

NUCLEAR POLICY AT SEA

A PART-TIME DETERRENT WILL NOT DO!

TIM HARE

Britain's nuclear capability is once again a subject of intense debate. Some suggest that, in order to save money and make a political statement on global disarmament, Britain should reduce its deterrent capability. But as Tim Hare argues, these arguments are misleading. The fundamental driver of British nuclear forces must be credible deterrence. While politically appealing, the alternatives to Britain's current nuclear capability carry serious deficiencies, which undermine their very purpose.

The prime minister's recent announcement that the government will consider cutting the UK SSBN deterrent force from four submarines to three in the future has brought the issue of Britain's independent nuclear deterrent posture sharply into focus. Indeed, with the recent high profile of the global nuclear disarmament agenda, coupled with recessionary pressures to reduce expenditure, it is not surprising that the nature of our nuclear capability and its related cost should be revisited. An inherent danger in this approach is that cost and disarmament become *the* drivers of change – and therefore the underlying strategic case for an independent nuclear deterrent is eclipsed. In a very short time, we could be seduced by the perceived fiscal and disarmament benefits of a 'part-time' deterrent at the expense of our core strategic requirement, which calls for a minimum nuclear capability to deter aggression and coercion (and in particular, nuclear aggression).

The strategic case for maintaining a minimum, independent, assured capability is underpinned by our deterrent posture – of ensuring one submarine is at sea at all times with missiles, warheads and a fully trained crew embarked at some notice to fire (known as CASD: Continuous At Sea Deterrence) – which has been at the heart of UK deterrence policy since the 1960s, and was argued to be fundamental to assured deterrence

in the 2006 White Paper. As CASD essentially defines much of the deterrent requirement (and therefore the cost), it remains the subject of much debate with a number of alternative options under consideration. It is therefore apposite that the case for CASD is revisited and fully understood.

