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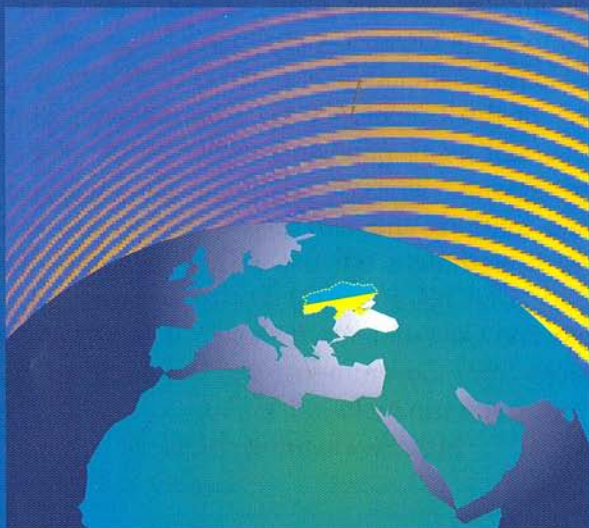
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Tactical Nuclear Weapons

A Perspective from Ukraine

A. SHEVTSOV, A. YIZHAK,
A. GAVRISH and A. CHUMAKOV



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ACRONYMS

ABM	Anti-Ballistic Missile
CFE	Conventional Forces in Europe
C ³ I	Command, Control, Communications and Intelligence
CIS	Commonwealth of Independent States
CTBT	Comprehensive Nuclear Test Ban Treaty
DOE	Department of Energy
EU	European Union
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
ICJ	International Court of Justice
INF	Intermediate-Range Nuclear Forces
JCIC	Joint Compliance and Implementation Commission
JCS	Joint Chiefs of Staff
MIRV	Multiple Independently Targetable Re-entry Vehicle
MLF	Multilateral Nuclear Force
MOD	Ministry of Defence
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Bacteriological and Chemical
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
SAC	Strategic Air Command
START	Strategic Arms Reduction Treaty
TNW	Tactical (Theatre) Nuclear Weapon
UN	United Nations
WEU	Western European Union
WMD	Weapons of Mass Destruction
WS3	Weapon Storage and Security System
WTO	Warsaw Treaty Organization

PREFACE

After a brief spell in the background, the question of tactical nuclear weapons (TNWs) in Europe has again begun to attract the attention of politicians and the public. Although the problems of today are not as dramatic as those of ten or twenty years ago they still need to be solved. The remedies that worked during the days of the Cold War are no longer effective and new ones have not yet been devised.

This study is concerned with the present and future role of tactical nuclear weapons in the new European security system as seen from Ukraine, a country which once had the world's third largest nuclear arsenal stationed on its territory. It is not an investigation of the composition and distribution of the stock of tactical nuclear weapons. Data of this kind are presented and compared, but for the purpose of clarifying the general picture rather than of exploring the details.

In no way is this study an expression of the official position of Ukraine on the issue of tactical nuclear weapons in Europe. Nevertheless, an attempt has been made to shed light on precisely those aspects of the problem that Ukraine finds worrisome. We hope that this will also interest an English-speaking audience.

The study is the work of a team of researchers at the Dnipropetrovsk Branch of the National Institute for Strategic Studies led by Professor A. Shevtsov, who wrote the section on the problems that faced Ukraine in choosing the non-nuclear alternative. A. Gavrish contributed the analysis of the situation with regard to the tactical nuclear weapons possessed by the North Atlantic Treaty Organization (NATO) countries, while the corresponding analysis of the Russian arsenal is due to A. Chumakov. The section on the prospects for nuclear disarmament was written by A. Yizhak who also had the general task of putting the study together. The Russian text was edited and proof-read by S. Pustovgarova. It was translated into English by T. E. Burton. Special thanks to UNIDIR, especially to S. Tulliu and A. Blétry, for producing this English edition of the text.

The authors

Never laugh at live dragons
J.R.R. Tolkien. *The Hobbit*

TACTICAL NUCLEAR WEAPONS IN EUROPE: HISTORY OF DEPLOYMENT

DYNAMICS OF DEPLOYMENT DURING THE COLD WAR

Tactical nuclear weapons first began to be developed and produced shortly after the establishment of NATO and the start of the Cold War. Thus, by the beginning of the 1950s American troops in Europe were already receiving the first battlefield nuclear weapons. These were originally perceived as just another, though more powerful, type of conventional weapon, and were initially produced as 280 and 203 mm nuclear artillery shells. It was only later that tactical missiles with nuclear warheads made their appearance. In the 1960s, self-propelled 203 and 155 mm howitzers and *Pershing-1* theatre missiles were added to the arsenal. At the same time, aircraft carrying tactical nuclear weapons also arrived on the scene. The beginning of the 1970s saw the maximum build-up of TNW warheads (about 7,000) and types of delivery systems: 155 and 203 mm howitzers, *Honest John*, *Lance*, *Sergeant* and *Pershing-1A* surface-to-surface ballistic missiles, *Nike Hercules* anti-aircraft missiles, bombs, mines and depth charges.¹

In the 1980s, as a result of modernization, some of these armaments were withdrawn from Europe. By the second half of the 1980s, only about 4,800 warheads remained, including 1,075 bombs, 1,660 artillery

¹ V. Belous, "Tactical Weapons Under the New Geopolitical Conditions", *Nuclear Monitoring*, No. 14, 1996, pp. 2-7, and G. L. Schulte, *Dispelling Myths About NATO's Nuclear Posture*, The Euro-Atlantic Foundation, 21 February 1997, <http://www.eaf.org/papers/myths.htm>.

shells, 180 *Pershing* warheads, 895 *Lance* and *Honest John* warheads, 130 cruise missiles, and 870 anti-aircraft missiles and landmines.²

Table 1 shows the evolution of the main non-strategic nuclear-capable delivery systems deployed by the United States and its European NATO allies during the period 1950-1980.³

Table 1: NATO Non-Strategic Nuclear-Capable Delivery Systems, by Type, 1950-1980

Delivery system	Number						
	1950	1955	1960	1965	1970	1975	1980
United States							
Theatre nuclear missiles	0	114	128	252	108	108	108
Quick-reaction alert aircraft	0	12	72	72	72	68	66
Forward-based bombers	45	135	0	0	0	0	0
Carrier-based aircraft	0	0	58	120	120	96	96
Sea-based missiles	0	0	0	40	40	40	40
European allies of the United States							
Theatre nuclear missiles	0	0	72	72	72	72	72
Quick-reaction alert aircraft	0	56	96	110	92	48	34
Carrier-based aircraft	0	0	0	12	12	14	0
Medium- and intermediate-range missiles	0	0	105	0	0	18	18
Bombers	70	122	180	104	86	86	81
Sea-based missiles	0	0	0	0	48	112	128
Total	115	439	611	782	650	662	643

² V. Belous, "Tactical Weapons Under the New Geopolitical Conditions".

³ P. R. Berman and J. C. Baker, *Soviet Strategic Forces: Requirements and Responses*, Washington, D.C.: The Brookings Institution, 1982.

In the mid-1980s, the tactical nuclear weaponry deployed by **France** consisted of tactical aviation and self-propelled tactical missile launchers. France's tactical nuclear-capable aviation comprised 30 *Mirage-3E* and 45 *Jaguar* aircraft capable of carrying an AN-52 atomic bomb, as well as 35 *Super Etendard* ground attack aircraft which could carry two AN-52s each. In 1986, the ASMP air-to-surface missile became operational on the *Super Etendard* and from 1988 on the new *Mirage-2000N*, both of these aircraft being capable of performing strategic as well as tactical missions.⁴ Moreover, the *Mirage-4P* strategic bomber could also be used to carry ASMP missiles. Between 1974 and 1978 the French ground forces were equipped with self-propelled launchers for the *Pluton* tactical missile fitted with an AN-52 warhead. Subsequently, plans were made to replace *Pluton* with the new *Hadès* missile which had greater range and a more powerful TN-90 warhead. The dynamics of France's TNW deployment are illustrated in Table 2.⁵

The **United Kingdom's** tactical nuclear weaponry consisted of the A, B and C versions of the WE-177 bomb carried by land-based tactical bombers and carrier aircraft. In the second half of the 1950s, the tactical bomber force was made up of the *Vulcan* medium bomber and the *Canberra* light tactical bomber, while at the beginning of the 1960s the *Buccaneer*, a low-flying carrier-based ground attack aircraft, was brought into service, to be followed at the beginning of the 1980s by the modern *Tornado* tactical fighter-bomber. In the mid-1970s, the number of WE-

⁴ V. A. Manzhola, *France's Nuclear Weapons and Questions of European Security: Historical Monograph*, Kiev: Vyscha Shkola Press, 1989.

⁵ *The Military Balance 1985-1995*, International Institute of Strategic Studies (IISS), Oxford: Oxford University Press, 1985-1995; V. A. Manzhola, *France's Nuclear Weapons and Questions of European Security: Historical Monograph*; R. A. Faramazyan (ed.), *Militarism: Facts and Figures*, 2nd edition, Moscow: Politizdat, 1985; R. S. Norris and W. M. Arkin, "Nuclear Notebook: French and British Nuclear Forces, 1999", *The Bulletin of Atomic Scientists*, Vol. 55, No. 4, July/August 1999, <http://www.bullatomsci.org/issues/nukenotes/ja99nukenote.html>.

Table 2: French Non-Strategic Nuclear Forces, by Type, 1986-1998

Type	Year introduced	Range (radius of action), km	Weapons x yield, kt (type of battle load)	Number		
				1986	1991	1998
Ground-based missiles						
<i>Pluton</i>	1974	120	1 x 15...25 (AN-52)	70	70	0
<i>Hadès</i> ^a		480	1 x 15...25			0
Land-based aircraft						
<i>Mirage-3E</i>	1964	(850)	1 x 15...25 (AN-52)	30	30	0
<i>Mirage-4P</i>	1986	(930)	1 x 300 (ASMP) ^b	18	18	0
<i>Mirage-2000N</i>	1988	(2,750)	1 x 300 (ASMP)	0	45	45
<i>Jaguar-A</i>	1974	(850)	1, 2 x 15...25 (AN-52)	45	45	0
Carrier-based aircraft						
<i>Super Etendard</i>	1980	(650)	1 x 300 (ASMP) ^c	24	24	24
Total				187	232	69

^a *Hadès* systems were not deployed. The launchers, missiles and TN-90 warheads produced were dismantled.

^b Prior to 1988 the *Mirage 4-P* was equipped with the AN-22 bomb (60 kt).

^c Prior to 1991 the *Super Etendard* was equipped with the AN-52 bomb (25 kt).

177s reached a maximum of around 200, a figure which remained more or less constant up into the 1990s. About 175 of these were versions A and B and about 25 version C, of which there were two modifications: free-fall bombs and depth charges, with a yield of around 10 kt each. The latter were intended for the carrier-based re-equipped *Sea Harrier-FRS1* (from 1980) and anti-submarine helicopters. Until fairly recently, WE-177 bombs were deployed both on United Kingdom territory and in

Germany. The dynamics of the United Kingdom's TNW deployment are illustrated in Table 3.⁶

Table 3: United Kingdom Non-Strategic Nuclear Forces, by Type, 1975-1998

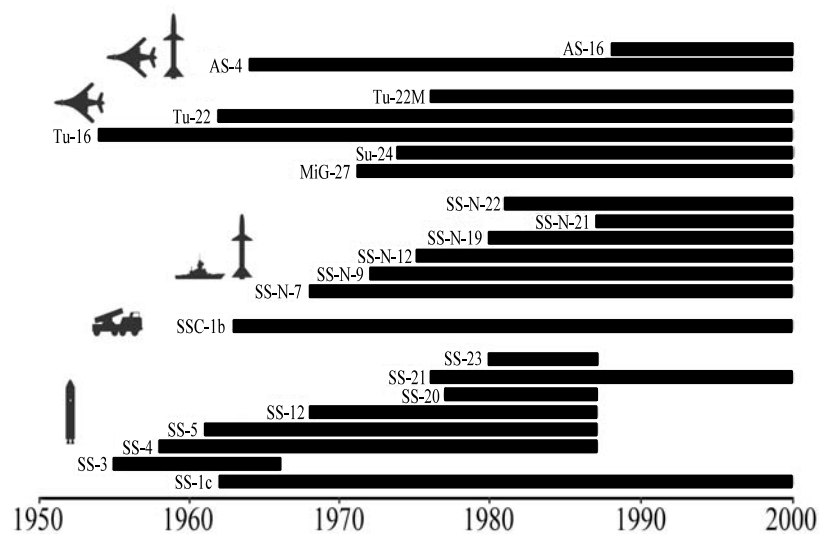
Type	Year introduced	Radius of action, km	Weapons x yield, kt (type of battle load)	Number		
				75	85	98
<i>Tornado</i>	1981	1,390	1, 2 x 200, 400 (WE-177A/B)	75	70	0
<i>Buccaneer</i>	1962, 1972	1,390	1, 2 x 200, 400 (WE-177A/B)	150	150	0
<i>Sea Harrier</i>	1980	460-750	1, 2 x 10 (WE-177C)	25	25	0
Total				250	245	0

The armed forces of the **Soviet Union** received their first tactical nuclear weapons in the mid-1950s. These were the SS-3 tactical missile, bombs for the Tu-16 bomber, nuclear shells for 406-mm self-propelled guns and nuclear mortar bombs for 420-mm mobile mortars. In the early 1960s, the first tactical weapon systems began to be delivered to the armed forces to enhance the firepower of their traditional weaponry. Later, the TNW arsenal was supplemented with intermediate-range missiles, medium-range bombers, short-range theatre missiles, 152, 203 and 240-mm self-propelled nuclear artillery, tactical aircraft and sea-launched missiles.

The dynamics of deployment of the main strike systems of the Soviet non-strategic nuclear forces are reflected in Figure 1.

