

ILLEGALITY

4. There is a compelling legal argument against further development of nuclear weapons. The 1968 Nuclear Non-Proliferation Treaty (NPT) committed the UK to nuclear disarmament “at an early date”. This was not imposed on Britain from outside. It was ratified by Parliament and is therefore part of UK law. Further, the 2000 NPT Review Conference laid out a Programme of Action which included “an unequivocal undertaking by the nuclear-weapon states to accomplish the total elimination of their nuclear arsenals leading to nuclear disarmament”. Nuclear weapons should have a *diminishing* role in national policies and disarmament must be irreversible. These pledges are a natural extension of the original NPT and they are legally binding on all states, including the UK.
5. There are no nuclear disarmament negotiations at all at the present time, and instead of pursuing this aim those countries (particularly the USA and the UK) with nuclear weapons are putting a huge amount of resources, both in terms of scientific expertise and money, into updating/replacing their current arsenals.
6. The UK Government should take the lead in abiding by its pledge to work towards the total elimination of nuclear weapons and ought to set an example to the rest of the world. How can we criticise Iran when we are breaking international law ourselves?

THE EFFECT OF MILITARISM ON WOMEN AND CHILDREN

7. Throughout history warfare has had a terrible effect on women and their families, without any aggression on their part. They are left to look after families when men folk go to war; they not only have to cope with being the main providers, they are vulnerable to vicious rape and loss of their homes. This is particularly the case in poor countries where life is hard enough.
8. The world's politicians must face up to their responsibilities towards future generations and turn their minds to peaceful resolution of disputes—nuclear war cannot benefit anyone.
9. Real security depends upon access for all to a fair share of the world's resources, in particular water and food, education and sanitation as in the Millennium Development Goals. This would reduce tension, aggression and conflicts caused by perceived injustice in the world.
10. Women have a record of opposition to nuclear weapons in the UK, and are now demonstrating at Aldermaston against their further development, and at the Faslane facility. We will continue to oppose the updating of the Trident system and work towards the abolition of war as a means of tackling international disputes.

WASTE OF RESOURCES

11. How can the world's politicians contemplate pouring resources into weapons of mass destruction, when there is already so much suffering in the world? Instead, they should channel the expertise and energies of their scientists into fighting the deterioration of the living conditions of so many caused by drought, poor health, lack of education, and past and current conflicts.

12. In the UK alone, there are other urgent issues to address, not least that manufacturing industries should be revitalised and support given for modernisation. Resources should be devoted to serious research into ways of changing armament factories over to manufacture of goods which could mean less imports and thus less environmental degradation.

CONCLUSION

13. We urge the Defence Committee to recommend to the Government that they abide by the law passed by Parliament to work towards nuclear disarmament at an early date and this means they have no legal right to consider updating the Trident nuclear weapons programme

18 April 2006

Memorandum from Peter Whitehouse

This is a written memorandum to clarify and expand upon the issues that came up during the Defence Committee hearing on The Future of the Strategic Nuclear Deterrent, 28 March 2006. It is submitted by me as an individual who has a close personal interest in the future of the UK nuclear deterrent. Although I am employed by the company that is responsible for refitting and refuelling the UK's current Vanguard class submarines, I have no direct involvement in this work. My major professional role is in strategic corporate planning.

Underpinning this submission is the assumption that a future national nuclear deterrent will be based on the use of a nuclear-powered submarine to provide a sea-based launch and delivery system. This assumption reflects my understanding of the flexibility, survivability, assurance of delivery and the exploitation of existing support infrastructure that only a follow-on submarine-centred system can provide through to 2050.

There are two principal subject areas relating to the strategic context for this decision that I wish to cover. These relate:

- (a) to the platform that carries the weapon and its delivery system; and
- (b) to the industrial base that will supply and support that platform.

PLATFORM ISSUES

Over and above the premise that a submarine will carry the future deterrent system, the continued use of the D5 missile to deliver the weapon is assumed. This reflects the US commitment to the missile to at least 2040, which is supported by a life extension programme that produces additional rocket motors and that is reported to address obsolescence in the guidance system and missile electronics.

The additional costs that would result if the UK were to de-link itself from Trident, which forms the backbone of the US nuclear deterrent capability, supports this assumption in my opinion.

