

CONTINUOUS AT-SEA DETERRENCE

Costs and Alternatives

Malcolm Chalmers



Summary

There is now a stark gap between the assumptions on which planning for the UK's conventional and nuclear forces, respectively, are based. Discussion of options for conventional capability in the current SDSR is based on the assumption that a significant threat of attack on the UK homeland by other states will not re-emerge without an extended period of strategic warning.

In contrast, the commitment to maintain a nuclear-armed missile submarine on patrol at all times (known as Continuous-At-Sea-Deterrence or CASD) has remained largely unchanged since the 1960's, when a surprise attack on Western Europe by the Soviet Union was a central driver for UK force planning.

The Government is committed to maintaining an effective nuclear deterrent. Given the severe costs that Trident renewal could require, however, there is now a strong case for a re-examination of whether alternatives to current CASD policy could yield significant financial savings while continuing to meet this agreed objective. The fiscal situation facing the Ministry of Defence (MoD) is significantly worse than was assumed in 2006, when current renewal plans were drawn up by the previous government. And awareness of the opportunity costs of Trident renewal has grown as key production decisions draw nearer.

The paper identifies four alternatives to current Trident renewal plans as being of particular relevance for the purposes of cost reduction:

1. a 'Normally-CASD' Submarine Force,
2. a 'CASD-Capable' Submarine Force,
3. a 'Dual-Capable' Submarine Force and
4. a Non-Deployed Force.

All four options would allow the UK to maintain a strategic nuclear deterrent.

Depending on the assumptions made, each option might also allow some significant delays in the timing of Trident renewal, and/or in the number of new submarines that are required.

Incongruence between the UK's conventional and nuclear postures

There is now a stark gap between the assumptions on which planning for the UK's conventional and nuclear forces, respectively, are based.

Discussion of options for conventional capability in the Strategic Defence and Security Review (SDSR) is based on the assumption that the UK homeland does not face a significant threat of attack by other states. Nor, it is assumed, could one emerge without an extended period of strategic warning. While the UK plans to maintain and improve capabilities for a range of national tasks, including strategic intelligence, counter-terrorism, counter-cyber, and defence of dependent territories, these tasks do not include defence of the UK against military attack by other states. The main focus of conventional force planning, accordingly, is now on the appropriate size and shape of the UK's contribution to collective capabilities for intervention and stabilisation in other parts of the world.

By contrast, the commitment to maintain a nuclear-armed missile submarine on patrol at all times (i.e., CASD) has remained largely unchanged since the 1960s, when a surprise attack on Western Europe by the Soviet Union was a central driver for UK force planning. The retention of this posture is now driven as much by institutional and political momentum as by strategic necessity. If the UK did not already have a CASD capability, it would be very difficult to make a case for investing large resources in order to obtain it. And no other nuclear-armed state (other than the US and France) maintains a CASD posture.¹

The costs of maintaining CASD have, until now, appeared to be relatively small. The objections to

abandoning it (for example in relation to the morale of submarine crews) have, as a result, continued to outweigh the limited cost savings that it might have allowed.

Yet this cost equation is now changing. The CASD requirement is the main operational driver for the timing of the planned Trident renewal programme. If the Royal Navy is to maintain a high level of confidence that it can maintain CASD after 2024, programme advocates argue, orders for construction of the first boat will have to be placed by around 2015, with annual spending rising to as much as £1.5 billion in subsequent years. The Treasury is now insisting, moreover, that these additional costs will have to be met from the MoD's core budget.

The effect of this insistence on other defence capabilities is further multiplied by the government's decision to make cuts in defence spending of at least 10 per cent over the next four years, and by indications that total spending will then be frozen in real terms for the rest of the decade. It should not be assumed that conventional equipment programmes will have to bear the entire burden of increased Trident renewal costs. MoD planners may decide to shift resources out of other areas (such as personnel) in order to help to pay for the increased strain on the equipment budget after 2015. What is clear is that the inclusion of Trident renewal in the core budget, on current plans, could require the MoD to plan for a further significant real reduction in annual conventional spending by 2020, over and above any reduction that the Spending Review decides to make over the next four years. Only a Treasury agreement to restore ring-fenced budgetary provision for Trident renewal can head off this prospective trade-off.

