NATO's Tactical Nuclear Dilemma

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Royal United Services Institute

Occasional Paper

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Malcolm Chalmers and Simon Lunn

The views expressed in this paper are the authors' own, and do not necessarily reflect those of RUSI or any other institutions to which the authors are associated.

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NATO's Nuclear Weapons: An Introduction to the Debate

Malcolm Chalmers

The purpose of this RUSI occasional paper is to contribute to the emerging debate on the future of the small number of remaining US nuclear weapons in Europe.

During the Cold War, these weapons played a central role in NATO plans for deterring a Soviet attack on NATO. As late as 1991, the US maintained around 2,500 such warheads in Europe, operationally deployed with short-range artillery and missiles, surface ships and dual-capable aircraft. The clear message was that, if it came to war with the Soviet Union, early nuclear use by NATO was a distinct possibility.

Since the Cold War ended, however, the role of these weapons in NATO strategy has been dramatically reduced, as have their numbers. Unofficial estimates suggest that only around 150-250 US warheads remain in Europe, all free-fall gravity bombs designed for use with US and allied tactical aircraft. This reduction has largely taken place away from the public spotlight, with little interest beyond the specialist defence and arms control communities.

Yet the prospect that this protracted drawdown might soon lead to their final elimination has now triggered a major debate on the role of nuclear weapons in NATO strategy. This is between those who believe that elimination could be a relatively cost-free approach to taking forward the disarmament agenda set out in President Obama's April 2009 Prague speech; and those who fear it could do serious damage to the credibility of US extended nuclear deterrence. As a result, reducing from 200 weapons to zero looks set to be much more controversial than the 90 per cent reduction (from 2,500 to 200) that has taken place since 1991. What these weapons lack in operational utility (given their short range and location, together with the continuing availability of larger and more powerful strategic arsenals) is now greatly outweighed by their symbolic significance.

On the one hand, key NATO governments, including those of the US, the UK and Germany, now accept the argument that a credible non-proliferation policy also requires a strengthened commitment to nuclear disarmament. Moreover, some influential voices (within and outside government) increasingly argue that the continuing deployment of US nuclear weapons in Europe, alongside the dual-capable aircraft (DCA) of European NATO members, is an obstacle to fulfilling this commitment. The case for withdrawing these weapons has been bolstered by reports that safety standards have been compromised at the nuclear storage facilities, as well as by concerns at the budgetary cost to the US of providing protection of a sufficiently high standard. Moreover, even supporters of continuing deployment recognise that these forces are of little operational relevance. A combination of diplomatic, budgetary and operational reasons, therefore, is pointing to the need for a reformulated approach.

The Dilemma of Extended Deterrence

Until recently, the official debate on the future of DCA was conducted largely behind closed doors. In October 2009, however, as part of the coalition agreement of Germany's new centre-right government, Foreign Minister and FDP leader Guido Westerwelle persuaded CDU Chancellor Angela Merkel to agree that they should seek the withdrawal of nuclear weapons from Germany as part of a wider NATO effort to pursue nuclear disarmament and arms control. Since this decision, the German Foreign Ministry has begun to lobby fellow NATO member states to this effect. The initiative has been supported by governments in Belgium and the Netherlands, two of the other three countries with nuclear-sharing arrangements.

Yet, as the first of these chapters makes clear, some other key NATO member states, together with influential policy experts, are far from convinced of the wisdom of unilaterally 'going to zero' in NATO DCA deployments. Since their inception in the

1960s, dual-key nuclear deployments have played a critical role in symbolising the sharing of nuclear burdens between nuclear and non-nuclear member states. As long as extended nuclear deterrence plays a central role in NATO doctrine, they argue, it is important to ensure that as many member states as possible are involved in the maintenance of the forces that symbolise that policy, not least because this act ensures that non-nuclear states then have to 'dip their hands in the blood' of preparing to use these weapons. Were non-nuclear states no longer to have a role in preparing for nuclear use, they argue, it might be increasingly difficult to convince nuclear-armed alliance members (the US, UK and potentially France) to risk the lives of their own citizens to extend an 'umbrella' over their non-nuclear partners.

Longstanding supporters of the nuclear status quo have been reinforced in their opposition to a 'zero option' by representatives of the Baltic states, who express concern that the nuclear 'umbrella' (that was so central to NATO strategy during the Cold War) should not be used to hedge against a resurgent Russia.

It is often argued, in response, that extended deterrence does not require basing on land (as the US nuclear guarantee to Japan, which does not involve the basing of US nuclear weapons there, illustrates). Moreover, Cold War nuclear deployments derived their political and symbolic significance from their deployment in locations close to potential Soviet invasion routes, and were thus specifically configured in order to lend credibility to NATO's doctrine of flexible response. By contrast, there is little, if any, deterrent value to be obtained from continuing to deploy weapons in locations, and with capabilities, that are functionally irrelevant. Given this new operational reality, it is questionable whether the US government will press for such weapons to be the primary test case for nuclear burden-sharing in the alliance. Some might also argue that nuclear burden-sharing is itself of declining relevance, given the marked reduction in the role of nuclear weapons in NATO doctrine since the Cold War.

At a time when Russia retains much larger arsenals of sub-strategic nuclear weapons, however, the Baltic states worry that unilateral withdrawal of all equivalent NATO weapons could be seen as diluting US guarantees of their security. The foreign ministers of Sweden and Poland have added to calls for Russian sub-strategic weapons to be included in the discussion, calling for sharp mutual reductions as part of US/Russian arms control talks, starting with Russian weapons deployed close to European Union member states (in the Kola peninsula and Kaliningrad).[1]

Finally, critics of a NATO 'zero option' point to the critical role that NATO extended nuclear deterrence has played in preventing proliferation within NATO. Today, the development of independent German and Italian nuclear weapons is not a serious possibility. Given current trends in Iran, however, the risk of Turkey moving in this direction cannot be dismissed so easily. At the very least, any steps towards revising the role of nuclear weapons in NATO doctrine must take the Turkish dimension into account.

Debates on nuclear weapon policy are, perhaps inevitably, strongly political and symbolic – 'theological' even – in character. Unlike their conventional counterparts, all concerned devoutly hope that they will never be used. As 'political' weapons, appearances matter as much, if not more, than what might, or might not, happen in the event of war.

Replacement and Retirement

As the second paper in this report makes clear, however, even nuclear systems must be grounded in operational realities. In particular, maintaining the status quo in the deployment of DCA depends on the future availability of European aircraft capable of carrying US nuclear weapons. At present, this role is performed by Tornado aircraft (for Germany and Italy) and by F-16 aircraft (for Netherlands and Belgium). But both models of aircraft are due to be withdrawn from service over the next decade. The US Congress has not yet approved plans for extending the life of the US B-61 warhead deployed with these systems, which is currently due to reach the end of its lifetime in 2017. Assuming agreement is reached on B-61 life extension, Belgium, Italy and

the Netherlands have the ability to maintain DCA until around 2020, when current aircraft in this role are due to retire. Both Italy and the Netherlands then plan to purchase US F-35 aircraft, which (depending on the outcome of current US discussions) may well be nuclear-capable.

Germany, by contrast, faces a more pressing replacement timetable. Most of its existing Tornado strike aircraft are due to retire from service before 2015, to be replaced by the Eurofighter. Germany has no plans to purchase the F-35. In principle, the Luftwaffe could develop a Eurofighter-specific nuclear avionics package, enabling it to continue in the nuclear role after that date. Even if alliance sensitivities may persuade Germany to hold off from precipitate action in relation to current systems, however, there is little prospect that the Bundestag (dominated by anti-nuclear parties) would pay for a significant nuclear modernisation programme. This budgetary reality is likely to play a key role in shaping the future of NATO's nuclear debate.

Towards a Modern 'Dual Track'?

It is in the collective interest of all NATO member states that this issue is managed sensitively. There is a danger that it could become a source of contention between members, in the process sapping political energy from the need for progress on more central issues. If a new consensus is to be reached, it will be important to look for a way forward that meets both deterrence and disarmament concerns, ensuring that all member states have gained something in the process.

Former NATO Secretary General George Robertson, together with former US administration officials Franklin Miller and Kori Schake, recently published a strong criticism of Germany's decision to call for the abolition of nuclear weapons on its soil.[2] Instead, they called for NATO to 'collectively negotiate with Moscow asymmetric but multilateral reductions to Russian and allied tactical nuclear arsenals'. Their proposal is a conscious echo of NATO's 1979 'dual track' modernisation decision, in which agreement to deploy new Pershing and ground-based cruise missiles in Western Europe was accompanied by a declared willingness to limit the deployment in return for reductions in Soviet medium-range missile deployments.

There is a strong case for bringing Russia's tactical nuclear arsenal into the arms control process, especially if (as many hope) a new round of strategic arms 'deep cuts' talks is to make progress in the near future. It is far less clear that 200 weapons in Western Europe provide a credible bargaining chip in these talks, given the much larger Russian arsenal. In any case, Russia's main rationale for keeping its weapons stems, not from concern about NATO tactical nuclear weapons, but from the weakness of its conventional forces, whose dismal performance was further highlighted in its recent conflict with Georgia. Russian tactical nuclear disarmament is therefore likely to have to involve addressing these concerns, either through conventional arms control or, more likely, through evolving its perception of the Alliance. Given this wider context, very different from the politics of the 1980s, does it really make sense for other major NATO members (including the US, UK and France) to embark on a campaign to press Germany to maintain and modernise its nuclear-capable aircraft fleet?

Even if the DCA status quo is unsustainable, however, Miller, Robertson and Schake's case for an incremental process of nuclear disarmament is important, in order to avoid destabilising longstanding alliances such as NATO, and thus preserve the broad political coalition that will be necessary for steady long-term progress to be made.

It is also vital that NATO places a high priority on reassuring its new member states most concerned over the future of Russia, while at the same time emphasising that the door is open for a qualitatively different, and more co-operative, security relationship between NATO and Russia. It should be made clear that NATO has both the commitment and the capability to come to the defence of the Baltic countries against aggression, whatever form this may take. At the same time, NATO should also be open to confidence-building measures that help to reduce fears of surprise conventional attack on both sides. Given Russian conventional inferiority, such measures can perhaps go some way to helping

it reduce its reliance on tactical nuclear weapons. Nuclear deterrence will still play a vital role in NATO policy and plans for the foreseeable future. However, given both the political and technical difficulties involved, as well as the budgetary costs incurred, there is a growing momentum behind a radical reduction in the number of European countries (currently five) in which the US forward-bases its tactical nuclear weapons.

There may be other ways in which those countries could demonstrate their willingness to make concrete contributions to NATO strategic and nuclear capabilities. A detailed discussion of alternative options is beyond the scope of this report, however one possibility is the consolidation of US nuclear munitions from the current five sites into one or two 'regional' locations. In this scenario, DCA air forces would still train for nuclear missions, periodically deploying to the regional storage location. This option would yield significant budgetary and personnel savings for the US (because storage depots would be closed), and could be accompanied by a further reduction in warhead numbers, which would be welcomed on disarmament grounds.

