



Trident after the Strategic Defence and Security Review

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Under the Conservative/Liberal Democrat coalition agreement, the new Government agreed to conduct a value for money review of the Trident successor programme *within the framework* of the SDSR.

That review concluded over summer 2010 and its recommendations were considered by the National Security Council as part of the Strategic Defence and Security Review (SDSR) process. Issues relating to the nuclear deterrent subsequently formed one chapter of the SDSR when it was published on 19 October 2010.

This note briefly examines the main conclusions of the SDSR with respect to the Trident successor programme, including changes to the UK's nuclear posture, timeframe and associated cost savings. It also briefly looks at the new UK-French nuclear treaty which, for the first time, establishes co-operation measures between the two nuclear weapon states; and developments on Trident since October 2010.

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1 Background

Prior to the May 2010 general election, each of the main political parties committed to undertake a strategic defence review should they take office, including a wholesale examination of future defence procurement programmes. However, both the Conservatives and Labour announced the intention to exclude the Trident replacement programme from that assessment; a decision which the Liberal Democrats called “illogical” and “a complete mockery of the whole [defence review] exercise”.¹ Instead the Liberal Democrats called for an immediate review of the programme and an examination of alternatives such as the possibility of equipping the new Astute-class submarines with nuclear-armed cruise missiles or the retention of a stockpile of fissile material that could be turned into a nuclear missile capability within six to 24 months (i.e. the retention of a ‘virtual arsenal’).²

Under the Conservative/Liberal Democrat coalition agreement, Lib Dem opposition to the like-for-like replacement of Trident was, however, dropped although the new Government announced that the programme would be scrutinised for value for money, within the framework of the Strategic Defence and Security Review, and that the Liberal Democrats could continue to make the case for alternatives.³

That review was intended to be a thorough assessment of not only the costs of the programme, but also the timetable (including the costs and risks of further extending the Vanguard-class beyond the already planned five-year life extension); the number of missiles, missile tubes and warheads that will be deployed; infrastructure and other support costs; and the industrial supply chain.⁴ However, the Government also made clear that alternatives to a submarine-based system would not be considered as part of the review.⁵ Importantly, the

¹ “Liberal Democrats call for immediate review of UK Trident policy”, *The Guardian*, 2 April 2010

² These potential options were set out in greater detail in a Lib Dem policy document published in April 2010 entitled, [Policy Options for the Future of the United Kingdom's Nuclear Weapons](#). The option of either a nuclear-armed Astute or the establishment of a virtual arsenal are also examined in Library Research Paper RP06/53, [The Future of the British Nuclear Deterrent](#), 3 November 2006

³ “David Cameron’s coalition government sets to work”, *BBC News Online*, 12 May 2010

⁴ HC Deb 5 July 2010, c3

⁵ HC Deb 5 July 2010, c7-8

study was also set to examine the UK's strategic posture, including the feasibility of procuring a three or four-boat class of submarine in order to maintain continuous-at-sea-deterrence.

In May 2010 the Foreign Secretary, William Hague, also announced that the UK's declaratory policy, i.e. the UK's position on no first use, would be re-examined as part of the SDSR.⁶

A more detailed examination of the Trident debate prior to the publication of the SDSR is available in Library briefing SN/IA/5150, *Future of the British Nuclear Deterrent: A Progress Report*.

2 Conclusions of the SDSR

In line with expectations, the SDSR concluded that the UK strategic nuclear deterrent would be retained as a key element of the Future Force 2020. As a result of the Government's value for money review the SDSR made several recommendations, however, on changes to the successor programme in order to achieve cost savings.

