US nuclear NATO arsenals 1996–97

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Basic Notes, 7 February 1997

BASIC
British American Security
Information Council

Fewer US nuclear weapons, more flexible warfighting

The United States (US) probably deploys significantly fewer nuclear warheads in Europe than previously assumed. Information supplied to the Berlin Information-center for Transatlantic Security (BITS) and the British American Security Information Council (BASIC) by the US Department of Defense strongly indicates that currently there are about 200 US nuclear bombs deployed at European sites. According to the latest official figures published by NATO, some years ago, 700 nuclear bombs were deployed in Europe. In recent years 480 nuclear bombs were said to be deployed on European soil. **1** NATO sources, on the condition of anonimity, mentioned a figure of around 200. They confirmed that besides the 1991–1993 reduction program resulting from the Taormina meeting of the NATO Nuclear Planning Group, another reduction process is currently underway, scheduled to be completed by 1998. **2**

However, NATO clings to its nuclear warfighting capability. NATO's new military strategy, MC 400/1, approved at the North Atlantic Council meeting on June 3rd, 1996 commits the alliance to maintain a reduced, but more flexible nuclear posture for the foreseeable future. **3** It does not revoke NATO's long-standing policy of keeping the "first use" option open. It does not commit NATO to use nuclear weapons only as a last resort. While the main purpose of nuclear weapons is said to be political, nuclear weapons are described as playing an essential stabilizing role in Europe, guarding against uncertainties (such as risks resulting from proliferation of weapons of mass destruction) and as serving as a hedge, in case a substantial military threat to NATO re-emerges.

NATO will no longer maintain detailed nuclear war plans for the use of sub-strategic **4** and/or strategic nuclear weapons in specific scenarios. Instead it will develop an "adaptive targeting capability", allowing major NATO commanders to develop targeting and nuclear weapons employment plans at short notice during contingency or crisis from pre-existing databases on possible targets. **5** NATO will reduce the number of fully-trained dual capable aircraft (DCA) units ready to conduct nuclear missions in peacetime. Instead, the capability to redeploy such aircraft from one NATO region to another will be increased. In peacetime each NATO country operating dual capable aircraft will, in the future, be required to maintain only one unit fully trained and ready for nuclear missions. **6**

NATO's nuclear warfighting capability is strongly supported by a parallel modernization program for nuclear weapons storage sites on NATO airbases. In 1987 the US, and then NATO, decided to install "Weapons Storage and Security Systems (WS3)" on all major European airbases. These storage systems allow for nuclear weapons to be deployed underneath the aircraft within vaults constructed into the floor of the hardened aircraft shelters. The system is said to protect the weapons against physical intrusion for a minimum of 30 minutes and to allow for remote control of the safety status of weapons by built-in sensors.

The current construction program for these new weapon storage systems totals 208 vaults on 13 airbases. (For locations see chart in Annex A). Since each vault probably holds one weapon (see photograph in Annex B), the new storage capacity, once completed can host 208 weapons. The actual number of weapons deployed may be less (e.g. NATO currently does not store weapons in 22 vaults built at Memmingen and Noervenich airbases in Germany). When developed and contracted in 1987 and 1988, the requirement for the new storage system was to build 437 vaults at 26 locations. However, during a lengthy post-Cold War review process, NATO's Senior Level Weapons Protection Group, the so-called SLOWPIG working group, decided to cut the program by more than 50 percent.

Since 1990, vault systems have become operational on eight bases in five European countries: Germany, the United Kingdom, Italy, Belgium and the Netherlands. Five additional bases in Italy (1), Greece (1) and Turkey (3) are still to be modernized. The United Kingdom, in its own modernization program, installed vaults at one airbase in the

United Kingdom and one in Germany. With the new storage system in place, special ammunition storage igloos which held nuclear warheads throughout the Cold War have been shut down.

While in public it has been widely debated whether NATO might deploy nuclear weapons in the territory of new member states, there are currently no indications that NATO plans contravene its 10 December 1996 statement that the Alliance does not intend to do so. However NATO resists any binding commitment and thus retains the right to deploy nuclear weapons on new members' territory during crisis or war. Furthermore, NATO has not officially foreclosed a future decision to construct nuclear weapons storage infrastructure in these countries.