⁶ *The Military Balance 1985-1995*; R. A. Faramazyan (ed.), *Militarism: Facts and Figures*; R. S. Norris and W. M. Arkin, "Nuclear Notebook: French and British Nuclear Forces, 1995", *Bulletin of Atomic Scientists*, Vol. 51, No. 6, November/December 1995, <http://www.bullatomsci.org/issues/nukenotes/nd95nukenote.html>.

Figure 1: Introduction and Retirement of Main Dual-Capable Strike Systems of the USSR (Russia), 1950-1999



Data on the total number of warheads in the USSR were never made public. Indirect calculations, based for example on the number of launchers, are highly imprecise. Thus, for example, the total number of nuclear warheads in Soviet arsenals at the end of the 1980s has been estimated by different experts at anywhere between 20 and 45 thousand.⁷ Since the number of warheads intended for the strategic nuclear forces is fairly accurately known, the discrepancies must be mainly associated with the calculation of the number of non-strategic and undeployed warheads.

As far as the distribution of tactical nuclear weapons is concerned, by the beginning of the 1990s they were in service with every branch of

⁷ See R. McNamara, *Blundering Into Disaster*, New York: Pantheon Books, 1996, and W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998*, NRDC Nuclear Program, March 1998.

the armed forces and were deployed in all the republics of the USSR, as well as in some Warsaw Treaty Organization (WTO) countries (possibly in Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary and Poland). According to some sources, at the end of the 1980s the following numbers of tactical nuclear warheads (altogether about 18,000) were deployed in the various republics of the Soviet Union: Russia–12,320, Ukraine–2,345, Belarus–1,180, Kazakhstan–330, Lithuania–325, Georgia–320, Estonia–270, Armenia–200, Latvia–185, Turkmenistan–0125, Uzbekistan–105, Moldova–90, Azerbaijan–75, Tajikistan–75, and Kyrgyzstan–75.⁸

OBJECTIVES OF TNW DEPLOYMENT

What were the objectives of the various tactical nuclear weapon deployments? Theoretically, the use of TNWs should be consistent with the strategic concepts adopted at the highest level. In the West, these were mainly determined by the position taken by the United States, which simultaneously determined the strategy of NATO (including the United Kingdom with its own nuclear forces), and, to a lesser extent, by the position taken by France, which pursued a nuclear policy relatively independent of that of NATO and the United States.

During the post-war period, United States military policy underwent several changes. Between 1945 and 1948 the prevailing strategy was that of “pre-emptive war”, the chief determinant of which was the American monopoly over nuclear weapons. At the end of the 1940s, after the Soviet Union had also acquired nuclear weapons, the “pre-emptive war” strategy was replaced by the “containment” strategy (1949-1953). In 1954, following the end of the Korean war, apparently under the influence of its wartime experience, the United States officially proclaimed the strategy of “massive retaliation”, which was sharply criticized since, in the event of its practical implementation, any conflict

⁸ See V. Belous, “Tactical Weapons Under the New Geopolitical Conditions”, and M. Butcher, O. Nassauer and S. Young, “Nuclear Futures: Western European Options for Nuclear Risk Reduction”, BASIC/BITS Research Report 98.6, December 1998, <http://basicint.org/nufu3-0.htm>.

involving the interests of the super-Powers would inevitably lead to total war and their mutual destruction. The Kennedy administration therefore adopted a strategy of “flexible response”, which was later replaced by the strategy of “realistic deterrence”. The Reagan administration, in its turn, developed a new strategy which became known as the strategy of “direct confrontation” and remained the official strategy of the United States and NATO up to the fall of the “iron curtain”. Since the above-mentioned concepts laid stress mainly on strategic offensive weapons, for the purposes of this paper there is no need to analyse them in detail. We shall consider only the principal differences in the concepts relating to the use of TNWs within the framework of these various strategies.

By the time that tactical nuclear weapons first appeared, the concept of “pre-emptive war” had already become irrelevant. The basic idea behind this concept was a sudden, preventive attack against the enemy using all available means for the purpose of obtaining its rapid capitulation on advantageous terms. In other words, the State effecting the first strike deployed, with maximum effectiveness, its entire potential against a State that was not properly prepared either to retaliate or to defend itself. Thus, even if after such a massive blow the enemy was still able to take some retaliatory measures, these would not represent a serious threat for the attacker.⁹ Even if it were assumed that in a “pre-emptive war” it would be possible to make full use of tactical nuclear weapons, they would be assigned only a secondary role as compared with strategic nuclear bombardment. It may also be assumed that the same role would be assigned to TNW under the “massive retaliation” concept proclaimed by Secretary of State John Foster Dulles in the Council on Foreign Relations in New York on 12 January 1954. It was clear from the context that these means of deterrence would be reserved principally for combating local aggression. The concept of massive retaliation would have required the United States to deliver a massive retaliatory strike against the centres of concentration of the military power of the USSR.¹⁰

⁹ B. Brodie, *Strategy in the Missile Age*, RAND Corporation, Princeton: Princeton University Press, 1959.

¹⁰ Ibid.

The later United States nuclear deterrence concepts were based on the idea that it was possible to defend vital interests without the conflict escalating into total war embracing both hemispheres. They were mainly prompted by the desire to prevent, as far as possible, the fighting from spilling over onto the territory of the United States. This led to the notion of “limited nuclear war”, a necessary condition of which was the observance of the principle of “forward basing”. These concepts assigned tactical nuclear weapons a more important, often independent role. Having admitted the possibility of limited war, especially in the European theatre, the United States gave TNWs the task of preventing the anticipated large-scale offensive by Soviet forces bent on invading Western Europe. The military tasks of the principal types of tactical nuclear weapons are summarized in Table 4.

Table 4: TNW Main Operational Missions, by Type

Type	Main operational missions
Sea- and air-launched cruise missiles	Hitting C ³ I objects crucial for the overall course of the enemy's operation
Short-range attack missiles	Hitting the enemy deep in his strategic staging areas; isolating a theatre of operations
Operational and tactical missiles	Hitting rear echelons
Bombs	Hitting the enemy deep in his strategic staging areas; isolating a theatre of operations

It is also important to note that a non-strategic nuclear weapon brought close to the borders of the Soviet Union would have been perfectly capable of carrying out missions of a strategic nature. Thus, in accordance with the “forward basing” principle, in the mid-1980s the United States deployed *Pershing-2* intermediate-range missiles and ground-launched cruise missiles in Western Europe, which blurred the already muddy theoretical distinction between strategic and tactical weapons even further.

Since acquiring nuclear power status in 1960, **France** has regarded its nuclear potential as the foundation of its security and military policy. For a very long time, its nuclear forces were considered to have absolute priority, to the detriment of other aspects of its military strength (economic, socio-political, moral and other factors). Conceptually, atomic weapons were considered to have a “levelling” effect, i.e. an ability to equalize the military and political power of States which differed in potential, size and geographical situation. This has led to the emergence of the French concept of “deterrence of the strong by the weak”.

A logical extension of the policy of non-dependence on the nuclear forces of the United States and NATO is the doctrine of “all-round defence” and the pursuit of a strategy of “global deterrence” using France’s own strategic forces. For a long time, the French rejected the idea of a “flexible response” as unacceptable and maintained that the only suitable response to any form of aggression that exceeded the nuclear threshold was an “immediate massive strike” (“all or nothing”). Accordingly, the mission of the French conventional forces and TNWs was to “test out” the enemy with a view to determining his intentions and aggressiveness and of fixing the moment of his crossing the nuclear threshold. In the mid-1970s there was a shift from a policy of “nuclear isolationism”—which meant that France would participate in possible military operations in Europe only at the sub-nuclear level and would use nuclear weapons solely to defend its own territory, independence and national interests—towards a policy of solidarity with the countries of Western Europe in matters relating to their common security and the concept of an “extended sanctuary”.¹¹ At the same time, there was a move away from the “all or nothing” concept towards a phased process of deterrence and the idea of a “flexible response”. In this context, tactical nuclear weapons and conventional armed forces emerged as important components of the deterrence effect, alongside the strategic factor. TNWs now served as a sort of connecting link between conventional weaponry and the strategic forces.¹²

¹¹ V. A. Manzhola, *France’s Nuclear Weapons and Questions of European Security: Historical Monograph*, Kiev: Vyscha Shkola Press, 1989.

¹² Ibid.

The **United Kingdom** regarded nuclear weapons as more of a political than a military tool. The principal mission of its nuclear forces was to ensure “minimum deterrence” so that political ends could be achieved without nuclear weaponry having to be used. In 1948, the United Kingdom became the first country to allow American nuclear weapons (B-29 bombers) to be stationed on its territory. Since then, the distinguishing feature of the United Kingdom’s nuclear policy has been harmonization with the corresponding changes in United States and NATO policy.

From the time it acquired nuclear weapons (1949) up to the death of Stalin (1953), the **Soviet Union** constructed its strategic concepts on the principles of the pre-nuclear age, basing itself on the experience gained in the Second World War and previous to that. Traditionally, the Russian Empire (and later the Soviet Union), being a large continental country with long borders, had based its defence mainly on the strength of a large army. From the mid-1950s there was a reappraisal, extending over several years, of the traditional view of war. This was prompted by the appearance of long-range nuclear-tipped missiles capable after a short flight of reaching targets anywhere in the world. The result was the adoption of a concept based on the conviction that war between the socialist and capitalist systems was not inevitable, but if war between the opposing coalitions did break out it would inevitably be nuclear and would result in the shattering defeat of the West.¹³ Over the entire period of confrontation, the American idea of limited nuclear war was considered to be implausible. In the age of nuclear weapons and missile technology the only possible war was a general nuclear exchange between the opposing blocs—NATO and the Warsaw Treaty Organization or, in other words, the two political systems. Despite changes in strategic concepts under the influence of improvements in strategic weapons (“retaliatory strike”, “retaliatory-encounter strike”, etc.), the Soviet strategists remained devoted to traditional military thinking whereby victory in war resulted from the physical protection of the country from enemy attack, the decisive defeat of the enemy’s armed forces and the occupation of the enemy’s territory. An important feature of Soviet strategy was the coordinated combined action of the strategic

¹³ P. R. Berman and J. C. Baker, *Soviet Strategic Forces: Requirements and Responses*.

and tactical, nuclear and non-nuclear forces.¹⁴ It was considered evident that military victory could not be achieved by one service alone (not even by the strategic missile forces) but could only be reached as a result of a combined arms effort.¹⁵

TACTICAL NUCLEAR WEAPONS TODAY

In December 1987, the Soviet Union and the United States signed the Treaty on the Elimination of Intermediate-Range and Shorter-Range Missiles (INF). The United States accordingly discarded its *Pershing-2*, BGM-109G and *Pershing-1A* missiles. In 1991, on the initiative of George Bush and Mikhail Gorbachev, all tactical nuclear weapons were removed from the submarines and surface vessels of both countries. Moreover, Bush declared that the United States would unilaterally relocate to its own territory and eliminate all nuclear artillery shells and tactical missile warheads and would also eliminate or remove a significant proportion of the *Tomahawk* cruise missiles and nuclear bombs from ships and aircraft carriers. After all these cutbacks only B-61 bombs for dual-purpose aircraft remain in the American arsenal in Europe.¹⁶ In addition, some of the non-strategic systems permanently based on United States territory, including some 600 B-61 bombs (out of 1,200) and about 160 BGM-109A *Tomahawk* sea-launched cruise missiles with W-80 warheads (out of 320), are available for European missions.¹⁷ The air-launched cruise missiles covered by the Strategic Arms Reduction Treaty (START-1) are also capable of carrying out non-strategic missions. The main types of United States weapons capable of carrying nuclear warheads and their principal characteristics are listed in Table 5.¹⁸

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ V. Belous, "Tactical Weapons Under the New Geopolitical Conditions" and G. L. Schulte, *Dispelling Myths About NATO's Nuclear Posture*.

¹⁷ W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998*.

¹⁸ *The Military Balance 1985-1995*.

Table 5: United States Dual-Capable Systems, by Type

Type	Year introduced	Range (radius of action), km	Max speed, mach	Yield, kt (number of weapons)
Sea-launched cruise missiles				
BGM-109A Tomahawk	1983	2,500	0.7	200
Land-based aircraft				
FB-111A Aardvark	1969	(1,890)	2.2	(6)
F-111D/E/F/G Aardvark	1967	(1,750)	2.5	(3)
F-4D/E Phantom II	1969	(840)	2.4	(3)
F-15E Eagle	1988	(1,800)	2.5	(5)
F-16 Falcon	1979	(930)	2.0	(2)
Carrier-based aircraft				
A-6E Intruder	1963	(1,250)	0.9	(3)
A-7E Corsair II ^a	1966	(880)	0.9	(4)
F/A-18 Hornet	1982	(850)	2.2	(2)
Air-launched cruise missiles				
AGM-86B ALCM	1982	2,400	0.7	170-200
AGM-129A ACM	1991	3,000	n.k.	170-200

^a The A-7E is used by Greece as a dual-capable land-based aircraft.

A characteristic feature of the American nuclear presence in Europe is the permanent basing of B-61 bombs in special protected vaults directly beneath the hangar floor (Weapons Storage and Security Systems—WS3), presumably with one bomb in each vault. The distribution of these

bombs, of which, according to most sources, there are not more than 200, is shown in Table 6.¹⁹

*Table 6: United States Tactical Nuclear Forces in Europe,
by Location, 1985-1998*

Location	Number of warheads			Number of vaults	Bases
	1985	1992	1998	1998	
Germany	3396	325	45	87	Büchel, Memmingen, Noervenich, Ramstein (US base), Spangdahlem (US base)
United Kingdom	1268	300	30	33	Lakenheath (US base)
Turkey	489	150	15	37	Balikesir, Incirlik (US base), Murted
Italy	549	150	30	29	Aviano (US base), Ghedi-Torre
Greece	164	25	10	6	Araxos
Netherlands	81	10	10	11	Volkel
Belgium	25	10	10	11	Kleine-Brogel
Total	5972	970	150^a	214	

^a According to some sources, the total number of warheads at the end of 1998 was as much as 180.