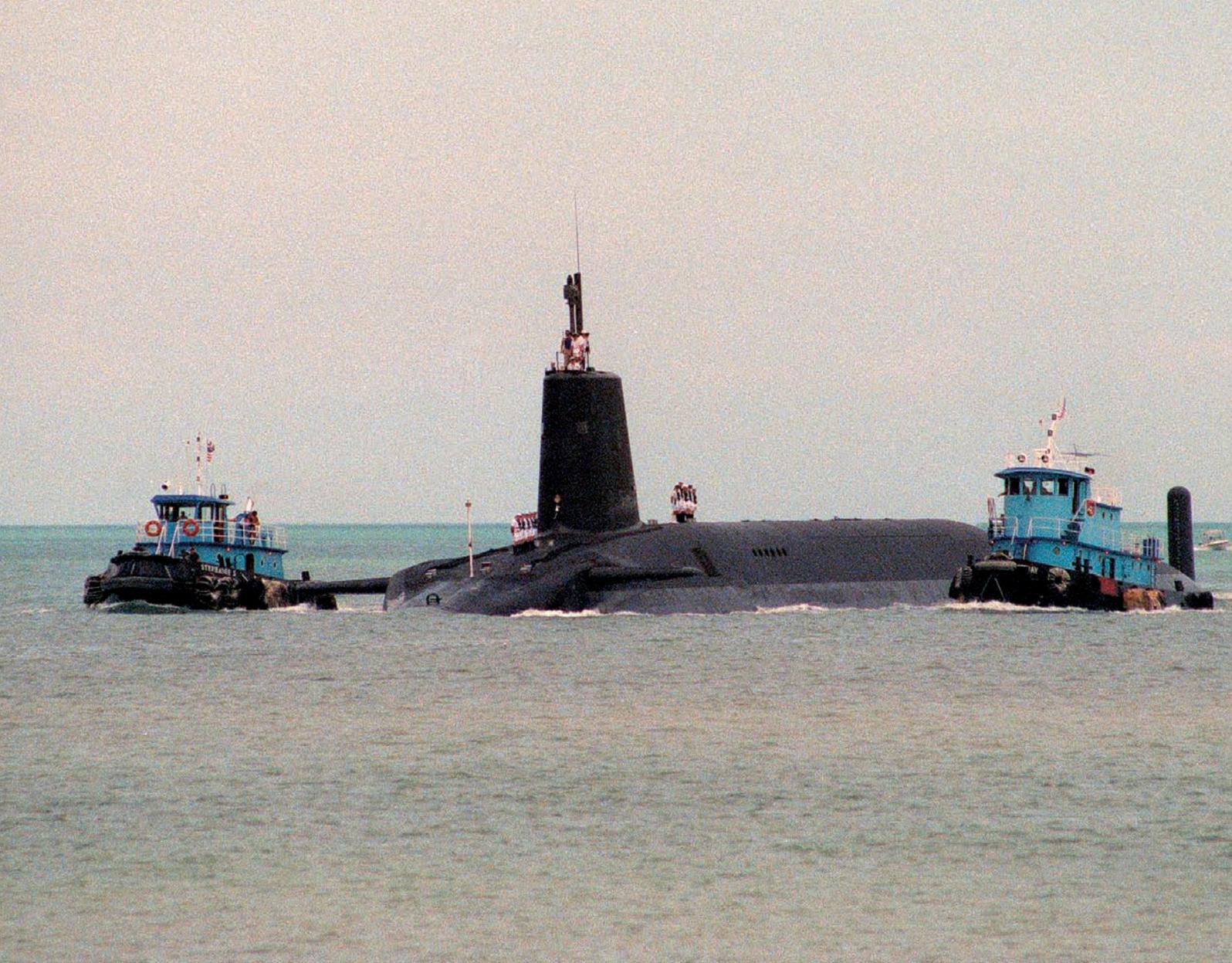
Policy Overview

There is broad agreement of the need for a strategic review of security policy to define Britain's future role in world affairs and specify both military and national capabilities, together with the budget required to meet that role. For want of any strong alternative, the review will be based on two broad premises: First, that Britain will continue to actively engage in world affairs; second, that the nation will continue to be a principal ally of the US and play a major role in NATO (and EU) foreign policy initiatives. With these roles come not only duties, responsibilities and military commitments, but also a wide spectrum of threats. It is from an analysis of these potential threats that our need for an independent nuclear deterrent capability – as defined in the 2006 White Paper – stems. Unfortunately, in any defence review, which by necessity integrates roles and mission analysis with budgetary factors, our nuclear deterrent requirement is often judged alongside other military capabilities in the wider debate over the gap between government commitment and resources.

However, the UK's nuclear weapons have no military use: they are political weapons whose sole purpose is to deter nuclear aggression. Their justification and rationale should not therefore be debated alongside clear military capabilities, such as aircraft carriers and Typhoons, in the grab for an overstretched military budget. The inclusion of Trident in the wider defence debate, for example in the recent IPPR report,¹ has already led some to conclude that somehow we might be able to make do with a different type of deterrent capability (in other words, cheaper). The strategic case for such a change remains obscure.

Why CASD?

If we are to pay such a large sum of money as an insurance policy against nuclear threats, then it is a given that such a capability should be effective. For a deterrent to be effective, it must be credible. To be credible there must be a proven, assured capability underpinned by a clear declaratory policy by government, demonstrating its will to fire nuclear weapons under extreme circumstances, and at any time, so that a potential adversary can be *absolutely certain* of retaliation in the event of nuclear aggression. CASD underpins both of these core requirements, demonstrating the will of government to support a posture that ensures that our single deterrent capability is invulnerable to attack (and therefore 'assured'), and is



Nuclear-powered ballistic submarine HMS Vanguard. Photo courtesy of US DoD.

available to government at all times at a variable notice to fire. There are a number of key benefits of CASD that warrant clear understanding before any alternatives are adopted. In particular: assurance, crisis stability and manpower.

