

NATO POLICY BRIEF

No. 2

ESCALATION BY DEFAULT?

THE FUTURE OF NATO NUCLEAR WEAPONS IN EUROPE

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About the Author

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I. Introduction

NATO's nuclear sharing program, designed during the Cold War period to, *inter alia*, create a European 'third force' to balance what was seen in Washington as a predatory Soviet Union,¹ is today in a precarious position. The roughly 180 B61 nuclear gravity bombs in Europe which constitute the US contribution to nuclear burden-sharing with NATO allies are rapidly approaching the end of their scheduled service lives, as are the dualcapable aircraft (DCA) assigned to deliver the B61s to their targets.²

The current global economic crisis magnifies the risks to the nuclear sharing status quo at NATO, as the US in particular is unlikely to continue to fund legacy systems such as the B61 for the indefinite future, especially absent a demonstrated

¹ See Steve Weber, 'Shaping the Postwar Balance of Power: Multilateralism in NATO', *International Organization*, Volume 46, No. 3, Summer 1992.

² See 'Nuclear Weapons: DOD and NNSA Need To Better Manage Scope of Future Refurbishments and Risks to Maintaining Future U.S. Commitments to NATO', GAO-11-387, May 2011.

commitment by European allies to carry their share of the fiscal burden. As former Secretary of Defense Robert Gates put it in his valedictory address to NATO in June 2011,

The blunt reality is that there will be dwindling appetite and patience in the U.S. Congress – and in the American body politic writ large – to expend increasingly precious funds on behalf of nations that are apparently unwilling to devote the necessary resources or make the necessary changes to be serious and capable partners in their own defense.³

Nor is Gates alone in this assessment, as US public polling data over the past decade demonstrate (see Part V of this policy brief).

This paper examines, in Part II, the price to be paid over the next decade in order to modernize both the nuclear weapons and the means of delivery associated with NATO's nuclear sharing program. This is followed with an examination in Part III of what amounts to a little discussed but emerging NATO position of nuclear escalation by default. Part IV considers some of the detailed problems with current and possible alternative DCA renewal plans. Part V examines public and parliamentary opinion in the US and Europe on nuclear weapons, nuclear sharing, and its associated costs. Part VI concludes with a recapitulation of the evidence offered, and makes some suggestions on the basis of it, for the best way forward for NATO, and its approach to nuclear deterrence in current political, economic, industrial, and strategic conditions.

II. The Price to be Paid

Extending the service life of the B61 nuclear gravity bomb in its several configurations is not expected to be cheap: US\$4 billion by the time the program is complete in FY 2022/23⁴ is the current estimate. The costs associated with the replacement of existing NATO DCA are considerably larger, to the point where DCA-hosting governments are expected to balk at footing the bill. The Panavia PA-200 Tornado, in DCA use by Germany and Italy, will reach the end of its service life between 2017 and 2024. The aircraft designed to replace it, the 'Eurofighter' Typhoon, is not intended to be nuclear-capable, as the work required to certify Typhoon as DCA-ready would expose sensitive and proprietary European aviation technology to US eyes.⁵ Thus the main potential DCA replacement aircraft for the Tornado and its US-built counterpart, the F-16C Fighting Falcon, is the troubled F-35 Lightning II, also known as the Joint Strike Fighter (JSF). It is difficult to pin down exact unit costs for new aircraft, since both manufacturers of, and armed service advocates for a given model have strong incentives to under-

³ 'Gates Blasts NATO, Questions Future of Alliance', Robert Burns, *Associated Press*, June 10, 2011.

⁴ 'Fact Sheet: U.S. Nuclear Modernization Programs', Arms Control Association, November 4, 2011

⁵ Oliver Meier, 'An End to U.S. Tactical Nuclear Weapons in Europe?', *Arms Control Today*, July/August 2006, p. 37.

report costs per aircraft. Recent media reporting reflects the difficulties in arriving at meaningful unit costs. According to a 2012 Reuters and Postmedia News report:

The Pentagon last year estimated the average cost of each F-35 warplane will be about \$90 million, up from early estimates of \$50 million, based on current plans to buy 2,443 jets. Early production models cost more, and the government paid \$111.6 million for each of 11 Air Force variants it bought in a fourth production contract, but that sum does not include the engine.⁶

In comparison, the recent Italian government decision to cut back on the number of F-35s it is ordering from 131 to 90 will result in reported savings of US\$6.6 billion, or nearly US\$161 million per unit.⁷ Nor are the Italians the only ones cutting back: The UK has changed its order from 160 F-35A and B models to 130 F-35As and Cs;⁸ Australia is rethinking its commitment to purchase 12 F-35s, while Turkey has postponed the purchase of two.⁹ Many of these actions are in response to a series of US DoD postponements of F-35 production quotas until some of the technical and manufacturing issues dealt with in the next section are cleared up.