France has also considerably reduced its tactical nuclear weapons arsenal. On 11 September 1991, the French President François

¹⁹ W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998*; W. M. Arkin, R. S. Norris and J. Handler, "Nuclear Notebook: US Nuclear Weapons Locations, 1995"; M. Butcher, O. Nassauer and S. Young, "Nuclear Futures: Western European Options for Nuclear Risk Reduction".

Mitterrand announced that France's AN-52 free-fall bombs, which had been carried at various times by the *Mirage-3E*, the *Jaguar A* and the *Super Etendard*, had been taken out of service. The main type of French tactical weapon remains the ASMP missile with a TN-81 warhead (around 100 missiles and 80 warheads have been produced), which is intended to be carried by approximately 45 *Mirage-2000N* and about 24 *Super Etendard* carrier-based aircraft (during the period 2002-2005 their nuclear role will be transferred to the *Rafale*). About 30 of the *Hadès* missiles produced and their TN-90 nuclear warheads have been dismantled.

All French TNWs are stationed on national territory. The tactical bomber force is based at Luxeuil and Istres. The carrier-based aircraft fly from the aircraft carrier *Foch*. When the new aircraft carrier *Charles de Gaulle* enters service it will take over the *Foch*'s nuclear functions. Thus, at present, France's tactical nuclear weaponry consists of about 80 ASMP missiles with TN-81 nuclear warheads carried by *Mirage-2000N* aircraft and carrier-based *Super Etendards*. It is planned that by about 2006 the ASMP will be replaced by the ASMP-plus version, which has a greater range.²⁰

In 1992, the **United Kingdom** declared that it would reduce the number of its free-fall nuclear bombs by more than half. The intention was to withdraw and completely dismantle all WE-177C type warheads, while leaving a maximum of 100 WE-177A/B warheads. In 1994, the *Buccaneer* aircraft was taken out of service. Thus, of the United Kingdom's tactical nuclear warhead delivery systems only the *Tornado* remained in use. On 4 April 1995, the Government declared that the remaining WE-177s would be withdrawn at the end of 1998. In accordance with its revised nuclear policy, the United Kingdom has given up tactical nuclear weapons, whose functions have been partially transferred to the *Trident-2*.

Given the above, there are at present two types of tactical nuclear weapons deployed by NATO members in Europe: three modifications of the American B-61 bomb (Mod-3, -4 and -10, the latter being a modernized W-85 *Pershing-2* warhead) and the French ASMP air-to-

²⁰ W. M. Arkin, R. S. Norris and J. Handler, "Nuclear Notebook: British and French Nuclear Forces, 1999".

surface missile. The B-61 bombs have four different yields: B-61-3—0.3 kt; 1.5 kt; 60 kt and 170 kt; B-61-4—0.3 kt; 1.5 kt; 10 kt and 45 kt; B-61-10—0.3 kt; 5 kt; 10 kt and 80 kt. The ASMP has a yield of 300 kt.

The B-61 bombs are intended for use by the A-7E, F-15E, F-16 and *Tornado* tactical aircraft. Suitable infrastructure is available at 16 bases in seven European countries, but nuclear weapons are currently deployed only at 10 of them. Five of these bases belong to the United States Air Force (two bases in Germany, one base each in the United Kingdom, Italy and Turkey), three belong to Germany and two to the United Kingdom (one on national territory and one in Germany), two to Turkey and one each to the Netherlands, Belgium, Italy and Greece. Apart from the United Kingdom, the other six countries are non-nuclear. Under special agreements with the United States, these countries assign from their armed forces tactical aviation units that are ready and certified to carry out possible missions with American nuclear weapons.²¹ All the French weapons are stationed on French territory and are not available under the extended nuclear deterrence procedures. Further details on the basing of NATO member tactical nuclear weapons are provided in Table 7.²²

²¹ M. Butcher, N. Butler and O Meier, *NATO Nuclear Sharing and the NPT—Questions to be Answered*, BASIC-BITS-CESD-ASPR Research Note 97.3, June 1997, <http://www.basicint.org/natonpt.htm> and <http://www.basicint.org/natonpt-a.htm>, and H. M. Kristensen and J. Handler, "The 520 Forgotten Bombs: How US and British Nuclear Weapons in Europe Undermine the Non-Proliferation Treaty", Green Peace International, October 1995, <http://www.greenpeace.org/~usa/reports/nuclear/520.html>.

²² M. Butcher, O. Nassauer and S. Young, "Nuclear Futures: Western European Options for Nuclear Risk Reduction", and W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998*; W. M. Arkin, R. S. Norris and J. Handler, "Nuclear Notebook: US Nuclear Weapon Locations, 1995".

Table 7: United States and French Tactical Nuclear Forces in Europe, by Site, 1998

Site	Aircraft	Owner of base	Weapons	Owner of weapons	Number	
					Weapons	Vaults
Ramstein (Germany)	F-16 ^a	USA	B-61	USA	45	54
Spangdahlem (Germany)						none
Büchel (Germany)	<i>Tornado-GR.1</i>	Germany	B-61	USA		11
Memmingen (Germany)	<i>Tornado-GR.1</i>	Germany	B-61	USA	none ^b	11
Noervenich (Germany)	<i>Tornado-GR.1</i>	Germany	B-61	USA		11
Brüggen (Germany)	<i>Tornado-GR.1</i>	UK	WE-177	UK	none ^c	10
Aviano (Italy)	F-16 ^a	USA	B-61	USA	30	18
Ghedi-Torre (Italy)	<i>Tornado-GR.1</i>	Italy	B-61	USA		11
Incirlik (Turkey)	F-16 ^a	USA	B-61	USA	15	25
Balikesir (Turkey)	F-16	Turkey	B-61	USA	none ^b	6
Murted (Turkey)	F-16	Turkey	B-61	USA		6
Lakenheath (UK)	F-15E	USA	B-61	USA	30	33
Marham (UK)	<i>Tornado-GR.1</i>	UK		UK	none ^c	24
Klein-Brogel (Belgium)	F-16	Belgium	B-61	USA	10	11
Volkel (Netherlands)	F-16	Netherlands	B-61	USA	10	11
Araxos (Greece)	A-7E	Greece	B-61	USA	10	6

Site	Aircraft	Owner of base	Weapons	Owner of weapons	Number	
					Weapons	Vaults
Luxeuil (France)	<i>Mirage-2000N</i>	France	ASMP	France	80	none
Istres (France)	<i>Mirage-2000N</i>	France	ASMP	France		
Landivisiau (French Navy)	<i>Super Etendard</i>	France	ASMP	France		
Total					230^d	248

^a Aircraft are rotated from bases in the United States.

^b *Memmingen*, *Noervenich*, *Balikesir* and *Muried* sites are in caretaker status.

^c All WE-177 bombs were dismantled in 1998. The sites in *Marham* and *Brüggen* are to be deactivated by 2002.

^d According to some sources, there was a total of 180 B-61s in Europe at the end of 1998, in which case the total number of United States and French weapons was 260.

On the other side of the former “iron curtain” the situation developed as follows. Responding to George Bush’s initiative, Mikhail Gorbachev announced plans for a radical reduction in the number of Soviet TNWs. Subsequently, these plans were developed in Boris Yeltsin’s declaration “On Russian Policy in the Field of Arms Limitation and Reduction” issued on 29 January 1992 in which he stated that Russia had stopped producing artillery shells and warheads for ground-launched missiles and that all stocks of these munitions would be destroyed. One third of the warheads removed from surface vessels and multi-purpose submarines would be eliminated, together with half the aviation munitions and warheads for anti-aircraft missiles.²³

²³ V. Belous, “Tactical Weapons Under the New Geopolitical Conditions” and W. M. Arkin, R. S. Norris and J. Handler, “Nuclear Notebook: Estimated Russian Stockpile, 1996”, *The Bulletin of Atomic Scientists*, Vol. 52, No. 5, September/October 1996, <http://www.bullatomsci.org/issues/nukenotes/so96nukenote.html>.

The qualitative and quantitative composition of the Russian nuclear forces is now considerably different from the peak levels reached in 1987. At some point the reduction in the number of TNWs, begun after the signing of the INF Treaty, became a sort of competition. Moreover, the break-up of the Soviet Union led to the removal of nuclear weapons from the territory of the new independent States and allied countries. Many of the weapons removed were destroyed or placed in long-term storage.

Nevertheless, Russia's nuclear potential remains very considerable. According to Jane's International Group, it consists of approximately 6,600 strategic warheads and 4,000 TNWs. Another 10,000 to 12,500 warheads remain undeployed. The main Russian dual-capable systems are the Su-24MK *Fencer* and Tu-22M3 *Backfire* bombers (air-to-surface missiles and free-fall bombs) and various types of sea-launched anti-ship missiles (SS-N-9 *Siren*, SS-N-12 *Sandbox*, SS-N-19 *Shipwreck*, SS-N-21 *Samson* and SS-N-22 *Sunburn*).

It is anticipated that in the near future the following new systems will enter into service:

- The *Iskander* operational and tactical missile system;
- The *Yakhont* universal anti-ship system;
- The Su-37 multi-purpose aircraft.

The tactical and technical characteristics of these weapons systems correspond to those of dual-capable delivery vehicles. The traditions of the Soviet armed forces and the thinking of Russia's current military and political leadership also suggest that the nuclear hardware required to equip these systems either already exists or else will be developed.²⁴

The Russian armed forces also retain other types of nuclear weaponry. An anti-missile defence system consisting of 100 nuclear-tipped missile interceptors has been deployed around Moscow. It is also possible that the destruction of the systems whose elimination was

²⁴ National Security Concept of the Russian Federation, *Independent Military Review* 1999, 20-26 November 1999, and Draft Military Doctrine of the Russian Federation, *Independent Military Review* 1999, 23-29 November 1999.

announced in the early 1990s (152, 203 and 240 mm systems, anti-aircraft missiles, anti-ship missiles and depth charges, torpedoes and mines) has not yet been completed.

Public data on the size and composition of Russia's current TNW arsenal are contradictory and disparate. It is assumed that about 190 Tu22M3 bombers (120 for the Air Force and 70 for the Navy) and about 350 Su-24MK bombers (280 for the Air Force and 70 for the Navy) have been earmarked for nuclear missions. About 2,000 nuclear weapon units (1,600 for the Air Force and 400 for the Navy) are available for use with these delivery systems. Moreover, the Navy has at its disposal some 500 nuclear-capable cruise missiles and about 300 anti-ship nuclear weapon units. It is also believed that Russia has 100 missile defence and around 1,100 air defence missiles armed with nuclear warheads.²⁵ Most of Russia's non-strategic nuclear weaponry is based in the European part of the country. Some characteristics of the principal Soviet and new Russian dual-capable tactical systems are given in Table 8.²⁶

The condition of Russia's ground-based dual-capable tactical missiles deserves notice. Officially, the declaration made by the Russian President in 1992 concerning the intention to stop producing and eliminate the existing warheads for these missiles remains in effect. Nevertheless, judging from public sources, Russia is seriously reviewing the composition of its tactical nuclear forces. This may lead to the deployment of some of the new *Iskander* missiles in a nuclear version.

²⁵ W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998*.

²⁶ *The Military Balance 1985-1995*.

Table 8: Russian Dual-Capable Systems, by Type

Type	Year introduced	Range (radius of action), km	Max speed, mach	Yield, kt (number of weapons)
Ground-based missiles				
SS-21 <i>Scarab</i>	1978	120	n.k.	100
SS-1c <i>Scud-D</i>	1965	300	n.k.	kt range
<i>Iskander</i> ^a		280	n.k.	n.k.
Anti-ship missiles				
SS-N-9 <i>Siren</i>	1969	100	0.9	200
SS-N-12 <i>Sandbox</i>	1973	550	2.5	350
SS-N-19 <i>Shipwreck</i>	1980	550	2.6	500
SS-N-21 <i>Samson</i>	1987	3,000	0.7	200
SS-N-22 <i>Sunburn</i>	1981	400	2.7	200
<i>Yakhont</i> ^a		300	2.5	n.k.
Land-based aircraft				
Su-24MK <i>Fencer</i>	1985	(1,100)	1.3	(2)
Tu-22M3 <i>Backfire</i>	1981	(2,500)	2.0	(4)
Su-37 ^b		n.k.	2.0	n.k.
Air-to-surface missiles				
AS-4 <i>Kitchen</i>	1962	300	3.3	1,000
AS-16 <i>Kickback</i>	1989	200	5.0	350
AS-6 <i>Kingfish</i>	1977	300	3.0	350-1,000
AS-15 <i>Kent</i>	1984	1,600	0.6	250

^a *Iskander* and *Yakhont* are new systems that have not yet been deployed. Their characteristics are given for non-nuclear export versions.

^b The Su-37 is a new aircraft that has not yet been deployed.

The Soviet Union operated a highly reliable and secure nuclear weapon storage system. The storage sites—more than 500 of them—were

spread over the entire country and some allied countries. Russia inherited this system and cut it back considerably. Its nuclear weapons are now concentrated in 90 storage sites of four different types, namely:

- National arsenals located near the places where warheads are built or destroyed. They belong to Minatom or Ministry of Defence (MOD) 12th Main Directorate (12th GUMO) and contain most of the weapons that are to be eliminated or that have not been deployed;
- Central storage sites or “Objects S” supervised by the MOD 12th Main Directorate;
- Supplementary central storage sites for the various arms of the services;
- Operational stations and storage sites in places where strategic nuclear forces are based.

Information on the stationing of tactical nuclear weapons in the European part of Russia is provided in Table 9.²⁷

It should be noted that the nuclear weapons complex Russia has inherited is excessive and extremely expensive. Insufficient funds are available to maintain it and carry out the planned cutbacks. The same can be said of the nuclear weapons storage system. The storage facilities are ageing and the personnel recruitment system has deteriorated. Moreover, although the Russian military have often proclaimed the nuclear weapon handling systems to be 100 per cent safe and reliable, reports of incidents involving radioactive materials periodically appear in the press.

