

# A PROGRESSIVE NUCLEAR POLICY

## RETHINKING CONTINUOUS-AT-SEA DETERRENCE

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**The United Kingdom has maintained unbroken nuclear weapons patrols since 1968. The rationale for this doctrine of continuous deterrence has been based on several pillars that are irrelevant in today's environment. Rather than an absolute need for continuous deterrent, there is instead a great opportunity for Britain to take the lead as the most progressive of the nuclear weapons states by reducing the readiness and size of its strategic force.**

The British government and main opposition parties have recognised the need for Britain to fully engage in international nuclear disarmament negotiations at the appropriate time, and announced their desire to take an active leadership role in examining the practical steps and challenges involved. The most important contribution and demonstration of leadership the UK government can make is to reduce further the salience of its nuclear weapons in foreign and defence policy. At the G8 summit in July 2009, Gordon Brown hinted that he was putting the details of Trident deployment on the negotiating table in the hope that other nuclear weapon states would be prepared to consider similar moves in a spirit of co-operation. At the United Nations Security Council summit chaired by President Barack Obama in September 2009, Brown declared that the UK might only build three new ballistic missile submarines instead of four.

The government is now looking for flexibility within the UK's system of nuclear deterrent that would enable further reductions in warheads, missiles and submarines, and changes to the current operational posture. The primary barrier to the latter is a continuing requirement

to have at least one of the UK's ballistic missile submarines at sea, fully-armed and ready to fire, in an operational posture known as 'continuous-at-sea deterrence' (CASD). This article considers the possible consequences of any decision to abandon the posture whilst retaining a non-continuous submarine-based system.

### *Ending CASD does not mean mothballing the SSBN fleet*

#### **CASD's Military Rationale**

The Royal Navy takes great pride in the fact that it has maintained unbroken nuclear weapon patrols since 1968. British public debate, however, has always focused on the 'political deterrence' aspect of a highly capable and effective nuclear capability, leaving the precise details of deployment to the experts. The rationale for maintaining a CASD posture is based on three operational arguments:

*Credibility:* A credible and effective nuclear deterrent threat requires an assured capability to retaliate against a strategic attack. This in turn requires a nuclear delivery platform that is

invulnerable to a surprise first strike, which means maintaining an undetectable submarine at sea at all times.

*Crisis stability:* Under a non-CASD posture any decision to sail a nuclear-armed submarine in a crisis risks unintentional escalation leading to heightened chances of conflict. It is far better to avoid such a scenario by maintaining a submarine at sea at all times.

*Operational expertise:* Operating a ballistic missile submarine fleet requires a high tempo of operations to maintain crew cohesion, morale and unquestioned confidence in the firing chain. Only a CASD posture can provide the morale, surety and tempo required.

These will be explored in turn.

#### **Credibility**

The credibility of the nuclear deterrent threat fundamentally depends on an opponent's belief that the threat is credible: in other words that the UK has both deliverable weapons capable of inflicting unacceptable damage, and the political will to use them given the perceived interests at stake. On the first count, ending CASD does not mean mothballing the SSBN fleet and mooring all the submarines in port indefinitely. Instead, continuous patrols would be



President Obama addresses the UN General Assembly, 23 September 2009, in a speech where he reiterated a vision of a world without nuclear weapons. Will the UK take a pioneering step to help make this a reality? Photo courtesy of White House/Samantha Appleton.

replaced with a 'reduced readiness' posture in which there may be periods of weeks, or even months, in which the UK does not have a nuclear-armed SSBN at sea. It is true that this reduces the probability of being able to fire nuclear weapons in response to a major strategic attack from near certain with CASD, to a lower probability without it (though only under the specific scenario of an accurate surprise strike). This requirement is only necessary though if there is a very real possibility of a nuclear first strike on Britain, but the government has acknowledged that the UK faces no major direct nuclear threat and has not for at least a decade.<sup>1</sup> The only country able to deliver such an attack against the UK now and for the foreseeable future is Russia – but the Cold War is widely and officially acknowledged to be over and the possibility of a surprise Russian nuclear first strike is near zero.<sup>2</sup>

Nevertheless, a CASD posture is still insisted upon, at considerable cost, as an 'insurance' against the remote (if not vanishingly small) possibility of the most extreme case. Furthermore, even

if CASD is dropped it may be possible to retain facilities and operations at a certain level to reconstitute the arrangement if relations were to deteriorate substantially over a period of time to the point where a surprise attack was judged a serious possibility.

