

Memorandum from BASIC

1 Summary

1.1 There is widespread suspicion that the Government's decision over Trident replacement has more to do with domestic political positioning than it does with security concerns. These suspicions are strongest when it comes to the timing of the decision. The stakes are high. This decision is far too important in its own right, with implications for Britain's role in the world and for global non-proliferation, for the Government to be rushing a decision based upon assumptions from outdated debates of the 1980s.

1.2 An early decision to replace, weeks before the first NPT Preparatory Committee meets in April this year, could derail efforts to build international momentum towards stronger non-proliferation norms and multilateral nuclear disarmament, even before delegates sit down to talk. It will not only strengthen the hand of those within countries like Iran trying to justify dangerous and proliferatory policies to their populations, stiffening their resolve to challenge the status quo, but will also further weaken Britain's credibility within the majority world: the 183 Non-nuclear Weapon States (NNWS) that are looking to the Nuclear Weapon States to take previously agreed steps towards a nuclear-weapon free world.[\[1\]](#)

1.3 A commitment now to spend a large proportion of the defence budget after 2014 on a system without clear military application will undoubtedly harm the procurement prospects for our active service personnel, and by extension the ability of the armed forces to carry out the essential tasks future governments will require of them. It will lock the MoD into this option, when alternative nuclear and non-nuclear options may be more appropriate in the future as new technologies emerge, creating vulnerabilities and new opportunities.

1.4 We were promised that the White Paper would include extensive and detailed consideration of options and the basis behind them. Given the dangers, the onus was on the Government to justify an early decision. The White Paper, in two short sentences in the first appended Fact Sheet, fails to do this. It simply asserts the oft-repeated position that the maximum possible life expectancy of the submarines is 30 years (with extension) and that it will take 17 years to build a replacement (Trident took 12 years from agreement to initial launch, the point at which the White Paper chooses to measure the life expectancy). It ignores the points made by BASIC and other analysts that question these bold statements. It is clearly taking a worst-case scenario on life expectancy and main-streaming it, perhaps overly influenced by the negative experience with Polaris, an entirely different design. Given the redundancy built into the system (with four boats when only three are required for CASD), this is unnecessary.

1.5 There are four clear reasons for believing that the decision set out in the White Paper is premature and can be delayed for a further 8-10 years.

1) *Longer life expectancy*: the life expectancy of the current submarines is probably much longer than stated, partly as a result of operational changes since the end of the Cold War.

2) *Dropping Continuous-at-sea Deterrence (CASD)*: an option the Committee's first report in June 2006 thought deserved consideration: a modest change in posture appropriate to today's security environment could extend the life considerably, and was not addressed in any satisfactory manner by the White Paper.

3) *Reduced lead-times*: a less ambitious project, to simply modify Vanguard rather than create a new class of submarine, would reduce lead-times considerably.

4) *Point of no return*: modest investment in R&D now could put off an irreversible decision for some years.

1.6 A Parliamentary vote to put on hold a final decision would give the Government more time to provide the necessary information for an informed debate. At the very least the Committee should strongly recommend that Parliament make an explicit and binding commitment to revisit any decision it takes now, prior to Main Gate, with an open view as to whether it confirms, reforms or abandons the project.

BASIC

The British American Security Information Council (BASIC) is an independent research organisation that analyses government policies and promotes public awareness of defence, disarmament, military strategy and nuclear policies in order to foster informed debate. BASIC has offices in London and in Washington and its governing Council includes former US ambassadors, academics and politicians. Further information is available on our website:

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Advantages to suspending the decision