²⁷ W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998*.

Table 9: Non-Strategic Nuclear Weapons in European Part of the Russian Federation, by Military District, 1998

Military District	Number^a
Northern Military District	1,300
Moscow Military District	700
North Caucasus Military District	250
Volga Military District	200
Ural Military District	200
Total	3,650

^a Deployed warheads only.

DEVELOPMENT OF CONCEPTS OF USE OF TNWs

In the last decade, the policies of the nuclear-weapon States involved in Europe with respect to tactical nuclear weapons, have taken different directions.

In the **United States**, the break-up of the Warsaw Treaty Organization (1989) and, especially the Gulf War (1991) led to the emergence of the idea of directing nuclear weapons mainly against “Third World” countries armed with weapons of mass destruction (WMD) and to the taking of the first steps towards putting this idea into practice.²⁸ The underlying considerations were set out in March 1990 in a Joint Chiefs of Staff (JCS) report on the military analysis of the situation, in May 1990 in a statement by the head of the Strategic Air Command (SAC) in the United States Congress, in June 1990 in a report to Congress by the Secretary of Defence, etc. After the end of the Gulf War, the United States Secretary of State for Defence signed a new directive, the Nuclear

²⁸ H. M. Kristensen and J. Handler, *Changing Targets: Nuclear Doctrine from the Cold War to the Third World*, Green Peace International, 1 March 1995, <http://www.greenpeace.org/~usa/reports/nuclear/changing.html>.

Weapons Employment Policy, which called for the drawing up of operational plans for the employment of nuclear weapons against hostile countries developing or capable of deploying weapons of mass destruction. In October 1991, the Deterrence Study Group formed by the SAC commander submitted a report in which it argued that the mission of the nuclear forces should be extended. The report also concluded that the technology for developing very low yield nuclear warheads was now available.

The United States Navy has expressed special interest in operations to counteract the proliferation of weapons of mass destruction. In June 1992, the Navy concluded its study known as STRATPLAN 2010, which determined the requirements for low-yield nuclear weapons in future wars. It was suggested that low-yield nuclear weapons offer a broader range of possibilities of employment and would therefore contribute to more reliable nuclear deterrence within the new world order. The Navy's main tasks include fleet strike operations in support of landings. In these operations the use of low-yield nuclear warheads delivered by cruise and ballistic missiles should not be excluded. It was accordingly proposed that a new generation of missiles—the Common Delivery Vehicle—should be developed. These universal missiles, with different sizes and throw-weights, should be capable of being launched from aircraft, submarines and surface vessels.

STRATPLAN 2010 envisioned concepts of nuclear weapons use that took into account the possibility of reducing the political repercussions and environmental pollution by conducting limited nuclear strikes. These concepts were best served by very low-yield warheads which on exploding produced a minimum of radioactive fallout, residual radiation and other collateral damage. So-called “clean nukes” would include the following types of nuclear munitions:

- “Micro-nukes” with a yield of around 0.01 kt (theatre offence weapons with limited collateral damage, intended for hitting underground structures of the command post type and destroying runways);
- “Mini-nukes” with a yield of around 0.1 kt (a theatre ballistic missile defence weapon intended for intercepting warheads with nuclear, chemical and biological payloads);

- “Tiny-nukes” with a yield of around 1 kt (theatre offence weapons employed in military operations to prevent the use of nuclear weapons by the enemy, as well as to destroy units of up to company strength).²⁹

A campaign to obtain funding for the development of low-yield nuclear warheads for use outside the context of nuclear super-Power confrontation began in 1989. In 1992, discussions about the need for new types of nuclear weapon led to programmes for the development of new nuclear munitions. The Director of the Los Alamos National Laboratory told members of Congress in closed session that his laboratory was participating in work on a new generation of special-purpose weapons. In this connection, it is well known that the “mini-nuke” concept was proposed precisely by the Los Alamos National Laboratory in 1991. In 1993, the low-yield nuclear weapon concept gained the support of the JCS. In the new combined nuclear operations policy it was noted that the use of low-yield nuclear weapons in a retaliatory strike that did not lead to the destabilization of the conflict was a useful alternative for the American high command. However, following the appearance in 1992-1993 of reports that the Energy Department was financing the development of low-yield warheads, at the end of 1993 the United States Congress vetoed all low-yield nuclear weapon research and development. This was justified on military as well as political grounds. Low-yield warheads seemed a dubious alternative to a high-precision non-nuclear weapon.

The rejection of low-yield nuclear weapons research and development by the United States Congress, however, did not mean the end of the reorientation of American nuclear policies. Confirmation of the change in American nuclear priorities came with the entry into service of a new bomb, the B-61-11 earth penetrator, intended for striking heavily protected underground targets. This project was not as ambitious as the plans to build low-yield warheads, since it only involved the modernization of the previously developed B-61-7. Nevertheless, it was a step in the same direction, namely the transformation of nuclear

²⁹ D. Evstafev and E. Kuznetsov, “A New Development in US Nuclear Strategy: Regional Nuclear Deterrence?”, *Nuclear Monitoring*, No. 11, 1995, pp. 18-21.

weapons into a practical means of waging war. The new bomb has been tested with both the B-2 and the F-16, but there are no signs of its being assigned for NATO purposes or being based in Europe.

France has traditionally based its defence policy on the principle of nuclear deterrence. Nuclear deterrence is intended to rule out the outbreak of any large-scale armed conflict in the future. Air-to-surface tactical nuclear missiles would be used to give a potential aggressor final notice that the course of the conflict had changed and that, if its operations continued, the use of strategic nuclear weapons would become inevitable.³⁰ In 1993, the Defence Minister said that France would adhere to the doctrine of non-use and that a rush to include low-yield nuclear weapons in the range of options available for delivering limited strikes would be a huge mistake. A high-precision non-nuclear weapon would be more suitable for this purpose. In 1994, the French President categorically rejected the idea of creating the means of delivering surgical nuclear strikes: nuclear weapons should be used to protect France's vital interests and should not play the part of a "nuclear gun". According to current French military doctrine, there are three different hypothetical situations in which France would be justified in using nuclear weapons. The invasion of Western Europe by a State or coalition possessing considerable quantities of nuclear and conventional weapons is one of the situations envisaged. The other two presuppose a threat to French overseas territories and a threat to France from a State on the periphery of Europe with moderate military potential in the form of modern conventional forces, submarines and/or chemical weapons. In this connection, it was proposed to give the deterrent forces a more flexible component. Strategic submarines were suitable only for global missions. Regional tasks could be assigned to long-range aviation systems.

France has recently made several attempts to give substance to the idea of nuclear deterrence by European forces. Since the other European countries have not expressed interest in replacing the existing NATO nuclear guarantee mechanisms with new ones, the idea has not

³⁰ H. M. Kristensen and J. Handler, *Changing Targets: Nuclear Doctrine from the Cold War to the Third World*, Green Peace International, 1 March 1995, <http://www.greenpeace.org/~usa/reports/nuclear/changing.html>.

progressed any further.³¹ Nevertheless, these French initiatives indicate the European orientation of its “nuclear isolationism”, as may the decision to destroy the new *Hadès* missiles and their warheads. The “continental” nature of this weapon was an obstacle to European defence integration. As distinct from *Hadès*, the ASMP air-launched missiles are a serious rival for the American B-61 bomb in terms of fulfilling the task of extended nuclear deterrence in Europe.

In accordance with its revised defence plans, the **United Kingdom** has abandoned tactical nuclear weapons. The British have come to the conclusion that there are no technical reasons why the *Trident* should not perform sub-strategic functions, which reduce to the firing of a single mono-bloc missile at a target whose coordinates would be transmitted to a submarine on patrol. The modernization of the *Trident* missile into a sub-strategic weapon would not involve a great deal of expense, there would be no need for nuclear testing, and it would only be necessary to develop additional software for the missile control systems.

Like other nuclear States, in the 1990s, **Russia** was forced to review certain aspects of its deterrence concept. Up to then, the chief means of deterring a potential enemy had been the strategic nuclear forces. However, as a result of the increased threat of regional conflicts, tactical nuclear weapons have acquired ever greater significance for Russia. In the view of most military specialists, deterrence can be effective only if the use of nuclear weapons under certain specified conditions appears perfectly realistic.³² In the case of regional conflicts, strategic nuclear weapons are unable to meet this requirement, whereas tactical weapons have real deterrent potential. In shifting its attention to the regional level, Russia’s thinking is similar to that of the Americans. However, the main difference is that whereas the target of American deterrence is a potential object of regional policy, the target of Russian deterrence is American policy itself in regions which are sensitive for Russia.

³¹ M. Butcher, O. Nassauer and S. Young, “Nuclear Futures: Western European Options for Nuclear Risk Reduction”.

³² V. Belous, “Tactical Weapons Under the New Geopolitical Conditions”.

RENUNCIATION OF NUCLEAR WEAPONS: THE HISTORY OF UKRAINE

At the time of the Soviet Union, the expression “nuclear missile shield of the Fatherland” was in constant use, often accompanied by the epithet “mighty” or “indestructible”, which was no exaggeration. In fact, there was reason to be proud. Thanks to the efforts of the entire country, the entire people, a powerful, highly sophisticated and very reliable complex encompassing the whole life cycle of nuclear weaponry—development, production, operation and dismantling—had been put in place and was operating smoothly. The Ukrainian republic made a considerable contribution to the creation of this complex, especially to such components as the strategic nuclear forces.³³ In Ukraine, and specifically in Dnipropetrovsk, since the 1950s the world’s largest missile plant had been producing and developing the intercontinental ballistic missiles that formed the basis of the Strategic Missile Forces. The principal characteristics of these “products” are listed in Table 10.³⁴ It is worth noting the high scientific and technical quality of these “Ukrainian” Intercontinental Ballistic Missiles (ICBMs). They were the first in the world to incorporate such design solutions as mortar launch, an autonomous control system, high-boiling fuel components, etc. The excellent military and technical characteristics of these missiles were confirmed by hundreds of training and test launches and many years of operational service.

³³ S. N. Konyukhov and A. I. Shevtsov, “Strategic Missile Complexes KB ‘Yuzhnoe’—Basis of the RVSN of the Soviet Union”, *Space Technology: Missiles*, Dnipropetrovsk: KB Yuzhnoe, 1994.

³⁴ A. V. Karpenko, *Russian Missiles 1943-1993: A Handbook*, St Petersburg: Pika, 1993.

Table 10: ICBMs developed and produced in Ukraine, by Type

Type	Year introduced	Range, km	Warheads x yield, mt
SS-3 <i>Shyster</i>	1955	1,200	n.k.
SS-4 <i>Sandal</i>	1964	2,000	1x1.0
SS-5 <i>Skean</i>	1961	4,500	1x1.0
SS-7 <i>Saddler</i>	1962	13,000	1x5.0
SS-9 <i>Scarp</i>	1967	12,000	1x20 or 3x4-5
SS-17 <i>Spanker</i>	1975	10,000	4x0.4 or 4x0.75
SS-18 <i>Satan</i>	1975	11,000	10x0.5
SS-24 <i>Scalpel</i>	1987	10,000	10x0.5

Of course, these ICBMs were only nominally Ukrainian. They were produced in close collaboration with enterprises and organizations located not only in Ukraine but also in other Soviet republics, notably Russia. In their turn, components and entire stages of these missiles were used in the missile systems of other manufacturers, for example, in the well-known ballistic missiles deployed on *Typhoon* class submarines.

In addition to military missiles, Dnipropetrovsk developed and produced *Cosmos*, *Cyclone* and *Zenith* space rockets. These rockets were used, and are still being used, for launching various military and civilian satellites.

At the beginning of the 1990s, a considerable part of the Soviet Union's nuclear potential was deployed on Ukrainian soil (approximately 1,500 strategic warheads and several thousand TNWs). Following the break-up of the USSR, Ukraine found itself as the third nuclear Power in the world. In accordance with the principle adopted by the leaders of the Commonwealth of Independent States (CIS) for dividing up the Soviet Union's assets, Ukraine became the outright owner of all these weapons. However, the nuclear arsenal command and control system remained strictly centralized. Ukraine could not use these weapons at its own

discretion, just as it could not prevent the execution of an order given by Moscow. Moreover, as a result of unilateral action taken by Russia the relatively mobile tactical nuclear weapons were removed from Ukrainian territory soon after the break-up of the Soviet Union.

It should be noted that the first official document of the newly independent Ukraine—the Declaration on Sovereignty—proclaimed the intention to abide by three basic non-nuclear principles, namely, “... *not to accept, not to produce and not to acquire nuclear weapons*”. Despite some doubts and hesitations, the movement towards non-nuclear status and the desire to get rid of its inherited nuclear weapons have been and remain a Ukrainian policy imperative. However, the path to nuclear disarmament has been far from smooth.³⁵

Following the signature of the Belovezh Agreements, the fate of the USSR’s nuclear inheritance remained undecided. The Strategic Nuclear Forces of the Commonwealth, which could scarcely be divided up between “national headquarters”, were hastily created or, more precisely, their creation was announced. Operational control over these forces remained with Moscow, but it was proposed that the heads of the new independent States should, in some way or other, have access to the “nuclear button”. As the centrifugal processes increasingly gathered strength, the non-viability of this scheme became ever more apparent.

The situation became further complicated as a result of the signing of the Lisbon Protocol to the START-1 on 23 May 1992. This Treaty provided for drastic mutual reductions in the strategic nuclear forces of the United States and the Soviet Union. After the break-up of the USSR, the legal situation became somewhat uncertain. In the Lisbon Protocol, Russia, Ukraine, Kazakhstan and Belarus were officially recognized as the nuclear heirs of the USSR and the legal assigns of the START-1 Treaty. Only Russia remained a fully-fledged nuclear-weapon State, while Ukraine, Kazakhstan and Belarus undertook to accede to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) as non-nuclear-weapon States. At the same time, Ukraine, being still the owner of strategic

³⁵ V. Gorbulin and A. Shevtsov, “The Way of Ukraine to Non-Nuclear Status: An Important Step Towards a Non-Nuclear World”, *Pugwash Newsletter*, Vol. 33, No. 3, January 1996.

nuclear weapons, even though not having control over them, could not properly be regarded as a non-nuclear-weapon State.³⁶

A letter from the President of Ukraine, Leonid Kravchuk, to the President of the United States, George Bush, dated 7 May 1992, became an addendum to the Lisbon Protocol. Ukraine undertook to destroy all the nuclear weapons on its soil within a seven-year period. The destruction was to take place under international control, thus preventing the possible reuse of components in nuclear weapons production.