While this could be a useful immediate step, however, it is not a viable medium-term solution. It would not solve the problem of how to continue to involve Germany in nuclear operations, once Tornado nuclear-capable aircraft retire from service. And, given the state of political debate in Belgium and the Netherlands, it is hard to conceive of a situation in which these two states would retain nuclear capabilities once Germany had relinquished its own. It is plausible to envisage the US retaining its current ability to deploy its own nuclear-capable aircraft to bases in Turkey and Italy, although this would require the US committing resources to its own modernisation programmes. If the three northern European countries were to withdraw from deploying nuclear-capable aircraft, however, the retention of Italy as the only DCA country would make little political or operational sense, and might simply highlight the unwillingness of other European states to do the same.

It has been suggested that European states could assign some military staff to US nuclear forces, either in Europe or in the US itself. The German Air Force already conducts a significant part of its training in the US, at Holloman Air Force Base in New Mexico. This precedent could be extended through the secondment of German (and other European) military officers to US nuclear facilities involved in providing NATO nuclear forces. The practicality of such an arrangement has not been explored, and the US may not be willing to provide more than a nominal amount of additional transparency in relation to its strategic forces. But such an option could still help provide a continuing symbol, if it was thought this was required, of European willingness to participate in nuclear planning and preparations.

In any case, were the Iranian missile and nuclear programmes to continue on their recent trajectories, there may soon be another, more operationally relevant, way in which West European states could be asked to participate in collective preparations against nuclear threats: the deployment of US missile defence systems (radars and/or interceptors) on national territory, as part of NATO collective defences against emerging nuclear threats. Agreeing such deployments in Western Europe at present is not easy, since Iranian missiles have not yet developed the range to threaten these NATO countries, and Iran does not yet have (to our knowledge) an operational nuclear arsenal. Were this to change, however, the domestic political dynamic in Western Europe could change rather rapidly. In these circumstances, European involvement in strategic missile defence might be one way in which European states could reassure concerned Americans that they remain willing to share the burdens, as well as the benefits, of collective defence.

NOTES

1 Carl Bildt and Radek Sikorski, 'Next, The Tactical Nukes', *New York Times*, 1 February 2010.

2 Franklin Miller, George Robertson and Kori Schake, 'Germany Opens Pandora's Box', C*entre for European Reform Briefing Note*, February 2010.

A Crucial Decision: NATO's Nuclear Weapons in the Twenty-First Century

Simon Lunn

By the end of this year, NATO will have developed a new Strategic Concept for adoption by its twenty-eight members. Among the range of issues the new Concept will need to address are the role of nuclear weapons in NATO strategy and the requirements of extended deterrence. The continued need to deploy American nuclear warheads in Europe for use by the dual-capable aircraft of Allies will be a question of particular interest. The purpose of this study is therefore to assess current thinking in NATO as it begins the development of the new Concept on the role of nuclear weapons, and the related questions of disarmament, arms control and non-proliferation.

A critical but controversial element in NATO strategy during the Cold War, nuclear weapons have enjoyed a relatively low profile since 1989. Today, their role has to be seen in the context of an enlarged NATO of twenty-eight members which, in looking to its future, has to deal with new and traditional threats, the growing challenge of proliferation and the commitment to reduce and eliminate the role of nuclear weapons. Discussion of the role of nuclear weapons will inevitably arouse concerns and sensitivities that lie at the heart of past Alliance politics. The context in which these discussions will take place is therefore of particular significance.

The study is largely based on interviews carried out since May 2009 with officials from national delegations at NATO, including seventeen permanent representatives and NATO international staff, in order to inform the debate on NATO's role in nuclear arms control. The study is presented in four sections. First, the significant historical role of nuclear weapons in NATO strategy is outlined. Second, the progress of the Alliance to a new, post-Cold War Strategic Concept is discussed. Until recently, the role of nuclear weapons in the Concept has been neglected. As a result, the institutional processes and wider debates relating to NATO nuclear capability bear examining. Third, the specific role of nuclear weapons in a new Strategic Concept is examined. What is their role in NATO strategy? To what extent does extended deterrence demand American warheads on European soil? And finally, what is the rationale for dual-capable aircraft in this context? The last section looks at the way ahead for NATO and nuclear weapons in the current strategic environment. The costs and benefits of change and the status quo are weighed up. US leadership will be essential in whatever process emerges; while the decision about warheads in Europe is an American one, the US must listen to its partners.

I. Nuclear Weapons in NATO Strategy

The Strategy of Flexible Response

Nuclear weapons have long played a central role in NATO strategy. During the Cold War, the perceived superiority of Warsaw Pact conventional forces meant that NATO's strategy of flexible response contained the explicit threat of escalation to the use of nuclear weapons. Flexible response was a compromise between the different national and transatlantic positions on the respective roles of nuclear and conventional forces in deterrence and defence. The priority was to deter of any form of aggression. However, NATO always made clear that if deterrence failed, it would use whatever force was necessary to end the aggression. At what stage nuclear weapons would be used was left deliberately ambiguous to accommodate the different views; 'As soon as necessary and as late as possible' was the expression used by the nuclear community to reflect this ambiguity.

What types of nuclear forces were necessary to make the strategy credible, where they should be based, and the guidelines for their potential use, were all kept under constant review. Alliance nuclear forces consisted primarily of US strategic forces, US sub-strategic capabilities deployed forward with certain European Allies, as well as with the independent nuclear forces of the UK and France (although the latter were not formally declared to NATO). The concept of a multilateral NATO nuclear

force surfaced from time to time – and continues to surface according to those familiar with the recent study carried out by the High Level Group of the Nuclear Policy Group – but such ideas always foundered on the issue of command and control. Allies could be involved in nuclear policy, but there could only be one centre of decision-making: the nuclear power concerned.

The Dual-Track Decision

A major decision was taken in 1979 to modernise the long-range theatre (or 'intermediate') component of the nuclear forces assigned to NATO and based in Europe – on aircraft or at sea – through the introduction of ground-launched cruise missiles into Belgium, the Netherlands, West Germany, Italy and the UK, together with Pershing II ballistic missiles into West Germany. This became known as the 'Dual-Track Decision' because, parallel to the decision to modernise, NATO also signalled its willingness to negotiate an arms control solution. Several factors in this decision have certain resonance today.

First, it had its origins in the suspicion of some Europeans that in the bilateral strategic arms negotiations with the Soviet Union, a deal would have detrimental consequences for European security. It was therefore a form of reassurance for the Allies of the continuing validity of the US's nuclear commitment and the indivisibility of Alliance security. Second, the decision involved considerable discussion of 'coupling' US nuclear forces to the defence of Europe, and the need (or not) for systems to be located in Europe. Third, the decision also involved discussion of Allies sharing the nuclear risk and burden. Fourth, it had account for different national sensitivities concerning nuclear weapons, and the existence of a substantial and well-organised peace movement whose opposition caused serious difficulties for several governments. Although circumstances today are different, some of these elements have a familiar ring.

The Nuclear Planning Group

Allies were involved in NATO nuclear policy through the deployment of tactical nuclear weapons on a wide variety of platforms with certain Allies – though under American control – and also through the creation of the Nuclear Planning Group (NPG) in 1967. The NPG has facilitated the participation of Allies in the development of NATO's nuclear policy. Since the Dual-Track Decision, it has been reinforced when necessary by a High Level Group (HLG), subordinate to the NPG and comprised of officials from national capitals to ensure prompt and high-level attention to potentially sensitive nuclear issues: another point of relevance to the situation today. As the principal nuclear guarantor, the US has always played the dominant role in Alliance nuclear policy-making. For obvious reasons, nuclear issues have traditionally enjoyed a high degree of sensitivity and confidentiality within the Alliance and have always represented a target for public criticism.

All members of the Alliance, with the exception of France, participate in both the NPG and the HLG. Officials refer to an informal hierarchy: the two nuclear powers (the US and UK); the European countries who make available dual-capable aircraft – Belgium, Germany, the Netherlands, Italy – and Greece and Turkey with a different status; those involved in SNOWCAT; and then the rest. (SNOWCAT represents an effort to involve as many members as possible in support elements of the nuclear operation.)

With the end of the Cold War and collapse of the USSR, nuclear weapons have assumed a lower profile in NATO strategy. NATO has unilaterally reduced the number of American nuclear warheads and short-range delivery systems in Europe. Only a few hundred warheads under American control now remain to be used on the dual-capability aircraft made available. And in the NATO-Russia Founding Act of 1997, the member states of NATO reiterated that they had 'no intention, no plan and no reason to deploy nuclear weapons on the territory of new members, nor any need to change any aspect of NATO's nuclear posture or nuclear policy – and do not foresee any future need to do so'.[1]

The Strategic Concepts of 1991 and 1999

The London Declaration of 1990 made substantial changes to NATO strategy, including emphasising the political nature of nuclear weapons and defining them as weapons of last resort. The term 'last resort' was not used in the Strategic Concept of

1991 because it was seen at that time as introducing an unhelpful element of predictability into NATO strategy. The 1991 Concept did, however, continue the new emphasis on the political purpose of nuclear weapons:[2]

> The fundamental purpose of the nuclear forces of the Allies is political: to preserve peace and prevent coercion and any kind of war by ensuring uncertainty in the mind of any aggressor about the nature of the Allies' response to military aggression. They demonstrate that aggression of any kind is not a rational option.

The same language was repeated in the 1999 Concept, including in a key paragraph that stressed that a credible Alliance posture requires widespread participation by European Allies in planning, peacetime basing, command and control and consultation arrangements in order to reinforce the link between Europe and North America.

The penultimate paragraph in the 1999 Concept,[3] however, reflected a further shift towards reducing the role of nuclear weapons, noting that because of the radical changes in the security situation, the circumstances under which the use of nuclear weapons might have to be contemplated 'are therefore extremely remote', as opposed to 'even more remote' in the 1991 Concept. The 1999 Concept also drew attention to the dramatic reductions made by NATO in its sub-strategic forces, and the fact that 'NATO's nuclear forces no longer target any country'. It notes, however, in language similar to 1991, that:[4]

> Nonetheless, NATO will maintain, at the minimum level consistent with the prevailing security environment, adequate sub-strategic forces based in Europe which will provide an essential link with strategic nuclear forces, reinforcing the transatlantic link. These will consist of dual capable aircraft and a small number of UK Trident warheads.

II. Towards a New Strategic Concept

Since the end of the Cold War, the Alliance has focused on adapting to the new security environment. This process has taken two distinct directions. First, there has been enlargement and the parallel creation of a network of partnerships, resulting in twelve new members. These have brought with them new perspectives, preoccupations and problems. Second, there has been the deployment of NATO forces to missions beyond the traditional Alliance boundaries, notably in the Balkans and in Afghanistan. These deployments have shifted Alliance capability requirements and considerably overstretched national force contributions and defence budgets.

In this transformation, the once-controversial role of nuclear weapons has been largely forgotten – until now. At the April 2009 Strasbourg Summit, NATO heads of state and government set in train the development of a new Strategic Concept. The role of nuclear weapons, the concept of extended deterrence and the related questions of disarmament, arms control and non-proliferation are key issues the Concept will have to address. Understanding the context in which these issues will be discussed is, as always, crucial. Several factors will be particularly significant: the institutional process, the need to balance commitments to territorial defence and power projection in a resource-constrained environment, and pressures on NATO to show its commitment to arms control and disarmament.