### *The Royal Navy has maintained unbroken nuclear weapon patrols since 1968*

However, some argue that any sign of vulnerability – any chink in the nuclear armour – may be seized upon as a weakness that could concede the initiative to an adversary and invite a devastating pre-emptive attack in a crisis.<sup>3</sup> A pre-emptive attack would rest upon the judgement that the advantages of striking first clearly outweigh the potential consequences of waiting for the opponent's next move. A state contemplating a pre-emptive strategic attack against the UK would have to be

absolutely confident that: first, there was no nuclear-armed SSBN at sea at the time of its attack; second, the UK's entire nuclear retaliatory capability could be eliminated; and third, that they would not suffer a devastating response from the US and other NATO allies. The burden of proof does not lie with the specific configuration of the UK's nuclear arsenal, but rather in the calculations of an aggressor. As the late Sir Michael Quinlan observed in 2006, 'Even a modest chance of a huge penalty can have great deterrent force'.<sup>4</sup>

It seems clear that a submarine-based system could undermine confidence in relation to the first two considerations, since even in a 'reduced readiness' posture there would always be the possibility that a nuclear-armed SSBN was at sea, able to strike back.<sup>5</sup>

Under a 'reduced readiness' posture the UK could modify the duration and tempo of SSBN sailing patterns during a crisis or a period of prolonged tension to create uncertainty in the mind of the adversary as to whether a nuclear-armed submarine is at sea. This might include

a return to continuous patrols for a limited period. The navy has operated two ballistic missile submarines in a continuous deployment pattern with back-to-back consecutive patrols for several deployment cycles in the past.

It would also be possible to hold a nuclear-armed SSBN in port for a period of months on enhanced alert, ready to sail at short notice if intelligence suggested an imminent attack. The UK regularly maintained a second *Resolution*-class SSBN armed with Polaris SLBMs (Trident's predecessor) at forty-eight hours notice to sail to join the SSBN on patrol during the Cold War.

*The possibility of a surprise Russian nuclear first-strike is so low as to be near zero*

In addition to adjusted tempo, enhanced security and counter-intelligence measures at Faslane – such as increased anti-submarine warfare activities – could reduce an opponent's ability to gather intelligence on SSBN movements, and protect UK SSBNs entering and leaving port with the attack submarine fleet. A further possibility lies in the development and subsequent activation of emergency plans to co-ordinate SSBN patrols with France for the duration of a crisis to complicate an adversary's cost-benefit calculus: a genuine strategic threat to the survival of the UK would automatically constitute a major threat to France. The potential for such co-ordination was reinforced by the prime minister in March 2010 when he announced that he had held talks on nuclear arrangements with President Sarkozy.<sup>6</sup>

**Alliance Commitments**

British nuclear weapons are assigned to the defence of NATO under the 1963 Polaris Sales Agreement. Would a 'reduced readiness' posture undermine the credibility of this extended deterrence commitment? We argue that it would not. First, there is no commitment, formal or otherwise, for the UK to provide any particular level or type of nuclear commitment to the

defence of NATO. A dramatic change in UK nuclear posture could have important implications for NATO, but it is highly questionable whether a modest shift away from CASD would register anywhere else within NATO other than France. Second, NATO acknowledges in its 1999 Strategic Concept that its nuclear capability is wholly political in nature. It has dramatically reduced the readiness and numbers of its forward-deployed warheads in Europe and describes the circumstances in which NATO might contemplate use of nuclear weapons as 'extremely remote'.<sup>7</sup>

It has been a matter of pride and perceived independence that the UK is able to field an operational strategic nuclear weapon system without relying upon America's extended deterrent commitments. Nevertheless, we are a member of an alliance at whose heart is the concept of interdependent, collective security, alongside burden sharing. A reduced readiness to fire and an abandoning of the CASD posture have to be considered within the context of NATO's nuclear capability as a whole. In this context, a devastating attack on the UK would surely risk a major response by NATO, particularly by the United States.

*Serious military threats of an existential nature evolve over time*

**Crisis Stability**

Crisis stability refers to the mutual interaction and interpretation of processes for mobilising and heightening the alert-status of military forces during a crisis. If, for instance, a heightened alert-status is interpreted by one or more sides as aggressive, escalatory and a prelude to an attack, it will create crisis instability since the risks of the other side not attacking first may become unacceptable. The decision to sail a Trident submarine during a crisis, for instance, could be interpreted by an adversary as a threat to use nuclear weapons, demanding an assertive response. It is argued to be far better to maintain CASD and avoid this hypothetical scenario altogether.<sup>8</sup> But this

dynamic is far from clear. Sailing a Trident submarine in a crisis could equally send a clear, credible and verifiable message that a crisis is serious enough to warrant strengthening the deterrent capability, thus reducing the risk of conflict.<sup>9</sup> We must be clear here that we are discussing one category of threat: existential state-based military (most likely nuclear) threats, rather than strategic surprise or uncertainty in general. Recall in this context the UK's declaratory nuclear policy that it would only ever consider using nuclear weapons in 'extreme circumstances of self-defence'.<sup>10</sup>

