



No Trident replacement update

Times are hard – don't waste our money on nuclear weapons

This briefing provides an update on the Trident replacement programme. It examines technical details of the planned timescale and budget within the context of national and international developments.

Despite a massive rebellion within the Labour Party and the opposition of the majority of British people, in March 2007, the British Parliament decided to replace the UK's nuclear weapons system Trident. However, the political landscape has changed significantly since that parliamentary vote. Not only does the UK find itself facing the worst economic crisis in decades, but senior political – and now military – figures are continuing to shift their position on the issue of nuclear weapons in ever greater numbers. This is evident in statements from both across the political spectrum and across the world. An early indicator of this, in January 2007, was the statement from Henry Kissinger and others calling for progress towards disarmament.¹

Most recently, President Obama has outlined a number of positive steps he wishes to take, with the ultimate goal of global nuclear abolition. This shift primarily represents a positive change in attitudes towards multilateral disarmament, and a recent Foreign Office paper entitled *Lifting the Nuclear Shadow*² draws a line between multilateral and unilateral disarmament. However, the majority of the British population opposes Trident replacement, irrespective of what other countries do, and recent comments from senior military figures also go one step further in the debate by stating that Trident is irrelevant to our security needs and should be scrapped. There is widespread recognition that if Britain is to play a role in achieving global abolition, it cannot simultaneously proceed with replacing Trident, ensuring that Britain is nuclear-armed to 2050 and beyond. This is a positive environment in which to reverse the decision on Trident. The MoD had planned its first progress report on the Trident Replacement process for September 2009. This would

mark the 'Initial Gate' decision point, where approval is needed before further developments on the design of the new submarines are undertaken. However, in July 2009 government sources said that the Initial Gate point was to be delayed until after the nuclear Non Proliferation Treaty Review Conference in May 2010.

CND congratulates the government on this delay. The UK could make a major contribution to advancing plans for global nuclear disarmament at the Review Conference by deciding not to replace Trident.

In the meantime, the government should specify the 'circumstances under which the UK would be prepared to suspend the Trident renewal programme' as recommended in a recent Foreign Affairs Committee

Trident
– the UK's current nuclear weapons system

4 nuclear powered submarines
(one on patrol at all times)
Each one carrying up to 16 missiles

Equipped with up to 48 nuclear warheads

Each nuclear warhead has 8 times the explosive power of the bomb dropped on Hiroshima

New nuclear reactors

The replacement submarines may be powered by a new type of nuclear reactor which Rolls Royce is likely to design and produce at its plant in Derby. Such a new reactor would need to be tested at a specialist nuclear testing facility such as the one also run by Rolls Royce at Dounreay, the Vulcan Naval Reactor Test Establishment.⁸ Although this site is due to be decommissioned in 2014, such a project could mean a new testing reactor being built there and the plans for decommissioning cancelled.

Replacement missiles

Life extension

The current arrangement is that the UK leases Trident II D5 missiles from a US pool of missiles. This missile leasing arrangement is planned to continue with the UK participating in a US life extension programme of the missiles. The Trident II D5A is planned to be in service from 2029 until the early 2040s. It will have a modernised guidance system believed to improve its accuracy.⁹ The Defence White Paper stated that participation in the programme would cost an additional £250 million beyond the government's projected overall acquisition cost of £15-20 billion.¹⁰

New missiles

As the new Trident replacement submarines are planned to run until 2050, new missiles will be procured once the 'life extended' Trident II D5A becomes obsolete in the early 2040s. According to the White Paper, decisions on this 'are unlikely to be necessary until the 2020s' and the US has made assurances that any successor missiles they develop will be compatible with the UK's Trident replacement system.¹¹

Costs for a new missile will be additional and could begin accruing in the 2030s; the White Paper does not attempt to make estimates but states that the current Trident II D5 missiles cost £1.5 billion in today's prices.¹²

Nuclear warheads

Trident's current warhead design is generally believed to be based on the US W76 warhead with which the US Trident system is armed*. The UK warhead is to be equipped with a new Arming, Fuzing and Firing System (MK4A) developed in the US (and to be equipped with the US W76) which will give it improved military capability against more targets, in particular a 'hard target kill' capability against hardened targets such as bunkers.^{13 14}

However the current warhead design may only last into the 2020s according to the Defence White Paper and will either need to be refurbished or replaced in time for the new system. The Defence White Paper states that decisions about this will be made in the next parliament. Ahead of such decisions however, Ministry of Defence documents indicate that a senior defence official has told industry representatives the warhead will be replaced.¹⁵ In the meantime, and under the US-UK nuclear Mutual Defence Agreement, 'activities will be undertaken with the United States' to 'analyse the range of replacement options available' and review the existing stockpile.¹⁶

