

The Future of Britain's WMD

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The Foreign Policy Centre



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To the memory of Robin Cook
who kindly gave support to my efforts and with thanks
to Jim Devine MP.

***“Dan Plesch documents in an impressive forthcoming report
that all levels of the Trident system depend on US cooperation.”***

Rt Hon Robin Cook PC MP, the Guardian 29 July 2005

About the Author

Dan Plesch is the author of the Beauty Queen's Guide to World Peace, Research Associate of the Centre for International Studies at SOAS, University of London, a Senior Research Fellow at Keele University and Senior Associate of the Foreign Policy Centre. Previously he was Senior Research Fellow at the Royal United Services Institute and from 1987 to 2001 the founding director of the British American Security Information Council in Washington DC. In 2003 he was the Department of Constitutional Affairs Independent Advisor on the guidance for implementing the FOIA in the Ministry of Defence and Foreign Office. His studies on nuclear weapons policy have included expert evidence to the United States Senate and contributions to the Pugwash Conferences on World Affairs.

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Disclaimer

The views in this paper are not necessarily those of the Foreign Policy Centre.

*We must beware, lest the Stone Age return
upon the gleaming wings of science.*

- Winston Churchill

Executive Summary

This report discusses replacing Britain's Trident nuclear missile system. It examines British dependence on the United States and concludes that most of the discussion on the replacement is based on the false premise that the UK has an independent nuclear weapon. To support this conclusion the report reviews the history of Britain's involvement with nuclear weapons from 1940 to the present day to show a sixty-year-old pattern of British dependence on the US for WMD.

The report recommends that Trident should not be replaced and should be phased out now, as neither Trident nor any US-supported successor would meet the '1940 requirement' for a system that the nation can rely on if it stands alone as in 1940. Back in the Second World War the British government concluded it could not be a nuclear power without US support. Half a century later the dependence remains decisive. President George Bush Snr ordered his officials to 'produce additional nuclear weapons parts as necessary for transfer to the United Kingdom' (page 14). For fifty years successive governments have concluded that Britain cannot afford an independent nuclear deterrent. An independent system is not an option.

The nuclear relationship will continue 'to tie the UK to US policy' as Admiral Raymond Lygo, former Chairman of British Aerospace and director of strategic systems modernisation for the Royal Navy put it. Not replacing Trident is essential for Britain to reclaim the freedom to act according to its own interests during the twenty-first century, for a Trident replacement will be expected to last until 2070.

With greater freedom of action to work closely with the US, the EU and other partners the UK should act to renew the multilateral disarmament agenda which achieved so much in the 1980s and 1990s. Supporters of nuclear weapons used to argue for a 'Twin Track' of arms and arms control, of multilateral as opposed to unilateral disarmament. Now, there is no international programme of

arms control and disarmament. It is unrealistic to consider that the world can continue indefinitely with uncontrolled nuclear armaments and not see a nuclear war. The UK should join the many other countries, notably South Africa, who are working to reduce and remove nuclear and other armaments.

The government should also address a number of technical questions on Britain's WMD and associated technologies:

1. How can the WMD operated by Britain be used should the United States withdraw its support or act preventively?
2. Were any reassurances required by the Bush Administration before it renewed the US-UK Mutual Defence Agreement in 2004 concerning the direction of British defence and civil nuclear policy?
3. How near to production is the US-assisted nuclear weapon the Conservative government tested and developed after Trident, and later cancelled in October 1993?
4. How much of the spending at Aldermaston is on equipment and services from US companies?

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Introduction

The government has stated that during the 2005-2010 Parliament, a decision will need to be made on a successor to what it calls the UK's Independent Nuclear Deterrent.¹ The current system is the American Trident submarine-launched ballistic missile fitted with nuclear weapons.

This study explains the key issues of the UK WMD programme in their historical context. It details the UK's unique dependence on the US for supplies of WMD. The study then reviews the current debate in Britain over the Trident renewal.

The UN,² governments and the media, describe nuclear, chemical and biological weapons and ballistic missiles³ as Weapons of Mass Destruction. This definition will be used in this study to describe UK operated nuclear weapons and the weapon systems that carry them. However, only nuclear weapons blow things up and poison through radiation making them far more powerful and reliable than either biological weapons which rely on the deliberate use of disease or chemical weapons which are poisons.⁴

¹UK Defence White Paper, 2003, Cm6041-1 Par 3.11, <http://www.acronym.org.uk/docs/0312/doc08.htm>.

² UN Security Council Resolution 1540 on Weapons of Mass Destruction refers to: 'nuclear, chemical and biological weapons, as well as their means of delivery ... Means of delivery: missiles, rockets and other unmanned systems capable of delivering nuclear, chemical, or biological weapons, that are specially designed for such use.'

³ Ballistic missiles follow a curved bullet-like trajectory. Cruise missiles are small pilotless aircraft relying on their aerodynamic qualities to keep them in the air.

⁴ See for example, T. Hare, 'What Next For Trident?', Journal of the Royal United Services Institute, April, 2005, Vol. 150, No 2.

Perspectives on possessing Weapons of Mass Destruction

It is important to summarise the conflicting points of view on whether or not to have these weapons.⁵ For some people, the question of keeping Britain's Weapons of Mass Destruction might be answered with a clear 'Yes'. From this perspective, Trident and its successor provide an Independent Nuclear Deterrent, the ultimate guarantee of the nation's safety against enemies known and unknown – essential in case the nation ever finds itself alone as it was in 1940.

The South African minister Abdul Minty expressed the view of the majority of nations that:

Those who rely on nuclear weapons to demonstrate and exercise power should recognise that such dependence on weapons of mass destruction only serves to increase insecurity rather than promote security, peace and development.⁶

The most authoritative rejection of deterrence as a delusion masking irrationality and instability has come from General Lee Butler who commanded all US nuclear forces and drew up the US plan for a possible nuclear attack on Iraq in 1991.⁷

Sir Michael Quinlan has expressed the pro-nuclear argument as a choice between a nuclear free world and a war free world.⁸ General Butler was presented with Quinlan's work at a meeting with the then Chief of the Defence Staff, General Sir Charles Guthrie and Kevin Tebbit, the then MoD Permanent Secretary. Butler handed the work back, saying that he had taught elementary logic at the staff college and the proposition was simply a syllogism.⁹ That is to say there is no logical reason why 'nuclear free' and 'war free' should be in contradiction. For Butler, a world free of WMD was arguably both practical to achieve and far safer than a world of nuclear armed states. For Butler, deterrence is a slippery word used to sanctify any

⁵ H. Beach and N. Gurr, 'Flattering the Passions', I. B. Taurus, London, 1999 and 'Alternative Nuclear Futures', J. Baylis and R. O'Neill, Oxford University Press, 2000.

⁶ South African Statement to the Nuclear Non-Proliferation Treaty Review Conference, 2005, <http://www.un.org/events/npt2005/statements/npt03southafrica.pdf>.

⁷ <http://www.cdi.org/issues/armscontrol/butler.html>.

⁸ M. Quinlan, 'Thinking About Nuclear Weapons', Whitehall Papers, Royal United Services Institute, London, 1997.

⁹ Private information.

manner of otherwise nonsensical ideas for the potential use of nuclear weapons.

An example of what Butler describes is the argument made by Sir Malcolm Rifkind, that wars can only be prevented if we declare that we are ready to turn a conventional war into a nuclear war. 'I remain deeply sceptical that NATO, or the United Kingdom, should make a declaration of no-first-use of nuclear weapons. The clear implication of any such declaration would be that conventional aggression could be undertaken without the fear of crossing the nuclear threshold. Put crudely, it implies, if it is believed, that conventional war is a safe option. For all its superficial moral attraction, therefore, a no-first-use declaration would take us out of the realm of war prevention into the realm of war limitation.'¹⁰ Deterrence boils down to arguing that the more dangerous things are the safer we are. Rifkind also argues simultaneously *against* small accurate war-winning nuclear weapons and *for* small nuclear weapons to send political signals to end war.

More recently, it has become fashionable to say that the Communists were rational and could be deterred but deterrence is no use against religious fanatics, who must be fought – if necessary, pre-emptively.¹¹ In fact, during the Cold War, Western and Communist leaders portrayed each other as fanatics, Ronald Reagan famously characterising the Soviet Union as the 'Evil Empire' who had no respect for human life. Winston Churchill was concerned that the Americans might launch preventive war against the USSR in the 1950s.¹²

There is also a strong legal argument that even possessing nuclear weapons is illegal. The advisory opinion of the International Court of Justice states that nations with nuclear weapons had a legal obligation to eliminate them through multilateral negotiation.¹³ This

¹⁰ Malcom Rifkind, 16 November 1993.

¹¹ National Security Strategy of the United States, 2002.

¹² P. Hennessy, 'The Secret State', Allen Lane/Penguin, 2002.