*NATO's nuclear capability is wholly political in nature*

Furthermore, a direct military threat from a nuclear-armed state that puts the very survival of the UK at risk is extremely unlikely to emerge overnight. Serious military threats of an existential nature evolve over time, allowing a 'reduced readiness' nuclear posture to be modified to reflect a changed threat environment. Moreover, any decision to sail a Trident submarine would likely be part of a wider and observable mobilisation of the UK's armed forces rather than singular event.

The unintended impacts of a decision to launch a Trident submarine could be minimised by clear communication. If a British SSBN is sailed from Faslane, the communication of UK nuclear firing options (including the ability to fire whilst docked at port), early warning capabilities, conventional stand-off power projection (in particular from undetectable attack submarines), and cyber-warfare capabilities targeted at the aggressor state's leadership and core economic infrastructure would all enhance uncertainty in the mind of an aggressor as to the nature of the UK's strategic response during a crisis. Clear communication though is essential to avoid miscalculation and inadvertent crisis intensification. Policy options that highlight the practice of launching an SSBN in the early period of any crisis as a matter of routine might also reduce the risk of unintended escalation.<sup>11</sup>

### Operational Surety and Tempo

Would a lower tempo of operations degrade confidence in the firing chain and the professionalism, crew cohesion and exacting standards of stealth, safety and technical reliability needed in the maintenance and operation of an SSBN fleet?<sup>12</sup> Current SSBNs are generally at sea for around three months and have two crews. On returning to port the first crew disembarks and hands the boat over to the second crew who prepare it for its next patrol. It may be possible to configure a non-CASD patrol timetable in a regular or irregular deployment pattern based on single crews for each submarine. Deterrent patrols are currently combined with extensive on-shore simulation and training. A non-CASD posture could include substantial sea-based training to maintain absolute confidence in the surety of the firing chain.

The US investigation of the unauthorised movement of six nuclear-armed cruise missiles inadvertently flown from Minot AFB to Barksdale AFB by a B-52 in 2007 led to the December 2008 'Report of the Secretary of Defense Task Force on DOD Nuclear Weapons Management' (the Schlesinger Report). This highlighted the importance of regular exercises and ensuring sufficient levels of expertise and senior-level attention to the nuclear mission.<sup>13</sup> But there is no clear reason why stepping back from CASD in itself would undermine the status of the nuclear mission within the navy. It simply means that high-level command must prioritise the professional operation of the nuclear mission so long as the government chooses to deploy nuclear forces. Ending CASD should not be conflated with ending the rigorous oversight and planning currently applied to all aspects of the Royal Navy's nuclear mission.

### Cost Savings from a Change in Posture

In addition to meeting non-proliferation and disarmament ambitions, stepping back from CASD could reduce costs in a number of areas.<sup>14</sup>

The planned new Successor submarines to replace the Trident fleet will have nuclear power reactors that last the life of the submarine, foregoing the

need for expensive and lengthy mid-life overhauls to refuel the reactors that can keep a submarine out of operation for 3-4 years, as is currently the case. A full-life reactor core *plus* ending CASD would enable the Successor fleet to operate with two or three rather than four submarines. The December 2009 White Paper on Trident replacement gave an upper estimate of £14 billion for four new submarines. Only building two or three could reduce the cost of the programme by up to £6 billion (on current estimates). It should be noted that the government gave very serious consideration to only building three Polaris submarines in the 1960s at the height of the Cold War, and that the white paper leaves open the option of three submarines, even with CASD.

Ending CASD would enable the navy to reduce from double to single crews and save corresponding costs. It is not clear what percentage of annual service costs are assigned to SSBN crews but evidence from the US suggests that a US Trident submarine costs about one-third more to operate than a single-crewed attack submarine, with the difference mainly attributed to higher personnel costs of having two crews per submarine.<sup>15</sup> Lessons could be learned from a 1998 experiment when the crew on HMS *Vanguard* was reduced to one enhanced 'gold' crew of 200 rather than the usual two crews of 140 each.<sup>16</sup>

### *A devastating attack on the UK would surely risk a major response by NATO*

Sailing an SSBN is a complex process that involves a host of support capabilities, including an SSN attack submarine escort, minesweepers and Nimrod aircraft. These make a substantial addition to the annual running costs of the Trident system. It was estimated in 1998 that the annual cost of conventional forces assigned to protect Trident was £303 million, based on parliamentary answers.