The basis for those changes was the overriding conclusion that minimum effective deterrence could be achieved with a smaller nuclear weapons capability. Therefore, the SDSR concluded:

- The number of operational launch tubes on the current Vanguard-class submarine will be reduced over the next few years from 12 to eight and the number of warheads deployed from 48 to 40.
- The operational stockpile of nuclear warheads will be reduced from less than 160 to fewer than 120; while the overall nuclear stockpile will be reduced from no more than 225 to no more than 180 by the mid 2020s. This decision has been considered part of UK's commitment toward disarmament, a position put forward at the NPT review Conference in May 2010.⁷
- Continuous-at-sea deterrence (CASD) will be maintained. Breaking CASD is not considered by the MOD to be a viable means for achieving costs savings. The submarines are nuclear powered so there would be no savings on fuel, while they would also still need to be crewed when in port for safety and security reasons.
- Initial gate of the Trident programme would take place by the end of 2010 and Main Gate will be delayed until early 2016. The decision to delay Main Gate until after the next election has been met with approval from some quarters, most notably by the Liberal Democrats, and concern from others. Sir Peter Tapsell suggested that the decision "looks like a subordination of the national interest to the political expediency of keeping the Coalition going".⁸
- The service life of the current Vanguard class submarines will be extended and the first replacement platform will enter service in 2028. This involves service-life

⁶ HC Deb 26 May 2010, c181-182

⁷ Further information on the outcome of that review conference is available in Library Research Paper, RP10/42, *Progress towards nuclear disarmament?*, 15 June 2010

⁸ HC Deb 19 October 2010, c806

extension of nine years, if an original 25-year lifespan is assumed.⁹ It will also bring the successor programme largely into line with the US programme to replace its existing Ohio-class SSBN. That programme is expected to bring a new submarine into service from 2027 onwards. However, as an article in *Jane's Defence Weekly*, highlighted "it is not yet clear exactly how that will be achieved because MOD studies in 2006 had foreshadowed the requirement and stated that, although it would be possible to extend their lives, it would only be to the mid 2020s at the very limit. Even that would incur gradually increasing cost and some increased risk of reduced availability".¹⁰

- The new platform will be configured with eight operational missile tubes, instead of the currently planned 12. It has been suggested that reducing the size of the missile compartment would make a re-designed Astute-class now more feasible as a potential successor platform.¹¹
- A decision on the final number of submarines required to maintain CASD will be taken at Main Gate when further information on the reliability and maintenance requirements of the new submarine design becomes available. On 23 February 2011, *BBC Scotland* reported the Secretary of State as commenting, however, that an assessment of "current technology required the retention of all four submarines", although "that's something that can always be kept under review".¹²
- The current nuclear warheads will remain viable until the late 2030s and therefore, a decision on the replacement warhead will now be deferred until 2019.¹³

2.1 Cost Savings

These decisions are expected to reduce the costs of the nuclear deterrent by £750m over the spending review period up to 2014-15, and £3.2bn over the next ten years (£1.2bn of savings and £2bn of deferred spending). The £750m savings over the period of the CSR will largely come from the decision to reduce the number of missiles and warheads deployed aboard the Vanguard-class. Overall savings and savings from deferred spending over the next ten years will also be the result of:

- Deferring a decision on the replacement warhead until at least 2019 which will defer £500m of spending from the next 10 years.
- Reducing the cost of the successor submarine missile compartment by reducing its size will make an outright saving of up to £250m.
- £1bn of spending will also be deferred, and potentially removed from the programme, over the next ten years from the submarine infrastructure and support network.

⁹ Assuming a 25-year lifespan for the Vanguard-class, the first submarine would have left service in 2019 (HMS *Vanguard* entered service in 1994), and in 2024 if assuming a 30-year span. The final vessel of the fleet (HMS *Vengeance*) entered service in 2001 and therefore decommissioning dates were 2026 or 2031 respectively.

¹⁰ "Trident replacement confirmed, but timing, cost issues remain", *Jane's Defence Weekly*, 27 October 2010. This point was also made during evidence to the Defence Select Committee inquiry in 2006 (HC 835, Session 2005-06)

¹¹ Comment by Dr Jeffrey Bradford of King's College London on: <http://kingsofwar.org.uk/2010/10/sdsr-mortgaging-the-future-to-a-war-in-afghanistan/>

¹² "Trident nuclear fleet cuts ruled out by Liam Fox", *BBC News Scotland*, 23 February 2011

¹³ In the 2006 White Paper the Government had indicated that a decision on the replacement warhead would be taken during the post-2010 Parliament.