¹³ 'It follows from the above-mentioned requirements that the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law; however, in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake; there exists an obligation to

undermines the argument that nuclear weapons are needed for Britain to keep its seat on the UN Security Council. As a non-nuclear state, the UK would enjoy more, not less, support from the international community.

Many states such as South Africa point out the indirect transfer of nuclear weapons from the US to the UK detailed in this study is a violation of Article 1 of the nuclear Non-Proliferation Treaty which prohibits such transfers.¹⁴

Regardless of the power-political considerations, nuclear weapons are immoral. Peregrine Worsthorne, once editor of the *Sunday Telegraph* argued in 1998:

That an individual could proudly say this - give me liberty or give me death - is more than understandable. But we armchair Cold War warriors in the West were saying more than this. We were saying that the whole human race, the greater part of which was neutral in the Cold War, should be put at risk to preserve Western liberty. How could we have believed anything so preposterous?¹⁵

Perhaps the most common view of nuclear weapons is that simply by having them we will never have to use them rather like the thug who ends up in court, arguing that he never meant to use his gun, and only had it as a status symbol. The head of the RAF bomber command in the 1960s put it bluntly:

It is no good taking refuge in the claim that the job of a deterrent is to deter, not to fight; nothing could be more dangerous than to base a policy on bluff, on a threat you don't really believe you will ever have actually to implement.¹⁶

pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control', 'Legality of the threat or use of nuclear weapons, International Court of Justice, Advisory Opinion, 8 July 1996, <http://www.fas.org/nuke/control/ici/text/index.html>.

¹⁴ <http://www.comeclean.org.uk/articles.php?articleID=125>.

¹⁵ P. Worsthorne, 'The Old Bombers who are now for Banning the Bomb', *Spectator*, 7 March 1998.

¹⁶ J. Slessor, *The Times*, 6 January 1963.

Weapons of Mass Destruction in the world today

Today, thousands of American and Russian nuclear weapons are ready to fire in less than 45 minutes,¹⁷ although the UK reduced the operational readiness of its submarines following the 1998 Strategic Defence Review.¹⁸ Robert Joseph, now President Bush's Under Secretary of State for Arms Control wrote in 1998 that no action should be taken to make an agreement with Russia to ensure greater safety and security since:

De-alerting undermines a basic principle of deterrence; namely, the ability to retaliate promptly so as to prevent any aggressor from assuming it can achieve a 'fait accompli.' In this context, assertions that de-alerting of U.S. strategic forces would eliminate fear of surprise attack have not been demonstrated.... De-alerting should not be allowed to become a back door to unilateral nuclear disarmament.¹⁹

Perhaps the most dangerous aspect of the continuation of the hair trigger alert is the risk of Armageddon by accident, a problem made worse since the public and political leaders alike are mostly unaware that the nuclear threat still hangs over them.

The US continues to build Trident missiles, Russia has introduced the Topol 26 and 27, France the new M-51 and China may have new missiles. India, Israel and Pakistan are also all adding to their nuclear arsenals. Other states, perhaps Japan²⁰ or Egypt²¹ may choose the nuclear option.

¹⁷ <http://www.ipnw.org/RXDealert.html>; <http://www.ieer.org/russian/pubs/dlrbk-e.html>

¹⁸ In 1994 Presidents Clinton and Yeltsin and Prime Minister Major announced that their weapons had been 'de-targeted', a meaningless gesture since in war the first action is to re-check the targets that weapons are pointed at. When a former US launch control officer, Bruce Blair pointed this out in the Washington Post, Clinton flew into a rage with the advisors who had convinced him that de-targeting would have real effect.

¹⁹ R.G. Joseph, R.F. Lehman, 'US Nuclear Policy in the 21st Century, Final Report', Project Directors, National Defense University/Lawrence Livermore National Laboratory, Washington, D.C., 1998.

²⁰ D. Plesch, 'The Beauty Queen's Guide to World Peace', Politico's, London, 2004, Chapters 2 and 8.

²¹ The International Atomic Energy Agency discovered that Egypt had secretly created a plant capable of making weapons grade radioactive material. The IAEA and the US are both satisfied with Egypt's assurances.

There is considerable public and official concern over the possibility that terrorist groups may obtain WMD. This proliferation problem is a serious matter. Indeed, as is discussed below, both America and Britain are prepared to use their own WMD – nuclear weapons – against such groups, possibly pre-emptively. Nevertheless, the great difficulty of finding a terrorist target to shoot at with nuclear weapons effectively removes this issue as a justification for the UK's own WMD. Prevention and police-type actions are the principal means of tackling the problem of terrorist access to WMD.

Arms control and disarmament has been an international priority since the Second World War. Between 1987 and 1996 a range of treaties came into force that regulated and removed tens of thousands of tanks, guns, warplanes and missiles, banned nuclear testing and chemical weapons. Now these achievements have been forgotten. No new agreements are underway. Instead a programme of sanctions and possible military action is being contemplated against the nuclear small fry – Iran and North Korea. There is an urgent need to restart the multilateral disarmament process and failing leadership from Washington, European states and the EU must take a lead. The author discusses how this might be done in his paper, 'A Strategic Concept for the Regulation and Removal of Arms and Proliferation'.²²

Figure 1 World Nuclear Weapons 2005²³

World Nuclear Weapons 2005	Total
China	400
France	300
India	50
Israel	200
North Korea	6?
Pakistan	50
Russia *	14,000
UK**	200
United States***	10,600

* Some 10,000 of these weapons are in storage;
 **The UK's weapons are US-sourced;
 ***Some 5,000 of these weapons are in storage.

²² http://www.psr.org/documents/psr_doc_0/program_4/scrrap.pdf.

²³ Natural Resources Defense Council and International Institute for Strategic Studies.

A history of American support for Britain's Weapons of Mass Destruction

British dependence on the US for nuclear weapons started in the Second World War. This history shows that it is incorrect to think that the UK was ever an independent nuclear state like France, Russia or China.

In 1940, Churchill initiated work on a British atomic bomb, rejecting a suggestion of cooperation from the US President, Franklin Roosevelt in October 1941.²⁴ It was not until the 1943 Quebec Agreement that Britain joined the Manhattan project that built the Hiroshima and Nagasaki bombs.

Margaret Gowing, the official historian of Britain's nuclear weapons explains that: 'Britain had then become only a junior partner in the business, contributing significantly in various ways but present largely on American sufferance'.²⁵

In 1946, the US Congress passed the MacMahan Act to stop nuclear collaboration with any state. British scientists returned home with information on how to build an atom bomb but without detailed knowledge of the industrial production processes.

Some nuclear sharing quickly restarted as the US needed supplies of British controlled uranium ore from the Congo, despite the MacMahan Act.²⁶ Until 1952, the US intermittently provided the UK with nine categories of information mostly on the construction of nuclear reactors for making nuclear explosives.²⁷ Congressional leaders brought into the negotiations used the threat of withdrawal from the Marshal Aid programme to get the Attlee government to

²⁴ A.J.R. Groom, 'British Thinking about Nuclear Weapons', Pinter, 1974, Chapter 1

²⁵ Margaret Gowing, 'Independence and Deterrence', Macmillan, 1974, Vol 1 p.3

²⁶ S. Paul, 'Nuclear Rivals: Anglo-American Atomic relations 1941-1952', Ohio University Press, 2000, passim.

²⁷ Ibid.

give up joint control over the use of nuclear weapons agreed by Churchill and Roosevelt during the war.²⁸

In 1947, the British Atomic bomb project was restarted by the Labour government. In Peter Hennessy's account, it was the Foreign Secretary, Ernest Bevin's intervention that swung the discussion amongst ministers.²⁹ And the need to have a 'Union Jack' on top of the bomb, in Bevin's famous phrase, was driven by the humiliating way that Bevin had just been spoken to by the US Secretary of State James Byrnes. The programme was mentioned in Parliament in 1948, with more detail only provided shortly before the first British atomic test in 1952 under Winston Churchill's premiership.³⁰ Churchill privately expressed surprise at how much money and work had been done in secret by the Labour government.

From 1948 the US began to base nuclear capable bombers in Britain and tested the first H-Bomb in the Pacific in 1952. Churchill's last political acts were to try to reach out to the Soviet leadership after the death of Stalin in order to control the H-Bomb. He found he had no influence in Washington and, shortly before retiring, Churchill began the UK H-Bomb programme, while privately expressing greater concern over the future of the world than he had even in 1940.

In 1957, with great difficulty and expense, the UK exploded its first Hydrogen bomb and shortly thereafter the US agreed to provide full support for the British nuclear weapons programme. As both Lorna Arnold and Peter Hennessy describe in their studies of the British H-Bomb programme, the key purpose in the mind of the Prime Minister, Harold Macmillan, was to show the Americans that the British were important enough a nuclear power to help, rather than to have an independent weapon.