Some general aspects of development of the new Strategic Concept demand examination, all of which ultimately bear upon the issue of dual-capability aircraft. First, the manner of the concept's adoption will be crucial, as states that feel their views have been fairly considered will be more willing to compromise – particularly on nuclear issues. Second, the outcome of the discussions is contingent on several wider debates, ranging from public opinion to NATO's capability requirements.

The Institutional Process

The Declaration on Alliance Security, adopted at the NATO summit in Strasbourg, tasks the secretary general with convening and leading 'a broad based group of qualified experts' to lay the ground for the development of a new Concept. The group of

twelve experts chaired by former US Secretary of State Madeleine Albright works in stages: a 'reflection' phase of four seminars (the third of these was held in Oslo on 14 January 2010); a phase of consultation with capitals in the first half of 2010; and then the drafting of recommendations for use by the secretary general in developing the Concept. It is planned that the Concept will be drafted in the latter half of 2010 for endorsement by heads of state at their end of year summit.

Considerable responsibility and latitude for the development of the concept has been given to the new secretary general, Anders Fogh Rasmussen. The process adopted in Strasbourg reflected divisions within the Alliance on how a new Strategic Concept should be developed. Some of the larger countries did not believe that agreement by twenty-eight members on a document of this significance could be achieved through the normal mechanism of Alliance consultation – the permanent representatives in the NATO Council (the NAC) assisted by the international staff. As one ambassador commented, 'the larger countries did not want it to get in the Alliance weeds'. The idea of calling on the expertise of knowledgeable outsiders and former professionals was broadly welcomed as an effort to appeal to a wider audience and as a contribution to much needed transparency.

However, there was scepticism whether an outside group, however well-qualified, could adequately reflect the current internal Alliance dynamics that are critical to building the necessary consensus. How the agreement of nations will be sought is unclear. The normal mechanism for this purpose is the NAC in Permanent Session. However, it has been suggested that national agreement may be sought through direct contact with capitals on the basis that the NAC itself is too close to 'the weeds'. An ambassador noted: 'The idea of direct contact with capitals appears to assume that the NAC would micro-manage the process by seeking consensus on every paragraph and that only national leaders can take the hard decisions for a document of this nature'.

The Strasbourg Declaration states that the secretary general will keep the NAC 'involved' throughout the process. The initial wording in the text was 'informed', until several Alliance leaders objected that this was not sufficient – an indication of the tensions surrounding the issue of consultation. Members of the NAC themselves are not certain what to expect. As one noted, 'there is confusion and unhappiness over the role of the NAC'. A number of other key questions remain to be resolved, most notably what sort of document will be produced, with what sort of detail and aimed at which audience. The July conference showed the wide range of views that exist on these basic questions. The new Concept, it was variously said, should be a mission statement, confirm basic principles, provide guidance to planners, be comprehensive but also brief and succinct, and convey a message to the public – the now familiar 'Omaha milkman' – and so on.[5]

A central question is whether the Group of Experts will use the 1999 Concept as the starting point for its work. This is particularly relevant to the question of nuclear weapons. Will the group work on the language in the 1999 Strategic Concept which, as noted earlier, forms the basis of the current study by the HLG? Will the group be briefed by those on the international staff responsible for nuclear affairs and who are known to be the guardians, some say the bastions, of orthodoxy? Or will the experts have their own ideas?

There is another body to consider. The NATO High Level Group has, in the last three years, produced a series of confidential reports addressing nuclear force posture in the twenty-first century. The initial reports re-affirmed the policy and military requirements as set out in the 1999 Strategic Concept that the presence of sub-strategic systems in Europe is essential. Subsequent reports have examined specific force posture options within the overall policy framework, and a range of eight options including sea-basing and a multinational force comprising dual-capable aircraft. Officials confirmed that these aircraft remain the most appropriate option: DCA 'ticks all the boxes', as one said. Officials also noted that in the discussion of general principles, there had been an emphasis on the importance of location and visibility to extended deterrence.

If these conclusions and the consequential requirement for DCA are eventually confirmed, then the countries concerned will have to decide how to fulfil the requirements and how to address the growing obsolescence of the aircraft. The costs of modernisation have to be seen also in the context of their conventional roles: the additional costs associated with the nuclear role are difficult to identify. However, modernisation could become a political issue in certain countries because of the economic climate and the association with the nuclear mission. Differences in timetables for replacement may play in the forthcoming debate. The HLG report was largely compiled during the Bush administration and has not had the input of the Obama team. This will presumably have to wait until the new administration completes its Nuclear Posture Review (NPR) in the near future. The HLG report was presented to Alliance defence ministers at their June 2009 meeting. The prevailing view among the nuclear community at NATO is that as currently drafted, the report commits no one. The nuclear specialists, one official said, were now on autopilot.

The HLG is to produce a further study, which it is assumed at this stage will work on the conclusions of the current study and produce recommendations for the June 2010 ministerial meeting. Under normal conditions, the countries concerned would then consider the implications and take the relevant decisions. However, in view of the ongoing work on the Strategic Concept, this date could be too early. It is not clear what status the HLG's work will have in relation to the work of the Group of Experts charged with examining the development of the Concept, or to the development of the new Concept itself. The experts may take the HLG study, and the rationale contained in the 1999 Concept that it endorses, as their points of departure. However, they may also wish to reassess the assumptions concerning the requirements of extended deterrence on which current conclusions are based. It would be surprising if the Group of Experts did not at least review the fundamental assumptions underlying NATO's nuclear posture.

There is an obvious disconnect between the ongoing work of the HLG and the development of the new Strategic Concept. However, if the new Concept were to establish new guidelines for the nuclear posture, then the HLG would need to adjust accordingly.

The process adopted in Strasbourg for the development of the Strategic Concept has left a substantial number of countries dissatisfied. Before the meeting in Strasbourg, many of these had agreed to a more traditional process. However, at the insistence of the larger countries, this was substituted at the last minute for the current process. The smaller countries resent what several see as a diktat by the larger members, and worry that their interests will not be fully reflected. For many members, the agreed process represents an effort to short-circuit the traditional Alliance system which, although often laborious and tedious, builds the consensus that must underpin a new Strategic Concept. This was articulated by a participating ambassador: 'Consensus is a complex business but worth the effort because it builds solidarity'. However, the result of the current situation is, according to another ambassador, that:

> The sense of ownership is diminishing. The perception is that the four cook it and impose it on others with limited transparency. But the new Strategic Concept cannot be owned by a few nations. That would create a risk for the next decades, for example for coalitions of the willing – these depend on collectivity.

The process is significant. The Concept must be agreed, supported and owned by all twenty-eight countries. The manner of its adoption is also important because it could affect the willingness of nations to compromise on key issues if they already feel their views have been ignored and their interests neglected. This will be particularly true for some of the more sensitive discussions on Alliance strategy, including those on nuclear weapons.

How significant and sensitive these discussions on the Strategic Concept and NATO's nuclear capability are will prove depends on a range of factors: the capability NATO needs; the global arms control movement; the proliferation of weapons of mass

destruction; member state public opinion; and the relationship between Russia and member states. These are discussed below.

Article V and Defence Planning

A key priority for the new Strategic Concept will be to define the capabilities NATO needs for its strategy of deterrence and defence in today's environment. One can assume that the emphasis will be again on the need for the now familiar 'appropriate balance of nuclear and conventional forces', although the discussions preceding the Strasbourg Declaration showed sharply differing members' views on the prominence of nuclear forces.

NATO's conventional defence planning is principally driven today by the deployments overseas in Kosovo and Afghanistan and by the need for forces that are mobile, flexible and sustainable away from home. Until the August 2008 Georgian War, the traditional mission of territorial defence had assumed a back seat in Alliance planning. However, since the Russian action, a number of Allies – notably the new ones close to Russia – have asked for additional reassurances on NATO's Article V commitment. NATO is examining what measures can provide greater reassurance for these members – particularly in planning, exercises and other activities.

This unease over the role and influence of Russia, and the doubts about the reliability of the NATO collective defence commitment, has been reflected in a variety of statements from the new members. Not surprisingly, they show a similar sensitivity concerning NATO's nuclear posture and the question of the US nuclear commitment.

NATO defence planning will also have to take account of economic circumstances. Defence budgets are already seriously overstretched with the existing commitment in Afghanistan, and in the current economic crisis new resources for are highly unlikely. Economics will be a major element in all Alliance decisions: including those on the modernisation of dual capable aircraft.

Disarmament, Arms Control and Non-Proliferation

Even during the Cold War, there were pressures for NATO to demonstrate its willingness to seek security at lower levels through arms control. This pressure is even greater today and was apparent in the drafting of the Strasbourg Declaration. Certain countries – 'the usual suspects' as they are endearingly referred to by the others – insisted that the emphasis on nuclear means had to be accompanied by a parallel mention of disarmament. As one ambassador noted: 'NATO should be seen as more than an operational centre, and as having an agenda for disarmament and arms control'.

The goal of reducing and eliminating nuclear weapons – 'Global Zero' – provides a crucial backdrop against which NATO will develop its policy on nuclear weapons. The initiative has gained widespread support and President Obama's endorsement in his 2009 Prague speech, albeit with his much discussed qualifications, has created expectations. NATO itself is not a party to arms control or disarmament agreements, but provides an obvious framework for consultation on national positions. The NPT review conference in the spring of 2010 will bring additional pressure for the Alliance and its member states to be seen to be moving in the right direction. Member states will be eager to demonstrate their collective commitment to the NPT process.

However, in addition to making the right noises on disarmament questions, many will ask what message NATO is sending with its own nuclear policy? The director general of the International Atomic Energy Authority (IAEA), Mohamed El-Baradei, speaking at the July 2009 seminar on the new NATO Strategic Concept, reminded participants that in developing its own policies NATO had a responsibility to think about the message it is sending on nuclear weapons.

It is not clear how important the political imperative of sending the right message will be in Alliance discussions of the requirement to maintain American nuclear warheads in Europe. This is not just a question of strategy. It is also a question of improving security and safety by reducing to

the minimum the number of warheads that need protection. In his Prague speech, President Obama emphasised the need for the US to maintain a safe and secure arsenal.

Much will depend on the message and leadership from Washington. Some officials suggested that the administration will be content to take plaudits for success in the START negotiations and will not be looking at this stage to seek changes to NATO strategy because of the political sensitivities involved. Others, however, suggested that in view of the endorsement by most Allies of the goal to reduce the role of nuclear weapons, it would be strange if NATO itself made no further movement with its own nuclear posture and insisted on maintaining the status quo.

Proliferation of Weapons of Mass Destruction
The proliferation of weapons of mass destruction to potential adversaries – states or non-state actors – represents a serious challenge for NATO and could influence the discussions on the role of nuclear weapons in Alliance deterrence strategy. It could reinforce support for the nuclear component as an essential hedge against the unknown and could also affect public attitudes to the role of nuclear weapons. Several NATO officials referred to the potential acquisition of nuclear weapons by Iran and the possible chain reaction this could cause in the region. This possibility, they suggested, should influence Alliance thinking on its nuclear requirements and reinforce the need for the current DCA arrangements. In other words, NATO should be considering whether and how it could deter potential threats from countries such has Iran and what role DCA could play in regional contingencies.