Options

The Government is committed to maintaining an effective nuclear deterrent. Given the severe costs that Trident renewal could require, however, there is now a strong case for a re-examination of alternatives to CASD. Such a study did not take place during the preparations for the 2006 deterrent White Paper, which announced the current timetable for Trident renewal. And the assumption that Trident renewal would be funded separately from the MoD core budget further reduced the incentive to look seriously at capability/cost tradeoffs. But the fiscal situation facing the MoD is significantly worse than was assumed in 2006, and awareness of the opportunity costs of Trident renewal has grown as key production decisions draw nearer.

While a wide range of alternatives to current nuclear deterrent renewal plans have been identified, four are of particular relevance for the purposes of cost reduction: a 'Normally-CASD' Submarine Force, a 'CASD-Capable' Submarine Force, a 'Dual-Capable' Submarine Force and a Non-Deployed Force.

1. A 'Normally-CASD' Submarine Force

Under this option, the UK would maintain Trident missiles and submarines, and CASD would be maintained as normal operating practice. But the MoD would accept an increased risk of short interruptions in CASD in the event of unforeseen, and low-probability, mishaps or accidents. On current operating patterns, the possibility of a disabling incident (a collision with another vessel, a technical failure, a serious at-sea medical emergency, or a blockage in the loch exit) requires that a second submarine always needs to be available at short notice to assume the deterrent patrol role.

If this requirement were relaxed at the margins – perhaps through a redefinition of what is meant by 'CASD' – it might increase the feasibility of reducing the total fleet from four to three. It might also be possible to delay the start of successor submarine production for (say) five years, with the first new boat not coming into service until 2029. This would

allow the MoD to delay the start of peak spending until 2019/2020. CASD would still be maintained between now and 2025 by current submarines, and after 2030 by their replacements. But there would be some risk that a deterrent submarine would not always be on patrol during 2025-2030, as a result of increasing unavailability of ageing Vanguard-class boats.

2. A 'CASD-Capable' Submarine Force

Under this option, the attempt to maintain CASD in normal circumstances would be abandoned, and replaced by an assumption that it would only be necessary to have the ability to reconstitute CASD if required, and then to maintain it for a significant (though not indefinite) period. The timescale for reconstitution would, in turn, be determined by an assessment of the shortest period over which a new strategic threat to the UK homeland could re-emerge. In order to maintain a credible reconstitution capability, it would be necessary to maintain submarine patrols. But these would not necessarily have to be on a continuous basis.

On this option, the start of submarine production could probably be delayed for several years more than in the 'Normally-CASD' Option, and the total size of the successor fleet could probably be reduced from four to two. This would allow the MoD to delay the start of peak spending until (say) 2023/2024, and to significantly reduce the total renewal budget. In return, the government would accept a sharp increase in the proportion of time when a boat was not on patrol. It should still be possible to maintain the ability to 'surge' a boat for an extended period of time. If significant new strategic threats were to emerge, moreover, new delivery platforms (including, but not limited to, submarines) could in principle be constructed within a few years.

The Costs of Protection

An important part of any cost/benefit review of CASD alternatives should be an examination of the requirement for the conventional SSBN protection capabilities that are maintained in order to protect

the deterrent against attack by the armed forces of other states. Thus a central rationale for much of UK anti-submarine warfare (ASW) capability is the protection of Trident submarines from Russian attack.

If the notice period for such an attack were to be brought into line with that assumed for major conventional attack more generally, however, significant savings might be possible, for example in relation to the modernisation and maintenance of maritime patrol aircraft and attack submarines.

The Industrial Drum Beat

Even if the operational risks of delaying Trident renewal were judged to be acceptable, it is often argued that new submarines need to be ordered by around 2015 in order to maintain the 'drum beat' of orders from Barrow, which houses the UK's only remaining submarine construction facilities. If orders are delayed for too long, it is contended, it will leave a gap after completion of current orders for new attack submarines, thereby threatening the loss of irreplaceable skilled personnel.