In 1958, the US-UK Mutual Defence Agreement (MDA) was signed although very little was known about it in public. It has been renewed periodically ever since, the last time in 2004. The MDA allows the US to provide the UK with nuclear weapons designs, nuclear weapons

²⁸ Groom, op. cit., p.31.

²⁹ Hennessy, op. cit.

³⁰ Gowing, op. cit.

manufacturing and nuclear reactor technology, designs and materials.

A secret British government assessment of 'The Dangers of Becoming an American Satellite' only released after 1988 stated

The UK, in its relatively weak position, is already greatly dependent upon United States support. It would be surprising if the United States did not exact a price for the support, and to some extent it does so...the more we rely upon them, the more we shall be hurt if they withhold it.³¹

Nuclear explosive materials

Tons of uranium and plutonium were traded between the UK and the US during the Cold War. This was flatly denied at the time. In 1997 the Clinton Administration revealed the extent of this exchange, the details of which are in Appendix I. Ross Hesketh wrote that the 5.4 tonnes of plutonium sent to the USA amounted to 'the entire production of plutonium from all the UK civil nuclear power stations, up to April 1969, according to official sources'.³² These exchanges were useful to the US but were essential to the UK.

The new British interest in nuclear energy should be examined closely for any commercial, political or technical connection to nuclear weapons collaboration with the United States. How, for example, can the British government be serious about being a nuclear weapons power if it is not going to have a modern nuclear industry?

Nuclear warhead design and construction

The 1958 MDA created the Joint Atomic Information Exchange Group and dozens of Joint Working Groups (JOWOGS). Documents obtained by the US Natural Resources Defense Council show that the US supplied the designs of many weapons to the British. The UK national archives on the JOWOGs even from 1960 are still sealed. The titles of some documents from that era show that the UK was briefed on the use of beryllium, plutonium and uranium and the

³¹ 'Planning Paper on Interdependence', Foreign Office, SC (58)8, Steering Committee, 27 January 1958, PRO FO371/132330, quoted in J. Baylis, 'Anglo-American defence relations 1939-1984', 2nd edition, Macmillan, London 1984.

³² <http://www.timesonline.co.uk/article/0,,60-1091224,00.html> 29 April 2004, accessed 1 July 2005.

Americans were presented with the results of British experiments using US supplied bomb parts. US officials also benefit from the exchanges because of the innovative and skilful approach of their resource-starved British counterparts.

In the early 1960s public concern over the nuclear arms race focused on the test explosions of nuclear weapons in the atmosphere and the accumulation of radiation in milk. After the 1963 UK/US/USSR agreement of the atmospheric test ban, the UK was only able to carry out test explosions jointly with the US at the underground test site in Nevada. Then President Clinton's support for a test ban forced John Major's government to follow suit and sign the Comprehensive Test Ban Treaty in 1996. The last US/UK tests at Nevada were codenamed Barnwell (1989), Houston (1990) and Bristol (1991).

For many years, the JOWOGs were secret and were only obliquely referred to in the open literature. Thus two of the main British academic studies on Anglo-American defence relations and nuclear weapons make no more than a passing reference to them.³³ It was only through the work of the Natural Resources Defence Council in Washington, D.C., Greenpeace UK and BASIC, that the JOWOGs were first discussed in public. Subsequent activity by MPs such as Frank Cook and Alan Simpson led to the British government providing occasional lists of the JOWOGs to Parliament.³⁴

The principal role of the JOWOGs is to assist the British in producing nuclear warheads. Since the mid-1960s the UK has deployed four types of nuclear weapon, some with variants. These are the WE-177, Polaris, Chevaline/Polaris and Trident. Only the Trident is in service today. The RAF and Royal Navy used the WE-177 free-fall bomb with three versions for different military tasks. However, the British only conducted three nuclear tests in the period when the weapon was developed making a British-only design most unlikely. The secret remains, although a declassified US document from 1960 obtained by the Natural Resources Defense Council says that the

³³ J. Simpson, 'The Independent Nuclear State', MacMillan, London, 1986 and J. Baylis, 'Anglo American Relations since 1939', Manchester University Press, 1997.

³⁴ Alan Simpson MP, House of Commons, Hansard, 15 December 1994, c 1222.

UK: 'plans to produce several versions of the [US] Mark 57'.³⁵ NRDC's analysis concludes that the WE-177 variants were probably based on this and one other US weapon, the B61.

The US supplied the W-58 design for Polaris and in heated exchanges in the House of Commons between the Prime Minister Lord Home and Harold Wilson, Home replied that the British weapon was probably 'both' the US design and a British design of the same size.³⁶ He saw no need to test the Polaris warhead at all, although Harold Wilson did get US permission to conduct one. Lawrence Freedman stated in a 1986 analysis that, 'it had originally been planned to purchase the A-2 warhead of one megaton, but in 1964 it was decided to go with the A-3 with three (not independently targeted) two-hundred-kiloton warheads.'³⁷

In the early 1970s the US stopped cooperation when the Labour government said they would not have a new nuclear weapon. There was consternation at Aldermaston. Then, US support resumed when under the premierships of Edward Heath and Harold Wilson, a secret programme to put a new warhead on Polaris was begun. This programme, known as Chevaline or 'Super-Antelope' in Britain was based on Lockheed's US Antelope project. It had the technical function of confusing Soviet defences that might be able to shoot down the existing missiles and the political function of keeping the nuclear support going.³⁸

In 1979, Margaret Thatcher's new Defence Secretary, Francis Pym, announced Chevaline in Parliament. This caused much infighting in the Labour Party, whose members had known nothing of a programme that was pursued, in violation of the decisions of the party conference. On the one side, David Owen argued that the Cabinet had taken the decision and, on the other, Tony Benn took the view that it had not.³⁹

³⁵ W. Peden, 'Safety of British Nuclear Weapon Designs', British American Security Information Council, 1991.

³⁶ House of Commons, Hansard, 12 May 1964, c222-223

³⁷ L. Freedman, 'British Nuclear Targeting', in 'Strategic Nuclear Targeting', D. Ball and J. Richelson (eds), Cornell, New York, 1986.

³⁸ G. Spinardi, 'Aldermaston and British Nuclear Weapons Development: Testing the "Zuckerman Thesis"', *Social Studies of Science*, Vol 27, 1997, pp547-582.

³⁹ House of Commons, Hansard, 15 February 1989, c 383.

Missiles

Forty years ago Harold Macmillan had to deal with the fact that not only could the government not afford independent bombs, it could not afford independent missiles either. His government first sought a US air-launched missile, Skybolt and, when this was cancelled, was offered the US Navy's Polaris missile.

The December 1962 Nassau agreement to provide the UK with Polaris provided the UK with missiles, submarine and reactor technology. President Kennedy offered a similar deal to the French President Charles de Gaulle.⁴⁰ In January 1963 De Gaulle made a speech rejecting the US offer of Polaris to France and vetoing British membership of the Common Market on the grounds that the British had now come under US control.

Macmillan's Permanent Secretary, Sir Robert Scott, recorded that the decision has 'put us in America's pocket for a decade'.⁴¹ The commander of the V bomber force wrote privately that the deal had been done to sustain the 'myth' of an independent force.

The Labour government of Harold Wilson came to power in 1964. Its manifesto said that Polaris: 'will not be independent and it will not be British and it will not deter.' Nevertheless, with most of the money committed, the Wilson cabinet, with the support of Parliament, continued the programme. Although even in retirement he said: 'I never believed that we had a really independent deterrent.'⁴²

Air Vice Marshal Stuart Menaul wrote in 1980 that:

Britain no longer has an independent nuclear deterrent...strategic considerations as far as Britain is concerned are no longer relevant...it could only be used after authority for the use of nuclear weapons had been conveyed from the President of the United States to SACEUR [the US general at NATO].⁴³

⁴⁰ http://news.bbc.co.uk/onthisday/hi/dates/stories/december/21/newsid_3815000/3815251.stm

⁴¹ Both cited in I. Clark, op. cit., p 413 and 418.

⁴² Hennessy, op. cit., p70 ff

⁴³ S. Menaul, 'Countdown', Hale, London, 1980, p 7 and 172.

Trident and its possible successor

Britain's ability to continue with nuclear weapons without US support becomes very slim to the point of invisibility.⁴⁴

- Julian Lewis MP Shadow Defence Minister

James Callaghan confirmed that, in deliberate contradiction of Labour party policy, he sought a private understanding with the US President Jimmy Carter that the US would supply Trident as a successor to Polaris. He explained how, in 1979, at a summit in Guadeloupe, he had a chat with Carter in his beach bungalow and secured the deal.⁴⁵

When Margaret Thatcher became Prime Minister, Trident was a natural choice. Proud of the policy, she held a debate in parliament. The Trident D-5 was designed to destroy Soviet missiles before they could be launched. It has a launch to target time of seven to thirty minutes, 'a range of over 4,000 nautical miles and an accuracy, which can be measured in metres'.⁴⁶

US management and technology, including nuclear materials, is involved throughout the Trident weapons system. According to the National Audit Office report of 1987:

The US will supply the missiles and associated strategic weapon systems equipment, certain warhead-related components and services, and missile preparation and refurbishment services: the remainder of the programme will be carried out by the UK.⁴⁷

A former British official engaged in the acquisition of Trident explained that the Royal Navy assessment in the 1980s was that the system would remain functional for eighteen months if the US withdrew support, since then US corporations have extended their management of the programme.⁴⁸

⁴⁴ Remarks by Julian Lewis MP at the Royal United Services Institute, 6 July 2005.