- Under the Submarine Enterprise Performance Programme [SEPP] the MOD also expects to deliver up to £900m of savings over the next ten years by improving commercial arrangements with industrial suppliers.

The MOD has also suggested that some of the deferred £2bn spend could be translated into real savings in later years.

In answer to a Parliamentary Question on 8 November 2010 the Secretary of State confirmed the additional costs of maintaining the Vanguard-class in service will be in the region of £1.2- 1.4bn.¹⁴ It has been acknowledged, however, that savings achieved from the SEPP will be used to offset the additional costs of delaying the successor programme:

The deferral does add cost to the successor programme but we are embarking on a programme to improve the efficiency of the submarine enterprise. The savings we expect this efficiency programme to generate will more than offset any additional costs resulting from the deferral of the submarines in service date.¹⁵

Indeed, the MOD has suggested that only extending the lives of the Vanguard-class beyond 2028 would incur disproportionate costs:

The value for money review showed that 2028 was a more realistic estimate and that it was possible to extend the lives of the Vanguard class boats to match. This involves extending them by 9 years beyond their original design life of 25 years. Any further would require a disproportionate level of spend to keep them in service and would jeopardise British industry's ability to design and construct nuclear submarines – a critical sovereign capability.¹⁶

On the issue of where funding for the replacement programme will come from, the Royal Navy has stated:

The defence budget is funding the Trident replacement as it is a defence capability which contributes to the security of the UK. The Government is committed to ensuring that the future budget will be sufficient to deliver the 2020 Force Structure and the Trident renewal programme.¹⁷

The MOD has stated that, for the present, a more detailed breakdown of costs will not be published. In answer to a PQ on 4 November the Secretary of State commented:

The Ministry of Defence (MOD) made estimates of the cost savings accrued from measures in the Strategic Defence and Security Review for the purposes of formulating policy. Some of these have been published to help inform the public debate. Release of further detail may prejudice the MOD's negotiating position with its commercial suppliers. Furthermore, final savings figures will depend on detailed implementation. The MOD is therefore not prepared to release more detailed figures at this time.¹⁸

However, during oral questions on 8 November, the Secretary of State also committed to the publication of a report shortly after Initial Gate that will set out likely expenditure on the

¹⁴ HC Deb 8 November 2010, c5

¹⁵ SDSR Briefing Pack: Trident V4M: Q&A

¹⁶ *ibid*

¹⁷ [Royal Navy Supporting Question and Answer Pack](#), 19 October 2010

¹⁸ HC Deb 4 November 2010, c959-60W

Trident successor programme.¹⁹ The SDSR had suggested that the overall cost of the successor programme would still fall within the £15-20bn estimate first set out in 2006.²⁰

2.2 Declaratory Policy

As part of the SDSR, the Government also committed to reviewing the UK's nuclear declaratory policy. The SDSR confirmed that the "UK would not use or threaten to use nuclear weapons against non-nuclear weapon states parties to the NPT". This assurance would not apply, however, to any state in material breach of the NPT. The SDSR also states:

We also note that while there is currently no direct threat to the UK, or its vital interests from states developing capabilities in other weapons of mass destruction, for example, chemical and biological, we reserve the right to review this assurance if the future threat, development and proliferation of these weapons make it necessary.²¹

The language is similar to that used by the US in its *Nuclear Posture Review* which was published in April 2010. While offering negative security assurances to the NPT non-nuclear weapon states, it effectively leaves options open with regards to Iran and North Korea, which are both deemed to be in contravention of their NPT obligations.²²

The SDSR also maintains a position on ambiguity on the precise details of when, how and at what scale the UK may consider the use of its nuclear weapons capability. However, as also stated in the 1998 SDR, this review sets out the position that the UK would only use nuclear weapons in extreme circumstances of self defence.