Such arguments should be viewed with some scepticism, with assumptions on labour market rigidity perhaps particularly open to question. In assessing such arguments, moreover, planners should not assume that current construction plans are necessarily the only ones that would be available for a delayed programme. With excess global submarine-building capacity, and with US spending cuts likely to require reductions in its own submarine fleet, a range of other options – both for construction management and construction itself – could become available were procurement to be postponed.

3. A 'Dual-Capable' Submarine Force

This would maintain the plan to build new submarines, but with only four missile tubes (compared with the twelve currently planned) and with an explicit design mandate that asked designers to allow them also to perform conventional roles.

Although this small number of missile tubes would reduce targeting flexibility, it would still be enough

to arm each submarine with up to 32 warheads (and a potential adversary would have to assume the worst).

One of the advantages of this option is that, in the long term, it would allow the current Astute-class attack submarines to be replaced with further 'dual-purpose' boats. The submarine fleet would be rationalised around a single model of boat, which could be used either for conventional roles (with warheads unloaded) or in a deterrent role.

It would not be possible, however, for potential adversaries to detect whether or not a particular boat was nuclear-armed when it went on patrol.

Such an arrangement could, in time, combine increased survivability for the nuclear force while also holding out the possibility of further reductions in the size and readiness of the nuclear deterrent. It might also provide a more consistent flow of submarine construction work than alternative options.

While it could be more arms control-friendly, however, it may be more difficult to generate significant medium-term savings from this option than from the others outlined here. Much would depend on the extent to which the provision of dual-capability in the next generation of submarines required more up-front costs than the construction of dedicated D5-armed SSBN's with a similarly small number of missile tubes.

4. A Non-Deployed Strategic Force

A more radical option would be to abandon a submarine-based nuclear deterrent altogether, relying instead on a non-deployed arsenal to provide deterrence of future nuclear attacks. In a recent study, for example, it was suggested that:

One view of nuclear deterrence thinking implies the calculus of deterrence....does not axiomatically require a nation-state to have deployed nuclear weapons. A latent stockpile (deployable in, say, days, weeks or even a few months) is likely to be equally effective (as long as it is 'survivable'), as one that is actively deployed.²

The key to an effective UK nuclear deterrent based on this option would be guaranteed, but not prompt, retaliation. Once the requirement for promptness is removed, a range of possible options for force survivability would be available, for example through dispersion between several secure locations. Planning could encompass a range of possible post-attack delivery systems, for example using surface ships, special forces, and/or aircraft. By removing the requirement for deployed sea-based forces, substantial financial savings could be generated, although allowance would have to be made for additional hardened infrastructure costs.

Such an option is probably too radical to be politically acceptable at present, and may remain so until other nuclear-armed states (and the US and Russia in particular) have taken substantial steps of their own to reduce deployed force levels. It should not be ruled out as a longer-term option, however, perhaps as part of a multilateral agreement to move to lower states of nuclear readiness.

Conclusion

The Government is committed to maintaining an effective nuclear deterrent. Given the opportunity costs for conventional capabilities that current plans for Trident renewal are due to incur over the next decade, however, there is now a growing case for a re-examination of whether there are less expensive means of pursuing this objective.

A key element of such a review is likely to be a reconsideration of the need to maintain a

commitment to CASD in strategic circumstances that are now very different from those in which it was first introduced.

NOTES

1. Russia has managed only a limited number of submarine patrols each year in recent years. China has not yet deployed an armed strategic submarine. Both the US and Russia, however, maintain silo-based inter-continental missiles on continuous operational alert.
2. Garry George, *Integrated Nuclear Security in the 21st Century: Thinking Multilaterally*, Sandia Report 2009-5641, October 2009, p. 17.

The Royal United Services Institute embodies nearly two centuries of forward thinking, free discussion and careful reflection on defence and security matters.

Malcolm Chalmers is Professorial Fellow in British Security Policy at RUSI, as well as Visiting Professor of Defence and Foreign Policy in the Department of War Studies, King's College, London. He was a member of the UK Defence Secretary's Advisory Forum on the 2010 Green Paper 'Adaptability and Partnership', and was previously Special Adviser to Foreign Secretaries Jack Straw MP and Margaret Beckett MP.

www.rusi.org/malcolmchalmers