⁴⁵ This is discussed in Hennessy, op. cit.

⁴⁶ Royal Navy description, <http://www.royal-navy.mod.uk/static/pages/177.html>.

⁴⁷ 'Ministry of Defence and Property Services Agency: Control and Management of the Trident Programme', National Audit Office, 1987, par 1.1.

⁴⁸ Private conversation.

The supply of Trident commanded a political price from the government in London. In his seminal study 'Nuclear Weapons: Who's in Charge?', Hugh Miall records comments from two British officials on the state of US influence in the mid 1980s. 'Sir Frank Cooper, the Permanent Under Secretary of Defence, said, "if you ask me whether the Americans have an undue degree of influence over British defence policy I would have to say yes".'

Clive Ponting, a former MoD official said:

Client state is putting it a bit strongly but there are very clear signs I think that it's not far short of that...They clearly do have an undue degree of influence because when the chips are down we side with the Americans because we think the American nuclear and intelligence material is so important to us that we are prepared to pay that price to keep the material flowing.⁴⁹

One area where the price was paid was in support for the US Star Wars programme which was strongly opposed by Foreign Office and Ministry of Defence officials. Initial doubts were expressed by the Foreign Secretary, Geoffrey Howe, only for the Prime Minister to bring the UK into line with Washington – a pattern familiar in recent years.

The Trident warheads

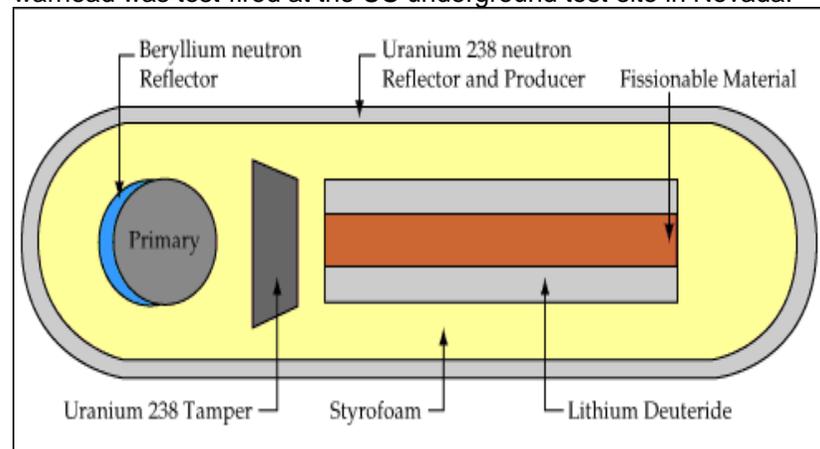
In June 2001 President George Bush Snr issued National Security Directive 61, now partly de-classified. He ordered that the Department of Energy 'shall produce additional nuclear weapons parts as necessary for transfer to the United Kingdom pursuant to the Agreement of Cooperation' for a period up until 1997.⁵⁰

According to the UK National Audit Office, 'warhead development and production [and] ... Most of the development and production expenditure is incurred in the US'. These costs included the cost of testing the weapons in Nevada. '[Regarding] special materials ... in 1982 Ministers decided...that a substantial proportion [of the explosive nuclear material] should be purchased in the UK [from

⁴⁹ H. Miall, 'Oxford Research Group', Macmillan, London, 1987, p77.

⁵⁰ <http://bushlibrary.tamu.edu/research/directives.html>.

British Nuclear Fuels plc'.⁵¹ Therefore, the remaining portion of the nuclear materials in the warheads comes from the US. Baylis describes how by the mid-1980s Britain was 'dependent for "vital materials" for weapons for warhead production'.⁵² The British warhead was test-fired at the US underground test-site in Nevada.



The A-90 manufacturing facility for the nuclear explosive materials 'appears to be a direct copy of the Plutonium Processing Facility (TA-55) at Los Alamos'.⁵³

The US provided Britain with details of its Trident nuclear warhead design⁵⁴ and sold its cone-shaped casing.⁵⁵ The US Sandia plant 'also designs the arming-fusing-firing mechanisms for all of the United Kingdom's nuclear weapons'.⁵⁶

Trident missile and submarine system

The British version of the US Trident system consists of four submarines built at Barrow in Furness, each fitted with sixteen

⁵¹ 'Ministry of Defence and Property Services Agency: Control and Management of the Trident Programme', National Audit Office, 1987, appendix 4, pars 1-4; 'Progress of the Trident Programme', HC 1987-1988, Defence Committee, Third Report, p 22.

⁵² Baylis, op. cit., p.195.

⁵³ Norris, op. cit., p.72 ff

⁵⁴ Annual Historical Summary [U], Joint Atomic Information Exchange Group, HQ Defence Nuclear Agency, 1 October 1982-30 September 1983.

⁵⁵ 'Annual Summary', Joint Atomic Information Exchange Group, 1983-1984.

⁵⁶ D. Kramer, 'Inside Energy / with Federal Lands', May 1994, cited in W. Peden, 'The Next Chevaline Scandal', Campaign for Nuclear Disarmament, London, 1999.

missiles. The submarines can sail to any part of the world's oceans. Powered by nuclear reactors they can stay underwater, undetected, for months at a time.

The submarines must collect the missiles from a US port in Georgia on the Atlantic coast under a lease-purchase arrangement.⁵⁷ This was a major increase in dependence over the Polaris missiles which were British-owned and stored at a base in Scotland. Denis Healey heaped derision on the arrangement:

Under the rent-a-rocket agreement we have to swap these Moss Bros missiles every seven or eight years for other missiles in the American stockpile...[there are] some serious political disadvantages, which can be summed up as a period of prolonged and humiliating dependence on the United States.⁵⁸

The Trident D-5 missiles are occasionally test-fired from the submarines at a US naval facility. Each Trident missile can carry up to 14 nuclear weapons able to hit separate targets hundreds of miles apart. However, as a result of successive, unverified, unilateral statements under Conservative and Labour governments, each missile officially carries a much smaller load than its theoretical maximum, with a total of no more than 48 nuclear weapons per submarine – 200 in total.

Figure 3: UK Trident dependence on the United States

British WMD	US dependence
Trident warhead design	Based on the US W-76
Trident warhead nuclear components	Some imported from US
Trident warhead nuclear component factory (A90)	A copy of the US TA-55 at Los Alamos built by the US Fluor corporation.

⁵⁷ http://www.subasekb.navy.mil/TRIDENT_per_cent20REFIT_per_cent20FACILITY/MISSION.htm

⁵⁸ J. Dumbrell, 'A Special Relationship', Palgrave Macmillan, 2000, p 145.

Trident non-nuclear components	Some imported from US
Trident detonator	Designed and built in the US
Trident D-5 Missiles	"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." ⁵⁹
Trident missile guidance system	Imported from the US
Trident submarines	British designed and built with the import of US components and reactor technology
Reading WMD factory (AWE Aldermaston)	US management – 33.3 per cent Lockheed Martin technology – much US sourced ⁶⁰
Plymouth submarine maintenance base	US management/ownership – 51 per cent Halliburton ⁶¹

Firing Trident

This section discusses whether Britain could launch a nuclear war when Washington did not want one and how the British and American governments prepare in peacetime for using their nuclear weapons.

Dr. John Reid the Defence Secretary explained that, 'the United Kingdom's independent nuclear deterrent can be targeted and used without the approval of any other country'.⁶² This statement on its own reinforces the idea that the UK does have an independent nuclear deterrent. However, if one asks 'can it be used if the United States disapproves?' we can see from the previous analysis that this is most unlikely. Half a century ago at Suez the British had to

⁵⁹ The Progress of the Trident Programme, Defence Committee 6th Report, 16 June 1993, HC 549.

⁶⁰ See, for example, the table of Joint Working Groups and the provisions of the Mutual Defence Agreement.

⁶¹ In-service support and refurbishment for Britain's nuclear submarines is provided by the Devonport Management (DML) group, 51 per cent owned by Halliburton, www.devonport.co.uk.

⁶² House of Commons, Hansard, 31 Oct 2005, Column 720W.

abandon a military operation under economic pressure from Washington.