New or refurbished warhead

A refurbished warhead would be a modernised version of the current warhead using both old and new components. A new 'High Surety Warhead' is also being considered. This is said to be similar to the 'Reliable Replacement Warhead' that has been under development in the US. This is currently suspended by President Obama. Reported by the *Glasgow Herald*, it is believed that these warheads would not need to be tested underground (and would avoid contravening the Comprehensive Test Ban Treaty) as they would be more dependable, containing 'fewer degradable components, giving them a longer shelf-life'.¹⁷ Whichever warhead design the UK chooses, according to the Defence White Paper, a lower yield variability (so the explosive power can be changed), combined with varying the numbers of both missiles and warheads on the system, makes for a 'more credible deterrent against smaller nuclear threats'.¹⁸

Tritium production

Tritium is a radioactive gas used to 'boost' the yield (explosive power) of modern nuclear warheads. It is produced in nuclear reactors and has a short half-life of around 12 years – meaning that it loses its efficacy over a period of decades and new sources need to be acquired. A special facility at Chapelcross, south-west Scotland, produced tritium until 2005 when it was decommissioned. To continue with nuclear warhead production at AWE Aldermaston until the 2050s the UK will need to acquire new sources of tritium. This might mean a new facility producing tritium or supplies coming from the US. When questioned on costs, former Defence Secretary Des Browne stated that supplies will be reviewed.¹⁹

National Audit Office report

A report produced by the National Audit Office (NAO) in November 2008 raised serious questions concerning the timetable and budget for replacing Trident.²⁰ The report identified major

* The US Trident system also uses a W88 warhead which has an even higher yield of 475 kilotons compared to the W76's 100 kilotons

areas of uncertainty in the budget with costs vulnerable to inflation and changes in the exchange rate. Following publication of the NAO report, the House of Commons Public Accounts Committee (PAC) took oral evidence from Ministry of Defence officials responsible for the Trident replacement programme. The PAC expressed concerns about the record of the Ministry of Defence and manufacturers in completing projects similar to Trident within the designated timeframes and budgets. The Astute class submarine programme was referred to as an example of this, given that it is currently running four years behind schedule and is almost 50% more than originally budgeted. Such concerns are given extra weight by Sir Bill Jeffrey's claims that the figures for the Trident replacement programme provided in the Defence White Paper were only ever a 'ballpark estimate of costs' and 'we must recognise we are dealing with essentially monopoly suppliers'.²¹

Conclusion

The government suggests that a new nuclear weapons system will cost £15-20 billion with extra costs of £250 million to join in with the US's missile life extension plan, and further costs (not given) at a later date for new missiles. But this does not include:

- £2 billion per year running costs for the lifespan of the system

- A substantial increase in spending by AWE – the UK's nuclear weapons factory including £1.1 billion between 2005-2008
- Inflation and increased costs of military equipment, as suggested by a leading Defence economist, which means that a more realistic cost for acquisition of the system is at least £25 billion

The cost of Trident replacement (acquisition and running costs combined) is therefore likely to be a total of at least £76 billion.

With such serious concerns about the timetable and budget for replacing Trident, the programme is high risk to say the very least. The growing economic crisis, coupled with the increased threat to our security, makes the cost of our nuclear weapons impossible to justify. In light of this and the shift in popular and political opinion, CND calls on the government to take a real step towards the global abolition of nuclear weapons by abandoning its own plans for new nuclear weapons. By cancelling Trident replacement, the government will send out a strong signal internationally that nuclear weapons are not necessary for a country's security. That will be a real indication of vision and global leadership and will contribute to a world safer for everyone.

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 - 2 Foreign and Commonwealth Office Policy Information paper, *Lifting the Nuclear Shadow*, 4th February 2009
 - 3 House of Commons Foreign Affairs Committee, (*Global Security: Non-Proliferation* Fourth Report of Session 2008–09, p9
 - 4 Richard Scott, 'UK starts concept work for future submarine', *Jane's Defence Weekly*, Volume 44, issue 46, 14th November 2007
 - 5 House of Commons, Debates, *Trident*, 14th March 2007, Column 309
 - 6 House of Commons, Written Answers, *Submarines: Procurement*, 18th October 2007, Column 1236W
 - 7 Defence White Paper, *The Future of the United Kingdom's Nuclear Deterrent*, December 2006, The Stationery Office Limited, pp. 3-4
 - 8 Rob Edwards, 'Dounreay likely site for new reactor', *The Sunday Herald*, 19th August 2007
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 - 11 *Ibid.*, pp. 7-6
 - 12 *Ibid.*, pp. 5-11
 - 13 http://www.fas.org/blog/ssp/2007/08/us_tripplis_submarine_warhead.php
 - 14 <http://www.fas.org/blog/ssp/2007/03/>
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 - 16 Defence White Paper, *The Future of the United Kingdom's Nuclear Deterrent*, December 2006, The Stationery Office Limited, pp. 3-4
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 - 19 House of Commons, Written Answers, *Nuclear Weapons*, Column 6994
 - 20 UK National Audit Office Report on the UK Nuclear Weapons Programme, 5th November 2008
 - 21 Public Accounts Committee, Oral evidence, 19th November 2008



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