The use of the D5 missile would also avoid the need for, say, a physically smaller warhead that a cruise missile would seem to require. It would also mean that the conventional/nuclear ambiguity associated with a submarine cruise missile launch does not become an issue and that the uniquely short time-of-flight and range of a ballistic missile is retained.

The current UK deterrent submarines are dedicated to the single deterrence role. There has been debate in the specialist press as to whether the future deterrent submarine would continue to carry out a single role throughout its life or whether it might be multi-role capable, that is, suitable for re-configuration to carry out attack submarine type tasks at specified periods in its service life. This would likely present a number of engineering, deployment and military tasking issues.

There is also the question of the degree to which the future deterrent platform would be based on the new Astute class SSN. As well as the widely reported cost challenges associated with acquiring these very large attack submarines, there will be obsolescence management and other engineering issues associated with the use of this platform as the basis of the future SSBN.

A specific aspect of this design commonality issue is the nuclear reactor plant in Astute, which is the same generation and type as that used in the current, Vanguard class submarines. This plant dates from design and development programmes in the late 1970s. Its affordability and engineering justification for use through to 2050 would seem to require careful consideration.

There are also important secondary issues that need to be considered early in a programme that has a projected service life of this duration. An example is the requirement for the future deterrent platform to be able to carry and fire a torpedo (or torpedo-like) weapon for self defence. It is difficult to predict or imagine what system of this type the RN will be using and supporting in 45 years' time, but these submarines will require a self defence capability and it will have to be designed-in at the outset of the build programme.

The elapsed time for the construction of the platform once the design fundamentals have been determined and the detailed design has been developed also needs to be considered. From a literature review, the Vanguard class appears to have begun construction in 1986, the first of class was launched in 1992 and it entered service in 1993. However, it benefited from a number of major technology development programmes that pre-dated 1986, such as the propulsion plant (see above). This suggests a gestation period from concept to in-service availability of a new SSBN that embodies key technology refresh items of at least 14–15 years, probably longer given recent industry experience.

This lead-time issue is also relevant when the industrial base issues are considered, over and above any required in-service date (see below).

On the basis that the future UK deterrent will be based on the Trident D5 Fleet Ballistic Missile system and that it will supplant the current system without a break in availability, there appears to be a number of points on which work to support resolution of fundamental issues needs to begin almost immediately. These include:

- confirmation of any longer term issues to be addressed regarding US design authority support for the missile, guidance system, electronics, warhead arming fusing and firing system, etc;
- decisions on a dedicated or flexible-role platform configuration—advantages, disadvantages, design/build/support challenges, operational issues;
- any aspects of design commonality with the later variants of the Astute class—whilst addressing known production cost drivers, equipment obsolescence issues and other aspects of through-life supportability;
- in particular, the extent of nuclear propulsion plant design evolution that is possible and required in a new class of submarine with a service life extending to 2050 or beyond; and
- identification of any other technology development and cost reduction programmes that are required in advance of detailed design and build, together with their required duration and logic links into the design and build schedule.

To address these issues and initiate the necessary work in the near term would not present a firm commitment to a future deterrent system beyond the life of the Vanguard class. It is, however, needed to protect the availability of a submarine-based solution in the requisite timescale and to give best chance of optimising it in technology and affordability terms—as well as generating information that is relevant to future SSN applications.

INDUSTRIAL BASE

The UK submarine industrial base consists of three main sites—the build yard at Barrow, an operational base at Faslane and an operational/refit and support site at Devonport. Rolls-Royce also has an important role in that it is responsible for the design and support of the nuclear reactor systems that power the UK's nuclear submarines and the manufacture of their reactor cores.

This sector of the defence industrial base is characterised by its need for highly specialised workforce skills and large scale purpose-built physical infrastructure. These requirements are present at all stages of the nuclear-powered submarine's life, from concept design through to operation, maintenance and disposal. They carry with them significant levels of fixed cost that have to be incurred if key capabilities are to be retained. Once lost, these capabilities are very difficult and expensive to recreate.

If the submarine design, build or major maintenance programmes exhibit periods with little or no activity in them then, at the very least, affordability suffers. At worst, capability has to be shed to help affordability and then expensive recovery action has to be taken in due course.