The START-1 Treaty and the Lisbon Protocol were ratified on 18 November 1993. The Resolution of the Supreme Council of Ukraine adopted on this occasion confirmed the intention to pursue a course of nuclear disarmament and to respect the three non-nuclear principles. However, the Supreme Council also considered that the implementation of article V, which called on Ukraine as a non-nuclear-weapon State to accede to the NPT as soon as possible, was not a binding obligation. At the same time, it disavowed the letter from President Kravchuk to President Bush insofar as it concerned the destruction of all nuclear weapons on Ukrainian soil.³⁷ The Supreme Council declared that “... *all the equipment of the strategic and tactical nuclear forces stationed on Ukrainian territory, including nuclear warheads, is the State property of Ukraine*”. The Resolution also contained a number of conditions whose fulfilment was linked with further phased nuclear disarmament. The most important of these were the obtaining of international guarantees of security and compensation for the cost of the weapons destroyed.

³⁶ This was not the first instance of legal uncertainty with respect to the non-nuclear status of Ukraine. In 1968, when the NPT was open for signature by all members of the United Nations, it was decided by the Soviet Government that Ukraine which, although a member of the United Nations, was a component part of the USSR should not accede to the Treaty. The accession of Ukraine to the NPT as a non-nuclear State would have been unacceptable to the USSR and its accession as a nuclear State unacceptable to the United States.

³⁷ “... 36 per cent of delivery vehicles and 42 per cent of warheads are subject to destruction. This does not exclude the possibility of destroying an additional number of vehicles and warheads in accordance with procedures which may be determined by Ukraine” (Resolution of the Supreme Council, ..., para. 6).

The ratification of the START-1 Treaty in this form met with a mixed response from the international community. There was a rash of articles on the nuclear ambitions of Ukraine, which some considered to have abandoned the previously proclaimed principles. The criticism from Russia expressed in particular in a Declaration of the Government of the Russian Federation, was especially severe. The flames were fanned by certain radical extremists openly in favour of a “great nuclear Ukraine”. In fact, no practical steps that would have made it possible to speak of a Ukrainian nuclear programme were ever taken. The text of the Resolution reflected the doubts and fears which at the time were felt by many in Ukraine’s ruling circles.³⁸ This was a compromise attributable to a whole series of factors including, in particular, the following:

- The removal of nuclear warheads from Ukrainian soil was a complex technical task that would take at least 24 months;
- Relations between Russia and Ukraine were far from serene; Russia’s unilateral removal of TNWs from Ukrainian territory did not help to strengthen mutual trust;
- The nuclear weapons stationed on Ukrainian territory were of considerable material value and their components could have been recycled for use in the national economy;
- The expectations of broad economic and political support for an independent Ukraine from the international community were not realized; the nuclear weapons were an excellent means of attracting the world’s attention to the problems of Ukraine;
- The fact that the processes of nation-building and territorial demarcation in the CIS were incomplete stimulated a desire to prolong the process of parting with such a weighty attribute of statehood as nuclear weapons.

³⁸ This did not signify a change in the negative views of the leadership of Ukraine on nuclear weapons. On 13 September 1993, the International Court of Justice (ICJ) turned to Ukraine as a member of the World Health Organization with a request concerning its position on the legality of the threat or use of nuclear force. The answer, delivered by the Ministry of Foreign Affairs on 16 May 1994 was that such a threat and such use would be a violation of international law, a more rigorous position than that taken in ICJ’s final Advisory Opinion in 1996.

Subsequently, the Ukrainian version of the path to non-nuclear status was finally defined. Its principal stages included:

- Obtaining guarantees of security from the nuclear Powers;
- Solving the question of compensation for the cost of the nuclear weapons, the procedure for destroying them, etc.;
- Accession to the NPT as a non-nuclear-weapon State on whose territory nuclear weapons, controlled by another State, are temporarily stationed;
- Exchange of START-1 Treaty ratification instruments and final removal of nuclear weapons from Ukrainian territory.

In general, Ukraine's requirements were accepted by the international community. On 14 January 1994, in a trilateral declaration by the Presidents of Ukraine, the United States and Russia it was stated that as soon as the START-1 Treaty entered into force and Ukraine acceded to the NPT as a State not possessing nuclear weapons, the United States and Russia would give the necessary security assurances. Moreover, the United States undertook to assist Ukraine, financially and technically, with the destruction of nuclear weapons. It was decided to offer Ukraine compensation for the fissile materials removed in the form of fuel assemblies for nuclear power plants. Ukraine undertook to deactivate its ICBMs within ten months by removing the nuclear warheads and sending them to Russia. The missiles themselves would have to be destroyed during the seven-year period of operation of the START-1 Treaty.

The result of these actions of the President and Government of Ukraine was the adoption by the Supreme Council on 3 February 1994 of a resolution removing the restrictions of the previous resolution on article V of the Lisbon Protocol and instructing the Government of Ukraine to proceed with the exchange of ratification instruments. The next logical step was for Ukraine to accede to the NPT as a non-nuclear-weapon State. In the law adopted on 16 November 1994 it was again pointed out that the situation existing as a result of the break-up of the USSR was not covered by the provisions of the NPT. The inheritance of part of the USSR's nuclear potential without control over it and the status of a non-nuclear-weapon State were not mutually inconsistent. The entry

into force of the law was linked with Ukraine's obtaining security guarantees from the nuclear Powers.

These guarantees were given by the heads of the United States, Russia and the United Kingdom on 5 December 1994. In the quadripartite Memorandum adopted in Budapest the three nuclear Powers undertook:

- To respect the sovereignty and territorial integrity of Ukraine;
- To abstain from the use of force or threat of force against Ukraine;
- To refrain from applying measures designed to exert economic pressure on Ukraine; and
- To give Ukraine "positive" and "negative" guarantees as a country having acceded to the NPT as a non-nuclear-weapon State.

In essence, these guarantees mean that the great Powers will not use nuclear weapons against non-nuclear-weapon States except in the event of such a State entering into an alliance with a nuclear Power. In the event of an attack on a non-nuclear-weapon State involving nuclear weapons or the threat of such an attack, the great Powers will take prompt action to obtain the assistance of the United Nations Security Council for the victim of the aggression.

Guarantees similar to those offered to Ukraine were received by Kazakhstan and Belarus. By the beginning of 1996, all nuclear weapons had been removed from Ukrainian soil and the process of destroying the ICBMs and missile silos had begun. The United States is providing substantial financial and technical assistance for this process under the Nunn-Lugar programme. The history of the implementation of the provisions of the START-1 Treaty is interesting and instructive in its own right. The technical, political and organizational complexity of the problems to be solved led to the Treaty becoming something more than a simple international agreement. It was provided with its own working body—the Joint Compliance and Implementation Commission (JCIC)—and acquired certain features characteristic of security systems.

The successful solution of the problem of the denuclearization of Ukraine led to significant improvements in the European and world political climates. Ukraine became a fully-fledged member of the

international community and improved its foreign policy image. As a result of its abandonment of nuclear weapons, its security, paradoxical though this may sound, actually increased. Ukraine has carried out a unique experiment which could also be repeated by other countries.

TACTICAL NUCLEAR WEAPONS IN THE NEW EUROPEAN SECURITY SYSTEM: TO BE OR NOT TO BE?

Much of what is known about nuclear deterrence consists of the purely theoretical constructions which have become an inseparable part of the military and political thinking and behaviour of many countries around the world. The desire to ensure security with the aid of nuclear weapons has led to their being built and deployed in such quantities as to be capable of destroying civilization many times over. In the 1970s and 1980s, masses of people in the United States and the USSR devoted all their efforts and talents to the preparation of secret plans for the production of inconceivable numbers of nuclear weapons. Today, a new generation of statesmen is having to decide what to do with these enormous stockpiles. All this is reminiscent of how children left unsupervised, playing in their fantasy world, can turn the whole house upside down, after which the adults arrive and muttering "What next?" start tidying everything up.

Today, it is already difficult to imagine that there is anyone, even among the "hawks", who still considers it useful to preserve arsenals crammed with thousands of weapons and plan for their use—the wave of insanity associated with the nuclear arms race has receded. However, something remains that compels many very influential politicians and military men to consider total nuclear disarmament a dangerous illusion.

THE LIBERAL AND PRAGMATIC APPROACHES TO NUCLEAR DISARMAMENT

Despite the huge remaining arsenals of nuclear weapons, it is possible to speak of an essentially new situation. Whereas ten years ago the main problem was to escape from the nuclear arms race, now the fundamental question is whether the world is ready to give up nuclear weapons completely. The situation is confused. Thousands of nuclear

warheads are still in a state of operational readiness, but the chief obstacle to further disarmament is not quantitative but qualitative in nature. What is there to prevent a progressive standing down of nuclear warheads and their being placed in storage for eventual destruction? Why instead of a slip of the tongue by the Russian President being turned into a disarmament initiative was there such a rush to deny what he had said?³⁹ He only proposed something which had already proved its effectiveness. Ukraine's experience has shown that there are no serious technical or insuperable economic obstacles, particularly for developed countries, to the large-scale decommissioning of nuclear weapons. The answer, however paradoxical, is that in this way it would be possible unintentionally to achieve the objectives proclaimed in the NPT, namely, general nuclear disarmament. Obviously, the nuclear-weapon countries are still not prepared for this.

The problem is more complicated than it may seem. New "liberals" calling for the immediate achievement of zero levels of nuclear weapons have appeared alongside new "pragmatists" who regard this as a dangerous illusion and the two groups are almost as far apart as the "doves" and the "hawks" of twenty years ago. As a result, a nuclear-free world is as far off as ever and fresh forces, often with no connection with the orthodoxies of the Cold War (although they too cannot be ruled out), are standing in the way. And all this against a background of huge nuclear arsenals left over from the period of confrontation. In other words, the old problem—what to do with surplus nuclear weapons—has still not been solved, while a new one—how many of them should we keep and do we need them at all—has arisen.

It is important to note that the catastrophic nature of the consequences of nuclear war is no longer a weighty argument. The dispute between "liberals" and "pragmatists" is a question not of thousands of nuclear warheads but of hundreds or even tens. And it is already difficult to claim that the use of, say, ten nuclear warheads would have catastrophic consequences. When all is said and done, neither the nuclear bombardment of Japan nor the 466 atmospheric nuclear

³⁹ See speech made by Boris Yeltsin in Paris at a press conference in May 1997 following the signing of the Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation.

explosions during the twenty-year period from 1945 to 1965 (on average 23 explosions per year), including the more than 50-megaton atmospheric explosion over Novaya Zemlya in 1961,⁴⁰ nor the atmospheric explosions in China, which continued until 1980, appear to have led to world catastrophe. It seems that the main issue that divides the “liberals” and “pragmatists” is whether it is possible to *restrain* the “nuclear genie” within a strict framework of minimum nuclear deterrence. This holds especially true for tactical nuclear weapons in Europe.

Minimum levels of nuclear weapons in the hands of a minimum number of countries is an idea that can prove very tempting for candidates for elected office. The idea is not new, but the first attempt, made half a century ago, was a failure. There were too many wanting to be exceptions at any price—to avert catastrophe it became necessary to conclude treaties and make promises about eliminating nuclear weapons. However, it cannot be categorically asserted that it is fundamentally impossible to achieve nuclear exclusivity under the new conditions, in the present context of cooperative security. Just as it cannot be categorically asserted that indefinite nuclear exclusivity at minimum nuclear weapon levels of, say, 100 warheads in the reliable hands of some guarantor of peace or even of the world community would be fatal. In the last analysis, maybe the “pragmatists” are right and the world around us would not actually be any safer if there were no nuclear weapons, as many “liberals” believe.

In general, the nuclear disarmament process has entered the stage in which the fundamental issues are qualitative rather than quantitative, that is, what matters is no longer whether 500 or 200 tactical nuclear warheads are deployed in the Europe of the twenty-first century, but whether any should be deployed at all.

⁴⁰ L. R. Sykes and D. M. Davis, “The Yield of Soviet Strategic Weapons”, *Scientific American*, January 1987, pp. 21-29.

OBLIGATIONS UNDER THE NPT AND THEIR FULFILMENT

The principal obligations of countries with respect to nuclear non-proliferation and disarmament are set out in the Treaty on the Non-Proliferation of Nuclear Weapons. This treaty was an acceptable compromise for many of the interested parties. This means that many of its provisions were deliberately formulated so as to allow for flexibility in their interpretation. Generally speaking, what is important is not so much the actual text as the understanding of the provisions of the document which each specific party to the Treaty took as its point of departure in signing and ratifying it. As practical experience has shown, even after the indefinite extension of the Treaty in 1995 more than one such interpretation still exists. We will begin with the main articles.

Treaty on the Non-Proliferation of Nuclear Weapons

1 July 1968

Article I

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons of explosive devices directly, or indirectly; ...

Article II

Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; ...

Article VII

Nothing in this Treaty affects the right of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories.

According to the NPT, thus, it is not possible to transfer nuclear weapons or control over such weapons directly or indirectly. However, the deployment of nuclear weapons on the territory of non-nuclear-weapon States is not a prohibited activity. This follows from the provisions of article VII concerning the right of States, including non-nuclear-weapon States, to assure “*the total absence*” of nuclear weapons in their territory, which must be understood to mean that “*the partial absence*” of nuclear

weapons in the territory of non-nuclear-weapon States is allowed under articles I and II of the NPT.