III. NATO Nuclear Escalation by Default?

It has been little observed that the B61 Life Extension Programme and efforts by Lockheed Martin and the US government to sell the F-35 JSF to NATO allies as a replacement DCA platform, appear capable of converging in a fashion that would amount to NATO tactical nuclear escalation by default. The B61-12, which will replace several current variants of the B-61 bomb in service, will, unlike current versions, be a precision-guided nuclear gravity bomb – the first such using modern Precision Guided Munitions technology.

The key to the B61 LEP is the replacement of the B61's current parachutedelay deployment system (intended to give DCA crews time to fly clear of the nuclear blast) with the B61 Tail Subassembly (TSA),¹⁰ a guidance mechanism similar to those used to convert conventional munitions such as the Mk84 unguided bomb into a precision-guided Joint Direct Attack Munition (JDAM), the GBU-31.¹¹ The JDAM bolt-on guidance package uses GPS technology to deliver accuracy on the scale of the low tens of meters or

⁶ 'Canada convenes international meeting over troubled F-35 fighters', *Reuters* and *Postmedia News*, February 11, 2012.

⁷ Steve Sherer, 'Cabinet to review defence spending cuts Tuesday', *Reuters*, February 10, 2012.

⁸ Jonathan Beale, 'F-35: BAE Systems faces turbulent times over carriers', *BBC News*, March 3, 2012.

⁹ Sherer, *ibid*.

¹⁰ Hans Kristensen, 'The B61 Life-Extension Program: Increasing NATO Nuclear Capability and Precision Low-Yield Strikes', *Federation of the American Scientists Issue Brief*, June 2011, p. 2.

^{2011,} *ibid*., p. 2

¹¹ Peter Grier, 'The JDAM Revolution', *Air Force Online*, September 2006.

less from intended target, even when GPS data is denied;¹² in combination with the nuclear warhead in a B61-12, the impact using a JDAM-like guidance package will be considerably greater than with unguided versions, equivalent to much greater explosive yields and thus far more effective at destroying hardened targets.¹³

The F-35 Lightning II, for its part, designed as the DCA replacement to the F-16, makes use of state-of-the-art 'low observable' (i.e., 'stealth') technology to enhance its survivability within and through the modern battle-space. In combination, the F-35/B61-12 weapons system represents a formidable increase in nuclear capabilities for NATO – one which could even overcome what are widely seen at present as rather incredible roles and missions for NATO's tactical nuclear arsenal in Europe.¹⁴

It is therefore conceivable that, if some F-35s were to enter DCA service for a NATO ally from 2019 onward, when the B61-12 has been deployed, nuclear planners might get the urge to view this stealthy, precision-guided nuclear system as a useful and usable tool in NATO's crisis management arsenal.¹⁵ Unlike current DCA, which would require a massive Suppression of Enemy Air Defence (SEAD) campaign in order to have any realistic hope of reaching targets in, for instance, Russia or Iran, the low-observable F-35 might be able to reach its target undetected with its super-precise nuclear payload intact and armed. This is not a scenario that Russia, for instance, could view with equanimity. If allowed to come to fruition, in fact, such a PGM/Stealth Nuclear force could eliminate any hope of further progress in reducing or eliminating NSNW in Europe as a whole.

IV. Problems with Replacing the Dual-Capable Aircraft

This scenario can only come to pass of course, if significant issues with regard to DCA renewal are successfully addressed.

The F-35's problems are many and complex, but appear largely to have been created by the insistence of US military authorities on the common procurement of three distinct models, designed to perform three disparate missions, in one airframe: a conventional take-off and landing (CTOL) variant intended for air forces, the F-35A; a Short Take-Off and Vertical Landing (STOVL) version intended for amphibious forces such as the US Marine Corps, the F-35B; and a naval version designed for use on aircraft carriers, the F-35C.¹⁶ The most problematic of the three, STOVL F-35B, has

¹² *Ibid*.