2.1 The benefits to deferring the decision for at least five years are overwhelming.

2.2 Maintaining maximum flexibility of response to possible threats and to new technologies makes military sense. Closing off options by making premature commitments to particular solutions can result in expensive cash and opportunity costs, particularly when lead-times are so long. UK military procurement is still suffering from costly legacy decisions (such as the purchase of Euro-fighter) made during the Cold War, which ended 17 years ago. A decision made closer to the point of deployment would mean being closer to the possible threats for which the system is designed and possess a superior understanding of appropriate needs. It would also give the MoD a better idea of the latest technology available, both for building appropriate systems, and in accounting for counter-measures. New technologies are likely to provide numerous cost and functionality benefits, such as miniaturisation of missiles, warheads and platforms. Yet this decision is locking the UK into a system that deploys massive D5 missiles, each capable of deploying 12 independently-targetted 100kt warheads. Already these missiles are far larger than that required by UK posture, which currently averages three warheads per missile, some of which only have a single warhead. While currently it is difficult to imagine a platform more stealthy than a submarine (a point made in the White Paper), this may not be the case in a decade's time. Given the pace of technological change experienced today we can expect with certainty that superior counter-measures and solutions will be emerging on the market.

2.3 As the White Paper acknowledges, a Trident follow-on system would have to be compatible both with the (upgraded) Trident II D5 missiles and any (as yet undetermined) US follow-on missile. Relying upon the exchange of letters with Washington on 7 December 2006 would be courageous, so far in advance of the Americans' decisions on a follow-on missile. Future US Presidents will be making decisions dominated by US technical and military requirements.

2.4 In April this year the Foreign Office is to sit down with nuclear negotiators around the world to find common ground in the search for elusive non-proliferation and disarmament agreements. A decision by Parliament in March to replace Trident, just a few weeks before, will severely weaken the UK delegation's hand in demanding stronger non-proliferation commitments. It is the view of most governments that the Nuclear Weapons States have collectively failed to live up to their disarmament commitments under Article VI of the NPT - a fact acknowledged by the recent Shultz-Perry-Kissinger-Nunn article in the Wall Street Journal.

The Non-Proliferation Treaty (NPT) envisioned the end of all nuclear weapons. It provides (a) that states that did not possess nuclear weapons as of 1967 agree not to obtain them, and (b) that states that do possess them agree to divest themselves of these weapons over time. Every president of both parties since Richard Nixon has reaffirmed these treaty obligations, but non-nuclear weapon states have grown increasingly skeptical of the sincerity of the nuclear powers.

2.5 Such scepticism also applies specifically to the UK. While the UK Government has reduced warhead numbers and readiness, the pressure it can place on Iran and North Korea with the support of the rest of the international community is weakened while it clings to the utility of its own nuclear deterrence. An early decision to replace Trident shows a lack of confidence in the regime (while expecting others to demonstrate it). Many within the Iranian parliament, for example, have claimed that the NPT is no longer binding, because of the lack of effective disarmament agreements. Whatever the legal truth, the consequence is the same - a dangerously weakened non-proliferation norm.

2.6 A longer window for the decision would allow the UK to initiate a new multilateral nuclear disarmament initiative prior to any irrevocable investment in new nuclear systems. One of the key reasons given by some to retain (and replace) the UK nuclear deterrent is to enter international nuclear disarmament negotiations from a position of strength. A new initiative could be the central plank of Britain's effort to secure progress in the run-up to the 2010 NPT Review Conference prior to any commitment to replace Trident.

2.7 Delay would ease pressure on the public purse in general, and on the defence budget in particular. Public spending plans in the run up to the 2007 Comprehensive Spending Review are under severe pressure. This decision is likely to create public and off-the-record resistance to achieving savings elsewhere in government spending. The defence procurement budget in particular is already unlikely to be sufficient to meet existing spending plans for 2011-2020. The Prime Minister's renewal of the covenant between the armed forces, government and the people outlined in his Portsmouth speech of 12th January, would appear particularly hollow if a decision to replace Trident meant fewer resources to an already over-stretched military. And if these resources do come from another government budget, these are resources that could otherwise be applied to properly equipping the forces.

2.8 Deferral would give the Government time to provide adequate information to give the public and parliament a chance to come to an informed view. Currently this is impossible. The three month process, while an improvement on the past, is grossly inadequate for a decision of this magnitude, and the information provided is insufficient. Consequently, the debate is often dominated by prejudice and presupposition.