Since the text does not define what is meant by “to transfer”, each new party (and this could mean India, Pakistan, Israel, Cuba or any newly formed State) must interpret the term itself, in a way that would suit the other parties. Whereas in the case of “direct” transfer of nuclear weapons or control over them the question could be decided on the basis of common sense and the existing precedents, in the case of “indirect” transfer it is a matter not just of the reticence but of the ambiguity of the language.

In fact, exactly what is meant by the requirement “not to transfer indirectly”—the process of indirect transfer or the result of indirect transfer? The second interpretation is less binding than the first. For example, if State **A** through international structures were to make it possible for State **B** independently to dispose of nuclear devices, this would be a violation on any interpretation. However, if the nuclear State were not to surrender national control, but made preparations for the possible transfer of that control, including technical training, military hardware and the establishment of approval procedures, the situation would be more debatable.

While the NPT was being prepared and concluded, the United States and the Soviet Union reached a mutual understanding that NATO and WTO nuclear arrangements, under which nuclear weapons are not transferred under the national control of non-nuclear members of military alliances or multilateral forces, were not inconsistent with the Treaty.⁴¹ However, this understanding does not impose any obligations on those parties to the Treaty which do not agree with it.

Differences on this point appear to be emerging in the various positions taken with respect to the objectives of the NPT. According to the pragmatists, the purpose of the Treaty is to prevent nuclear war. Accordingly, if the division of nuclear responsibility between nuclear and non-nuclear States favours this outcome, then it is also consistent with the

⁴¹ R. M. Timerbaev, *Russia and Nuclear Non-Proliferation: 1945-1968*, Moscow: Nauka, 1999.

objectives of the NPT. In the view of the liberals, the aim of the NPT is general and complete nuclear disarmament. Accordingly, any activity, including the division of nuclear responsibility, that prevents the attainment of that objective goes against the Treaty. We will consider what justification there is for each of these positions.

Treaty on the Non-Proliferation of Nuclear Weapons

1 June 1968

Preamble:

The States concluding this Treaty...

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples (first paragraph),

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war (second paragraph),

...

Since the Treaty begins precisely with a reminder of the need to prevent nuclear war, it might be assumed that it is precisely this that forms the basis of the entire document, particularly as not a single article, including article VI, calls for general and complete nuclear disarmament, only the pursuit of negotiations towards this end.

The following also tends to support this notion of the purpose of the NPT. When the Treaty was being ratified in the United States Senate, the State Department provided a commentary which included a document in question-and-answer form originally prepared for the NATO allies and later supplied to the USSR and other countries.⁴²

⁴² Ibid. and cited in M. Butcher, N. Butler and O. Meier, *NATO Nuclear Sharing and the NPT—Questions to be Answered*.

Questions on the Draft Non-Proliferation Treaty asked by United States Allies together with Answers given by the United States

...

Question: Does the draft treaty prohibit arrangements for the deployment of nuclear weapons owned and controlled by the United States within the territory of non-nuclear NATO members?

Answer: It does not deal with arrangements for deployment of nuclear weapons within allied territory as these do not involve any transfer of nuclear weapons or control over them unless and until a decision were made to go to war, at which time the treaty would no longer be controlling.

Since the Soviet Union, like other countries, did not express disagreement with this particular item in the commentary, it may be assumed to reflect the view prevailing at that time. This is perfectly consistent with the interpretation of the Treaty as intended to prevent war rather than to impose disarmament, that is if war were to break out—and, as follows from the quotation, not necessarily nuclear war—the Treaty would become meaningless and lose its binding force. Accordingly, *preparing for a situation in which the Treaty is inoperative is not a violation.*

However, the world is changing and the prevailing view is changing with it. Let us now consider the other position which emphasizes the disarmament aspects of the NPT.

Treaty on the Non-Proliferation of Nuclear Weapons

1 June 1968

Preamble:

The States concluding this Treaty ...

...

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament (eighth paragraph),

...

Desiring to further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of

nuclear weapons and the means of their delivery pursuant to a treaty on general and complete disarmament under strict and effective international control (eleventh paragraph),

...

Have agreed as follows:

Article VI

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

An analysis of this text leads to the following conclusions:

- The NPT distinguishes between the concepts of “nuclear disarmament” and “general and complete disarmament”. As follows from the eighth paragraph of the Preamble to the Treaty, nuclear disarmament implies a process, but not the attainment of zero levels, as distinct from general and complete disarmament, the meaning of which is unambiguously defined in the eleventh paragraph of the Preamble;
- The NPT does not link the requirement concerning nuclear disarmament with the fulfilment of any preconditions, whereas, according to the Treaty, general and complete disarmament will be possible only after the easing of international tension and the strengthening of trust between States;
- Article VI of the NPT requires the pursuit of negotiations on measures relating to cessation of the nuclear arms race at an early date, but is not so categorical with respect to nuclear disarmament and general and complete disarmament.⁴³

Thus, States are obliged:

1. To cease the nuclear arms race as soon as possible (this has now been done);

⁴³ G. Bunn, R. Timerbaev and J. Leonard, *Nuclear Disarmament: How Much Have the Five Nuclear Powers Promised in the Non-Proliferation Treaty?* , Washington, D.C.: Lawyers Alliance for World Security, May 1994.

2. To pursue, in good faith, negotiations on nuclear disarmament, which does not imply the attainment of zero levels, regardless of the existing international situation;
3. To pursue, in good faith, negotiations on general and complete disarmament, which implies the attainment of zero levels, if the necessary conditions are met (the easing of international tension and the strengthening of trust between States).

In addition to these direct obligations upon States parties to the NPT, there are also indirect obligations which are not directly expressed in its provisions but follow from them.

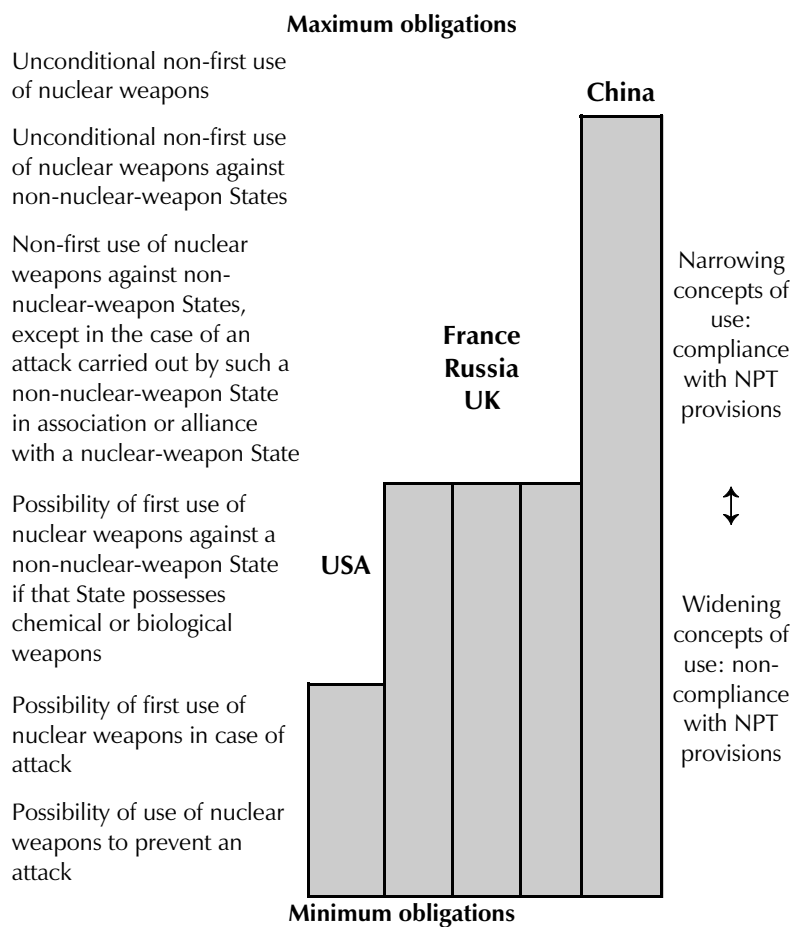
The NPT requires movement in good faith towards general and complete nuclear disarmament. This requirement is as indefinite with respect to time as it is definite with respect to procedures. The fact is that the process of achieving zero levels must pass through binding stages. Any retreat or tendency to retreat from or even simply halt the process would be a violation of the obligations assumed under the NPT.

The declared concepts of use of nuclear weapons (Figure 2) could serve as an accurate indicator of progress with nuclear disarmament.

It is important to note that it is not the concepts of use of nuclear weapons in themselves but the dynamics of their acceptance which indicate observance of the nuclear disarmament provisions of the NPT. If a State were to step back from previously accepted more rigorous obligations or insisted on keeping its hands as free as possible, whereas other countries had accepted more rigorous obligations, this would be a clear violation of the commitment to move in good faith towards a world free of nuclear weapons.

In the light of the above, if we venture to judge who is closer to the truth—the “pragmatists” or the “liberals”—we might draw an analogy with the followers of the Old and New Testaments. The conflict lies not in the rejection of the old but in the acceptance of the new. The “liberals” consider the “pragmatic” approach to be unsuited to the new conditions, while the “pragmatists” regard the liberal innovations as a vain illusion. The best judge of this, of course, will be time; however, it should not be forgotten that the 1995 Conference, which extended the

Figure 2: Indicators of compliance with NPT provisions concerning general and complete disarmament



NPT indefinitely, started out from an interpretation essentially different from that agreed upon by the depositaries in preparing the Treaty. This is apparent, for example, from the Conference's Decision 2 concerning the principles and objectives of the Treaty. In this document there is only one indirect reference to the need to prevent nuclear war, whereas the disarmament aspect of the NPT is further emphasized:

Principles and objectives for Nuclear Non-Proliferation and Disarmament Adopted by the 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (Decision 2)

...

Reiterating the ultimate goals of the complete elimination of nuclear weapons ...

The Conference ... adopts the following principles and objectives:

...

4(c). The determined pursuit by the nuclear-weapon States of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons ...

**LEGALITY OF THE USE OF NUCLEAR WEAPONS BY A STATE
IN ARMED CONFLICT**

On 8 July 1996, the International Court of Justice, having considered a request from the United Nations General Assembly concerning the legality of the threat or use of nuclear weapons, handed down the following Advisory Opinion:⁴⁴

- (a) There is in neither customary nor conventional international law any specific authorization of the threat or use of nuclear weapons (unanimously).
- (b) There is in neither customary nor conventional international law any comprehensive and universal prohibition of the threat or use of nuclear weapons as such (by eleven votes to three).
- (c) A threat or use of force by means of nuclear weapons that is contrary to Article 2, paragraph 4 of the United Nations Charter (requirement to refrain from the use of force or threat of force) and that fails to meet all the requirements of Article 51 (self-defence implies the adequacy of the measures) is unlawful (unanimously).

⁴⁴ See "Legality of the Threat or Use of Nuclear Weapons", International Court of Justice Advisory Opinion of 8 July 1996, <http://www.icj-cij.org/icjwww/idecisions/isummaries/iunanaummary960708.htm>.

- (d) The threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict, particularly those of the principles and rules of international humanitarian law, as well as with specific obligations under treaties and other undertakings which expressly deal with nuclear weapons (unanimously).
- (e) The threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict and in particular the principles and rules of humanitarian law.
However, in view of the current state of international law, the Court could not conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake (by seven votes to seven).
- (f) There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects (unanimously).

From this we may conclude that the international legislation governing the right of States to wage war does not distinguish between nuclear and conventional weapons, that is to say that the provisions of international humanitarian law relating to the regulation of the means of waging war do not include bans on nuclear weapons similar to those on other types of weapons of mass destruction.

The principal additional limitation with regard to the threat or use of nuclear as compared with conventional weapons is the fact that it would most probably lead to violations of human rights in conflict situations. However, even taking into account the importance of respecting the 1949 Geneva Conventions, as demonstrated by the recent Kosovo crisis, it cannot be said definitively that a State is prohibited from consciously infringing humanitarian law, by using nuclear weapons in a conflict, when its supreme national interests are threatened —this, at least, is what follows from subparagraph (e) of the above-mentioned Advisory Opinion.

Nevertheless, if their supreme national interests are not threatened, States possessing nuclear weapons should be aware that, in general, the threat or use of nuclear force would be contrary to humanitarian law.

The main conclusion to be drawn from the opinion given by the International Court may well be as follows: if modern international law is regarded as a form of human knowledge of the world around us—correct or incorrect, then from this knowledge it follows that *in certain circumstances nuclear weapons may be a rational and lawful means of waging war*. This is the crux of the problem of achieving zero levels.

THE PROBLEM OF QUALITATIVE IMPROVEMENTS IN NUCLEAR WEAPONS

It has previously been noted that extending the range of situations in which nuclear weapons might be used would be a violation of the obligation to work in good faith towards general and complete nuclear disarmament. Qualitative improvements in nuclear weapons might lead to such an extension, the question of third-generation nuclear weapons being of particular importance.

When in the 1980s the first publications on these weapons began to appear, everything seemed to centre on the question of selective action. The design of nuclear devices that did selective damage would have radically changed the situation, since simply extending to the new devices the same principles as operate in relation to weapons of mass destruction would have been problematic. However, in practice, the situation turned out to be much simpler, although perhaps the classification experts would not agree. The realization of ambitious projects still appears to be a long way off. On the other hand, there are two far from new types of nuclear warheads which, though generally speaking, they cannot be regarded as selective action weapons, nevertheless have a number of important special characteristics.⁴⁵ Both these types have already been deployed in Europe and both, for different reasons, have been taken out of service.

⁴⁵ If low-yield nuclear warheads are taken into account, there are three such types. However, bearing in mind the work that remains to be done, it would be premature to regard these warheads as a real alternative to high-precision conventional weapons.

The first of these is the neutron weapon. Neutron weapons are selective in the sense that they kill people and damage certain components of military technology, but do not lead to mass destruction. This may be a sort of selectivity, but it is not spatial selectivity, that is every living thing within a fairly wide area is indiscriminately destroyed (mass destruction).