Germany still hosts largest storage capacity

Germany still has the largest capacity to host foreign nuclear weapons. Fifty-eight vaults, the highest number installed on a single base, have been built at Ramstein Airbase, which also hosts the US Air Force Europe Headquarters. In addition, eleven vaults have been constructed in addition at each of three German Air Force (GAF) main operation bases: Memmingen Airbase, Noervenich Airbase, and Buechel Airbase. The GAF operates one wing of dual capable Tornado aircraft at each of the three airbases. Since the construction programs at all bases in Germany were finished before they could be affected by the SLOWPIG review process, it is assumed that the original number of vaults planned and financed for these bases have since been built. Up to 91 US nuclear weapons can most likely be stored in these more modern and safer storage bunkers. Since Britain bought and installed a 10 vault system for its Royal Air Force Base in Brueggen, the total nuclear weapons storage capacity for Germany is 101 vaults.

Under a new NATO policy, two of the GAF airbases do not host nuclear weapons during peacetime. They were removed from Memmingen and Noervenich airbases by the end of 1995. **7** GAF special guard units were also dissolved. Germany is required to maintain only one fully trained unit of dual capable aircraft ready for nuclear missions. This unit is the 33rd Fighter Bomber Wing at Buechel Airbase, nominally equipped with 36 Tornado IDS aircraft. The maximum number of US nuclear weapons to be stored in vaults during peacetime on German soil thus should not exceed 80. **8**

The Netherlands and Belgium retain nuclear weapon storage capacity

Both Belgium and The Netherlands retain the capability to store nuclear weapons on their soil and to participate in NATO nuclear operations. Each country has one main airbase for storing nuclear weapons to be used with F-16 dual capable fighter-bomber aircraft: Volkel airbase in The Netherlands and Kleine Brogel airbase in Belgium. At Volkel, 11 vaults reached initial operational capability on September 13, 1991; at Kleine Brogel the same change took effect on April 3, 1992. Both countries thus fulfil NATO's new requirement, that all countries participating in Programs of Cooperation should maintain one fully operational nuclear capable unit.

US Department of Defense reveals British airbases to have nuclear weapons storage capacity

The US Air Force's Electronic Systems Center accidentally revealed a British national

secret. Marham Air Base in Britain and Brueggen Air Base in Germany are two Royal Air Force airbases having the capability to store nuclear weapons. On July 18, 1995 the Hanscom Air Force Base Electronics Systems Center issued a little-noticed press release announcing the $24 million sale of 34 “Weapon Storage and Security Systems” (WS3), providing “storage of tactical nuclear weapons within the floors of hardened aircraft shelters” to Britain. The release stated 24 vaults were installed at Marham Air Base in Britain by May 1995, and 10 more at Brueggen Air Base in Germany by June 1995. These vaults became available because the SLOWPIG decision to reduce the number of vaults occurred only after 257 vaults were built, leaving an excess of 49. **9**

The only US airbase in Britain to host nuclear weapons storage vaults is RAF Lakenheath. It is likely that 30 vaults have been installed and reached initial operational capability on November 18, 1994. While originally 48 vaults had been planned for this airbase, Lakenheath is the only airbase for which the concrete change to the WS3 program resulting from the SLOWPIG review process is known. **10** This clarifies reports in the British press that the nuclear weapons at Lakenheath might have been quietly withdrawn. They have been relocated to vaults, a much less visible storage method.

The British investment in a safer nuclear weapons storage system for its WE-177 free-fall bombs came late and proved to be an unnecessary expense. While the foreign military sales contract with the United States was signed in late 1993, construction began in late 1994. Construction was completed in June 1995, only two months after the British government had decided to retire all WE-177s by 1998. **11** It will relinquish Brueggen Airbase by 2002.

Emphasis now on NATO’s southern flank

Current construction activities concentrate on NATO’s southern flank. All AFSOUTH airbases planned to host US nuclear weapons in the late 1980s were reviewed by NATO’s SLOWPIG group. The number of bases and vaults planned for AFSOUTH then decreased. The same is true for AFCENT and the United Kingdom. However, the decrease is smaller in the latter, reflecting the increased emphasis NATO is giving to its southern flank. Construction work at the airbases of AFSOUTH is not yet completed at all but one base.