3 Industrial Considerations

3.1 The Defence Committee's most recent report on Trident outlined concerns that the skills base for building a new generation of nuclear submarines in the UK is at a 'critical level', suggesting that an indigenous production capability may be at risk. Certainly, industry representatives are keen to see a new project follow on after Astute, warning that lengthy gaps could lead to a loss of key expertise. A report from the Rand Corporation, commissioned by the MoD specifically for the purpose of advising on how best to retain the submarine industrial base, suggests delaying the start of production of the next generation of submarines, to avoid a much larger gap at the end of SSBN production and the start of the next generation of submarine, the MUFC (Maritime Future Underwater Capability, the follow-on from Astute).[\[2\]](#) However, exaggerated warnings of 'catastrophe' from any delays should not frighten government into a hasty decision and over-ride the strategic defence needs of the country, which as the Committee concluded, must drive any future decisions, not industrial and employment factors.

3.2 In addition, a forthcoming report from BASIC that looks at the choices between investment in Trident replacement and renewable energy opportunities, suggests that far more employment opportunities could be created through alternative investment than those lost by the rationalisation or closure of the UK nuclear submarine manufacturing capability.[\[3\]](#)

4 Life Expectancy

4.1 The 1998 SDR and 2003 White Papers referred to a life expectancy of Vanguard of 30 years, as did ministerial statements prior to 2006. In its evidence to the Defence Committee in January 2006, the MoD reduced this for the first time to a more conservative base life expectancy of 25 years, with the possibility of extension, 'albeit with gradually increasing cost and some increasing risk of reduced availability, perhaps out to the mid-2020s'. The White Paper measures this 25 years from the point of launch rather than commission. This brings forward the time for decision some 7 years from that assumed by analysts previously, and by the MoD's DLO Nuclear Cluster responsible for managing the strategic deterrent as late as August 2006 (they assumed an overall life of HMS Vanguard to last to 2024).

Q: Why was the life expectancy of the Vanguard submarine reduced by five years?

4.2 Operational changes introduced with the 1998 Strategic Defence Review (SDR) suggest a longer life-expectancy than 25-30 years. While the SDR retained a policy of Continuous-at-sea Deterrence (CASD), it also announced reduced readiness: the UK "will have only one submarine on patrol at a time". This significantly reduced the number of at-sea hours for each submarine, in turn

significantly reducing the stresses on both hull and reactor and thus increasing the life expectancy.

4.3 Most UK analysts believe that three boats are required to ensure that one is out at any one time (one on patrol, one in dock in preparation and one in refit). Four boats give added security in case of catastrophic damage or exceptionally poor performance and therefore, by providing redundancy give added life expectancy to the system as a whole. It also means that each boat is at out sea for only around a quarter of its operational life (which includes time in refit).

4.4 By contrast, American Ohio-class submarines are reported to be out to sea for roughly two-thirds of their operational life, yet the DoD has extended their life-expectancy from 30 to 44 years. The White Paper says that the Ohio class life extension cannot be replicated in the UK because such an option was not built into the original design, manufacture, refit and maintenance of Vanguard.

Q. Why were the Vanguard-class submarines apparently built to lower standards than the US Ohio-class submarines?

Q. Why is the same shipyard in line to receive the follow-on contract when it apparently failed to produce a lifetime cost-effective solution last time?

4.5 There are a number of projects already underway that can be expected to further extend the lives of the submarines. These include, for example, Rolls Royce working with the MoD's Nuclear Propulsion IPT on an integrated support solution for the existing marine reactors.[\[4\]](#) These extension projects were not and could not have been envisaged in the initial design of Vanguard, and it is difficult, at this stage, to see how MoD can be so certain of their impact in extending the life (by only five years in total).