Officials also emphasised that the presence of DCA with American nuclear warheads was an important element of reassurance for Turkey, and in their view obviated the need for the development by Turkey of a national nuclear deterrent. Turkey, therefore, would be against their removal. A senior Turkish official concurred that they would like to keep US warheads in Europe in sufficient numbers 'not for ourselves per se but for the Alliance'. He added, however, that speculations in the press and academia on Turkish nuclear ambitions were unrealistic. Turkey was an NPT signatory and had no such ambitions. They needed to diversify energy and take advantage of the peaceful use of nuclear energy. Turkey shared President Obama's goal as the ultimate aim, but this goal had to take into account current realities. The situation in the region has given additional strategic relevance to the NATO base at İncirlik, where it is reported American nuclear warheads are maintained. One Alliance official suggested that because weapons of mass destruction were an issue in the region, the presence of DCA could also provide an effective crisis management tool – although he did not elaborate on what sort of a role this would be. The use of DCA as a collective deterrent or crisis management capability for regional threats is increasingly mentioned. However, according to officials, the feasibility and credibility of such a posture and its implications has received little in-depth study or discussion.

Public Opinion
Public opinion in most NATO countries remains sensitive to nuclear issues. This was clearly true in the Cold War, when nuclear weapons were closely associated with the struggle between two systems, and because their destructive potential embodied the ultimate price of conflict. However, it is not clear whether in today's environment – with a larger number of nuclear states, potentially a more dispersed threat and without the ideological tension of the Cold War – this sensitivity to the role of nuclear weapons will play the same role or mobilise the public opposition as it once did.

Several officials questioned whether the potential acquisition of nuclear weapons by Iran and others would make the public more accepting of NATO's nuclear forces, or generate a greater demand for disarmament and arms control. In several member countries, the traditional antipathy to nuclear weapons remains strong.

This is partly a general aversion to all things nuclear, including peaceful uses. However, as the twin pressures of climate change and energy diversification make themselves felt, public

attitudes towards nuclear power are changing. It is now appropriate to talk of a 'nuclear renaissance' in increasing the share of nuclear power in meeting energy demands.

However, with regard to nuclear weapons, it would be sensible to assume that public attitudes will remain negative in general, and hostile to basing on one's own territory. The three 'Nos' in the NATO-Russia Founding Act mean that this will remain an untested proposition in the new member states. It is therefore difficult to speculate on the likely public reaction if NATO continues with its current nuclear posture, except to say that the issue might be a problem for some governments. As each country could merit their own study, what follows is a brief snapshot based on the interviews conducted.

In Germany, the presence of US nuclear warheads is highly sensitive. In October 2009, and shortly after being appointed foreign minister, Guido Westerwelle led the ruling coalition of the Christian Democratic Union (CDU) and the Free Democratic Party (FDP) in a policy statement publicly advocating the withdrawal of US nuclear weapons from German soil.

Also in October 2009, Belgian Senator, Phillipe Mahoux, proposed a bill to constitutionally ban nuclear weapons on Belgian territory, and in January 2010, a group of anti-nuclear peace activists received press attention after they managed to breach security at Klein Brogel air force base and came close to an area that is believed to house up to twenty US nuclear warheads.

In the Netherlands, the peace movement remains active and will certainly attempt to draw attention to the continuing role of nuclear weapons in NATO strategy. Following talks with his German counterpart, Dutch Foreign Minister Maxime Verhagen stated that the two would work together on this issue, but that the potential withdrawal of US nuclear weapons should be a multilateral decision within the NATO framework. The ruling coalition (in power until February 2010) was also split on this issue, with a Labour Party spokesman calling for their withdrawal, but the other two parties seeming more cautious. The opposition in parliament has also pointed out that the discussion of the purchase of the F-35 to replace the F-16 has not mentioned the need for a nuclear option.

In Italy, it was said there was little public interest in the issue but if there were a debate, 95 per cent of public opinion would be against. Similarly, Spanish public opinion is largely hostile to things nuclear – a hangover from the Franco era. Traditionally, the Nordic countries and Canada have never been wildly enthusiastic, and couple their acceptance of the nuclear emphasis in NATO documents with an insistence on a parallel mention of disarmament and arms control. With respect to the development of the new Strategic Concept, there is a variety of European groups critical of the role of nuclear weapons in NATO strategy and the deployment of American nuclear warheads in Europe, and whose aim will be to draw attention to this dimension.

The opposition in its various forms will probably not enjoy the same level of intensity as the Peace Movement of the 1980s, but enough to make some governments uncomfortable. One activist noted, 'the peace crowd is dwindling. No one has a good fix on whether or not the nuclear question will be an issue.' However, he was certain they would do their best to make it one. The aim, he said, is 'to denuclearise NATO policy'. Precisely what this means is not clear, but it is safe to assume it will involve the withdrawal from Europe of American nuclear warheads. This opposition is not necessarily anti-NATO per se, but against a NATO with nuclear weapons and against an alliance whose business, in their view, is too often shrouded in secrecy. The need for greater transparency and openness in NATO affairs is a persistent criticism. As a result of the new environment, their approach to the nuclear issue is likely to be more co-operative and less confrontational than in the past – after all, as one activist said 'this time they think they have the President of the United States on their side'. Alliance officials are well aware of the distractive and disruptive potential of the nuclear issue, particularly when there are so many other pressing issues to deal with. However, as one ambassador noted: 'Public opinion in Europe subscribes

to denuclearisation. This is a political reality governments will have to take account of.'

Nevertheless, most were hoping that in the discussions surrounding the development of the new Strategic Concept, the issue of nuclear weapons would prove to be the dog that did not bark.

Russia

The need to develop a constructive relationship with Russia is recognised by all members. There are several areas of mutual interest between NATO and Russia where co-operation makes sense. Negotiations on strategic arms are an obvious candidate and the recent restart of these negotiations will be strongly supported by the Allies. However, as well as being a potential partner, Russia is also – in a strategic and planning sense – a potential problem. Russian behaviour and particularly its use of force in Georgia has reinforced the already nervous disposition of several member states. This means that Russia continues to be an element in NATO defence planning, although for obvious reasons this is not stated openly in Alliance documents.

One of the problems in responding to the requests for reassurance, as one ambassador noted, is that the current deployment measures are easily interpreted as being anti-Russian. Another commented that Russia in fact provides the only plausible operational rationale for dual-capable aircraft. Even then, in his view, the rationale is not very strong.

There is also the problem of the large number of forward-deployed Russian sub-strategic systems. NATO has attempted to discuss these systems in the NATO-Russia Council (NRC), but with no success. Ideas have been floated to include sub-strategic systems at some stage in the strategic arms negotiations. However, this would bring substantial complications. The new members remain particularly attentive to this aspect noting that, in contrast to NATO, there is an increased dependence on nuclear forces in Russian strategy – including the retention of first use – to compensate for the weakness of their conventional forces. The new members remain sceptical whether arms control negotiations can do anything to alleviate this situation. Defining relations between the Alliance and Russia will be one of the more testing challenges for the drafters of the new Strategic Concept because attitudes within NATO are seriously divided. Several of the new members believe that their experiences as part of the Soviet Union give them a special insight into Russian thinking and good reason to remain vigilant. The new members are critical of some of the older members – referred to by one ambassador as 'the friends of Russia' – who are seen as being over solicitous to Russian concerns. These countries were at times, according to the same ambassador, 'more worried about Russian interests than the Russians themselves'. Even sensible contingency planning, it was said, was seen as provocative by some Allies.

The new members insist that they are not tougher on the Russians: just more consistent in applying NATO principles. There is no doubt that other members find this approach irritating. Several confirmed that the obduracy of the Baltic States concerning relations with Russia was the source of considerable frustration. Norwegian officials point out that Norway has lived alongside the Russians for a long while. Another ambassador acknowledged that his country believed it was necessary to take account of Russian security concerns. This is a serious rift that risks becoming a schism. It will not be easily bridged and it will permeate all aspects of NATO's strategic discussions.

III. Nuclear Weapons and the New Strategic Concept

So how will the new Strategic Concept specifically deal with the role of nuclear weapons? Much will depend on the drafting of the new Concept and its assumptions. In addition, there are a number of related questions that must be answered in a new Concept: what is the role of nuclear weapons in NATO strategy? How salient are the demands of extended deterrence in the Alliance context? And what is the specific rationale for dual-capable aircraft?

In trying to answer the overarching question, at this stage several officials made the same general point

that it was crucial to see the role of nuclear weapons in the full context of deterrence. Deterrence, they said, was too often discussed as if there is only *nuclear* deterrence, neglecting its other elements. One official suggested that in looking at the new threats abroad, we had lost sight of the principles of deterrence and had lost the habit of discussing them. As a consequence, deterrence was not well understood. As one member of the international staff underlined: 'Deterrence is not just about capabilities but political willingness. Worry about the will not the capabilities. We need to think of ways to bolster confidence including capabilities.'

Several officials agreed that in the discussions on the new Concept, particular attention should be given to finding ways to fill out and give more substance to deterrence in a way that meets the new challenges and also satisfies the concerns of the new members. Some of these members, it was said, had a very singular approach to deterrence. But as one new member noted: 'that's why we joined NATO'. By way of example, one official noted that in exercises there was a tendency for the new members to look to the nuclear option too early, whereas the older members tended to look through all the options. Another noted that some new members were obsessed with infrastructure because they believed that countries with American forces on their soil did not get invaded.

All the new members argued that they needed more Article V exercises, more contingency planning and better and more visible preparations. Their focus is on reassurance through location and visibility rather than the broader aspects of deterrence. An ambassador of one of the older members noted: 'There is a real division of views between the new members and the old. The nuclear issue will be meshed with Article V and the comprehensive approach.' In other words he said: 'NATO must grapple with deterrence itself and how to maintain credibility. Think about the new threats that the Strasbourg Declaration had mentioned – cyber, climate change, energy – and see how these will link in. The new environment demands a new emphasis on all aspects of deterrence. NATO must define deterrence in the twenty-first century'.

The general impression is that in defining its strategic needs, NATO has to look forwards, but with one eye over its shoulder. Deterrence in the twenty-first century means coping with a combination of new and largely unknowable threats, but also with more traditional threats, which refuse to disappear and remain significant.

The Role of Nuclear Weapons in NATO Strategy

Despite differences over the weight to be accorded to the nuclear component in Alliance documents, there can be little doubt that nuclear weapons will remain a central component of Alliance strategy. As one ambassador put it:

> The nuclear posture is crucial as it provides uncertainty and complicates calculations, we need that ambiguity and uncertainty, it is also a political weapon and an expression of solidarity; and it is the transatlantic link.

This view of nuclear weapons as the bedrock of the Alliance and the symbol of the transatlantic bond is shared by all members, but particularly strongly by the new members for whom the reassurance it provides was one of the prime motivations for joining NATO. It was also endorsed by the two other nuclear powers, albeit with their different national slants. Their views need no elaboration here. France does not participate in the Nuclear Planning Group or in discussions of NATO nuclear strategy. However, French officials do participate in the discussion of the language to be used on nuclear issues in major NATO documents such as the Strategic Concept. French officials decline to comment on the question of the need for sub-strategic systems, as these are the concern of other Allies.