The second type—earth penetrators—consists of nuclear warheads capable of withstanding impact of collision with the ground and of exploding only after penetrating the earth. This type of weapon is selective in the sense that it destroys objects outside the zone of human habitation. However, if a penetrator exploded in the air or on the surface, it would act as a classical weapon of mass destruction. Of course, the penetrator could carry a directional warhead, but current events oblige us to focus on other aspects.

Whereas it can be said of the neutron bomb that almost everybody has forgotten about it, with the penetrator everything is much more complicated.⁴⁶ The idea of hitting underground targets did not die with the *Pershing-2*; on the contrary, it is still thriving. This is because the United States has come up against a new challenge: potentially unfriendly countries have built subterranean facilities completely protected from conventional and also from many types of nuclear weapons. The United States is actively seeking a solution to this problem.

In 1997, the United States Air Force began to equip itself with a new type of B-61-series nuclear bomb, namely, the B-61-11 earth penetrator. The situation is interesting in that this bomb was certified on the basis of hydrodynamic testing and computer modelling, without any underground nuclear testing. This was possible because the earth penetrator was built by equipping the well-proven B-61-7 bomb with means of penetrating deep into the ground.

⁴⁶ In 1999, India forced the world to think again about the neutron bomb by announcing that it was able to build one. However, it seems to have been more a question of demonstrating its prowess, since building a neutron bomb presupposes a high degree of mastery of thermonuclear explosion technology.

The bringing into service of a new nuclear bomb after the signing of the Comprehensive Test Ban Treaty (CTBT), is an event of the utmost importance. If even the militarily most powerful country, the United States, considers it impossible to get by without nuclear weapons for striking non-nuclear targets, what implications does this hold for the rest?

More problems associated with the qualitative improvement of nuclear weapons were raised when details of the United States Department of Energy Stockpile Stewardship and Management Program designed for test ban conditions became accessible to a wider public.⁴⁷ The existence of this programme in itself should not give cause for suspicion since the safety of the remaining nuclear arsenals is a natural concern of all nuclear States. And since, to all appearances, the CTBT will enter into force long before zero nuclear weapon levels are achieved, new ways of guaranteeing the safety of the remaining stockpiles must be found. Questions arise where improvements in nuclear weapons and the reversibility of the disarmament process are concerned.

The CTBT is specially mentioned in the NPT and in the decisions of the Conference on the extension of that Treaty and its rapid entry into force is of the utmost importance for the entire non-proliferation and arms control regime. It is worth discussing two of its basic principles: protecting the environment and restraining (but not forbidding) the development and qualitative improvement of nuclear weapons. A treaty with these objectives is very difficult to infringe other than by carrying out nuclear tests. Therefore, returning to the problem of programmes similar to the above-mentioned plan of the United States Department of Energy, it would be more appropriate to address the need to comply with the NPT rather than the CTBT.

Thus, what aspects of the American Stewardship Program and its possible counterparts in other nuclear countries might be contrary to the obligations assumed? There could be two. Firstly, the development of technologies that would enable nuclear devices to be improved and

⁴⁷ C. E. Paine and M. G. McKenzie, *End Run: The US Government's Plan for Designing Nuclear Weapons and Simulating Nuclear Explosions Under the Comprehensive Test Ban Treaty* Natural Resource Defense Council (NRDC), August 1997, <http://www.nrdc.org/nuclear/endrun/erinx.asp>.

certified without nuclear testing and, secondly, the maintenance of technical readiness to resume testing, if necessary. Judging from the published excerpts from the Stewardship Program, it incorporates both these elements; moreover, it assigns the government the task of breeding a new generation of scientists and engineers trained in the full range of technologies needed to develop nuclear weapons under nuclear test ban conditions.

This activity is not in violation of any formal commitments, at least as long as it is accompanied by nuclear disarmament. However, it is clearly incompatible with the idea of reducing nuclear weapon levels to zero.

In general, the entry into service of the B-61-11 bomb and the emergence of the United States Department of Energy Stewardship Program confirm that banning nuclear testing may make it more difficult to achieve qualitative improvements in nuclear weapons but cannot stop the process completely. Consequently, the CTBT does not make the achievement of zero nuclear weapon levels inevitable.

THE PROBLEMS OF NATO'S NUCLEAR ARRANGEMENTS AND THE POSSIBLE NUCLEAR STATUS OF THE EUROPEAN UNION

Many of the problems relating to the presence of nuclear weapons in Europe are connected with the integration processes taking place on the European continent. These problems arose before the conclusion of the NPT and survived the end of the Cold War. The establishment of the European Union (EU) and NATO expansion have given them a new urgency, especially in the context of the exacerbation of differences with respect to the non-proliferation regime. The debate centres on NATO's nuclear arrangements providing for the involvement of non-nuclear States in certain aspects of nuclear activity and on the possible nuclear status of the European Union in the event of a European Defence and Security Identity being successfully developed.

NATO's nuclear arrangements are linked with the mechanism of security guarantees provided by the United States for its European allies. During the Cold War, this mechanism was based on the "escalation

ladder”, which meant that a threat to Western Europe automatically became a threat to the United States. The logic of this “ladder” was as follows:

1. An armed attack on Western Europe would be repelled, in the first instance, by the conventional NATO forces;
2. If the attack could not be repelled by conventional means, the American nuclear battlefield weapons deployed in Europe (TNWs) would be used;
3. The aggressor, having been hit with nuclear weapons, would either lose his advantage or be forced to use nuclear weapons against American installations and troops, perhaps even on the territory of the United States itself. This would inevitably mean a United States retaliatory strike with strategic nuclear weapons;
4. Knowing that the strategic arms of the United States would be automatically engaged in the defence of Western Europe, any potential enemy would refrain from launching an attack.

The reliability of this strategy was often criticized, in particular by a number of authoritative American politicians.⁴⁸ The thrust of the criticism was that there was no guarantee that tactical nuclear weapons would be a strong enough link in this chain. Firstly, in the event of aggression by a powerful enemy possessing a sufficient nuclear potential, the United States might “waver” and attempt to “sit it out” beyond the ocean, without making any use of battlefield nuclear weapons.⁴⁹ Secondly, if a nuclear strike was in fact launched against a superior enemy, there could be no certainty that the aggressor would hit back specifically at United States targets, thus obliging the United States to retaliate. The aggressor could launch a retaliatory nuclear strike exclusively against Western Europe, destroying it and making its conquest inevitable, in the reasonable expectation that in these circumstances the United States might decide not to initiate an exchange of strategic nuclear strikes, even when faced with the prospect of its allies being overrun.

⁴⁸ R. MacNamara, *Blundering into Disaster*, New York: Pantheon Books, 1996.

⁴⁹ Admittedly, the advocates of the “escalation ladder” had a serious objection to this argument, namely, that without the presence of battlefield nuclear weapons in Europe, the United States would be even more sorely tempted to “sit it out”.

The Warsaw Treaty Organization has since been dissolved, the Soviet Union has broken up, and it is already very difficult to establish precisely what deterred the Eastern bloc from invading Western Europe or whether it ever had that intention. However, there is no denying the coexistence of two facts: there was an “escalation ladder” and there was no Soviet invasion of Western Europe.

Today, it can be said with some confidence that, to a considerable extent, the mechanism of United States guarantees for a widening circle of European allies continues to be based on the “escalation ladder” described, admittedly adapted to the new lower levels of confrontation. The principles of the modern United States nuclear guarantee mechanism have been laid down in a number of basic documents and, in particular, in NATO’s new Strategic Concept:

The Alliance’s Strategic Concept

23-24 April 1999

...

63. A credible Alliance nuclear posture and the demonstration of Alliance solidarity and common commitment to war prevention continue to require widespread participation by European Allies involved in collective defence planning in nuclear roles, in peacetime basing of nuclear forces on their territory and in command, control and consultation arrangements. Nuclear forces based in Europe and committed to NATO provide an essential political and military link between the European and the North American members of the Alliance. The Alliance will therefore maintain adequate nuclear forces in Europe. These forces need to have the necessary characteristics and appropriate flexibility and survivability to be perceived as a credible and effective element of the Allies’ strategy in preventing war. They will be maintained at the minimum level sufficient to preserve peace and stability.

...

Clearly, there can be no questioning NATO’s resolve to preserve a United States nuclear presence in Europe. At the same time, it cannot be overlooked that to a considerable extent the role of United States nuclear weapons in Europe is a political one, namely, as a symbol of the American commitment to European security. In addition, these weapons have another function, i.e. to ensure transatlantic solidarity by

maintaining active mechanisms enabling NATO's European members (nuclear and non-nuclear) to participate in the joint nuclear planning structures (including the development of operational plans and the training of personnel), while NATO members are directly prohibited from participating in regional agreements that run contrary to NATO objectives and, hence, the alliance's nuclear policy principles:⁵⁰

The North Atlantic Treaty

4 April 1949

Article 8

Each Party declares that none of the international engagements now in force between it and any other of the Parties or any third State is in conflict with the provisions of this Treaty, and undertakes not to enter into any international engagement in conflict with this Treaty.

We will now examine precisely what it is in NATO's nuclear activities that is provoking criticism in many countries, especially prior to the conference to consider NPT 2000.

Among the procedures mentioned in the NATO Strategic Concept are consultations via the Nuclear Planning Group and Agreements for Cooperation for Mutual Defence Purposes between the United States and Belgium, Germany, Greece, Italy, the Netherlands and Turkey. These agreements provide, firstly, for pilots from these countries to receive training in delivering United States nuclear warheads, secondly, for aircraft from these countries to be certified for the delivery of American tactical nuclear weapons, and, thirdly, for these countries to have negative control (right of veto on use) over the nuclear weapons deployed on their territory.⁵¹ This is much more than the deployment of nuclear weapons on the territory of non-nuclear-weapon States allowed by the

⁵⁰ However, it is not forbidden to make individual commitments, not secured by multilateral treaties, including commitments relating to nuclear status.

⁵¹ See M. Butcher, O. Nassauer and S. Young, "Nuclear Futures: Western European Options for Nuclear Risk Reduction"; M. Butcher, N. Butler and O Meier, *NATO Nuclear Sharing and the NPT—Questions to be Answered*; and H. M. Kristensen and J. Handler, "The 520 Forgotten Bombs: How US and British Nuclear Weapons in Europe Undermine the Non-Proliferation Treaty".

NPT. Nevertheless, the United States does not consider that NATO's procedures infringe the NPT. The reasoning is apparently as follows: it is not so much the text of the NPT itself that is important as the accepted interpretation of it. Since the NATO procedures were established before the NPT was signed and the United States declared at the time of signing that it interpreted the provisions of the NPT as not affecting its military cooperation with its allies and as there were no objections raised at the time, NATO's nuclear arrangements remained lawful even after the signature of the NPT. Moreover, WTO had similar procedures. The existence or non-existence of a Cold War does not have any legal effect on the NPT and therefore NATO's nuclear activities are still and will remain lawful.⁵² In this connection, it is also important to note that during the preparation of the Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation, despite all the ideological strains, Russia did not make a fuss about the "dubiousness" of NATO's nuclear arrangements. The objections were invariably expressed in another way, namely, as the non-acceptance of an eastward advance of NATO's nuclear infrastructure. Thus, at the time Russian diplomacy (after taking over from Soviet diplomacy, which had been among the "founding fathers" of the NPT) shared the United States approach to the problem of participation of non-nuclear-weapon States in the military activity of their nuclear allies.

Nevertheless, another view of the problem is also justified. Conferences to consider the operation of the NPT are also held in order to determine whether "*the purposes of the Preamble and the provisions of the Treaty*" are being realized (NPT, Article VIII, paragraph 3). If during the course of the conference a group of countries concludes that NATO procedures are not consistent with the purposes or provisions of the NPT, the opinion of that group will have at least the same force as the opinion of any other group, for example, the NATO member countries. If the view that the NATO nuclear arrangements violate the NPT came to predominate, then those procedures would at the very least be called into question.

⁵² It should be noted that treating the end of the Cold War as an event that has no effect on the NPT is somewhat dubious, since it is directly related to "*the easing of international tension and the strengthening of trust between States*", a condition specifically mentioned in the text of the NPT.

The objectives and principles on the basis of which the 1995 Conference extended the Treaty indefinitely point unambiguously to the disarmament aspect of the NPT, including the need to achieve zero levels of nuclear weapons (Decision 2). This means that until the objectives of the Treaty are achieved, it will remain binding, even in the event of war. NATO's nuclear arrangements concern the preparations for a transfer of control over nuclear weapons or the nuclear weapons themselves to non-nuclear countries before zero levels are achieved. This means preparing for a possible infringement of articles I and II of the NPT while the Treaty is still in effect. In other words, since 1995, NATO's nuclear arrangements are no longer a form of preparation for the Treaty's losing its legal force. It is now a question of *preparing for a possible violation of the NPT*. Obviously, it is not possible, at one and the same time, to prepare for a possible violation of the Treaty and work in good faith to achieve its objectives. Consequently, the inconsistency of NATO's nuclear arrangements with the objectives and principles of the NPT may be considered to be an established fact.

Nevertheless, it cannot be said that NATO's nuclear arrangements in themselves infringe articles I and II of the Treaty. The existing mechanisms of interaction between NATO's nuclear and non-nuclear members do not lead to control over nuclear weapons being transferred to the national control of non-nuclear States or international coalitions. NATO's nuclear arrangements would be illegal if the ban on the indirect transfer of control over nuclear weapons were interpreted more narrowly, that is, as banning the partial transfer of control. At present, to assert that in itself the phrase "*not to transfer indirectly*" implies "*not to transfer partially*" would be to seriously strain the meaning of the words. Until another interpretation is agreed, NATO cannot be accused of violating articles I and II.