3 French Nuclear Co-operation

One of the overarching principles of the SDSR was a renewed emphasis on alliances and partnerships, in particular with the US and France. In light of that recommendation, the latest UK-France summit, held on 2 November 2010, was widely expected to agree various measures on defence co-operation, including joint procurement programmes, greater interoperability, shared logistics and support and greater industrial co-operation. For several months there has also been considerable speculation that the UK and France could make moves towards sharing elements of their respective nuclear deterrents, including the possibility of joint nuclear patrols.²³

That programme for defence co-operation will now be taken forward through an overarching defence co-operation treaty ([Cm 7976](#)), a subordinate treaty relating to joint nuclear facilities ([Cm 7975](#)), a Letter of Intent signed by the Defence Ministers and a package of joint defence initiatives. Both treaties have been labelled by commentators as 'historic', particularly for co-operation in the nuclear sphere. While the treaty does not go as far as some commentators feared, it does represent an unprecedented step in the sharing of nuclear facilities and technologies.

¹⁹ HC Deb 8 November 2010, c4

²⁰ SDSR Briefing Pack: Trident V4M: Q&A

²¹ SDSR Fact Sheet 10: Trident Value for Money Review

²² North Korea renounced the NPT in January 2003. However, some disagreement over its status remains. The country backdated its mandatory three month withdrawal notification period back to 1993, when it first threatened to withdraw from the treaty, thereby drawing criticism from some quarters that it did not follow the correct procedures and therefore remains subject to the provisions of the treaty.

²³ See for example, "Britain and France may share nuclear deterrent", *The Independent*, 30 September 2010

The following examines the main aspects of the nuclear treaty. Further information on defence co-operation treaty and package of joint initiatives is available in Library note SN/IA/5750, *Franco-British Defence Co-operation*.

3.1 Nuclear Treaty

This new nuclear treaty²⁴ is intended to facilitate collaboration in the technologies associated with stewardship of both countries nuclear stockpiles. To that end, the treaty establishes the following provisions:

- Co-operation, including the exchange of relevant classified information, will focus on the following areas: safety and security of nuclear weapons, stockpile certification, counter nuclear or radiological terrorism.

As a result both Parties will jointly build and operate a dedicated radiographic and hydrodynamics facility at Valduc in France and will co-operate in a joint radiography and diagnostics technology programme in a joint facility (Technology Development Centre) at AWE Aldermaston in the UK. The output of this joint facility shall comprise development work to underpin the technologies used in the French facility throughout its operational life (**article 1**). The TDC facility will be designed, constructed and commissioned by 2014; while the French facility will be built and commissioned in two stages in 2014 and 2016 (**article 4**).

- Either Party will be able to conduct independent hydrodynamics trials needed for its national programmes at the facility in France.

Joint use of the facilities will not imply that all the work conducted by the Parties shall be shared.

The technical, financial, security and administrative arrangements for both joint facilities will be set out in separate and appropriately classified agreements which will be finalised no later than 31 March 2011 (**article 2**).

- The French Directeur des Applications Militaires (DAM) and the UK's Chief Scientific Adviser will meet at least once a year to review the implementation and effectiveness of these arrangements and approve the future direction. They will also report progress to the Senior Level Group established under the defence and security co-operation treaty (**article 3**).
- The French facility shall comprise separate areas for solely national (manned by either UK or French personnel only) and joint use; whereas the TDC will comprise shared areas within a shared facility. Both Parties will have guaranteed and unhindered access to both facilities for 50 years or until such time as mutually agreed by both Parties (**article 5**).
- The UK will meet the costs related to the design, construction, operation, maintenance, decommissioning and dismantlement of the TDC; while France will meet the costs of phase 1 of the French facility. After 1 January 2015, with the exception of work being undertaken solely in support of national programmes the

²⁴ Full title: *Treaty between the United Kingdom of Great Britain and Northern Ireland, and the French Republic relating to Joint Radiographic/Hydrodynamics Facilities*

Parties will share all costs and benefits as a result of their participation in the joint programme equitably (**article 6**).