Ending CASD now would further extend the service life of the existing submarines well beyond 2024, with

significant savings, estimated at over £5 billion.<sup>17</sup> The key factor limiting the life of the current Trident fleet is the health of the nuclear reactor. Peter Whitehouse of Devonport Management Ltd has stated that the life of the reactor 'is an inherent function of the design features, metallurgy and duty cycle when the system is in use' suggesting that reduced operation of the submarines could extend the life of the reactor.<sup>18</sup>

### Benefits of Extending Service Life

If the service life of the current boats could be extended by ending CASD, this would have several additional political and military benefits.<sup>19</sup>

### *Sailing an SSBN is a complex process*

It would enable the UK Trident submarine replacement programme to synchronise with that in the US, where the first new US SSBN to replace its current Trident submarines is scheduled for operational deployment in 2028/29, five years behind the UK, thereby reducing design and construction risk in the UK programme.

By then, there should be a much clearer sense of how successful the global nuclear disarmament agenda has been, and the UK's role in it. Since 2007, calls have grown from current and former statesmen and women and global civil society to take the goal of a nuclear weapons-free world seriously.<sup>20</sup> President Obama took this agenda forward in his Prague speech in April 2009.<sup>21</sup> A year on, it is a key time for determining progress: a successor treaty to START 1 has been signed, the US has released its first Nuclear Posture Review in nine years, Washington has hosted a Nuclear Security Summit, and the NPT Review Conference is taking place at the UN in New York. The outcome of these events will provide a strong indication of the prospects for a significant reduction in the role and numbers of nuclear weapons, and containment of nuclear proliferation on a path towards zero. Progress would allow the government to delay significant spending on the Trident replacement programme at a

time of extreme pressure on the defence budget and general public purse. It would also allow the government to delay the Initial Gate procurement decision by more than just a few months, avoiding possible accusations that it is putting Britain's deterrent capability at risk for short-term political gain. Domestically, a decision to abandon CASD is unlikely to have a strong direct political impact at a time when it is near-universally accepted that Britain does not currently face a strategic threat.

### *A non-CASD posture could include substantial sea-based training*

#### **Conclusion**

In sum, the three pillars of the case for CASD – the credibility of the nuclear deterrent threat, the risk of crisis instability, and degradation of operational capability – are open to serious question and are certainly not fundamental to the credibility of a UK nuclear deterrent threat, the professional exercise of the Trident fleet, or the avoidance of 'crisis instability'.

Arguments that the UK must be perpetually prepared to deter a surprise nuclear attack, primarily from Russia, and that ending CASD will fatally undermine the credibility of a UK nuclear deterrent threat, are deeply questionable. Neither is crisis stability a compelling reason to preclude a reduced operational-readiness posture. A non-CASD posture does not guarantee that the UK will not have an SSBN at sea during a crisis – only that it

might not. In such event, the government will have alert options at its disposal to prepare an armed submarine for sailing at short notice with protection forces at the ready. Whilst this could conceivably risk destabilising a crisis, the manner in which the decision is communicated will be as important as the act itself. Finally, there is no automatic relationship between stepping back from CASD, and degradation of the professionalism of Trident crews or the ability of the crews and their commanding officers to maintain the exacting standards required to operate Trident submarines and provide total confidence in the firing chain.

### *A US Trident submarine costs about one-third more than a single-crewed attack submarine*

The concept of 'minimum deterrence' is not fixed and absolute. In international discussions prior to the 2010 NPT Review Conference, it has become clear that non-nuclear weapon states are looking for qualitative shifts in nuclear weapon postures that reduce the salience of nuclear weapons in defence doctrine (as opposed to further quantitative reductions in warhead numbers), in the belief that reduced reliance will mean lowering the danger of use and raising the chances for nuclear disarmament. There is a clear opportunity in the coming months for the UK to take a major leadership role as the most progressive of the nuclear weapon states by reducing

the operational readiness and size of the current and future nuclear force. This is the next logical contribution the UK can make to the global nuclear disarmament agenda: to step back from a CASD posture and develop a credible, functioning reduced readiness regime demonstrating that 'minimum deterrence' does not require nuclear forces on permanent, continuous alert.

The fundamental question is whether the government can accept that a 'bolt from the blue' surprise nuclear attack, in particular from Russia, is now and for the foreseeable future so unlikely that it can safely reduce the operational posture of the current Trident system and its planned successor, and in doing so demonstrate international leadership on the nuclear disarmament agenda and reduce operational costs without incurring political risk at home. The decision is a political judgement, but one backed by a robust case for a positive assessment. ■

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## **NOTES**

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