¹³ Kristensen 2011, *ibid.*, p. 2.

¹⁴ Kristensen, June 2011, *ibid.*, p. 2.

¹⁵ Lt. Col. Stephen D. Pedrotty, 'Let Sleeping Dogs Lie: NATO Nuclear Policy Since 1991', US Army War College Strategy Research Project, March 4, 2010, pp. 15–19.

¹⁶ David G. Ahern, 'F-35 Joint Strike Fighter Concurrency Quick Look Review', Ahern Report, November 29, 2011, p. 6.

forced weight reductions in all three variants so that the F-35B could have a meaningful combat payload (i.e., bombs and missiles) capacity.¹⁷

These on-the-fly redesign efforts have had two further effects: slowing down production and driving up costs. A recent US Department of Defense study identified, among other things, problems with the F-35 Helmet Mounted Display System, Fuel Dump Subsystem, Integrated Power package (effectively the aircraft's power-on switch, generator, and power supply for the oxygen system uniquely combined into one, Arresting Hook System and one other issue that was said to be classified. In addition the US DoD team also identified five other areas of moderate cost/consequence risk. In fact, there are so many moderate risks in play that a cumulative risk exists that redesign efforts might have to be undertaken even while the aircraft is in production, a problem known as 'concurrency.'¹⁸

One certainty about the F-35 program however, is that no matter the delays and cost overruns, the program itself is practically immune from cancellation. As long-time Pentagon procurement critic Chuck Spinney has noted:

The F-35 program is not at serious risk, despite all the hysterical hype in the trade press — not by a long shot. The F-35's political safety net has been front-loaded and politically engineered with exquisite malice aforethought. Domestically, the F-35 employs 130,000 people and 1300 domestic suppliers in 47 states and Puerto Rico. The only states missing the gravy train are Hawaii, Wyoming, and North Dakota. Internationally, there are already cooperative development/production plans involving nine countries, and more are in the offing. Given the intensity of the geographic carpet-bombing of contracts around the globe, can there be any question why the Secretary of the Air Force said in September, "Simply put, there is no alternative to the F-35 program. It must succeed."¹⁹

At risk or not, the F-35 may yet price itself out of budget reach for NATO allies looking to replace their PA-200 or F-16C DCA.

The other possibilities which remain for retaining DCA capabilities are real, though fraught with dangers of their own. Life extension programs for both the Tornado and the F-16 Fighting Falcon are underway, and represent a significant cost saving over F-35 purchases. The F-16 Service Life Extension Program (SLEP), for example, seeks to increase the structural flying life of later-model F-16C aircraft (Blocks 40, 42, 50 and 52) from the current 8,000 hours to a possible 12,000 hours, which would push most of the 350 aircraft in question out to a 2025 retirement date²⁰ (other estimates go as far as

January 30, 2012, available at: http://battleland.blogs.time.com/2012/01/30/f-35-out-ofaltitude-airspeed-and-ideas-but-never-money/

¹⁷ Chuck Spinney, 'F-35: Out of Altitude, Airspeed, and Ideas — But Never Money',

¹⁸ Ahern Report, ibid., pp. 8-9.

¹⁹ Spinney ibid.

²⁰ Amy Butler, 'USAF C-130, F-16 Upgrades Get Near Term Focus', *Aviation Week*, March 5, 2012.

 2035^{21}). The estimated US\$2.8 billion price tag for SLEP is formidable, but works out to only \$8 million per unit – a far cry from the purchase price of a new F-35 (or for that matter, another alternative, the new F-16E Block 60 – in use in the United Arab Emirate (UAE) airforce at an estimated cost of US\$80 million per aircraft).²²

It must also be noted however, that the F-16s in NATO inventories tend to be older, less capable models which the US Air Force does not intend to include in its own SLEP for these aircraft types, due to cumulative incompatibilities with future requirements.²³ The Belgian and Dutch governments, for instance, have both pursued modernisation of their F-16A/B fleets via the Mid-Life Update (MLU) program offered by the US Air Force in efforts to push their F-16s' retirement dates out past 2020. There is no guarantee, however, that having spent the time and money to undertake the MLU process, they will get their older-but-upgraded F-16 models approved for DCA missions by US DoD authorities in future.²⁴ The problems here are linked: because both Lockheed Martin and the US government, the Dutch and the Belgians would have little protection from future decisions (arbitrary or otherwise) forcing them in the direction of F-35 purchases.