British officials stressed that this dimension of Alliance strategy had to be seen in the overall approach to the strategy of deterrence. This endorsement of nuclear weapons and their central role in Alliance strategy has now to be set against the general support for the goal of a Global Zero. The Strategic Concept will have to strike a balance between the commitments inherent in its strategy of deterrence and defence and the commitment of

the member states to disarmament, arms control and non-proliferation.

NATO is not a party to negotiations on non-proliferation, but all members subscribe to the goal of making progress in each of the areas. NATO's nuclear policy is collectively agreed and therefore there is a balance to be struck. In deciding NATO's nuclear posture, the members will have to decide what message they wish to send about their commitment to the goal of Global Zero, to achieving progress at the forthcoming NPT review conference, and to improving safety and security.

The general response to the dilemma of simultaneously supporting the Global Zero and a strategy in which nuclear weapons play a central role is to emphasise the long-term nature of the goal. Most officials point out that President Obama himself noted that this goal lay very much in the future. One ambassador commented:

> We would prefer a world without nuclear weapons. We think the 'Global Zero' is smart but unrealistic; smart because it creates a virtuous dynamic and a coherent argument against proliferation and pushes Iran and others.

Few officials were willing to challenge the fundamental assumption that a world without nuclear weapons would be a safer place. Some were prepared to make a robust and intellectually rigorous case for the status quo and the role nuclear weapons have played since 1945 in averting major war between the great powers. Most, however, preferred to accept the Global Zero as a desirable but distant objective, and focused on the interim steps that could be taken to move in this direction.

For members of the Alliance this means returning to the question of what contribution NATO itself can make to this process. At the level of declaratory policy, it is difficult to see how the language in the current Concept can change much. The emphasis is already firmly on the political nature of nuclear weapons. It may be possible to return to language used in the London Declaration of 1990 that suggests that nuclear weapons are weapons of 'last resort'[6] or similar wording, if it can be found, that accords them an even lower profile. However, given the sensitivities involved concerning the role of nuclear weapons it is possible that the current language is as much as the market can bear. The alternative would be to try an entirely new approach. There appears to be little support for moving to a policy of no first use.

The Continued Viability of Extended Deterrence

The experts and eventually the new Concept will need to re-examine whether the continued viability of extended deterrence requires the presence in Europe of American nuclear warheads for the use by Allied dual-capable aircraft. Does the exceptional nature and character of NATO as an alliance of collective defence, and the commitments this embodies, require visible arrangements that have not, as observers point out, been required by other US allies such as Japan?

The issue raises fundamental questions about deterrence and reassurance and the relationship between the two. It involves the perennial question of whether the location of a response capability has any effect on its capacity to deter; new members tend to focus primarily on reassurance through location and visibility and the older members on deterrence in its broadest interpretation. The question is whether the rationale underlying the HLG study and the language in the 1999 Strategic Concept will be carried forward into the new Concept. This is where people are waiting to hear what approach the Obama administration will adopt.

The confidential HLG study represented the existing consensus view within the Alliance. However, the status of the study is unclear. The assumptions on which it is based were agreed in 2007 and there have been significant developments since. During a meeting of the HLG in 2009, several countries drew attention to the emphasis in the public domain on reducing nuclear weapons, including the speech by President Obama, and questioned the assumptions underlying the HLG study.

For several participants, the insertion into the report of the phrase 'against this background' was

a marker that these developments could result in a change of approach. However, as of mid-2009 there were no signs from Washington of any such change: according to NATO officials it has been business as usual. Nevertheless, several officials expressed unease at the study and its political ramifications. One noted that the Nuclear Planning Group was compartmentalised from the broader debate and somewhat detached from the broader political discussions. Another was even blunter in suggesting that the study was at odds with every day experience and detached from the real world:

> They do not face the reality of those who have to act on their decisions … We are allowing the NPG community – the dedicated few – to dominate the debate with conclusions that are not consistent with political reality. Deterrence does not depend on location.

These remarks also highlight the tensions that can exist between the nuclear practitioners who deal with these issues on a daily basis and the policy world who have to deal with the political consequences of their recommendations. Discussing national views on the need for the DCA mission, one official cautioned of 'double talk' in the sense that views frequently differed depending on whether the person asked represented defence, foreign affairs or the military. The HLG was created precisely to minimise these differences, to ensure that potentially sensitive modernisation decisions were not developed in a vacuum, the political consequences understood, and that as far as possible unpleasant surprises were avoided. Several officials wondered whether the HLG was indeed bringing sufficient policy guidance to bear.

The Rationale for Dual-Capable Aircraft

In its conclusions thus far it would seem that the HLG study follows the conventional wisdom of the 1999 Strategic Concept. The rationale for the presence of American nuclear warheads in Europe for deployment on DCA includes: the linking of the European and North American members of the Alliance; the unambiguous coupling of American nuclear forces to the defence of Europe; and the widespread participation of the Allies in Alliance nuclear policy, and also in risk- and burden-sharing. It is additionally claimed that these forces play an important non-proliferation role by assuring Allies that might otherwise seek their own nuclear forces. There is also now the suggestion that these systems could be used in regional contingencies, particularly involving Middle Eastern proliferation.

Discussing the rationale for these systems, the new members emphasise that it is the credibility of extended deterrence through coupling that for them is the most significant. The ambassador of a new member summed up this attitude:

> Nuclear deterrence by the US and through NATO and with the presence of American warheads in Europe is the ultimate test of NATO's credibility. If that fails you will see a different NATO – more will follow the Poles in seeking bilateral guarantees. It is the essence of NATO membership.

Another added: 'The basic issue is one of confidence in the transatlantic link. People feel that removal weakens the link.' A recent Estonian statement emphasised the indispensable role of the US as 'the provider of nuclear deterrence along with elements of the nuclear sharing arrangements' and concluded that 'that any change in that role would constitute a fundamental change in the North Atlantic security system'.

For the new members, the location and visibility of systems is crucial for extended deterrence. 'We need visible options. DCA are very important as a visible commitment of unity and solidarity.'

Other new members made similar comments and leave little room for doubt as to the importance they attach to the presence of American nuclear warheads on European territory. The new members see no reason, therefore, to change existing arrangements. As one said: 'Why do it? No one will thank you, certainly not the Russians. We may get our weapons out but the Russians never will. So will we be safer or less safe?' Furthermore, a withdrawal of the warheads would send all the wrong signals. Russia, another ambassador noted, is about power. 'If you draw down it is a sign of weakening'.

However, several of the older members pointed to the apparent inconsistency between the political importance attached to these systems and their lack of operational application or usability. Everyone agrees that the credibility of deterrence depends on usability: the threat to respond must be credible. Yet no one could provide a military rationale for the use of dual-capable aircraft – 'militarily useless' was the common response. So what were they actually there for? How would they be used? Is it credible that a decision of such magnitude would be taken by using a NATO dual-capable aircraft?

When this question is posed to the nuclear practitioners, the reply is that it is the wrong question – the systems are there never to be used. But how can they deter if they cannot be used? The image of the emperor with no clothes comes to mind.

Yet despite these inconsistencies these systems remain powerful symbols of the transatlantic link and the nuclear commitment. Their political value has gone beyond their practical application. The emperor may have no clothes but no one appears to worry. Arguments about the credibility of deterrence carry little weight with those who believe in linkage through location and visibility. The fact is that for the new members these systems embody the transatlantic link and the US nuclear commitment.

The current DCA arrangements have other benefits. Participation in the Nuclear Planning Group was widely appreciated as a positive and constructive experience, which greatly facilitated the understanding of how Alliance nuclear policy is developed. However, as one non-DCA ambassador pointed out, participation in the NPG is not conditional on being a DCA participant. How and under what conditions the NPG would function if the DCA arrangements were changed was never discussed.

This is a question worthy of further consideration. Risk- and burden-sharing was also seen as an important consequence of the current arrangements and an important contribution to the maintenance of Alliance solidarity and cohesion. However, discussions showed that different views exist towards the concept of risk- and burden-sharing. It was suggested that this was an issue in which the nuclear provider should have a major say. Did the benefits of the existing arrangements outweigh the disadvantages?

One official noted that to insist that other members deploy capabilities that caused them political and economic difficulties was itself hardly conducive to Alliance solidarity. Perhaps the direct costs of providing this reassurance should be identified and those benefitting be asked to make a contribution. This idea, it was agreed, was unlikely to get far. Finally, one official reflected the views of several when he said very simply 'there must be other ways of doing burden-sharing'. The attitude of the DCA countries on the need for the mission is best summarised as one of grudging acceptance. They acknowledge the problems involved in explaining to parliaments and publics the rationale for the mission particularly when scarce defence resources and nuclear weapons are involved. They also agree that the safety and security of the warheads which absorbs people and money would be diminished if there were fewer sites. However, they are very aware of the political symbolism these systems have attained in the eyes of the new members. They accept, therefore, the need for the role albeit with no great enthusiasm. Most said that they would not be sorry if the mission were to be discontinued. As one ambassador said, 'We are not wedded to DCA'. Another remarked: 'We would not ask for their removal but if there was an opportunity … we would be happy to get rid of the whole thing'.

However, it is not always evident how widespread this view is. NATO officials claim that certain DCA countries would be sorry to lose the role, as it provides them with a degree of status. It is impossible to know for certain where the individual DCA countries stand on the retention of the role until, in the preparation of the new Concept, there is a frank and uninhibited discussion involving all parties of the military, political and economic implications of any change.

IV. The Way Ahead

Weighing the Options

NATO must reassess the requirements of extended deterrence in the light of the new strategic environment. What capabilities are required and where should they be based? This should involve a careful weighing of the advantages and disadvantages of continuing the existing situation or changing it either by discontinuing or modifying the dual-capable aircraft arrangements.

Retention of Dual-Capable Aircraft

The advantages of retaining the existing situation can be defined as follows: it has the advantage of being the status quo on which countries have reached consensus; it provides crucial – some would say critical – reassurance to the new members; the DCA countries are willing to accept the role, albeit with different degrees of enthusiasm and without, as yet, the domestic pressures modernisation requirements could provoke; the current arrangements facilitate Allied participation in nuclear planning through the NPG and represent a willingness by Allies to share the nuclear risk and burden; and it could be said to be giving the Alliance extra flexibility for regional contingencies.

The Costs of the Current System

However, alongside the advantages of the existing situation there are also disadvantages: maintaining the security of the warheads involves the expenditure of money and the deployment of manpower at the sites where the warheads are kept; modernisation of the aircraft will at some stage impose pressures on already stretched defence budgets and probably provoke political opposition; the mission is not easy to explain or justify to the public; and maintaining the status quo would mean that, apart from the reductions it has already made, NATO could not claim to be making a strategic contribution to the goals set out in the Global Zero initiative. Although the warhead numbers are small, critics will certainly point to their continued deployment as a sign of NATO's obduracy. Ending the current arrangements would also have advantages: a more rational, coherent and credible posture; a more secure situation as there would be no or fewer nuclear weapon sites to maintain with commensurate savings in money and manpower; savings on the modernisation of the aircraft and therefore a more effective use of scarce defence resources; and a significant political signal that NATO members are serious about reducing the role of nuclear weapons.