Assurance

Aggression is unpredictable. History demonstrates that aggressors often seize the initiative. Therefore, we must decide our posture based on how an adversarial leadership might think, rather than how we might act under the similar circumstances. Unlike all the other nuclear weapon states, the UK has only one system – the submarine-based Trident missile – on which its nuclear deterrent capability is based. It is vital that this singular system remains effective, in order that it is able to deter. If an adversary felt able to damage the capability (and there are a large number of ways that this might be achieved) then

the capacity to deter is impaired, and its purpose lost. Basing the capability in a submarine deployed at sea reduces this risk enormously. The capability is virtually invulnerable to attack before retaliation can be effected, and its ability to deter sustained at all times.

In the Cold War, assurance was accepted as a necessary prevention measure against a surprise attack. Future scenarios will, of course, be very different and whilst the emotive language of the Cold War mitigating against a ‘bolt from the blue attack from the Soviet Union’ may indeed have gone away, SSBNs alongside in harbour and their supporting infrastructure do remain very vulnerable to attack by conventional or nuclear means, rendering at best a reduced capability or one at finite risk.

Some argue that such a risk – which would give an 80 per cent or even a 50 per cent chance of successfully launching missiles – would suffice as a deterrent. But

such an assumption carries huge risk. In increasingly desperate situations, equally desperate leaders might well assume that a sluggish, low readiness, vulnerable force does not represent a convincing deterrent at all. With a CASD posture there is no doubt. Maintaining one submarine at sea at all times, invulnerable to attack and with the full spectrum of deterrent capability embarked therefore remains the minimum insurance policy required to ensure that our deterrent remains effective. Anything less will invite an aggressor to look very differently at the UK and increase the risk of conflict with potentially catastrophic results.

Crisis Stability

Perhaps the most serious political implication of a reduced or ‘part-time’ approach to deterrence lies in the decision-making process to raise the stakes and resume a higher alert state (that is, CASD) from a period of extended

readiness at the time of a crisis. Re-establishing a SSBN to operational status from extended readiness is a high-risk activity involving a very complex technical programme and manpower generation. It would take many, many months to achieve. Such a decision therefore would have to be taken early in the crisis, at a time when ministers will be pursuing diplomatic solutions and therefore reluctant to take such a visible, aggressive decision. The risk is that a potential adversary will interpret the measure in such a way so as to escalate the crisis. In short, ministers would be invited to make a key tactical decision at the very worst time. A delay in activation would be the probable result, essentially rendering our deterrent ineffective just when it is needed most.

People

One aspect that is rarely if ever considered in discussing nuclear posture is people. In the UK, we invite young men to deploy at sea for two or three months at a time, with no communication with home, to train and work very hard to develop the specialist skills required to operate the highly complex Trident system. The stewardship of the SSBN force depends solely on their strong teamwork, skill, dedication and motivation. They remain absolutely critical to the maintenance of an effective deterrent and present a real risk factor for the future. To ensure future generation of this vital resource, clarity of purpose is vital and the nation must offer its unequivocal support to the task that they do and, in recognition, ensure that they are suitably rewarded in terms of pay and conditions. The challenge is aggravated by competition from the civil nuclear sector where reward and lifestyle may be perceived to be better. In any consideration of deterrent posture therefore the 'people factor' will be pivotal. CASD offers the optimum *modus operandi* for a clear, focused and dedicated approach to training and motivation. It is one that would be confused by expanding the role of the submarines to embrace conventional operations, or through periods of extended readiness which would lead to the dissipation of trained teams and

reduced efficiency resulting from apathy and the lack of impetus. The recent Schlesinger Report on US nuclear practice² reinforces this view and emphasises the absolute need for continuous training in a realistic manner (a core requirement of CASD) to sustain safety and operational standards.

Options for a Reduced Posture

From the factors outlined above, the case for CASD remains compelling. However, the politically attractive twin objectives of saving money and contributing to global disarmament have led to consideration of a number of alternative options³ for our deterrent posture each of which warrant analysis in terms of their potential impact on deterrent effectiveness.

Option One: 'Trident Lite'

This argues for a two- or three-submarine force (against the White Paper baseline of four), with a smaller missile compartment with fewer tubes than the standard sixteen (already down to twelve), and reduced warhead numbers (from the current 160). Implicit here are two significant changes in UK deterrence posture.