Dropping CASD

4.6 The 2003 Defence White Paper stated that the UK faces no major conventional threat today or in the near future. The Defence Committee proposed the possibility of dropping CASD. Nine years ago the SDR had rejected dropping CASD on the grounds that any emergency launch of Vanguard could dangerously escalate tensions. The White Paper also argues that CASD is necessary to reduce vulnerability and assure the credibility of the deterrent. But such concerns are irrelevant to the main reasons given for replacing Trident - in particular the insurance against possible future risk. Dropping CASD would show British commitment to the further dealerting necessary to promote global non-proliferation, while maintaining a flexible deterrent if that is deemed appropriate. It would also dramatically increase the life expectancy of the current system, both by reducing stresses on the submarines today, and by providing for even greater surplus capacity in the system.

Q: Is a continuous-at-sea-deterrent necessary at a time when even the Prime Minister agrees there is no major nuclear threat to our

strategic interests?

Halving the lead-time

4.7 The option of building new Vanguard-class submarines appears not to have been considered in the White Paper. Instead it proposes a whole new class of submarines that "might take around 17 years" to design, manufacture and commission, that will simply deploy modified Trident D5 missiles. This estimate "reflects the judgment of industry". It is a worst-case estimate from BAE Systems, a company that knows it is in a monopoly position, negotiating with a government apparently keen to make an early decision.

4.8 The lead-time for the Vanguard-class submarines was 12 years from decision to launch (in 1992). This required major new designs from scratch to create a submarine that bore little resemblance to the previous Polaris-class boats. In contrast, in a slimmed-down and efficient procurement exercise, it may take two years to design minor upgrades to the Vanguard-class, and around five years to construct each submarine. The appropriate lead-time could therefore be seven rather than 17 years.

Q: Why should a minimum deterrent require a new class of submarine, and why should this take 17 years to design and build?

Q: How much faith should MPs put on the judgment of BAE Systems, a company still under the shadow of the Serious Fraud Office investigation abandoned in December 2006, and responsible for the MoD's six most delayed major weapons projects (cumulative 25 years) and the five experiencing the highest overspends (nearly £3bn).

Q: Could a replacement submarine be purchased off-the-shelf from the Americans at a lower cost and with a much reduced lead-time?

The point of no return

4.9 Since the bulk of spending is loaded into the final stages of any replacement programme, namely in construction, modest investment in the preferred option need not require an irreversible commitment. The June 2006 Defence Select Committee report accepted this point, stating that a binding decision on the final option and any serious investment would not be needed until 2014. In fact, even if there was an urgency to commence work on the project, a point we would fiercely contest, there is no need to make a decision at this stage in the cycle to procure a new generation of SSBNs - simply a decision to work up the options for future procurement decision. In which case, at the very least, at this stage Parliament should with-hold any decision to go ahead with the procurement of a new system, and instead agree to the government working up the options, and require the issue come back to Parliament prior to a Main Gate decision.

Q: Could a decision be made to invest in R&D while holding off on a 'main gate' decision until the next parliament?

5. Conclusions

The White Paper fails to address the many issues raised by organisations querying the need for haste in replacing the Vanguard class submarines, and fails to provide the level of information promised for an informed debate. Instead, it relies on stating the government's conclusions and asking us to accept them on trust. BASIC believes the underlying assumptions are based upon unnecessary worst-case perspectives, heavily influenced by commercial considerations, that will have damaging consequences for Britain's role in the world, and for an efficient procurement process. We would urge the Defence Committee to exercise extreme caution before accepting the White Paper's conclusions.

15 January 2007

[1] Steps that were agreed at the 2000 NPT Review Conference.

[2] RAND Europe, The United Kingdom's Nuclear Submarine Industrial Base, Volume 1: Sustaining Design and Production Resources. Bottom p.47. Available online at:
http://www.rand.org/pubs/monographs/2005/RAND_MG326.1.pdf

[3] Dr Steven Schofield, Oceans of Work: Arms Conversion Revisited, BASIC, 24 January 2007.

[4] The Nuclear Cluster, DLO, August 2006, available online at:
<http://www.mod.uk/NR/rdonlyres/F25A7345-AA9D-46E8-B33A-76304FBF7B53/0/NuclearclusterPDF.pdf>