In 1962 Robert McNamara the US Defense Secretary spoke out about the 'dangerous' contribution of small nuclear powers. This created headlines in Britain and was seen as an attack on the UK force, then consisting of the RAF V Bombers. McNamara and his advisors sought to sooth the British press by explaining that they were only talking about the French, since the British 'did not operate independently'.⁶³

In any crisis where the US and the UK were at odds the US would have every ability and incentive to prevent its use even if the US does not have to be asked for permission. And this is precisely the circumstance of 'Britain alone' that the public have been told that Trident and its successors are for.

Both governments state that the UK weapons are assigned to NATO. What does this mean in practice? According to sources familiar with the process, the US is aware through the NATO command structure and the US Strategic Command (STRATCOM) of the location and deployments of the Trident submarines. US communications and satellite facilities are normally used for keeping in touch with the boats and for targeting the missiles. Nevertheless the command chain from the British PM to the submarine captains does not involve the Americans.

Yet the UK makes use of US satellites to target Trident and US communications facilities to contact the submarines. Former UK Trident launch control officers have said that it would be very difficult to fire the missiles without the use of the satellites.⁶⁴ John Ainslie has provided the details of the British reliance on US computer software, satellite generated targeting information and related systems that would permit the US to interfere with a British Trident launch.⁶⁵

⁶³ I. Clark, 'Nuclear Diplomacy and the Special Relationship: Britain's deterrent and America, 1957-1962', Clarendon Press, Oxford, 1994, pp 334-337.

⁶⁴ Private information.

⁶⁵ <http://www.comeclean.org.uk/articles.php?articleID=132>.

The British and American governments are at pains to point out that they abhor the idea that nuclear weapons could ever be used. But this is accompanied by official policies that they could be used in a wide variety of circumstances. The public have never been properly informed that their understanding that nuclear weapons would only be used in retaliation after this country had been devastated with nuclear weapons has not been the policy pursued by successive governments.

The British Chiefs of Staffs explained in a secret paper in 1952 that 'the fact is that the Free World cannot hope to contain the enemy by land forces deprived of support by atomic weapons'.⁶⁶ The most accessible account of Britain's overseas nuclear deployments to Singapore and Cyprus is given in Richard Moore's 'Where Her Majesty's Weapons Were' in a 2001 article for the Bulletin of the Atomic Scientists.⁶⁷

The hydrogen bombs carried by Trident are thought to have an explosive power equal to some 100,000 tons of TNT, with some in a less powerful version.

Less powerful warheads – for the 'sub-strategic' role – were first produced under the government of John Major.⁶⁸ This was achieved not by producing a new nuclear weapon but by reducing the power of the warhead.⁶⁹ The possibility of two explosive sizes is confirmed in 'A New Beginning', AWE Annual Report 2000.⁷⁰ Three sizes are mentioned by the Natural Resources Defense Council, as low as 300 tons and as high as 20 kilotons. Several sources indicate that this has been achieved by removing the larger bomb and adjusting the power of the primary.⁷¹ Paul Rogers⁷² and Milan Rai⁷³ discuss sub-strategic Trident.

⁶⁶ J. Baylis, 'Ambiguity and Deterrence', Clarendon, London, 1995, pp 45-64.

⁶⁷ http://www.thebulletin.org/article.php?art_ofn=if01moore_050.

⁶⁸ One of the few discussions of the purpose of this system is found in Paul Rogers, 'Sub Strategic Trident: A Slow-Burning Fuse', London Defence Studies, No 34, Centre for Defence Studies, London, 1996.

⁶⁹ <http://www.nrdc.org>.

⁷⁰ 'A New Beginning', AWE Annual Report, 2000, p.14.

⁷¹ Private information and T. Milne, H. Beach, J. Finney, R. Pease and J. Rotblat, 'An End to UK Nuclear Weapons', A Report from the British Pugwash Group, 3 October 2002, <http://www.pugwash.org/uk/documents/end-to-uk-nuclear-weapons.pdf>.

The Labour government conducted a strategic defence review in 1998 that stated:

The credibility of deterrence also depends on retaining an option for a limited strike that would not automatically lead to a full-scale nuclear exchange. Unlike Polaris and Chevaline, Trident must also be capable of performing this 'sub-strategic' role.⁷⁴

After 9/11 the British government added a 'New Chapter' to the Strategic Defence Review that extended the role of nuclear weapons further to include deterring terrorist organisations:

The UK's nuclear weapons have a continuing use as a means of deterring major strategic military threats, and they have a continuing role in guaranteeing the ultimate security of the UK. But *we also want it to be clear, particularly to the leaders of states of concern and terrorist organisations, that all our forces play a part in deterrence*, and that we have a broad range of responses available. (emphasis added)

The Bush Administration's policies on using nuclear weapons are illuminated in its 2002 Nuclear Posture Review⁷⁵ and in the subsequent policy on combating WMD.⁷⁶

Rogers recalls a conversation in the mid 1990s with what he described as 'a serving British Admiral' in which the admiral cited as an example (of the use of sub-strategic Trident) a future confrontation with a nuclear-armed state in the Middle East, believing it to be eminently practicable to use a Trident missile with a single warhead to fire a low-yield demonstration shot or, if necessary, use a combination of missiles and warheads in a pre-emptive strike against opponent's nuclear facilities.

⁷² P. Rogers, 'Sub Strategic Trident: A Slow-Burning Fuse', *London Defence Studies*, No. 34, Centre for Defence Studies, London, 1996.

⁷³ M. Rai, 'Tactical Trident: The Rifkind Doctrine and the Third World', Drava Papers, London, 1995.

⁷⁴ UK Strategic Defense Review, 1998.

⁷⁵ <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm>.

⁷⁶ <http://www.armscontrolwonk.com/index.php?id=512>.

Geoff Hoon, then the British Defence said 'we have always made it clear that we would reserve the right to use nuclear weapons in conditions of extreme self-defence. Saddam can be absolutely confident that in the right conditions we would be willing to use nuclear weapons'.⁷⁷

William Arkin, long a leading expert on US nuclear weapons, wrote about US nuclear war planning for Iraq in January 2003:

At the U.S. Strategic Command (STRATCOM) in Omaha and inside planning cells of the Joint Chiefs of Staff, target lists are being scrutinized, options are being pondered and procedures are being tested to give nuclear armaments a role in the new US doctrine of "pre-emption". According to multiple sources close to the process, the current planning focuses on two possible roles for nuclear weapons: attacking Iraqi facilities located so deep underground that they might be impervious to conventional explosives and thwarting Iraq's use of Weapons of Mass Destruction. The current nuclear planning, revealed in interviews with military officers and described in documents reviewed by the Los Angeles Times, is being carried out at STRATCOM's Omaha headquarters, among small teams in Washington and at Vice-President Dick Cheney's "undisclosed location" in Pennsylvania.⁷⁸

In his memoirs, Colin Powell explained how in 1991 Dick Cheney ordered him over his objections to prepare a plan for using nuclear weapons on Iraq. Powell regarded the plans as disastrous and unusable and had them burned.

Iran has been a focus of US peacetime war-planning for a decade. Kristensen describes how: 'Iran became the first test case for the new doctrine, with STRATCOM performing an in-depth study in the fall of 1995 of how to target nuclear and chemical targets in Iran with U.S. nuclear weapons'.⁷⁹

⁷⁷ Frost Programme, BBC, 4 February 2003.

⁷⁸ W. Arkin, 'The Nuclear Option in Iraq: The US has lowered the bar for using the ultimate weapon', *Los Angeles Times*, 26 January 2003.

⁷⁹ H. Kristensen, 'Targets of Opportunity: How nuclear planners found new targets for old weapons', *Bulletin of the Atomic Scientists*, Vol. 53, No. 5, September/October 1997: Kristensen draws on the U.S. Strategic Command that was partially declassified and released under the Freedom of Information Act, 'Minutes of the Fifty-Fourth United States Strategic Command Strategic Advisory Group Meeting (U), 19-20 October 1995, Offutt AFB, Nebraska', Secret/rd, January 1996, pp. 4, 11.

Attacks like this seem far-fetched, so it is worth concluding the discussion of Firing Trident by illustrating that peacetime planning for using nuclear weapons is normal. Below is the US Joint Chiefs of Staff Joint Doctrine for Theatre Nuclear Operations regarding nuclear war planning in peacetime.⁸⁰

US Procedures for planning nuclear war in peacetime

Proper joint operation planning increases the commander's flexibility and facilitates the package approval and release process.

Peacetime Planning

Given an operation plan within an area of responsibility and/or joint operations area and a threat, it is advantageous to plan as many potential operations as possible in peacetime.

Present US support for UK WMD

In Britain, as in the US, the focus of activity is on two issues: keeping the current weapons ready to explode and preparing for possible new weapons. In the mid-1990s, there was a huge international campaign to ban nuclear weapon test explosions with much attention on France's final tests in the Pacific. From the early 1960s these have been conducted underground and the UK used the US site at Nevada for tests of the weapons for its systems.