The potential costs of ending the arrangements would be: the risk of a less cohesive Alliance in which some new members doubt the US commitment and the value of NATO membership and seek greater security through bilateral arrangements; a reduced role for the NPG; the loss of Alliance flexibility in terms of a visible nuclear response capability to new proliferation threats; and the loss of Alliance risk- and burden-sharing in nuclear policy.

A Possible Compromise

There is a third option to further reduce the role both in terms of dual-capable aircraft and warheads, and to centralise the latter at fewer sites. The possibility of an interim solution to avert a potential crisis of confidence within the Alliance was mentioned during discussions with officials, but not in any detail. Any interim solution of this nature would require a detailed discussion of which countries would continue the mission and with which aircraft.

Given the complexities that normally emerge once these solutions are 'operationalised', this option could prove difficult. However, reducing and centralising the mission around bases in Italy and Turkey would have substantial benefits in terms of showing movement, maintaining cohesion and reducing the vulnerability problem. A move from the status quo will require careful Alliance management because of the political sensitivities involved. Adoption of the interim solution, for example, would involve a process of thorough consultation with all members; the provision of additional measures of reassurance to those new members worried about the American commitment; the elaboration and consolidation of the new arrangements and then the implementation of the reductions.

Attitudes within NATO towards moving to a new situation can be divided broadly into two camps. First, those who believe that dual-capable aircraft,

and the associated warheads, are essential to the credibility of the Alliance. These are primarily the new members, and they see no reason to move from current policy, and believe any change would fundamentally weaken NATO.

Second, there are those who see no real purpose to dual-capable aircraft. These countries believe they tie down scarce resources and cause domestic problems, but acknowledge their symbolic political significance. They accept that a change, unless handled carefully, could have consequences for Alliance cohesion.

Will the Obama administration seek to move NATO away from the current arrangements? This can only be decided at the highest level, and with the Nuclear Posture Review still under development it is too early to tell. A decision either way will be significant for the cohesion and the image of the Alliance. Many officials believe that despite the commitment to the Global Zero and, in view of the other demanding challenges it is facing, the US administration will be reluctant to take up such a potentially charged issue. Others suggested that because of the Global Zero, this will be an issue on which the administration would want to take the lead. Alliance officials note that visits and briefings by US officials to date and bipartisan reports indicate an adherence to the status quo. There is a dialogue of sorts between the two sides of the Atlantic on NATO's nuclear posture. The Europeans are anxious to ascertain the likely direction of US nuclear policy and in developing that policy the US is soliciting European views. However, the exchanges do not reflect current circumstances but rather positions taken in 2007.

On the question as to whether NATO still needs the current dual-capable aircraft arrangements for extended deterrence, the two sides appear to be dancing round each other, each waiting to hear what the other thinks before committing itself: a 'tell us if you want them' versus 'tell us if we need them' routine. The exception, of course, is the new members who are in no doubt as to what they want.

During much of 2009, the situation was even more complicated for the DCA countries because, as one official noted, 'none of us are particularly keen on this mission but no one wants to be the first to break ranks'. However, this situation has now changed with the German coalition government's public questioning of the weapons' presence and its pushing for debate within NATO, as well as the more cautious movements of Belgium and the Netherlands.

The Necessity of American Leadership

In looking ahead, three aspects merit attention. First, there is the question of modernisation of the DCA, which is seen by many officials as the decisive factor in these discussions. A decision by the Alliance to continue with the existing arrangements means that at a time of economic scarcity and overstretched defence budgets, the DCA countries will be asked to spend money on capabilities that are difficult to justify to their parliaments. The sums are not enormous, but the budget squeeze is such that any spending considered questionable will come under close scrutiny. How much of a problem this will be will vary from country to country and depend on the circumstances.

Second is the question of diplomatic tactics. In the event that NATO decides to move away from the current arrangements, should it do so unilaterally or in a negotiation with the Russians? What could it get in return? Most officials thought an adjustment of current arrangements would be more politically acceptable if done in the context of an arms control package involving equivalent Russian systems. However, as several officials pointed out, this is not as straightforward as it looks. Russia has larger numbers than NATO, would appear to be increasing its reliance on nuclear weapons and all its systems are on its own territory. As one official noted, NATO's few hundred warheads would not have much leverage with the Russians. Moreover, arms control does not deal with the 'coupling' argument. In the view of some members, these systems are required in their own right irrespective of what the Russians possess.

Third, there is the question of whether change is strategically beneficial and politically acceptable. Some officials thought that the withdrawal of

the American warheads from Europe would have serious consequences strategically and politically. Some on the international staff even went as far as to suggest it could signal the end of NATO. Likewise, some new members saw no reason for a change in policy and were deeply concerned by the consequences of such a development. Other new members were more sanguine, saying that the acceptability of a change would depend on the context – on the state of relations with Russia, on whether it was part of an arms control deal, and above all on how it was carried out. Several older members saw an opportunity to tidy up what they see as an outdated legacy of the Cold War, achieve a more rational posture, and improve safety and security.

One senior official summed up the situation:

> It is not that we think the Baltic concerns are unreasonable. It's that we think there are better ways of dealing with them than the deployment of gravity bombs on short range aircraft – ways that will leave us all feeling more secure.

However, any change has to be managed properly. This would include: wrapping any change in an overall re-evaluation of Alliance strategy; providing additional reassurance to the new members, developing an arms control package in which NATO obtains something in return from the Russians; and ensuring that the system of consultation is effective and that all security concerns are taken into account. There was general agreement that any change had to be an Alliance decision in which all members were satisfied that their security was safeguarded. Whether or not US nuclear warheads remain in Europe is an American decision. In making that decision the US will listen to the signals of its Allies. On balance, at this point in time, these signals would argue for a continuation of the existing arrangements. The strength of feeling of the new members means that any change could be seen as weakening cohesion – and maintaining Alliance cohesion will probably be assessed as having the highest priority. But there is an undercurrent of unease among the older NATO members over the continuing need for these systems, at their potential economic and political cost and at a missed opportunity to be seen making a visible contribution to disarmament and non-proliferation. Despite this unease, there is little optimism at present that things will change and expectations along these lines are stifled in the call for solidarity and cohesion. However, a new approach from Washington could change this.

The persistent message for the US from its NATO Allies is to consult, listen and reassure – with an emphasis on the latter. However, as the principal nuclear provider there is also an obligation to lead, to encourage countries to examine old assumptions and to adjust to new realities. The work on the new Strategic Concept during the next eighteen months will provide an opportunity for discussion and debate on the fundamental assumptions which should guide NATO policy in the coming decade. An important part of this process should be a reassessment of the requirements of extended deterrence. It will be for the US to lead such a reassessment and ensure an Alliance force posture that satisfies the concerns of all members, that provides the necessary reassurance to the new members and demonstrates NATO's commitment to further reducing the role of nuclear weapons in Alliance strategy.

NOTES

1 NATO, 'Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation signed in Paris, France', NATO Official Texts, 27 May 1997.

2 NATO, 'The Alliance's New Strategic Concept', NATO Official Texts, 8 November 1991, para. 54.

3 NATO, 'The Alliance's Strategic Concept', NATO Official Texts, 24 April 1999, para. 64.

4 *Ibid*.

5 One of the authors of the 1949 Washington Treaty used the ability to be understood by 'a milkman from Omaha' as the benchmark for clear and concise language. George Robertson, 'The Omaha Milkman Today', lecture at RUSI, London, 8 September 2003.

6 NATO, 'Declaration on a Transformed North Atlantic Alliance', NATO Official Texts, 6 July 1990, para. 18.

NATO Dual-Capable Aircraft: A Stocktake

Malcolm Chalmers

This short study provides a technical complement to Simon Lunn's paper. It examines whether, and on what time scale, current aircraft replacement programmes will impact on the ability of Belgium, Germany, Italy and the Netherlands to maintain nuclear-sharing arrangements. The sources for the study included a wide range of secondary literature as well as interviews conducted with a range of officials and experts, both in Europe and in the US.

Context

The number of US nuclear weapons in Europe has declined significantly since the end of the Cold War, and is now estimated to be between 150 and 350. The remaining weapons are stored on air bases in Belgium, Germany, Italy, Netherlands, Turkey and (possibly) the UK.[1]

Although nuclear weapons are deployed at USAF facilities in Turkey and Italy, the focus of this study is the US nuclear weapons that are deployed alongside units of the air forces of Belgium, Germany, Italy and the Netherlands. Under long-standing nuclear-sharing arrangements, these weapons are controlled by US Munitions Support Squadrons (MUNSS), but could be released for use by allied Dual-Capable Aircraft (DCA) in response to a NATO command, and with the authorisation of both the governments concerned. The air forces of these four countries continue to organise and train for this mission. Their aircraft are wired with the avionics necessary for the use of nuclear munitions.

There has always been concern that the existence of DCA is difficult to reconcile with the terms of Article 1 of the Non-Proliferation Treaty (NPT), in which the nuclear weapon states agreed not to transfer nuclear weapons to other states, and 'not in any way to assist, encourage or induce' non-nuclear states to acquire nuclear weapons.

Moreover, the end of the Cold War has called into question whether any operational role for NATO tactical nuclear weapons in West/Central Europe remains. The dual-key nuclear weapons in Belgium, Germany, Italy and the Netherlands were all deployed on air bases near the likely front line in the event of a Soviet breakthrough into Western Europe (in the approaches to the Low Countries or in northern Italy). During the Cold War, they symbolised the shared commitment of their governments to prepare to use nuclear weapons against advancing Soviet troops (or perhaps their rear echelons in Eastern Europe) in the event of Soviet first use, or if NATO conventional forces had failed.

As the Cold War threat faded, the number of nuclear weapons in NATO Europe fell sharply. The UK withdrew its nuclear weapons from Germany in 1998, and scrapped its air-based nuclear force entirely. US nuclear weapons are believed to have been withdrawn from Greece in 2001, and the USAF ended the nuclear role of its forces at Ramstein, Germany, in 2005. The nuclear-sharing role of the Turkish air force may also have expired.[2] In addition, several facilities (including USAF bases at Lakenheath, UK and Nörvenich, Germany) appear to have been placed on a 'caretaker' status.

As the operational requirement for deployment in Western Europe has declined, the political imperative for nuclear-sharing has become increasingly dominant. For some, dismantling this capability could be a relatively low-cost way to demonstrate the US's (and NATO's) commitment to pursuing the disarmament objectives set out by President Obama in his April 2009 Prague speech. For others, US nuclear withdrawal from Europe would heighten concerns over the US's commitment to extended deterrence, and to European security more generally.

Many in the US Air Force would welcome an end to its nuclear role in Europe. As early as the 1970s, there was a fierce internal Pentagon dispute as to whether the increased weight and complexity required to wire the USAF's F-16s for the nuclear role, together with the training required to

provide a useable capability, justified the costs in reduced conventional capability. A similar debate is emerging again today, with air forces – in both the US and in European NATO allies – concerned at the costs involved in maintaining a role that, in operational terms, appears to be a lower priority. The US is obliged to maintain a special infrastructure for the purpose, together with the posting of around 1,500 of its service personnel (250 in each of six MUNSS bases) in expensive foreign security postings. Ongoing threats from terrorism further add to the risks against which these bases must guard themselves.