There may be some hope, however, as sources interviewed at NATO in the preparation of this paper have confirmed efforts are underway to make the B61 platform-independent (i.e., able to operate from most modern fighterbomber aircraft). If this were to happen, governments from The Hague to Ankara would be able to seek the best available deal from sellers of modern military aircraft from France, Sweden or the US (but presumably not Russia).²⁵

V. A Lack of Public Appetite

While such a development might help with the economics, it would not necessarily help with the politics of DCA renewal and continued NATO nuclear sharing. When American public opinion in particular turns its attention to defence spending in general the evidence coming back seems to depend on the question asked. According to Steven Kull, for example:

When polls ask in the abstract about defence spending, Americans are often reluctant to cut it. However when Americans are asked to consider the deficit and presented with trade-offs, majorities cut defence and cut it more than

²¹ John A. Tirpak, 'New Life For Old Fighters', Air Force Magazine, February 2011.

²² 'The UAE's F-16 Block 60 Desert Falcon Fleet', Defense Industry Daily, available at: http://www.defenseindustrydaily.com/the-uaes-f-16-block-60-desert-falcon-fleet-04538/#arab-plane-imports

²³ Tirpak ibid.

²⁴ 'Modernization of the F-16 Fleet', Defense Update, available at: http://defense-update.com/features/du-1-04/f-16-upgrades.htm

²⁵ Interviews with members of the International Staff and national delegations at NATO, February 2-16, 2012.

any other area of the budget. Furthermore when they learn how much of the budget goes to defence, large majorities cut it, on average quite deeply.²⁶

On the nuclear side, American public opinion appears to be more sharply focused. In their 2009 analysis, Claudine Lamond and Paul Ingram pointed out that:

Recent polls suggest 87% of the US population believe the government should negotiate an agreement to eliminate nuclear weapons. Over half also believe that the government's practice of sharing its tactical nuclear weapons with NATO members could be a violation of the NPT and should cease.²⁷

Public opinion in Europe is strong on the subject of nuclear weapons as well. In recent years, the percentage of population desiring Europe to be nuclear free in Belgium was 64.6%, in Germany was 70.5%, in Italy 71.5%, the Netherlands 63.3% and in Turkey 88.1%.²⁸

Although public opinion can be volatile and levels of knowledge about international treaties like the NPT are likely to be minimal, this polling data nonetheless points to an undercurrent of public opinion in Europe that is unlikely to support further large scale expenditure on nuclear sharing, at least in the context of the current and foreseeable threat environment.

Parliamentary opinion is less well plumbed by polling organisations, but some items stand out here too. The unanimous vote by Belgium's Senate in 2005, for example, (inspired by the then imminent NPT review conference) for the government to reconsider its support for hosting nuclear weapons,²⁹ and the German Parliament's repeated efforts to get NATO to reconsider its nuclear sharing policy, including Foreign Minister Westerwelle's November 2010 speech to the Bundestag ahead of the Lisbon Summit, in which he said:

Of course it is necessary to include tactical nuclear weapons in this discussion. We remain committed to their withdrawal. However, we hope that this issue will first and foremost provide impetus for a much broader effort. The disarmament debate is now gathering momentum.³⁰

²⁶ Steven Kull, 'Does the public favor defense budget cuts?' Available at:

http://www.iwatchnews.org/2012/01/26/7979/does-public-favor-defense-budget-cuts ²⁷ Claudine Lamond and Paul Ingram, 'Politics Around US Tactical Nuclear Weapons in

European Host States', BASIC Getting to Zero Papers No. 11, January 23, 2009, p. 5. ²⁸ Hans M. Kristensen, 'US Nuclear Weapons in Europe', Natural Resources Defense Council, February 2005

²⁹ Belgian Senate resolution, adopted unanimously April 21, 2005, available at: http://www.nukestrat.com/us/afn/BelgiumSenate032205.pdf

³⁰ 'Foreign Minister Westerwelle's statement to the German Bundestag on NATO's Strategic Concept, 11 November 2010', available at: http://www.auswaertiges-amt.de/EN/Infoservice/Presse/Reden/2010/101111-BM-BT-Nato-Rede.html

VI. Conclusion

In these and other circumstances outlined in this brief, NATO faces two possible dangers in its approach to handling US non-strategic nuclear weapons in Europe. On the one hand, there is a danger of individual European countries being unable or unwilling to continue their nuclearsharing roles and of a disorderly NATO process of nuclear disarmament by default. This would be a significant and potentially damaging development, because if the DCA are retired in disorderly fashion without replacement, NATO is not only out of the NSNW business, period, but its political cohesion is also likely to have suffered in the process.