Following pressure from NGOs⁸¹ and members of the US Congress, the government of John Major finally fell into line with President Clinton and with the Russian position in favour of a ban. Whitehall had been supportive of some parts of the US government that opposed President Clinton's pursuit of a complete ban. In a reversal of the usual pressure, two members of Congress, Elizabeth Furse and Mike Kopetski, threatened cancellation of support for the UK programme unless the UK supported the test ban.

The test ban was finally signed at the UN in 1996. A key part of the deal within the nuclear weapons establishment in the US was to provide large-scale funding for what is called 'stockpile stewardship'.

⁸⁰ JP-3-12-1, available at www.globalsecurity.org.

⁸¹ The author was involved in international research and advocacy on this issue, directing the British American Security Information Council from Washington, D.C.

This means developing tests to see if nuclear weapons work that do not require setting them off. Since then, this task has been stated by the UK government to be a prime function of the WMD factory at Reading - the Aldermaston Atomic Weapons Establishment.⁸² As we will see in the discussion below of potential new nuclear testing, the questions of new weapons, reliable weapons and test-explosions are complex and closely connected.

Useful surveys of the nuclear relationship in the period after New Labour took office in London and before the Bush Administration arrived in Washington are provided by Butler and Bromley in their report for the British American Security Information Council and in CND's 1999 briefing, 'The next Chevaline'.⁸³

In order to prepare for a decision on a new system around £300 million has already been spent to refit the factory at Reading (Aldermaston), an investment equal to some 60 per cent of the current book value of the factory, estimated by the government at some £500 million.⁸⁴ The refit includes: a new high-powered laser and a supercomputer. Lockheed Martin part manage the factory. The extent of the expenditure that is used to procure US technology is not yet known. However, earlier in the Labour government there were plans to invest in a US facility in California. The Nuclear Information Service tracks the ongoing construction of new facilities and the recruitment of staff to make the next generation of nuclear weapons.⁸⁵

Figure 5: US/UK Joint Working Groups⁸⁶

Joint Working Group	Title
6	Radiation Simulation and Kinetic Effects
9	Energetic Materials

⁸² <http://www.awe.co.uk>.

⁸³ N. Butler and M. Bromley, 'Secrecy and Dependence: The UK Trident System in the 21st Century', Basic Research Report, Number 2001.3, British American Security Information Council, London and Washington, November 2001.

⁸⁴ House of Commons, Hansard, 11 Jan 2005.

⁸⁵ <http://www.nuclearinfo.org>.

⁸⁶ House of Commons, Hansard, 22 Feb 2005, column 601.

22	Nuclear Materials
23	Warhead Electrical Components and Technologies
28	Non-Nuclear Materials
29	Nuclear Counter-Terrorism Technology
30	Facilities
31	Nuclear Weapons Engineering
32	Nuclear Warhead Physics
34	Computational Technology
36	Aircraft, Missile and Space System Hardening
37	Laboratory Plasma Physics
39	Manufacturing Practices
41	Nuclear Warhead Accident Response
42	Nuclear Weapon Code Development
43	Nuclear Weapon Environment and Damage Effects
	Methodologies for Nuclear Weapon Safety Assurance

The debate so far on a successor to Trident

Mike Gapes: You do not know what the options are?

Mr Hoon: Yes, I do.

Mike Gapes: You do know what the options are. At this point is there anything you would like to say about what those options are?

Mr Hoon: No.⁸⁷

Hoon and his officials did rule out a European option as being prohibited by the nuclear Non-Proliferation Treaty.⁸⁸ Since the election some debate has begun in the House of Commons. The discussion tends to follow a historical pattern. In the 1970s the UK first envisaged simply keeping Polaris going and this allowed many people to accept the inevitability of carrying on. Then, when it appeared that the US was scrapping Polaris and building a new system it was more difficult to create opposition.

When Mrs Thatcher decided to go ahead with Trident, there were those in the armed services who were opposed. The opposition tends to fall into a traditional pattern of inter-service rivalry. The Army sees the expenditure as a diversion from the need for 'boots on the ground' soldiering. The Air Force, which had a nuclear force at the time, argues it can do the job better than the Navy, and the rest of the Navy suggests that something cheaper can be done. The public debate brings in academics and politicians. In the 1980s, David Owen suggested that a cheaper and better alternative would have been US Tomahawk Sea Launched Cruise Missiles fired from torpedo tubes. As this type of missile has now been purchased for a purely conventional role, and as the need for nuclear weapons is much reduced according to the government's own assessment, his option would now look to have been quite prescient. These arguments are being rehearsed again on similar lines. For example, the RAF favours a nuclear missile for the new Typhoon/Eurofighter.⁸⁹

⁸⁷<http://www.publications.parliament.uk/pa/cm200304/cmselect/cmdfence/465/4033107.htm>.

⁸⁸ The Americans have made a condition of their support since the late 1940s that the UK not even share information with France, despite the French role in the British and US programmes of the early 1940s.

⁸⁹ R. Fox, 'Trident: the done deal', *New Statesman*, 13 June 2005

In the end, the UK government is likely to opt for the best US technology it can afford – a point made in Hennessy's review of the topic. As Clarke observes about the present Trident system, 'it is credible because it is the most sophisticated currently available'.⁹⁰

The US will not have any Trident missiles after 2042 while a Trident successor may be in service until 2070 so that the UK would need to be part of the US successor. Early indications are that the US will choose a ballistic missile submarine that is a conventional/nuclear hybrid.

In their recent articles, the former MoD nuclear planning director, Tim Hare and Michael Clarke of King's College, London, note the UK's dependence on the US for the technology, but neither draw any policy conclusions from it. Their assessments of the geopolitical universe of British policy do not account for the gravitational pull from Washington. In contrast Admiral Raymond Lygo has observed that, 'we should not think of it as independent' and that the nuclear relationship will continue 'to tie the UK to US policy'.⁹¹

Michael Clarke argues against a decision to replace Trident with a similar system. There is, he argues:

- no current or near-term threat from another nation;
- any chemical or biological attack on the UK from the Middle East would not be responded to with nuclear weapons because of the political hostility this would create;
- sub-strategic Trident – and perhaps any sub-strategic weapon – is not usable in the Third World;
- there is no plausible emerging nuclear competitor to the US even by 2050, unless, he is careful to point out, the US creates such a threat through overly aggressive pursuit of the war on terror.

These are convincing arguments but presume the existence of an independence that does not exist. Michael Portillo makes similar

⁹⁰ M. Clarke, 'Does My Bomb Look Big In This? Britain's nuclear choices after Trident', *International Affairs*, January 2004.

⁹¹ Admiral Raymond Lygo, remarks at the Royal United Services Institute, July 2005.

arguments but concludes that the UK should depend totally on the United States.⁹²

Dr Julian Lewis, the Conservative MP, argues that Britain should have an independent nuclear deterrent so long as other countries have them. He has missed the point that it was a Conservative PM, Harold Macmillan who gave up the independence and that his officials even then regarded independence as a myth.

The pro-replacement argument boils down to the need to have a weapon in case we face 1940 again, but the irony is that in an obvious worst case of facing a hostile or neutral US the US would have every incentive and ability to remove the UK capability or prevent it from being used. In such circumstances a US-sourced system would be worse than useless if the public and the political elite had been left with the comfortable delusion that the weapon was independent.

Tim Hare supports replacing Trident with more of the same: new submarines to carry missiles the US will continue to produce and reconditioned warheads of the same type as at present.⁹³ He states that 'whilst the Trident missile and launch systems are purchased from the US, all the remaining elements are UK procured'. However, as has been demonstrated earlier, in fact the missiles are leased and not purchased and the National Audit Office stated, in 1987, that much of the warhead was procured in the United States, where the warhead fuse was also designed and built. As a former MoD official, Hare may be somewhat constrained in the frankness with which he can discuss the issues.

Hare argues that US unilateralism would increase if the UK ceased to play its part in the common defence. Many in the US believe that British support encourages and sustains US unilateralism rather than curtailing it, seeing Tony Blair as George Bush's great legitimator.

Hare discusses whether the UK should unilaterally give up its weapons and emphasises that France and other European states

⁹² Michael Portillo, 'Does Britain Need Nuclear Missiles? No. Scrap them', *Sunday Times*, 19 June 2005.

⁹³ Hare, *op. cit.*

would not want France to be the only state with nuclear weapons in Europe. He does not take account of the continental perspective that since the Nassau agreement of 1962 France has indeed been the only independent nuclear power in Western Europe and no state has asked the UK to build an independent system.

Another argument for a successor is that once given up the UK could never get back into the nuclear league. The UK clearly has the ability to make a simple nuclear weapon in small quantities. Indeed the idea that impoverished third world states can quite easily build nuclear bombs is received political wisdom. However, the US would be unlikely to resume supplying WMD to the UK once it had stopped.