Similarly, the four NATO air forces involved continue to bear the opportunity costs of training their air personnel for this role, and ensuring (albeit at some months' notice) future availability of their aircraft. The four European partners deploy their aircraft on NATO missions overseas, in the Balkans and Afghanistan, as well as for Baltic air policing. There may be limited military, or political, appetite for the continuing financial and training commitments that a modernisation of the nuclear role could involve.

However, Simon Lunn's paper shows some NATO members remain more concerned about existential threats, against which US nuclear deterrence could still be relevant. Eastern European states are keenly aware of recent Russian sabre-rattling (for example, threatening to target US missile defence bases in Poland and the Czech Republic with nuclear weapons). As a result, they may be keener to keep some US nuclear presence in Western and Central Europe than their Western neighbours. On the other hand, the 2009 statement by leading former Polish statesmen suggests that opinion-shapers in that country are also interested in current efforts to promote multilateral nuclear disarmament.[3]

In addition to Italy's own dual-key nuclear role, the US Air Force maintains a force of two F-16C/D squadrons (twenty-one aircraft) at Aviano in southern Italy. These are also nuclear-capable, and it is estimated that the Aviano Munitions Supports Squadron holds around fifty warheads. A recent article by a junior officer in the US Air Chief of Staff's office has suggested that the US should consider transferring the F-16 aircraft currently in Aviano to Poland.[4] Yet it is not difficult to imagine the Russian reaction were such a move to be proposed, with or without a US nuclear capability being involved. There is no indication that either the US or Polish government is considering such a suggestion seriously.

Before NATO agrees to an end to its air-based nuclear role in Europe, it will be especially important to understand Turkish attitudes. Iranian acquisition of nuclear weapons remains a real possibility over the next decade, and there is already a lively debate as to whether this might spur further proliferation, most notably to Saudi Arabia, Egypt, Syria and Turkey. There is no permanent US Fighter Wing at the İncirlik base, where it is estimated that 50-90 nuclear weapons are still deployed. There may be more effective ways to assure Turkey as to the credibility of US extended deterrence, notably greater deployments of US conventional forces, including medium-range missile defence capabilities. Yet, if discussions with Turkey came to the conclusion that the withdrawal of US nuclear weapons could increase proliferation risks, it would clearly not be a sensible step to take.

Modernisation Programmes of the DCA States

The four European air forces that maintain DCA

Table 1: Current Capabilities and Scheduled Replacements

Country	Current Dual-Capable Aircraft	Location	Replacement Aircraft	Scheduled Replacement Date
Belgium	F-16	Kleine Brogel	F-35?	2020?
Germany	Tornado IDS	Büchel	Eurofighter	2015
Italy	Tornado IDS	Ghedi	F-35	2021-25
Netherlands	F-16	Volkel	F-35	2020?

capabilities currently rely on F-16 aircraft (Belgium and the Netherlands) or Tornado strike aircraft (Germany and Italy) to provide delivery platforms. But both these aircraft models will be retired from service when they reach the end of their service lives. The maintenance of their DCA capability, therefore, will depend on the nature of the timing of their modernisation and replacement programmes.

As following analysis makes clear, the four countries are adopting quite different approaches to aircraft modernisation. This variation results from an array of factors (including historical legacies and procurement policies) that are unrelated to DCA requirements. But it means that the four countries also face significantly different time scales over which they will have to consider whether or not to modernise their DCA capabilities.

Germany

Germany is the largest NATO European member state (by GDP and population), with a key role in the development of alliance strategy. It currently has 156 Tornado IDS aircraft (including forty-two in a reconnaissance role) in front-line service, together with thirty-three Tornado Electronic Combat and Reconnaissance (ECR) aircraft. Of these aircraft, two squadrons (of around forty aircraft) are allocated to Fighter-Bomber Wing 33, based at Büchel air base, and retain a nuclear role. German crews are certified and trained for the nuclear role, and aircraft are appropriately wired. The Luftwaffe is supported in the nuclear role by a US Munitions Supports Squadron, which retains custody of between ten and twenty warheads believed to be located at this site.

Germany is on track to buy 180 Eurofighter aircraft, of which thirty-eight are now in service and a further 105 are already on order. More orders are possible in due course. The plan is to move towards an air force that consists predominantly of Eurofighter aircraft. There are no plans to purchase other combat aircraft. Over the next two years or so, Eurofighter will progressively replace the seventy-six F-4F Phantoms in the air defence role. It will also replace Tornado IDS, including Fighter Bomber Wing 33, over the period up to 2015. Some eighty-five Tornado ECR and reconnaissance aircraft are due to remain in service until 2020, however, in the suppression of enemy air defences (SEAD) and reconnaissance roles. The former were first delivered in 1990, after the main IDS variant aircraft, and have recently received the ASSTA 2 upgrade. Thirty-three Tornado ECR aircraft are currently deployed with Fighter Bomber Wing 32 in this role at Lechfeld. A further forty-two Tornado IDS (reconnaissance variant) are deployed with Tactical Reconnaissance Wing 51 at Jagel.

Germany has made no decision as to whether to continue the nuclear-sharing role after the Tornado aircraft in Fighter Bomber Wing 33 are replaced. One interim option under discussion is to keep a few nuclear-certified Tornados at another base at a lower state of readiness. This would involve maintaining a very small number of nuclear-certified Tornado IDS for this purpose, attached to the existing Tornado ECR Wing at Lechfeld. These could then move back to the Büchel MUNSS, or to another location, if necessary.

If the interim option is not adopted, the timetable for Tornado IDS is such that Germany will probably have to make a decision in 2011 (or possibly 2012) as to whether and/or how to maintain the nuclear-sharing role from 2015. It is technically possible to provide the Eurofighter with the avionics for the nuclear role. But Germany would be the only country planning to use the aircraft in this role, and would therefore be responsible for the full cost of developing and installing the necessary software and equipment. One source recently reported to the author that this cost would amount to around €300 million, a commitment that would face strong opposition in the Bundestag. Another source suggested that it might be possible to avoid some of these costs by making modifications to the warhead instead, presumably at US expense.

Italy

Italy's sole nuclear-capable aircraft is the Tornado IDS aircraft. Italy has sixty-nine of these aircraft on the front line, based at Ghedi, 40 miles west of Verona. There are also fifteen Tornado aircraft in the Electronic Combat and Reconnaissance (ECR) role, based both at Ghedi and at Piacenza. The Italian Air Force nuclear capability is supported by

a US Munitions Supports Squadron at Ghedi, which is estimated to host between twenty and forty nuclear warheads.

The current plan is to replace Tornado IDS with the F-35A (the conventional take-off and landing version). The Italian authorities believe that the F-35A could replace Tornado in the nuclear role, provided that it is fitted with the appropriate avionics. Most Tornado IDS aircraft have received a major Mid-Life Update (MLU), however, and its full replacement is not anticipated to take place until 2022-25.

Italy has outlined a requirement for 131 F-35s, to be delivered to the air force (109) and navy (twenty-two), replacing the Air Force's AMX and Tornado IDS aircraft, as well as the Navy's AV-8B Harrier II carrier-based aircraft. It is also due to play a major role as a centre for assembly and support of European customers. Over the next few years, however, a large part of Italy's air procurement budget will be needed in order to complete its purchase of 121 Eurofighter aircraft, of which twenty-seven are now in service and sixty-nine have been ordered. Italy is seeking ways of reducing the number of aircraft it orders (as is the UK), but has not so far been successful in doing so without severe financial penalties.

As a result of growing budgetary pressures, exacerbated by Eurofighter contractual obligations, Italy opted in October 2008 not to buy two F-35s for operational testing purposes. It also seems probable that large-scale expenditure on F-35 acquisition will have to wait until Eurofighter spending begins to fall, which is not likely (on current plans) until around 2014-15. As a result, Italy will probably not be in a position to begin to replace its squadrons of AMX strike aircraft (sixty-eight currently in service, but due to fall to fifty by 2014) and Harrier II aircraft (seventeen currently in service) with the full front-line deployment of F-35s until around 2018-20.

On current planning assumptions, the number of Tornado aircraft will be gradually reduced in number (to around fifty in 2014),[5] but those aircraft which have most recently received their Mid-Life Update (which could continue to fulfil the nuclear-sharing mission) will not need to be retired from service until 2025.

This timetable could accelerate if budgetary considerations necessitate a more rapid reduction in the size of the air force. One could imagine, for example, a more rapid withdrawal of Tornado IDS from service once F-35s began to replace the AMX in substantial numbers. Even if this were to be the case, however, maintaining a nuclear capability would not require the provision of a nuclear F-35 avionics package until around 2021-22.

The Netherlands

The Royal Netherlands Air Force currently possesses a total of eighty-seven combat aircraft, all of them F-16s. They are deployed at bases in Leeuwarden and Volkel. 312 Squadron at Volkel, consisting of sixteen F-16 aircraft, retains a nuclear role. The US Munitions Supports Squadron at Volkel supports it in this role, and is estimated to maintain ten to twenty nuclear warheads.

A final decision on F-16 replacement is due to be taken soon. The favourite remains the F-35, with the Netherlands provisionally committed to order eighty-five conventional version F-35 aircraft to progressively replace its F-16 fleet. But these plans remain politically controversial. The possibility of a further life-extension programme for existing aircraft remains alive, and Saab continues to lobby vigorously for its Gripen aircraft as a more economic alternative. A new advanced F-16 also remains a possible candidate. In preparation for a final choice of replacement aircraft, the Netherlands was considering whether to order two F-35 aircraft for operational evaluation. But the government is divided on the issue, with the financial crisis increasing parliamentary resistance to additional expenditure commitments. It now seems increasingly likely that a final decision as to whether to purchase the F-35 will not be made until 2011 or 2012.

If the Netherlands decides to sign an acquisition contract for F-35 procurement on this timescale, production could begin by 2013 and the first aircraft could arrive in front-line service by 2015. Depending on the rate at which aircraft were then procured, the last F-16 aircraft would be due for replacement by around 2022-25. If the RNLAF decides to move towards a smaller, all F-35, fleet, the date for the

withdrawal of the last F-16 from front-line service might be as early as 2020.

If the current NATO review were to decide that the Netherlands should seek (along with others) to maintain a Dutch nuclear capability beyond this point, the RNLAF could either (a) find a way of retaining a small number of F-16s in the nuclear role; or (b) participate in the development of a new nuclear avionics package for the F-35. In the latter case, a decision to develop such a package would presumably need to be made by around 2015, in order to incorporate it into the later batches of F-35 orders.

Belgium
Belgium now has sixty combat-capable aircraft in front-line service, based at Kleine Brogel and Florennes air bases. All Belgium's combat aircraft are F-16s, and the nuclear role is assigned to 31st 'Tigers' squadron, based at Kleine Brogel, in the north-east of the country. It has twelve aircraft, all of which have received a major Mid-Life Update since 2002. Until its disbandment in 2002, the 23rd Squadron (based at Kleine Brogel) also had a nuclear role. The US maintains a Munitions Supports Squadron at Kleine Brogel, and it is believed that this maintains between ten and twenty nuclear warheads.