Firstly, reducing the number of submarines will put the ability of the Royal Navy to sustain CASD at some risk. Notwithstanding this, the prime minister has called for consideration of a reduction to a three-submarine force whilst seemingly maintaining a CASD posture. Whilst CASD could probably be sustained with three submarines for a limited period, guaranteeing that one submarine could be at sea at all times over the thirty-year-plus lifetime of the force would carry significant risk. Nuclear submarines are hugely complex and the chances of any new design lasting this long without some major defect rendering some of the force subject to lengthy repair are very slim. Furthermore, should a catastrophic event occur – say a major collision or fire putting a submarine beyond repair – then it will not be possible to rebuild a replacement submarine at will. It is worth remembering the 'C' in CASD stands for 'continuous' and some analysts believe that to sustain this over a long period of time, you need *five* submarines. Much to their credit, the UK and France have

achieved CASD with four submarines; however, at times it has been a close run thing, and luck has played its part. Any sensible analysis would conclude that a reduction to three hulls will endanger the ability to sustain CASD over the lifetime of the new submarine force and it is not right that the Royal Navy be invited to support such a policy on which it cannot deliver.

There is also a related myth that three submarines will be cheaper than four. This is not so. If availability criteria is to be maintained throughout the life of the SSBNs (presumably, to 2050+) and the risk against catastrophic failure contained, then a three-submarine force will have to be designed and built to a higher standard than four would, resulting in at least equal cost. Even if CASD is no longer required, the savings would not be significant as the cost of four submarines is not pro rata, with the majority of expenditure related to the design of the class and the first vessel.

Reductions in missiles and/or warheads will also have implications for deterrence. Attractive though such reductions might be in terms of the disarmament agenda, the sole criteria for these numbers must be an analysis of the UK nuclear deterrent requirement and the firepower necessary to meet it. In terms of retaliatory power, what missiles/warheads are necessary to inflict unacceptable damage (as perceived by the leadership of the potential aggressor, rather than us), and therefore deter all possible nuclear threats over the lifetime of the submarines? Missile/warhead numbers must be based on what we need to deter, rather than disarmament objectives which might render the UK's capability ineffective – and therefore not worth having at all. The government has always stated that 'as soon as it becomes useful for our arsenal to be included in a broader negotiation, Britain stands ready to participate'.⁴ Implicit here is the assumption that the nuclear threat will have reduced (through multilateral disarmament measures) and that therefore the UK can afford to reduce its capability accordingly and contribute to disarmament. In the meantime, we need to maintain either an effective deterrent or not have one at all.

Option Two: Reduced Alert

This option envisages an end to CASD and acknowledges that there will be periods of weeks, and perhaps months, when there is no Trident submarine on operational patrol. Sometimes a Trident submarine would be at sea conducting non-deterrent, conventional submarine operations. The perceived advantages are a more relaxed posture, thereby building confidence and reducing tension, as well as savings in manpower. However, such an option would severely reduce deterrent effectiveness to the extent that the credibility of our deterrent capability would be brought into question. There are a number of reasons for this.

The primary flaw is the lack of clarity of purpose of the SSBN and therefore its efficacy as a credible deterrent force. Combining deterrent and conventional roles will lead to confusion as to whether the nation has an effective deterrent or not; the answer being: 'Sometimes we do, sometimes we don't'. The clear divide between conventional and nuclear capabilities would be broken.

A second reason is the loss of assurance because of vulnerability to pre-emptive attack. Would such a posture deter an adversary? Some argue yes; a submarine could in theory be brought to a high state of (nuclear) readiness quickly. However, there is a relatively short limit to readiness extension beyond which the time taken to achieve deterrent alert status would be very long and indeed far too long to impact on a modern international crisis. Extensive experience with managing nuclear submarines has clearly demonstrated that changing from an extended readiness posture to operational status is fraught with difficulties – both technical and human – such that regeneration always takes much, much longer than expected. As an example: A submarine deployed on conventional operations would have to return to base port, load and test the missile system, train the crew to operational readiness standard and deploy again – a matter of some weeks or even months, by which time the crisis could well have come and gone.