President Bush's support for UK WMD

In contrast to Clarke and Hare, Chris Bellamy writes that 'the British deterrent is probably the least independent of any...could this be one reason why Prime Minister Tony Blair has been at such pains to support US foreign and strategic policy over the past eight years?'⁹⁴

Bellamy's point comes sharply into focus when we realise that in 2004 the Mutual Defence Agreement was renewed until 2014. The government decision not to debate the matter was backed by the Defence Select Committee and it was left to a few MPs and NGOs to try to bring the issue to the fore.⁹⁵

The history of the nuclear relationship was been full of hard political bargaining. The present Bush Administration prides itself on its tough pursuit of US interests. One can logically deduce that the Bush Administration would not have renewed the MDA without being certain that the UK would continue to provide reliable support.

In a formal letter to his officials endorsing the renewal, President Bush said that the UK is: 'making substantial and material contributions to the mutual defense and security. The proposed Amendment will permit cooperation that will further improve our mutual defence posture and support our interests under the North

⁹⁴ C. Bellamy, 'British Nuclear Forces, the decision that dare not speak its name', *The World Today*, May 2005.

⁹⁵ The British-American Security Information Council and the Acronym Institute provided analysis of the issues.

Atlantic Treaty Organization.’⁹⁶ He explained to Congress that that agreement will continue to:

Permit the transfer of nonnuclear parts, source, byproduct, special nuclear materials, and other material and technology for nuclear weapons and military reactors. ... In the light of our previous close cooperation and the fact that the United Kingdom has committed its nuclear forces to the North Atlantic Treaty Organization, I have concluded that it is in our interest to continue to assist them in maintaining a credible nuclear force.

For George Bush, his decision makes Britain credible. Would he do so free of charge? From any other but the US perspective, US support does not provide credibility of independence – quite the opposite. Had the UK not gone to war with the US in Iraq, neither President Bush nor the Congress are likely to have agreed that cooperation was close, especially in the climate of ‘you are either with us or against us’ that has prevailed since 9/11.

US thinking on a replacement for Trident is likely to provide strong indications of the type of weapons that the UK will opt for.

One other option apparent from the NRDC’s research on British nuclear forces is that Britain may, quietly, have partly developed a new nuclear weapon at the end of the Cold War. With the usual US assistance, the UK apparently carried out three tests of a Tactical Air To Surface Missile Warhead in 1989, 1990 and 1991. In 1992, the Conservative government told Parliament that a new tactical warhead could be ready before the likely test ban in 1996. A year later the weapon was cancelled. The UK may have a new US-tested nuclear warhead on the shelf ready to be manufactured, provided the US is prepared to supply parts and management.

Future nuclear warheads and nuclear testing

There is strong political and institutional pressure in the US to restart explosive nuclear testing at the underground test-site in Nevada. The US Under Secretary of State for Arms Control, Robert Joseph, judged in a 1998 study that ‘retaining the safety, reliability, and performance of the nuclear weapons stockpile in the absence of

⁹⁶ June 14 2004.

underground nuclear testing is the highest-risk component of the US strategy for sustaining deterrence’.⁹⁷

Any British decision to continue with US sources of weapons will require acceptance at least of any US resumption of testing even if the UK made use of an existing weapon type.

There is extensive debate in the United States Congress and amongst arms control groups over any new US nuclear weapons test explosions. At present, Congress has resisted the Bush Administration’s attempts to prepare to restart testing. Within the US government, pressure to resume testing comes from two main sources: the nuclear weapons industry and President Bush’s officials. Statements from the weapons industry hint that the nuclear scientists believe that one key nuclear warhead – the W-76 Trident – might require explosive testing to prove that it still works properly.⁹⁸

President Bush allocated funds in his latest budget for Fiscal Year 2006 to ‘enhance readiness to conduct underground nuclear testing if directed by the president’.⁹⁹

A political decision to resume testing would produce strong domestic and international opposition. People may recall the global uproar over France’s nuclear tests in the 1990s. Nevertheless, it should be remembered that senior officials in the US Administration, including Vice President Dick Cheney, National Security Advisor Richard Hadley, Deputy National Security Advisor J.D. Crouch, Defense Secretary Donald Rumsfeld and Under Secretary of State for Arms Control Robert Joseph, have never ceased to oppose the test ban. On taking office President Bush declared that he did not support the

⁹⁷ Joseph and Lehman op.cit.

⁹⁸ W. Pincus, ‘Washington Post Report Finds Shortcomings In Energy Dept. Arms Testing. Ability to Ensure Weapons’ Reliability at Issue’, Washington Post, 3 January 2002: ‘IG Says The Energy Department’s inspector general has determined that the growing problems associated with the safety and reliability of the nation’s nuclear weapons, without nuclear testing, have become a “most serious challenge area” for the newly established National Nuclear Security Agency that runs the weapons complex’; D. Ruppe, ‘U.S. Testing I: No Live Testing Needed For Now U.S. Official Testifies’, *Global Security Newswire*, 15 February 2002.

⁹⁹ ‘US Department of Energy Budget Request’, Fiscal Year 2006, Vol 1, p.57. The US Fiscal Year runs from October of the previous year in this case 05 October to September of the year designated.

treaty but indicated that at present he would not resume testing. President Bush's advisors might believe that international opposition would, in fact, strengthen their support amongst the American people and enable him to portray any Democrat supporting the CTBT as weak on defence and in cahoots with foreigners.

Both the UK and US governments argue that 'responsible' nuclear powers have a duty to make sure that their weapons work properly. In this definition of 'responsible' lies the potential to argue that testing is once again needed. British officials may well argue that, if there are problems in the American version of the Trident warhead, Britain should again take part in the US nuclear tests at Nevada.

The US has already begun funding the design work on a new generation of nuclear weapons. The Bush Administration's policy on the future of US nuclear forces, including the Trident system, was made by the Pentagon in January 2002 in a document called the 'Nuclear Posture Review'.¹⁰⁰ It recommended that 'new capabilities must be developed to defeat emerging threats such as hard and deeply buried targets (HDBT), to find and attack mobile and relocatable targets, to defeat chemical or biological agents, and to improve accuracy and limit collateral damage'.

The *New York Times* reported that 'worried that the nation's aging nuclear arsenal is increasingly fragile, American scientists have begun designing a new generation of nuclear arms meant to be sturdier and more reliable and to have longer lives, federal officials and private experts say'.¹⁰¹

¹⁰⁰ 'Today's nuclear arsenal continues to reflect its Cold War origin, characterized by moderate delivery accuracy, limited earth penetrator capability, high-yield warheads, silo and sea-based ballistic missiles with multiple independent reentry vehicles, and limited retargeting capability.'

'New capabilities must be developed to defeat emerging threats such as hard and deeply buried targets (HDBT), to find and attack mobile and relocatable targets, to defeat chemical or biological agents, and to improve accuracy and limit collateral damage. Development of these capabilities, to include extensive research and timely fielding of new systems to address these challenges, are imperative to make the New Triad a reality.' Nuclear Posture Review, US Department of Defense January 2002 www.globalsecurity.org.

¹⁰¹ W.J. Broad, 'US redesigning atomic weapons', *New York Times*, 7 February 2005.

Whatever decision President Bush makes, looking further ahead some fifteen years to the development of a US successor to Trident, the testing issue will, at some point, again come to the top of the international agenda. If the UK is sourcing its new weapons in the US, then it will likely follow US policy on nuclear testing at Nevada and revoke the CTBT citing the legal provision of 'supreme national interest'.

Future missiles and systems

Keeping Trident running indefinitely

New submarines take some fifteen years to build and as the oldest UK Trident submarine, Vanguard, will end its planned service life in 2023, a replacement will have to be started in 2008. The US Nuclear Posture Review explained that 'the Navy has extended the Trident hull life to 44 years. This in turn will require the DoD to extend the service life of the D-5 [missile]'. A similar decision in the UK would mean that the oldest submarine, Vanguard, would cease to operate in 2038 rather than 2023 as planned at present. However, such a service life extension risks the submarines breaking down as has happened already to other types of UK nuclear submarines.

US plans for new missiles and submarines

A British decision to continue with its existing policy of obtaining the most advanced US system would mean buying into a new submarine and missile that would be available for use about twenty years from now and which would continue in service for a further thirty or forty years up to 2070.

According to the Nuclear Posture Review, the Pentagon will build a replacement for Trident system to be ready around 2029 – in time for the UK to share the technology:

'The Navy is currently studying two options for future follow-on SSBNs:

- (1) a variant of Virginia-class nuclear attack submarines (SSN);
- (2) a dedicated SSBN (either a new design or a derivative of the Trident SSBN) ... If the decision is made to develop a new dedicated SSBN, a program would have to be initiated around 2016 to ensure that a new platform is available in 2029.'

There has been some discussion in both the UK and the US of producing a new multi-purpose submarine capable of using both

conventional and nuclear-armed missiles as a successor to Trident. This would fit the description of the US 'Option 1' discussed above. A detailed study by the Massachusetts Institute for Technology of the Future of the Trident Force provides an indication of some of the extra weapons that might be fitted alongside or instead of a Trident-style missile.¹⁰² These could include 500km ballistic missiles, 2000+km Cruise Missiles, armed robot-planes,¹⁰³ mini-submarines and commandos.