DESIGN AND BUILD

The recent RAND studies on behalf of MoD identified the impact of programme gaps and loss of capability in connection with the Astute project. These experiences are also relevant to a future SSBN programme.

Hansard (Written Answer, 19446, 31 October 2005) indicates that the second and third Astute class submarines are due to enter service in 2010 and 2012 respectively. At the assumed production rate of one boat every two years this means that units four, five, six and seven (if ordered) would enter service in 2014, 2016, 2018, and 2020 respectively. This implies that completion of a seven-strong Astute class build and commissioning programme would occur in 2019.

A sensible build programme overlap with a successor deterrent class would be a minimum of four years to support balanced workforce loading, implying in the above scenario that it would ideally need to begin construction in 2015. An eight-year (2007 to 2015) programme for concept development and assessment followed by generation of a full design ready for build, given platform-related issues of the type and scale identified above, is achievable but challenging.

The associated resource and schedule challenges will be compounded by any pressures to re-engineer the Astute design, purely as an SSN, for the fourth/fifth of class onwards. There is also the parallel need to maintain a sustainable SSN build programme that provides the required operational boat availability numbers via new Astute class submarines as the existing Trafalgar submarines reach the end of their lives.

A construction start in 2015 for a new SSBN would suggest earliest availability for launch in circa 2022 and an in-service date of 2023-based on the programme achieved for the build of HMS Vanguard.

SUPPORT

General and specialised press commentary has widely assumed that the Vanguard class submarines will undergo a relatively major, non-refuelling maintenance period approximately 10 years after completion of their first refit and refuel, that is, about 2016 for HMS Vanguard. This would align with current refit practice and requirements, outwith the reactor refuelling activity that has historically also been normally performed at this point (prior to the introduction of through-life reactor cores).

This schedule would fit well with the Devonport workload profile, assuming all Vanguard class submarines are refitted and refuelled at the end of their first commission, given that the current SSN refit stream completes in 2008 and the successor SSN (Astute) class major maintenance periods do not begin until 2020 or later.

The key issues to be addressed during any second Vanguard class refits will be the work that is to be carried out and how many submarines are to be refitted. This will depend on the projected in-service dates of the successor SSBNs and the minimum number of platforms required to support the continuous availability of at least one submarine at sea.

For industrial base reasons (associated with the design and build phase) and for whole-boat obsolescence reasons, any approach based on installing a new reactor compartment or carrying out major reactor component replacement on the existing Vanguard class submarines has been discounted in the above discussion.

SUMMARY

Assuming the UK policy of deploying a minimum nuclear deterrent using a submarine-carried Trident D5 system is to continue beyond the planned life of the existing submarines, a structured programme of work is advisable to protect the required in-service date. If some of the fundamental affordability and technical options are to be addressed adequately, that work programme needs to start imminently—albeit addressing topics and at costs that do not constitute a commitment to creating a successor deterrent system.

This approach would also facilitate a subsequent design and build programme that would support the essential elements of the associated industrial base in a sustainable and cost effective manner.

19 April 2006

Memorandum from the Religious Society of Friends (Quakers)

The Religious Society of Friends (Quakers) is committed to the peaceful political resolution of intractable disputes within the international rule of law. We are opposed to the development, maintenance, or use of nuclear weapons as an instrument of international policy. While we welcome the existence of this inquiry we are disappointed that neither MOD Ministers nor their senior civil servants have given evidence on an issue where Government perceptions of strategic imperatives are so crucial to a decision. This is especially so where it is not apparent how weapons designed to meet the perceived threats of the cold war now meet the requirements of a very different security world. In looking at the strategic context of a decision on the future of Trident, we hope that the report will include an assessment of the potential impact that a decision to replace would have on the non-proliferation regime. An adequate inquiry requires analysis of the following related dimensions as a preliminary to democratic debate:

1. The legal environment of any decision. This needs to include treaty commitments, in particular that of the Non Proliferation Treaty and its subsequent reviews, and International Humanitarian Law, including criteria of proportionality and the question as to whether any weapon could be used compatibly with its *jus in bello* requirements. The increasing scope of human rights jurisprudence and its overlap with humanitarian law requires an investigation as to whether the use of nuclear weapons could ever be compatible with the Human Rights Act and with Article 1 of the European Convention of Human Rights with its positive commitments regarding the right to life in Article 2. There is an urgent need for consideration of what safeguards there are to ensure that the Government is seen to take truly independent legal advice. The Secretary of State should be required to clarify to what extent the experience of defects in Parliamentary accountability in relation to the Chevaline programme will be addressed in developing any proposed new generation of nuclear weapons.