A further implicit proposition is that the SSBN does not need to go to sea at all and could launch missiles alongside

in harbour. This argument misses the key point that the primary purpose of the SSBN force is to deter aggression. It achieves this by being at sea with missiles and warheads embarked. Only if deterrence fails will it fire its missiles. The question is therefore would a SSBN in harbour, in whatever state of readiness, truly fulfil this deterrence criteria (particularly in the context of the UK's singular system)? Or would an aggressor believe that the will is not really there and that therefore this is no deterrent at all?

Option Three: De-mated Alert

This option calls for SSBNs to operate without warheads embarked. The primary danger here is the impact on deterrence. There are elements of nuclear policy where uncertainty can enhance deterrence. Maintaining some level of secrecy over the exact status of missile and warhead combinations (within declared limits, for example forty-eight warheads per submarine) embarked is one. Mystery and uncertainty can in itself cause an adversary to pause and think more carefully about future aggressive action. De-mating would therefore negate this factor of deterrence thereby reducing effectiveness. Furthermore, re-mating of warheads to missiles could be misinterpreted by a potential adversary and accelerate crisis escalation. At the same time, the SSBN would be highly vulnerable to attack once visible measures to embark warheads were started.

Option Four: Alternative Delivery Systems

Land and air nuclear systems were addressed in the 2006 White Paper and rejected on grounds of cost and degree of difficulty. The weight of these two factors should not be underestimated. Any land or air system would require a huge development programme as no delivery system or related warhead exists and would have to be designed from scratch. In addition, the establishment of new nuclear facilities would be fraught with political and planning difficulties. The submarine-based system is essentially evolutionary, using design and facilities already tried and tested, and benefits enormously from shared costs with the US.

One frequently argued submarine-based alternative is the nuclear-armed cruise missile. Conventional cruise missiles are subject to wide military use and their utility as political instruments of deterrence could be confused. Thus it is questionable whether a cruise missile truly represents a strategic weapon (like Trident). Notwithstanding this, current cruise missile systems remain vulnerable to modern defences and do not have the range to prosecute all potential targets. Research into a hypersonic version of the Tomahawk cruise missile is underway in the US, and the UK would have to contribute to this major development programme; not only to increase speed and range, but also to minimise vulnerability. Such an option would also necessitate the design from scratch of a new (UK) warhead and the related test, storage and handling facilities. More *Astute*-class submarines would be required and a major design change – to accommodate safe handling and discharge of nuclear weapons in an SSN environment – incorporated. In addition, there may be political difficulties with the US export of cruise missile technology for nuclear use under the term of the NPT resulting in a purely British programme with no US cost share. In short, the cruise missile option would, unlike the evolutionary nature of Trident-related designs be a completely new programme, be one of significant risk and limited cost saving.

Costs

Proponents of capability reduction measures assume that their implementation would reduce costs. However, there is little evidence to support this. Indeed, maintaining Trident in line with US systems reaps enormous financial benefits for the UK – such that we are able to maintain an operationally independent minimum nuclear capability at relatively low cost. The alternative French example – whereby France spends some 18 per cent of its defence budget on its nuclear capabilities as opposed to the UK figure, which is around 5 per cent – supports this. Once we depart from common ground with the US, particularly in terms of a common strategic weapon system design, development and supporting test infrastructure, then costs

will rise. Indeed, these very significant cost benefits would not be evident in any alternative UK land or air based system – an issue often ignored by those arguing for a ‘cheaper’ capability. Certainly, if you choose to expand the roles of SSBNs to embrace other nuclear submarine activity, and manage and train the crews accordingly, increased cost will result. The warning here is obvious: the devil is in the detail and reduction measures that have initial financial (and political) benefits often have hidden costs, which will diminish that benefit.

The premise that savings will arise with these measures is at best not proven, and reinforces the view that only a strategic review should lead to an alteration in nuclear posture. Any alternative system (land or air) would almost certainly cost more than Trident as brand new warheads, delivery and control systems and shore infrastructure would be required which, together with the stringent safety criteria imposed on such a development, would render the costs truly prohibitive.