In addition, the US may be pursuing a classified programme to meet the requirement of 'Option 2' that will not see the light of day for some years yet. One reason for considering this is that Cruise missiles are slower and potentially easier to shoot down than ballistic missiles; thus, for the military, a requirement for a long-range strategic weapon able to destroy enemy targets in under half an hour from launch can be expected to remain.

An independent nuclear weapon

One option is return to a truly independent British nuclear weapon. In the 1950s, the UK decided that this was too expensive and this is likely to be the case today. However, given the public attachment to the false idea that the UK has had an independent nuclear weapon and, as a hedge against the unknown unknowns, the UK could retain the industrial capacity to build a simple atomic weapon. It is sometimes said that, once out of the business of weapon making, it would be too difficult to get back in. This makes no sense. The original wartime programmes invented and built weapons in three years. Today, a programme to retain a minimum capability that could, in extreme conditions, be delivered by aircraft or unconventional means would be possible.

¹⁰² <http://web.mit.edu/ssp/Publications/pubs.html>

¹⁰³ The US ground-based units already use the Predator Unmanned Aerial Vehicle armed with Hellfire Missiles.

Appendix I:

US-UK trade in nuclear explosive materials

DECLASSIFICATION OF THE QUANTITY OF PLUTONIUM ACQUIRED FROM THE UNITED KINGDOM UNDER BARTERS A, B, AND C OF THE 1958 UNITED STATES/UNITED KINGDOM MUTUAL DEFENSE AGREEMENT, 22 December 1997

The Department of Energy committed to provide any additional information that could be released regarding plutonium inventories. DOE, with the cooperation of the United Kingdom (UK) Government, is releasing additional information regarding nuclear materials barter, i.e., the quantity of plutonium received from the UK and the tritium and highly enriched uranium provided to the UK under each of the individual Barter (A, B, and C). In addition, the Department is releasing information regarding the quality of the plutonium in terms of Pu-240 content. The release of this information will provide the public with more information regarding plutonium inventories.

SPECIFICALLY:

	Barter A 1960 - 1969	Barter B 1964 - 1969	Barter C 1975 - 1979	Total
Plutonium Received from the UK	0.5 metric tons	4.1 metric tons	0.8 metric tons	5.4 metric tons
Tritium Delivered to the UK	6.0 kilograms	None	0.7 kilograms	6.7 kilograms
HEU Delivered to the UK	None	7.5 metric tons	None	7.5 metric tons

The Pu-240 content of the 5.4 metric tons received under the barter was as follows:

Pu-240 content	Metric Tons Received
2 per cent	0.1
10 - 12 per cent	1.2
13 - 15 per cent	1.9
16 - 20 per cent	2.2
Total	5.4

BACKGROUND:

The total quantity of plutonium received by barter was announced in February 1996; today we are releasing the quantities received for each of the individual barter programs. Programs for mutual defense and international cooperation in the peaceful uses of atomic energy are authorized by the Atomic Energy Act of 1954, as amended. The 1958 United States/United Kingdom Mutual Defense Agreement had barter provisions for the exchange and safeguarding of atomic material.

Most plutonium was shipped from the UK to the Hanford and Savannah River Sites. Prior to 1964, some plutonium received under Barter A was used for military purposes. In 1964, the U.S. and the UK agreed to use Barter A and Barter B plutonium for civilian programs and that an equivalent amount of U.S. plutonium could be substituted for UK plutonium in U.S. civilian programs. Civilian programs include californium production and reactor research. The Barter C was not so restricted. Some of the plutonium received under Barter C was used in U.S. nuclear weapons.

Information released is based on evaluating available records; it may be updated or revised based on re-evaluation of the methodology used originally or upon the availability of any newly discovered information.

By declassification, the United States government with the cooperation of the UK government is acting as a global leader in nuclear information transparency.

Also from the Foreign Policy Centre:**PREVENTING THE NEXT COLD WAR: A VIEW FROM BEIJING**

Andrew Small
November 2005
£4.95

2005 has seen the emergence of political dynamics and shifts in thinking in both Washington and Beijing that risk tipping US-China relations over into a state of open geopolitical rivalry unless there are concerted attempts at conflict prevention. The ramifications would run far beyond the damage inflicted on both countries – which at its worst could ultimately involve a ‘hot’ war in the Asia Pacific. It would be felt across virtually every other area of policy, as a world order characterised by increasingly unleavened great power competition weakened or unravelled most of the global rules, regimes and institutions that have emerged since the end of the first Cold War, from free trade to non-proliferation regimes, from development policy to the UNSC.

This paper argues that economic interdependence and deft diplomacy are no longer going to be sufficient to keep Sino-US relations on track. It sets out the developments in Washington this year that have led to the US embarking on what looks in Beijing like the early stages of a containment policy, the increasingly ideological quality of the divisions between the two sides, and the hedging strategy with which China has responded. It argues that without early intervention and the establishment of a new relationship framework that can stably encompass these issues – which implies some difficult choices for both sides – 2005 is, in retrospect, more likely to be described as the first year of the Cold War than as a prelude to it.

THE NEXT ATTACK: ‘KNOW YOUR ENEMY AND KNOW YOURSELF’

Greg Austin
October 2005
£4.95

There will be more attempts by the self-proclaimed jihadists to murder large numbers of Britons in coming years, either in the UK or

abroad. Their campaign has been going on for over a decade and will almost certainly continue for another decade at least. Their tactics and targets will change in that time. The risks are high, with some prospect of the terrorists reaching for ever greater casualty numbers through the use of weapons of mass destruction. To defeat this threat, the British community as a whole must 'know' its enemies and it must 'know' its own capacities to disrupt, capture or kill them. So far, it does not know either adequately. This pamphlet provides an overview of the threat and looks at ways in which the UK can improve its defences through greater investment in intelligence, in recruitment and training of security services personnel and crown prosecutors, and in setting up stronger public accountability mechanisms for the government's counter-terrorism operations.

BRITAIN'S ENERGY FUTURE: SECURING THE 'HOME FRONT'

Stephen Twigg, Dan Plesch, Greg Austin and Fiona Grant
September 2005
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Environmental security, including the role that renewables can play, has become one of the highest priorities on the international agenda. Yet the British Government has set a target for its own use of renewables that is among the lowest in Europe, and even then the UK is not on track to meet it. Britain cannot lead internationally on these issues without a dramatic change in its domestic policy settings and a more visible link between its international goals and domestic achievements. Overlaying the long-standing environmental agenda, Britain and the world face new risks with oil infrastructure and security in the Persian Gulf. These circumstances provide both the need and a foundation for a new political consensus, both domestic and international, for a 'powershift' to renewable energy sources. Such a rapid shift away from dependence on hydrocarbons to low carbon fuels will benefit the economy, tighten international security, strengthen development policy and, last but not least, help mitigate climate change. Traditionally these issues have been the province of environmentalists and to a lesser extent the international development sector, but now there is a new national security imperative for a rapid transition to renewable energy.

A NEW GRAND BARGAIN FOR PEACE: TOWARDS A REFORMATION IN INTERNATIONAL SECURITY LAW

Greg Austin and Ken Berry
February 2005
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The United Nations does not just need reform, it is in need of a Reformation'. The scope of change needed can only be understood with reference to the massive changes in international power relationships of the past sixty years. The composition of the Security Council is just one structural question among many other deeper issues. Reform of the Council membership and setting up a Peace-building Commission, while both important changes, are not adequate by themselves. Such innovations need to be seated in a comprehensive programme of reform that addresses other aspirations among rising powers. There needs to be a quick move towards the progressive codification of important innovations in international security law that address several areas of grave concern to the majority of states.

This paper argues that the growing support for reform of the Security Council provides a unique opportunity to address these other concerns. States can now work towards a new grand bargain that will begin to bridge the growing gulf between, on the one hand, US and European perceptions of the international legal and political order and, on the other, those of the 'non-West'. Only when these other concerns are addressed will reform of the Security Council be meaningful and durable.

PRE-EMPTING NUCLEAR TERRORISM IN A NEW GLOBAL ORDER

Amitai Etzioni
October 2004
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Leading communitarian author, Amitai Etzioni, argues for a shift in international counter-terrorism resources toward more focus on preventing attacks with nuclear weapons. The best way to do this, he argues, is to limit greatly the damage the damage that terrorists will cause by curbing their access to nuclear arms and related materials. He argues for a robust and intrusive campaign of 'de-proliferation'-

making states surrender such materials. He pleads for more attention to failed and failing states (Russia, Pakistan) than to rogue states (Iran, North Korea), on the grounds that each failing state is like hundreds of actors with too wide a variety of motives and too low a visibility for them to be easily deterred. On the other hand, rogue states- which have singular and effective governments- might be deterred.

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