2. The ethical dimension. While clearly this cannot be separated from other aspects of consideration, in a multi cultural society there is a need to consider not only the ecumenical perspective of the Christian Churches but to include evidence from representatives of Indic, Islamic and other faiths.

3. The environmental impact. In the light of the lessons learnt from the Chernobyl disaster this would need to include not just the unthinkable environmental consequences of an accidental or deliberate use of weaponry but of potential accidents at ordnance factories. The environmental cost of testing; the impact of the development of materials to be used in warheads and their eventual decommissioning also need to be considered.

4. Economic cost. This requires an assessment of the overall impact on the national economy of maintaining and developing nuclear weapons. It would require a comprehensive assessment of all the spending parameters including forward looking research and all those set out in Lord Carver's detailed Parliamentary Question of 9 December 1997⁸⁵ and an analysis of potential cross subsidy from nuclear energy programmes in relation both to development of materials and the decommissioning of weaponry. The Government should be asked to provide an account of how expenditure involving decisions on a replacement for Trident will be identified in requests for expenditure made by the MOD, and what level of detail of information will be given in the departmental report on the purposes and outcomes of such expenditure.

We hope that the Inquiry will be able to address these and other issues as a background to a full and open debate in both houses of Parliament.

26 April 2006

Memorandum from Mr David Boucher

The Comprehensive Test Ban Treaty uses the criteria of states which possess research or other reactors (ie those with a nuclear capability such that they could conceivably be able to manufacture a nuclear device) as the basis for determining who has to sign in order for the Treaty to come into force.

It lists the following 36 states, as well as China, France, Russian Federation, UK and US, plus India, Israel and Pakistan as being in that category. Of those 36, only the 15 states marked with an asterisk appear to have significant nuclear energy programmes, and might technically be in a position to produce a nuclear device and move towards a stockpile within 24 months of a decision to do so, if all existing diplomatic and other barriers to proliferation were removed.

Algeria	Iran*
Argentina*	Italy
Australia	Japan*
Austria	Mexico
Bangladesh	Netherlands
Belgium	Norway
Brazil*	Peru
Bulgaria	Poland
Canada*	Republic of Korea*
Chile	Romania
Colombia	Slovakia
Democratic Republic of Congo (Zaire)	South Africa*
Democratic People's Republic of Korea*	Spain*
Egypt	Sweden*
Finland*	Switzerland*
Germany*	Turkey
Hungary	Ukraine*
Indonesia*	Vietnam

22 March 2006

Letter from the Clerk of the Committee to the HCDC Liaison Officer, Ministry of Defence

As indicated in my previous letter, the Committee intends in the autumn to consider further how it will examine issues surrounding the decision on a replacement for the present strategic nuclear deterrent. As the 2003 Defence White Paper noted, and the Secretary of State has subsequently confirmed, a decision on whether to replace Trident is likely to be required in this Parliament.

⁸⁵ Asked for estimated total cost of "maintaining the capability to design, produce, maintain the safety of, store, move and dispose of nuclear weapons and of providing, operating, maintaining and disposing of the Royal Navy's ballistic missile submarine fleet including its missiles."

I would be grateful therefore for a memorandum setting out what work the MoD and other government departments are doing to inform this decision; when more precisely the decision is expected to be made; what constraints the UK is under in making this decision (whether as a result of international agreements or otherwise) what options for replacement are under consideration and what estimates have been made of their costs; and which specific elements of the nuclear deterrent will require replacing and upgrading and by what dates (eg the missiles themselves, the submarines, the warheads, command and control systems, transport maintenance and storage systems).

The Committee has noted newspaper reports that the Secretary of State has authorised officials to open negotiations on a replacement for Trident with the United States government and defence companies. The memorandum should cover where things stand on these matters and on any other discussions, eg with other nuclear powers or other parties.

The Committee would also be grateful for further information on the facilities upgrade for AWE Aldermaston announced on 19 July and in particular on what extra supporting infrastructure will be required, what the planned operational life of the upgraded facilities will be and what is the intended in-service life of the existing Trident stockpile.