By January 1996, Aviano airbase in Italy had become the first AFSOUTH base to receive the new storage system. In 1987, it had been planned that Aviano should host 18 vaults. Ghedi Torre, an Italian Air Force base, has been chosen to host the nuclear weapons storage vaults for Italian dual capable aircraft. Initial operational capability had not yet been reached by late 1996.

Greece’s participation in NATO nuclear operations will be maintained by the country hosting nuclear weapons at Araxos airbase. Eleven vaults were planned for Araxos in 1987. It is not known whether the number has been reduced in the SLOWPIG review process.

Turkey will receive nuclear weapons storage vaults at three airbases. None of these construction projects had been completed by late 1996. Incirlik airbase, which is used by the USAF on a regular basis, has probably been selected to have the largest storage capacity in Turkey. Nevertheless, the number of vaults to be built is likely to be smaller than the 30 planned in 1987. Two other airbases, Murted and Balikesir, which are both operated by the Turkish Air Force, will host smaller quantities of vaults. In 1987, it had been planned, that six vaults at each base should be constructed. As with Germany, under the new NATO policy of keeping only one unit per country operating nuclear-capable aircraft, it is highly likely that only one base in Turkey, presumably Incirlik, will actually host nuclear weapons during peacetime.

NATO wants to complete the whole construction program by 1998.

NATO enlargement and nuclear weapons deployment

NATO nuclear weapons have become a disputed subject in the context of NATO-enlargement. Facing strong Russian opposition to NATO enlargement and especially the possibility that nuclear weapons might be deployed closer to Russia's borders, the North Atlantic Council announced on 10 December 1996 that "enlarging the Alliance will not require a change in NATO's current nuclear posture, and therefore, NATO countries have 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 we do not foresee any future need to do so". **12** Then US Secretary of State, Warren Christopher, added that "no NATO nuclear weapons are presently on alert". **13**

However, the decisive question, whether infrastructure for nuclear weapons deployment will be built in the new member states, has been avoided in the statement. Current plans for constructing nuclear weapons storage vaults do not indicate any concrete plans to deploy such weapons in any of the new member states. Nevertheless, these plans were finalized prior to NATO's decision to accept new members. Furthermore, NATO refuses to make this political statement a legally binding one, as NATO Secretary Solana emphasized recently. **14** At the same time, new members are supposed to play a role in NATO nuclear policy. They are eligible "to join the Nuclear Planning Group and its subordinate bodies and to participate in nuclear consultation during exercises and crisis". **15** Thus it remains an open question whether NATO would stick to its commitment not to deploy nuclear weapons in new member states during crisis or war, or even in response to changes in the international climate. The decision whether to build nuclear weapons infrastructure in new member countries is likely to be made when these countries are members. Furthermore, it is still uncertain how NATO would answer a request by one or several new members for participation in nuclear sharing arrangements to include deployment of nuclear weapons on their soil. None of the possible members yet has made a decision to buy Western nuclear certified aircraft.

The Weapons Storage and Security System

The process of modernizing NATO's nuclear weapons storage system began in 1988. For most of the Cold War, NATO main operation bases participating in NATO's Quick Reaction Alert task force held a small number of nuclear bombs ready in on-base nuclear weapons bunkers. Most nuclear warheads for use at these airbases were stored in separate nuclear weapons storage sites. In some cases, these sites were part of the airbase, but in others the igloos were often located several miles from the aircraft shelters. Transporting the munitions "requires convoys with large security forces traveling through unrestricted areas. The very presence of the convoys attracts attention and they may be vulnerable to sabotage." **16**

The Weapons Storage and Security System allows storage of weapons underneath the aircraft inside hardened aircraft shelters. This increases the weapons survivability in case of attack. The WS3 has several components: the vaults themselves, sensors, data-transmission, consoles and monitors and voice communications. These enable weapon safety to be remotely controlled.

The main contractor for the construction program is Bechtel National Inc. from the United States; Mannesmann Anlagenbau of Duesseldorf, Germany, holds the major subcontract for building the mechanical parts for the system.

B-61 and WE-177 Bombs

The nuclear B-61 free-fall bomb is the only type of US tactical nuclear weapons still deployed on European soil. Eleven versions of this bomb have been developed and/or produced for use in either tactical or strategic roles. Deployments in Europe are believed to be limited to the more modern tactical versions containing advanced safety features such as Insensitive High Explosives and advanced Permissive Action Links. Models B-61-3 and B-61-4 were deployed to Europe during the 1980s. Since June 1990 the B-61-10, sometimes also called B-61-4/10 (which is a re-converted W85-Pershing-II warhead17) has been in production. It is not known whether the current US posture in Europe consists solely of B-61-10s or whether there are still older B-61 bombs deployed.