- Waste from trials and experiments at either facility will remain the property and responsibility of the originating state (**article 10**).
- Nothing in the treaty governs the release, use, exchange or disclosure of information, classified or otherwise, in which intellectual property rights exist unless written authorisation of the owner of those rights has been obtained (**article 12**).
- The treaty will remain in force for the entire life cycle of the facilities, including in-service upgrades, which is expected to be 50 years, or until such time as mutually agreed by both Parties. Following receipt of final investment approvals to proceed with phase 2 of the French facility, 10 year notice of withdrawal may be given by either Party. Where the obligations under this treaty may conflict with future treaty obligations which may arise, either Party may withdraw with one year's notice (**article 17 and 18**). If France withdraws from the French facility within the first 25 years of the treaty coming into force, the UK may recover the full cost of UK capital investment in the facility. Reciprocal arrangement shall apply in the event of the UK's withdrawal from the TDC (**article 18**).

4 Developments Since October 2010

During Prime Ministers Questions on 9 February 2011 David Cameron reiterated his commitment to a full replacement of Trident. He stated:

First of all, let me make this point. The replacement of Trident is going ahead. The investment is going in; the initial gate will soon be passed. The reason for the delay is that we had a value-for-money study because we desperately need to save some money in the Ministry of Defence, so that we can invest in front-line capability. That is the argument there. In terms of the future, all I can say to the hon. Gentleman is that I am in favour of a full replacement for Trident, a continuous at-sea deterrent and making sure that we keep our guard up. That is Conservative policy; it will remain Conservative policy as long as I am leader of this party.²⁵

4.1 Initial Gate

There has been a longstanding debate over whether Initial Gate²⁶ of the Trident programme should be subject to Parliamentary scrutiny and even a vote in the House of Commons (See [SN/IA/5150](#)).

The issue of parliamentary scrutiny over Initial Gate has once again come to the fore after the MOD revealed, in answer to a series of Parliamentary Question in January and February 2011, that several 'long lead' items, including the steel for the hull of the first replacement submarine, would be procured as part of the Initial Gate business case. In January 2011 the MOD stated:

²⁵ HC Deb 8 February 2011, c295-6

²⁶ The Initial Gate review assesses the feasibility of the programme going forward. Approval by the MOD's internal Investment Approvals Board is required at this point before funds can be released for the assessment phase. Approval at Initial Gate does not, however, commit the MOD to approval later on in the programme at Main Gate, which is the point when the main investment decision on a programme is taken.

Dr Julian Huppert (Cambridge) (LD): Whether any components for the construction of Trident replacement submarines are to be purchased prior to main gate decision in 2016. [36748]

The Secretary of State for Defence (Dr Liam Fox): We are currently considering the initial gate business case for the successor submarine and, as part of the next phase of work, we would expect to purchase some long-lead items so that the first boat can be delivered in 2028. This is normal good practice for major build programmes.²⁷

In response to further questions in February the MOD went on to state:

Jeremy Corbyn: To ask the Secretary of State for Defence whether steel for the substantial construction of the hull structure of the first boat of the Trident replacement programme will be made as a long-lead purchase prior to main gate. [40547]

Dr Fox: Yes. The specialist high strength steel needed for the hull structure for the first boat is included as a long-lead item in the Initial Gate Business Case for the programme. This is due to the length of time needed for the mill run, that means that the order must be placed prior to Main Gate in order not to put at risk the in-service date.²⁸

Items relating to the propulsion system of the submarine are also expected to be included as long lead items, although the MOD has confirmed that “Final decisions on exactly what long-lead items will be required, and when, have yet to be taken. The value of these long-lead items will be dependent on the work programme to be approved at initial gate”.²⁹ Contracts for those long lead items are expected to be placed at varying times throughout the programme’s assessment phase.³⁰

In line with the Government’s previous position on the Parliamentary scrutiny of Initial Gate, the MOD also revealed:

Jeremy Corbyn: To ask the Secretary of State for Defence whether he plans to seek Parliamentary approval for long-lead orders prior to the Trident replacement main gate decision. [40549]

Dr Fox: I have no such plans. It is not normal practice to seek parliamentary approval for such matters. The Initial Gate approval is subject to the normal Ministry of Defence and Treasury process for category A programmes.³¹

The proposal to procure a number of long lead items prior to the main investment decision (Main Gate) in 2016 has prompted criticism from a number of MPs, including Tom Brake who argued:

It’s a false start, he’s [the Secretary of State] has jumped the gun. Clearly there is a commitment on behalf of the Government to assess the value for money of the Trident replacement programme. This has got to happen before components of the system are being purchased.³²

²⁷ HC Deb 31 January 2011, c580

²⁸ HC Deb 16 February 2011, c805W

²⁹ HC Deb 17 February 2011, c921-2W

³⁰ HC Deb 17 February 2011, c922W

³¹ Ibid, c806W

³² “Liam Fox risks Lib-Dem backlash with steel order for new nuclear sub”, *The Evening Standard*, 17 February 2011

Tessa Munt has also questioned whether the MOD will be so financially committed by the time the programme reaches Main Gate that that part of the procurement process will become almost irrelevant.³³

Jeremy Corbyn tabled an EDM on 17 February 2011 which stated:

That this House strongly condemns the Government plans to order the steel for the first new Trident replacement submarine before any formal decision is made on whether to go ahead with the project, a decision not due until 2016; notes that the decision is at variance with the commitment given during debate on the Strategic Defence and Security Review that Trident would not be renewed in this Parliament; and therefore calls for a statement by the Secretary of State for Defence and a proper Parliamentary debate before any further commitments on renewing Trident are made.³⁴

As of 23 February 2011, that EDM had five signatories.

Despite expectations in the SDSR that the Initial Gate on the Trident replacement programme would take place by the end of 2010, at the time of writing that review was still ongoing.

Going forward, it will be for the next Government which takes office in 2015, to determine whether parliamentary scrutiny of the programme prior to Main Gate in 2016 will include a further debate and votes in the House. In July 2010 the MOD confirmed that “a decision on how best to consult will be made nearer the time”.³⁵

In the meantime, the Government has committed to update Parliament on the progress of the replacement programme, including any updated cost assessments, after Initial Gate, through the publication of a report.³⁶

4.2 BASIC Trident Commission

On 9 February 2011, the British American Security Information Council (BASIC) launched a new independent, cross-party Commission to examine the UK’s nuclear weapons policy and the renewal of the UK’s nuclear deterrent. Announcing the new Commission BASIC issued a press release stating:

This week BASIC will launch a cross party Trident Commission to take advantage of the opportunity that was opened up by the British government to consider its nuclear weapons policy, when it decided to delay the timetable for the construction of the replacement submarines on which the Trident system crucially depends. Growing proliferation risks to states and terrorist groups, domestic fiscal constraints, and the decision to pay for trident renewal (should it happen) from the core defence budget rather than the Treasury reserve mean there is now new policy context that must be considered.³⁷

³³ HC Deb 31 January 2011, c581

³⁴ EDM 1477, Session 2010-11

³⁵ HC Deb 26 July 2010, c621W

³⁶ HC Deb 1 December 2010, c819W

³⁷ <http://www.basicint.org/news/2011/week-time-new-cross-party-examination-trident-renewal>

The Commission will be co-chaired by Lord Browne of Ladyton, Sir Malcolm Rifkind and Sir Menzies Campbell and will include former senior military, diplomatic and academic figures.³⁸ Its terms of reference are as follows:

It will:

- Examine the international context within which the decision on trident renewal now sits.
- Assess current UK nuclear weapons policy and the policy of the UK in wider efforts to promote multilateral nuclear disarmament and non-proliferation around the world.
- Examine the strategic case for and against, and the costs associated with, Trident renewal and any potential opportunity costs for non-nuclear portions of the defence budget.
- Consider all possible future nuclear policy options that have the potential to maintain UK national security while further strengthening efforts at multilateral nuclear disarmament and non-proliferation.

Submissions can be sent to the Commission as part of its ongoing work. Contact details are available via the website: <http://www.basicint.org/tridentcommission>.

The Commission is expected to publish a final report in early 2012.

³⁸ Including Professor Alyson Bailes, Sir Jeremy Greenstock, Lord Guthrie of Craigiebank, Professor Lord Hennessey of Nympsfield, Lord Rees of Ludlow and Dr Ian Kearns.