The Committee would also welcome any other information which you believe would be relevant to its consideration of how best to take forward its examination of these issues.

I would be very grateful to receive the memorandum by 23 September.

26 July 2005

Letter from the HCDC Liaison Officer, Ministry of Defence, to the Clerk of the Committee

Thank you for your letter of 26 July, which set out the Committee's intention this autumn to consider further how it will examine issues surrounding the decision on a replacement for the present nuclear deterrent. In your letter, you requested a memorandum setting out what work the MoD and other Government Departments are doing to inform this decision and sought answers to a number of specific questions. I am writing to explain how the MoD intends to meet this request.

As the Government has made clear on a number of occasions since the beginning of this Parliament, no decisions on any replacement for the Trident system have been taken, either in principle or detail. Whilst some decisions are likely to be necessary in the current Parliament, they are still some way off. Indeed Ministers have not yet begun to consider the range of options that might be available. Whilst work has started in Government to begin the process of preparing for future Ministerial decisions, this work by officials is still at a very early stage and no advice has been presented to Ministers. It will take considerable time before this work generates a detailed understanding of the relative costs and capabilities of different options. We shall let you have information on these matters in due course, and will seek to be as open as possible.

An initial memorandum is in preparation which will respond to the questions relating to maintaining the effectiveness of the current system, including on our investment plans at the Atomic Weapons Establishment. I envisage we will forward this at the end of October.

I hope that this letter will give you a sense of the current status of the work that is in hand and the limited maturity of the information that has so far been drawn together. I regret that at this stage we are unable to respond in greater detail to the Committee's request for information.

26 September 2005

Letter from the Parliamentary Clerk, Ministry of Defence, to the Clerk of the Committee

On 26 July 2005, your predecessor wrote to the HCDC Liaison Officer conveying a request from the House of Commons Defence Committee for advice on a series of issues relating to the possible replacement of the Trident nuclear deterrent.

She responded on 26 September 2005, indicating that the Department would provide substantive answers in two stages: the first, responding to questions relating to the current deterrent; and subsequently the second, answering those questions relating to possible future deterrent systems.

The attached memorandum⁸⁶ meets the first of these undertakings. It sets out the range of legal constraints on future decision-making by the Government (Annex A), it provides advice on the expected life of the current deterrent system (Annex B, and also provides some additional background information to the announcement made on 19 July 2005 on investment at the Atomic Weapons Establishment (Annex C).

⁸⁶ Published separately as *The Future of the UK's Strategic Nuclear Deterrent (2005–06)* HC 835.

As regards the second set of questions, Ministers have yet to begin to consider future deterrent options and it is likely to be some time before we can provide advice on the range of options that might be involved, including their costs. We will aim to provide a further response in the coming months, but the Department is not in a position to commit to a specific timing at this stage.

24 November 2005

Letter from the HCDC Liaison Officer, Ministry of Defence, to the Clerk of the Committee

During the House of Commons Defence Committee's visit to DARA St Athan on 21 November, you mentioned that the Committee was considering holding either an oral evidence session or an informal briefing on Tuesday 13 December in support of its planned enquiry into the strategic nuclear deterrent. Following the Committee's subsequent visit to Rheindahlen, you also mentioned that the Committee was considering deferring the evidence session for its Afghanistan inquiry that had been planned for 6 December and you asked me to explore the possibility of the Committee using this session for an informal briefing on the nuclear deterrent.

As our Ministers have said on a number of occasions, whilst decisions on any replacement for Trident are likely to be necessary in the current Parliament, they are still some way off. Officials have started initial preparatory work in advance of these decisions, but Ministers have yet to become engaged in this work in any detail. We have not yet reached even preliminary conclusions on any of this work. It would therefore not be appropriate for officials to share any views or analysis with the Committee even before they have been shared, far less endorsed collectively by Ministers. I therefore regret to say that we have concluded there is nothing further that we could usefully say at this stage beyond the information that the Secretary of State gave to the Committee in evidence on 1 November and that which was contained in the memorandum sent to the Committee on 24 November: indeed, in forwarding the memorandum we made clear that we were not in a position to provide further information at this stage.

29 November 2005