The B-61 is said to be of great tactical flexibility, since the yield as well as the time and type of detonation can be chosen in flight. The weapon can be used by aircraft flying at altitudes as low as 15 meters. The bombs are 3.61 meters long and have a diameter of 0.34 meters. They can be deployed by a variety of dual capable aircraft. In Europe, F-16s, F-15Es and Tornados are among the aircraft in active inventories certified to carry this weapon.

A new version of the B-61, the B-61 “mod 11”, has been developed in secrecy over the last couple of years, despite a pledge by the Clinton administration that no new types of nuclear weapons are currently under development in the United States.18 The B-61-11 was planned to enter service by late 1996 or early 1997.19 The B-61-11 is an earth-penetrating weapon, supposed to replace the old, 9-megaton B-53. It is believed to be derived from the B-61-7, which is a strategic bomb. “Bunkerbusting”, or earth-penetrating, weapons have been supported because they can play a unique role in striking against deeply buried underground targets especially within the context of controversial counterproliferation scenarios such as attacking Libya’s underground facilities at Tarhunah, said to contain a chemical weapons factory. It is unknown whether the new B-61-11 is or will be deployed in Europe. Since the weapon’s main purpose is to replace a strategic nuclear bomb, deployment in Europe is assumed to be relatively unlikely.

Much less is known about the British WE-177 free-fall bomb. It was developed during the 1960s, possibly making use of the technology from the US B-57 bomb.20 Production took place between the mid-1960s and the late 1970s, or even early 1980s. Since 1982, the Royal Air Force uses WE-177As with its Tornado aircraft. The yield for the WE-177A is not known. It is estimated to have a yield of 100-400 kilotons. Concerns about inadequate and old safety features of these weapons21 may have influenced the British government’s decision to retire these weapons early. On 4 April 1995, it was announced, that all WE-177s will be taken out of service by 1998. There are unconfirmed rumors that by late 1996 all WE-177s had been redeployed to Britain.

Annex A

NATO's 1996 nuclear weapons storage system

Airbase	Country	No.	Date completed	Remarks
Buechel AB	GE	11	9.8.1990	GAF operated base
Memmingen AB	GE	11	18.10.1990	GAF operated base, no weapons currently stored
Noervenich AB	GE	11	28.6.1991	GAF operated base; no weapons currently stored
Ramstein AB	GE	58	24.1.1992	USAF operated base
Brueggen AB	GE	10	12.6.1995	GAF operated base
Kleine Brogel AB	BE	11	3.4.1992	BEAF operated base
Volkel AB	NL	11	13.9.1991	NLAF operated base
RAF Lakenheath	UK	30	18.11.1994	USAF operated base
RAF Marham	UK	24	14.5.1995	RAF operated base
Interim Total by 1995	NATO & UK			
Aviano AB	IT	18*	22.1.1996	USAF operated base
Ghedi-Torre AB	IT	6*	not completed	IAF operated base
Araxos AB	GR	11*	not completed	GRAF operated base
Incirlik AB	TR	(30*) 25**		TR/USAF operated base
Murted AB Akinci	TR	6*	not completed	TRAF operated base
Balikesir AB	TR	6*	not completed	TRAF operated base

Total	NATO & UK			

* planning figures as of 1987, exceeding the total of 208 planned today. It is not known, which bases have been affected by SLOWPIG reductions, but it is most likely that smaller numbers of vaults have been built in Aviano and/or Incirlik. It is unlikely that Balikesir and Murted AB will host nuclear weapons during peacetime. Ghedi-Torre, Araxos and Incirlik might host nuclear weapons once storage vaults have been completed since they have the one national unit in each country operating DCA under a POC that should be maintained fully ready and capable to conduct nuclear missions.
** According to Jane's Defense Contracts, December 1996, Incirlik will receive 25 vaults under a contract with Bechtel National Inc.by 1998; however the figure seems to be quite high. It is not yet clear whether it includes vault for other Turkish bases.

Sources

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BASIC and BITS would like to thank the W. Alton Jones Foundation for the generous support received for their programs on nuclear weapons and disarmament.