It is also a somewhat naïve view that the more extreme decision to cancel the Trident programme would yield strong financial benefits for defence. There are three core reasons against this: First, the funding profile is all wrong. Politicians and army generals are looking for funding now and over the next five years to support operations in Afghanistan (helicopters, armoured vehicles, and so on). The main expenditure for the *Vanguard*-class replacement submarines does not kick in until 2014, outside the timeframe for current operations and too late for political expediency.

Second, the decommissioning costs of dismantling the submarines, warheads and the supporting infrastructure will be significant and eat up much of the Trident budget for years to come.

Finally, there is absolutely no guarantee that the Treasury will redeploy

any savings that might arise from a cancelled nuclear programme to other areas of defence. Indeed, the Treasury’s view is that Trident expenditure is ringfenced and savings would be taken to support the national economy, not redeployed to support defence.

Nuclear Disarmament

Some argue that a change in posture will constitute a positive contribution to global nuclear disarmament. There remain a very large number of nuclear weapons in the world and a number of countries continue to promote their nuclear ambitions. Whilst the recent global disarmament initiatives are very welcome, it is universally agreed that the ‘zero option’ will take a very long time to achieve. The UK has already made a significant contribution to disarmament by reducing its nuclear arsenal by over 75 per cent since 1997 and operating a minimum capability at reduced alert status with missiles de-targeted. Any further finetuning of the UK’s nuclear posture will make little difference and have no real impact on other nuclear weapons states or nations with nuclear ambitions. Indeed, that there are no indications of any wider disarmament initiatives resulting from the UK’s recent announcement of a potential reduction of the UK submarine force from four to three is demonstrative of this. Better, surely, to ensure the continuing effectiveness of the UK’s minimum capability while nuclear threats remain, and be active in the global disarmament arena focusing on reducing international tension, thereby negating the need for nuclear weapons in the long term. When global numbers have reduced considerably, such that the corresponding threat is eased, then – and only then – should the UK offer cuts in missile, launcher and warhead numbers. To do so now could put us in no man’s land, with an ineffective deterrent and no tangible impact on global disarmament.

Conclusion

The UK maintains a single deterrent capability vested in the submarine based-Trident system. If such a system is to deter nuclear aggression and coercion it must be credible and able to demonstrate the will and capability of government to fire those weapons in certain extreme circumstances. To remain effective, the minimum system that we have must remain invulnerable to attack, have the necessary capability to deliver unacceptable damage to a potential adversary and deploy a well-motivated and trained crew to execute that capability.

The only way to achieve this is through CASD. Anything less would reduce our capability to a ‘part time’ deterrent whose effectiveness – that is, the ability to truly deter an adversary from aggressive action – would be seriously impaired, to the extent that it is debatable whether it is worth having at all. Furthermore, it remains at the very least questionable as to whether any of the ‘posture reduction’ measures proposed would generate major cost savings or make a significant contribution to global disarmament. The ultimate danger is that the UK will spend a very large sum of money in generating a ‘part-time’ deterrent which will not deter. This would be a criminal waste of public money. In short, the decision is simple: CASD or nothing. A ‘part-time’ deterrent just will not do. ■

Tim Hare was a weapon systems engineer in the Royal Navy for thirty-seven years. Much of his career was spent in the operation, acquisition and support of the submarine-based strategic deterrent. His last service post was as Director of Nuclear Policy in the MoD where he was responsible for the promotion and implementation of the UK deterrent policy at home and in the international community.

NOTES

1 ‘Shared Responsibilities: A National Security Strategy for the UK’, Institute for Public Policy Research, 30 June 2009.

2 Report of the US Secretary of Defense Task Force on Department of Defense

Nuclear Weapons Management, December 2008.

3 For a comprehensive analysis of alternative options see, Nick Ritchie ‘Stepping Down the Nuclear Ladder:

Options for Trident on a Path to Zero’, Bradford University, Disarmament Research Centre, May 2009.

4 Prime minister’s speech on nuclear energy and proliferation, 17 March 2009.