On the other hand, there is a danger that NATO, in the guise of maintaining the status quo, will actually improve its tactical nuclear forces stationed in Europe and render them more credibly usable in war-fighting scenarios. This could alienate Russia in particular and worsen the prospects for further negotiations on NSNW reductions in Europe as a whole. This escalation by default should be avoided, not least because non-strategic nuclear weapons in Russia, as well as in NATO, are a security and safety risk and a matter of concern to all members of the Alliance, even if to varying degrees. The combination of new precision-guided nuclear munitions and a stealthy delivery vehicle would quite rightly gain the attention of any potential targets, and will no doubt draw vivid reactions from them. Nor would it help NATO's profile at the next NPT review conference to be seen to have not only maintained the current approach to nuclear sharing in the face of strong and widespread intra-NATO and international opposition, but in fact to have upgraded NATO's nuclear capabilities in the process. At a time when nuclear proliferation risks are so much in the news, it behoves the North Atlantic Alliance to consider carefully before sending out such signals to the rest of the world.

There is another way, of course. The issue of nuclear sharing can be settled well in advance of the F-35's eventual entry into active service and the appearance in the US nuclear arsenal of the B61-12. NATO can and should instead agree to remove all remaining US nuclear weapons from Europe, and urge the US to eliminate that category of weapons once and for all. This would have several positive effects:

- It would make NATO a much more 'NPT-friendly' organisation
- It would force Russia onto the back foot by taking away its built-in excuse for inaction on its own formidable NSNW arsenal in and near Europe
- It would preclude NATO nuclear planners from getting any ideas about building credible tactical nuclear missions into NATO's future plans.

This last point is crucial. As NATO's tactical nuclear deterrent on European soil now stands, it lacks the credibility to deter any potential foes, and is thus incapable of providing meaningful reassurance to allies who are concerned

about potential future conflicts with unfriendly neighbours. This is arguably a good thing, as it provides all needed incentives for NATO to agree to remove NSNW from its arsenal sooner rather than later.

Nevertheless both the current state of affairs and the suggested change being called for here are a cause for concern in some European capitals. In this context, it also has to be kept in mind that there are a number of alternative, less costly, and less dangerous approaches to nuclear-sharing in the Alliance that have the potential to fill what some would see as a politically and symbolically important gap. These alternatives include: consolidation of B61s and DCA down to fewer sites (with or without partial withdrawal of B61s from Europe); creation of a NATO nuclear air wing; full withdrawal of B61s from Europe with a US commitment to return them to Europe if and as required; and withdrawal of all B61s from Europe, replacing them as a deterrent force with other means – ICBMs, SLBMs and/or strategic bombers owned by the US but crewed by NATO personnel.³¹

In the view of the author, a straight-forward decision to withdraw US tactical nuclear weapons from Europe would be preferable to both these alternatives and to inaction, which would itself leave open the door for a very enticing, and extremely dangerous, vision of high-technology tactical nuclear deterrence and in fact, compellence, to take root in NATO planning circles. Given the strong public preference across the alliance for eliminating nuclear weapons in Europe, it is incumbent on policymakers and concerned citizens to push for change in the right direction, and soon.

About the ELN

The European Leadership Network (ELN) is a non-partisan, non-profit organisation working to advance education in, and to promote greater understanding of, multilateral nuclear disarmament, non-proliferation, and related issues. It does this in particular by producing and disseminating independent research and analysis, and by providing an independent platform for international dialogue and debate.

www.europeanleadershipnetwork.org

³¹ See Karl-Heinz Kamp and Robertus C. M. Remkes, 'Options For NATO Nuclear Sharing Arrangements', in Reducing Nuclear Risks in Europe: A Framework For Action, Steve Andreasen and Isabelle Williams, eds., NTI, 2011.