Although internal Ministry of Defence studies are reported to have been carried out, Belgium remains at an earlier stage than other countries (Italy and the Netherlands) in considering how it might replace its F-16 fleet, and the recent MLU should allow the aircraft to remain capable of fulfilling their NATO roles for some years to come. When a replacement decision is made, it could opt to buy the F-35 'off-the-shelf' if it is offered an attractive enough deal. Alternatively, it might purchase late-model F-16 aircraft from the US, Rafale from France, or Gripen from Sweden. In each case, delivery of replacement aircraft seems likely to be completed around, or most likely after, 2020.

Conclusions
In principle, all four countries are waiting for the outcome of the current NATO review of sub-strategic nuclear options, due to be concluded by 2010 or 2011, before finally deciding whether to proceed with programmes to provide replacement nuclear capabilities. Yet the German decision to press for the withdrawal of nuclear weapons from its own soil as part of this review, together with similar positions from Belgium and the Netherlands, has increased pressure for change in the current arrangements.

This political pressure for change is deepened by technical factors relating to aircraft modernisation timetables. In particular, if NATO were to decide to maintain its DCA capability in its current form, Germany would be the country faced with the most immediate decision. Its programme for replacing its Tornado IDS aircraft with Eurofighter aircraft is already well-advanced, and contracts for the final (and most relevant) tranche (Tranche 3) of procurement were signed in 2009. As a result, the forty German Tornado IDS aircraft that currently perform the DCA role (based at Büchel) will all be replaced by Eurofighter aircraft by around 2015. The Luftwaffe has developed an interim DCA option, which involves the attachment of a very small number of nuclear-certified Tornado IDS with the Tornado ECR Fighter Wing at Lechfeld. But the capability provided would be much less substantial than at present, and it would probably last only until around 2020.

Most officials and analysts agreed that it would be technically possible to provide German Eurofighters with the avionics for a continuing nuclear role. While Tornado IDS aircraft were initially deployed in a nuclear role by three countries, however, neither of Germany's partners has a current requirement for a nuclear-capable Eurofighter. The Royal Air Force relinquished its nuclear role in 1998, and has no plans to give its own Eurofighters (Typhoons) a nuclear role. Italy is also planning to buy the Eurofighter, but not as a Tornado IDS replacement.

Thus, in order to maintain a DCA role, Germany would have to fund a *single-country* avionics upgrade for its Eurofighter aircraft. Costing around €300 million (according to one informed estimate), this investment would need to be initiated during 2011-13 in order to be available before Tornado

IDS aircraft leave service. The interim option (of retaining small numbers of Tornado IDS aircraft at Lechfeld) would provide only minimal capability. Given the costs of maintaining a small number of ageing Tornado IDS aircraft in service primarily for this purpose beyond 2015, moreover, it would quickly turn out to be significantly more expensive. If political leaders prove unwilling to fund a Eurofighter avionics upgrade, while still refusing to abandon the DCA role altogether, the interim option might be viable for a year or two. It is hard to see it lasting much beyond 2018.

Italy, the Netherlands and Belgium will also need to make additional investments in order to maintain their nuclear-sharing roles. In each case, however, the timetable for such decisions is not as compressed as for Germany. Italy is planning to replace its nuclear-capable Tornado IDS aircraft with the F-35. But it does not envisage doing so until 2022-25, after the completion of its current Eurofighter programme (around 2015) and after early-batch F-35s are deployed in other roles. Italian mid-life update programmes for its Tornado IDS aircraft are consistent with this timetable.

The Netherlands and Belgium retain only one combat capable aircraft, the F-16, which is also used as the platform for the nuclear-sharing role. Neither country has yet made a final decision as to a replacement aircraft, although the Netherlands is a partner in the F-35 programme. On reasonable assumptions, the F-16 could be fully replaced in front-line service in both countries around 2020, or shortly thereafter.

If both the Netherlands and Belgium decide to choose the F-35, then it is possible that the two countries could join with Italy in a joint requirement for an F-35 nuclear avionics package, to be ready by 2020. Although the USAF currently has no such requirement, such an investment would presumably have US government approval, provided that it was (perhaps partially) funded by the three European governments themselves. Understandably, given all the competing demands on their defence budgets, none of the three governments concerned believe that a decision is needed on this question at present.

As a consequence of the unique nature of its air procurement plans, Germany will be the first country that has to decide whether to devote substantial resources to fund a new generation of nuclear-capable aircraft in Europe. If it decides to go ahead, and given its political weight in Europe, it will be hard for Italy, the Netherlands and (possibly) Belgium to resist seeking a comparable programme of their own, albeit on a longer timescale. On the other hand, were Germany to resist such a programme, it would be hard for the other countries to go ahead on their own. The fate of nuclear-sharing will be formally decided by NATO within the next year. In practice, however, the strongest voices in this debate will be those of Germany and the US.

NOTES

1 Some reports suggest that nuclear weapons previously deployed in the UK, with USAF F-15E squadrons at Lakenheath air base, have been withdrawn. Not all sources agree.

2 Hans M Kristensen, *US Nuclear Weapons in Europe: A Review of Post Cold War Policy, Force Levels and War Planning*, Natural Resources Defense Council, February 2005, p. 12. More recently Kristensen reports that 'the Turkish wings at Balikesir Air Base and Akinsi Air Base may also have nuclear strike missions, but all weapons are stored at Incirlik air base': Hans M Kristensen, 'United States Removes Nuclear Weapons From German Base, Documents Indicate', *fas.org*, accessed 10 February 2010.

3 Alexander Kwasniewski, Tadeusz Mazowiecki and Lech Walesa, 'A Ray of Hope for Abolishing Nuclear Arms', *RealClear World*, 8 April 2009.

4 Kent Harris, 'USAF officer suggests F-16s move to Poland', *F-16 News*, 23 March 2009, <http://www.f-16.net/news_article3326.html>, accessed 10 February 2010.

5 Air Force Deputy Chief of Staff, Guiseppe Bernadis, cited by Luca Peruzzi, 'Italian budget crunch threatens AMX fleet', *Flight International*, 8 April 2009.

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Simon has written extensively on NATO and nuclear issues, completing a book entitled *Burden Sharing in NATO* (Royal Institute of International Affairs, 1983); and papers such as: 'NATO's 1979 Dual Track Decision on Intermediate Nuclear Forces (INF)' (Royal Institute of International Affairs, 1982); 'Nuclear Weapons in Europe' (report for the North Atlantic Assembly, 1982); and 'The Modernisation of NATO's Long-Range Theatre Nuclear Forces' (report prepared for the United States Congress, House Committee on Foreign Affairs, 1980). He currently serves on the advisory boards of the Geneva Centre for the Democratic Control of Armed Forces, the Brussels-based Security and Defence Agenda, and the World Nuclear Association in London.

Glossary of Terms

Declaration on Alliance Security (DAS): At the NATO Strasbourg Summit, Allies issued the Declaration on Alliance Security, which highlights key aims of the Alliance (leading to the new Strategic Concept of 2009). The DAS set out the future direction and priorities for NATO and aims to make future processes more open and transparent.

Dual-Capable Aircraft (DCA): A fighter/bomber that can deliver both conventional or tactical nuclear weapons. Currently, NATO has deployments of F-16 and Tornado IDS aircraft that are fitted for this purpose, stationed in Germany, Belgium, Italy and the Netherlands.

'Dual-Track' Decision: This decision of 12 December 1979 linked deployments of US long-range theatre nuclear forces (LRTNF) to proposals for negotiations with Moscow, and was arguably a response to Soviet long-range forces targeting Europe.

Group of Experts: Appointed by the Secretary General to facilitate the drawing up of a new Strategic Concept, this twelve-member body represents a broad spectrum of NATO members and offers balanced combination of insiders and outsiders. It is chaired by former US secretary of state, Madeleine Albright.

High Level Group (HLG): Consists of all member countries except France, and acts as the advisory body to the Nuclear Planning Group (NPG). The HLG meets several times per year to consider aspects of NATO's nuclear policy and planning and matters concerning the safety, security and survivability of nuclear weapons.

London Declaration: In July 1990, NATO's heads of state and government agreed that the Alliance would have to adapt to reflect the revolutionary changes that had taken place in Europe. The London Declaration announced the intention to enhance the political component of the Alliance and outline a new military posture for NATO's integrated military structure.

NATO-Russia Founding Act: The 'Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation' was signed in Paris on 27 May 1997 by the heads of states and governments of the NATO Alliance, the secretary general of NATO and the president of the Russian Federation. The Founding Act is the expression of enduring commitment to work together to build a lasting and inclusive peace in the Euro-Atlantic area.

Non-Proliferation Treaty (NPT): Concluded in 1968 and entered into force on 5 March 1970. The founding document of multilateral non-proliferation endeavours, it deals with preventing the spread of nuclear weapons, containing commitments on non-proliferation, safeguards, nuclear disarmament, nuclear energy and nuclear-weapons free zones.

North Atlantic Council (NAC): Holds effective political authority and powers of decision, and consists of permanent representatives of all member countries meeting together weekly. The Council has an important public profile and issues declarations and communiqués explaining the Alliance's policies and decisions to the general public and to governments of countries which are not NATO members.

Nuclear Planning Group (NPG): The ultimate authority within NATO with regard to nuclear policy issues. Its discussions cover a broad range of nuclear policy matters, including the safety, security and survivability of nuclear weapons, communication and information systems, as well as deployment issues. The NPG provides a forum in which member countries of the Alliance can participate in the development of nuclear policy and in decisions on NATO's nuclear posture, irrespective of whether or not they themselves maintain nuclear weapons.

Nuclear Posture Review (NPR): A review of US nuclear policy, doctrine, force structure, command and control, operations, supporting infrastructure, safety, security, and arms control, and effectively, determines what the role of nuclear weapons in US strategic security should be. The new review is set to be released March 2010.

Strategic Arms Reduction Treaty (START): A bilateral treaty between the US and the Soviet Union on the reduction and limitation of strategic offensive arms. Signed on 31 July 1991, the treaty barred its signatories from deploying nuclear warheads, Intercontinental ballistic missiles and submarine-launched ballistic missiles. START was renamed START I after negotiations began on the second START treaty, which became START II.

Strategic Concept: An official document that outlines NATO's enduring purpose, nature and its fundamental security tasks. It also identifies the central features of the new security environment, specifies the elements of the Alliance's approach to security and provides guidelines for the further adaptation of its military forces. The Strategic Concept of 1991 was dramatically different from preceding strategic documents, because it was a non-confrontational document released to the public, and while it maintained the security of its members as its fundamental purpose (i.e. collective defence), it sought to improve and expand security for Europe as a whole through partnership and co-operation with former adversaries. The Strategic Concept of 1999 committed members to common defence and peace and stability of the wider Euro-Atlantic area. It set out the purpose and tasks of the Alliance, the strategic perspectives at that time, the Alliance's approach to security in the twenty-first century and guidelines for the Alliance's forces.