NATO is trying to preserve the principles of its nuclear activities, though many question the legality of this. The situation is further complicated by NATO's expansion. This process, while maintaining the existing NATO nuclear guarantee mechanisms, involves the admission of new non-nuclear-weapon countries to NATO activities. This seems illegal to many countries which, though far off, are important for Europe. Clearly, the problem cannot be solved on a regional basis. There cannot be two types of non-nuclear NATO members, i.e. those admitted to the joint nuclear activities and those not so admitted, otherwise the entire

new architecture of European security would be damaged. On the other hand, the general non-proliferation regime cannot be allowed to be undermined (in the name of the security of that same Europe). Thus, we are seeing the appearance of a very real “escalation ladder” in terms of the strain on the non-proliferation regime, namely, the acceptance into NATO of new members leading to the exacerbation of the general non-proliferation situation and thence to nuclear threats to Europe from new enemies having nothing to do with Soviet hegemonism. It follows that the only way in which this problem can be solved is by modernizing NATO’s nuclear activities.

Another group of potential problems is associated with the development of the concept of a European identity in the field of security and defence. These problems, like the problem of NATO’s nuclear arrangements, were being considered even before the conclusion of the NPT, but were never felt to be as pressing as the latter. There are two different approaches to this question. One of these is expressed in the above-mentioned commentary by the United States State Department:

Questions on the Draft Non-Proliferation Treaty asked by United States Allies together with Answers given by the United States

...

Question: Would the draft prohibit the unification of Europe if a nuclear weapon State was one of the constituent States?

Answer: It does not deal with the problem of European unity, and would not bar succession by a new federated European State to the nuclear status of one of its former components ...

In connection with this answer, the Soviet Union declared that it did not consider itself associated with any unilateral interpretation of the Treaty. However, since a federated European State was a remote prospect, it did not raise any substantial objections.⁵³ Later, many non-party States, particularly India, drew attention to the negative consequences of a geographical enlargement of the aggregate territory of the nuclear States while their number remained the same or, in the case

⁵³ R. M. Timerbaev, *Russia and Nuclear Non-Proliferation: 1945-1968*.

of a united Europe, even decreased, considering this to be a form of proliferation.

FACTORS DETERMINING THE FUTURE OF THE TACTICAL NUCLEAR WEAPONS IN EUROPE

If at some point tactical nuclear weapons are eliminated from Europe, it will be done not because it makes no sense to possess them but out of necessity. As compared with the 1980s the situation has changed radically, and it is now a question not of getting rid of useless surpluses but of eliminating militarily and politically significant stocks.

The process of nuclear disarmament in Europe is approaching a state which at the end of the 1980s was seen as *terra incognita*, where there is no clear relationship between numbers of weapons and the level of security. In practice, we have already entered that territory, but all we see is a dense fog in which the only reference point is the status quo.

At present, the tactical nuclear weapons in Europe are owned by Russia, the United States and France, while some of the United Kingdom's strategic systems are also capable of carrying out tactical missions. All these States possess powerful strategic forces that guarantee their national security, but nevertheless continue to regard tactical systems as necessary. Here, military and political interests are closely interwoven and it is difficult to say which are the more influential.

Militarily, tactical nuclear weapons are an important element linking the rational possibilities of waging war by conventional means with the irrational strategies of nuclear deterrence. They can be used in real military operations and at the same time they carry the threat of unpredictable consequences.⁵⁴ In this, moreover, resides the political

⁵⁴ *US Nuclear Policy in the 21st Century: A Fresh Look at National Strategy and Requirements*, National Defense University and Lawrence Livermore National Laboratory, Executive Report, July 1998, <http://www.ndu.edu/ndu/inss/ccp/nucpolicy/nucpolicy.html>.

importance of the weapons, especially now when military coercion is becoming an increasingly common aspect of politics.

When, in the early 1990s, the United States and the USSR (Russia) achieved unprecedented reductions in tactical nuclear weapons in Europe, their motives were understandable: in the new political situation the previous numbers and range of weapons were not needed. Today, the situation is fundamentally different. Firstly, the process of détente has lost the impetus it had in the early 1990s, indeed it has come to a halt and may even have turned back on itself. Secondly, at present levels the political influence of tactical nuclear weapons in Europe is no longer a reflection of military capabilities. For example, according to certain data, between 1995 and 1999 the United States reduced its nuclear weapons in Europe by about half.⁵⁵ But even if this is true, it can hardly be said that the quality of the American nuclear presence on the continent has changed. The formula “several hundred nuclear bombs” remains the same regardless of the specific figures. The destructive power of the B-61 bombs that have been removed has been withdrawn across the ocean, but their political influence has stayed behind in Europe.

The present crisis in the process of nuclear disarmament in Europe is not due exclusively to a deterioration in relations along the “East-West” axis. An underlying cause is the attainment of the absolute limit of the quantitative approach to the problem. Russia and NATO cannot declare their nuclear capabilities and intentions more precisely than in the form of “several hundred warheads to guarantee security”, without changing the situation qualitatively. What might induce the United States, Russia and France to make such changes or deter them from following such a course? There are several possible factors.

⁵⁵ See W. M. Arkin, R. S. Norris and J. Handler, *Taking Stock: World Nuclear Deployments 1998* and H. M. Kristensen and J. Handler, “The 520 Forgotten Bombs: How US and British Nuclear Weapons in Europe Undermine the Non-Proliferation Treaty”.

The Global Non-Proliferation Regime

The demands of the non-nuclear States with regard to the fulfilment by the nuclear States of their obligations under the NPT are becoming increasingly insistent and organized.⁵⁶ The apparent determination of the nuclear States to perpetuate nuclear deterrence, albeit at a minimum level, is threatening to undermine the existing non-proliferation regime. Initiatives with respect to the tactical nuclear weapon in Europe might do much to improve the situation. Such changes would be easier for Russia and the United States than in the case of the ratification of START-2 and the banning of nuclear testing and would partially compensate for them. The fact that there is no longer such a close link between the political and the military significance of the weapons remaining in Europe is giving the European nuclear States more room for manoeuvre, so as to deflect the wave of increasing dissatisfaction on the part of the non-nuclear States.

However, there is also another aspect. Many countries with the urge to possess nuclear weapons have already made their choice which no initiative in the field of tactical nuclear weapons in Europe can change. The same applies to the possible intentions of Iraq, Iran and North Korea. That is, the result of eliminating TNWs in Europe would be more hygienic than therapeutic. It would not have a direct effect on potential proliferators, but would undoubtedly smooth over the political differences between nuclear and non-nuclear States.

In general, in speaking of tactical nuclear weapons in Europe in the context of the NPT it would probably be a mistake to make an absolute of the adherence of the nuclear States to the Treaty. The nuclear States undoubtedly want to avoid a nuclear arms race, but they are unlikely to be afraid of living in a world in which a minimum level of nuclear deterrence is the norm and "irrational" proliferators are under the strict control of the "rational" nuclear Powers. Whether this is realizable is another matter.

All the same, if arguments in favour of strengthening the global non-proliferation regime are to lead to changes in European nuclear policy,

⁵⁶ R. Johnson, "Division and Doubts at the Third NPT PrepCom", *Arms Control Today*, Vol. 29, No. 3, April/May 1999, pp. 10-16.

the initiative will have to come primarily from the United States. The criticism which the non-nuclear States are directing at France is not too sharp, while in its present situation Russia is practically incapable of taking effective unilateral steps. However, not much can be expected even of the United States. When the basic provisions of the NPT were just being agreed, the United States found it difficult to make a choice in favour of a global non-proliferation regime and give up complete freedom in the framing of NATO nuclear policy. Today it is faced with making a similar choice, and it will still not be easy.

Relations between NATO and Russia

Sensing the general superiority of NATO, Russia is trying to offset the imbalance by means of nuclear weapons. As compared with the 1980s, the parties have changed places. Now it is Russia that is resorting to a “dual-track strategy” by trying to trade the expansion of its own nuclear capabilities in Europe against concessions on the part of NATO. NATO has recognized the signal, but is still not about to go for the “zero option”.⁵⁷

The requirements of the two sides are asymmetrical. Russia is concerned with its military and political standing and the United States with the strength of NATO and the controllability of Russia's nuclear arsenals. Given this asymmetry, as the experience of the 1980s suggests, a class of nuclear weapons is most likely to be eliminated within the framework of broader disarmament projects in a sort of “simplification of the equation”. At present, the opportunities for this are not very extensive. The Treaty on Conventional Forces in Europe (CFE) has been modernized outside the nuclear weapons context. The modernization of the Anti-Ballistic Missile (ABM) Treaty may bring concessions on the part of the United States, but not bilateral reductions. The only remaining

⁵⁷ “... we note with concern that Russia appears to be moving towards a greater reliance on nuclear forces to ensure its security. We renew our call on Russia to review further its tactical nuclear weapons stockpile with a view toward making significant reductions. ...” . (Ninth paragraph of Nuclear Planning Group press communiqué M-DPC/NPG-2(99)157, 2 December 1999.)

possibility for large-scale mutual reductions may be the inclusion of the question of tactical systems in a future START-3 Treaty.

All the same, certain initiatives are already feasible. The parties could proceed with unilateral steps which very probably would require matching concessions. For Russia, the most sensitive areas are the American nuclear presence on the continent and the legality of moving the Alliance's nuclear infrastructure eastward,⁵⁸ while for the United States they are the lack of transparency in Russian policy and the ten times larger number of systems deployed.

Russia is displaying a certain inconsistency in its demands. In preparing the Founding Act on Mutual Relations with NATO, Russia asked for guarantees against the basing of nuclear weapons on the territory of new members, but did not call into question the NATO nuclear arrangements themselves. There are two possible explanations. Firstly, Russia most likely had not ruled out the possibility of basing its own nuclear weapons outside its national territory. Secondly, a NATO repudiation of extraterritorial basing would have been too universal a solution. Russia required such changes in the NATO procedures as would constitute an acknowledgement of precisely the Russian factor in European politics. The presence of NATO members which were not entitled to station nuclear weapons on their territory because of their proximity to Russia would have been just such an acknowledgement. However, whatever Russia's reasons may have been three years ago, today its position is different. Russia wants changes in NATO's nuclear

⁵⁸ It was noted in the text of the United States Senate resolution of ratification of the Protocols to the North Atlantic Treaty on the accession of Poland, Hungary and the Czech Republic that the political commitments made by NATO to the Russian Federation in the NATO-Russia Founding Act (among these was the declaration that NATO 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 policy) "... are not legally binding and do not in any way preclude any future decisions by the North Atlantic Council to preserve the security of NATO members". Congressional Record—Senate, 4 May 1998, S4217.

arrangements, thus aligning itself with the New Agenda Coalition.⁵⁹ This shift may indicate that either Russia does not believe in the possibility of drawing demarcation lines within NATO or that it thinks the removal of American nuclear weapons from Europe would ultimately result in the situation developing in a way favourable to itself or that it has given up the idea of basing its tactical weapons outside its own territory. In any event, if NATO were to proceed to take unilateral steps with regard to United States nuclear weapons in Europe, Russia would be obliged to respond.

What could Russia propose? To a large extent, NATO views its nuclear policy in Europe within a counter-proliferation context. Its concern about the thousands of Russian nuclear weapons is more indirect, a sublimation of the fear of uncontrolled proliferation. If Russia could assuage this primary fear, it could exert an important influence on NATO nuclear policy.

There appears to be no justification for the meagreness of the information which Russia provides concerning its tactical nuclear weapons. The degree of uncertainty in this respect is clearly unreasonable. It makes sense to conceal one's own capabilities and intentions when the adversary is either stronger or irrational. However, Russia does not even give any reasons for its secretiveness. If the object of deterrence is NATO, then this is clearly a rational enemy, with several times fewer tactical nuclear systems deployed than Russia. If, however, the adversary is an irrational proliferator, then it could be deterred at a level of uncertainty of "several hundreds", as is the NATO practice. More likely than not, the cloud of secrecy which hangs over Russia's tactical nuclear weapon arsenals is the product not of a conscious strategy but of bureaucratic inertia. In this case, simply by reviewing some of its outdated secrecy requirements Russia could banish many of the spectres that haunt the imagination of the West.

⁵⁹ The coalition comprises Benin, Botswana, Brazil, Cameroon, Chile, Colombia, Congo, Costa Rica, Ecuador, Egypt, El Salvador, Fiji, Guatemala, Ireland, Kenya, Lesotho, Liberia, Malaysia, Mali, Mexico, New Zealand, Nigeria, Panama, Peru, Samoa, Slovenia, Solomon Islands, South Africa, Swaziland, Sweden, Thailand, Togo, Uruguay, Venezuela and Zambia.

Germany's Status with Regard to Military Policy

One of the few points on which both the United States and the Soviet Union agreed during the Cold War was that there should be no revival of Germany as an independent military force. The involvement of Germany was perhaps the only function of NATO that the Soviets viewed in a positive light. However, the two sides held different opinions on how far that involvement should go. To a large extent, the NATO idea of a Multilateral Nuclear Force (MLF) was a non-proliferation idea, but in a form unacceptable to the USSR. The United States saw in it an opportunity to give Germany surrogate nuclear status and thus avoid its developing its own nuclear forces, whereas the USSR perceived the idea as an attempt by the Bundeswehr to gain access to nuclear weapons at any cost. Both great Powers were trying to reach the same goal by different means. When the United States opted for the NPT, it had to make a considerable effort to convince Germany as a non-nuclear State to content itself with the Nuclear Planning Group and the Agreement for Cooperation for Mutual Defence Purposes within a NATO framework, institutions which are now the object of ever-increasing criticism.⁶⁰

The fears associated with Germany's role in two World Wars are now almost forgotten—Europe welcomed the reunification of Germany and its increasing role in ensuring international security. Is it also possible to forget about the German factor in connection with the nuclear problem? Many experts believe that it is.⁶¹ In this case there are even fewer reasons for preserving NATO's nuclear arrangement than for continuing to base the B-61 bomb in Europe.

The following can be said in favour of abandoning the old stereotypes. Firstly, the complete restoration of Germany's rights to its own military policy is a process as objective as its reunification. The international security system cannot forever remain based on the assumption of the existence of primordially aggressive States. Secondly, Germany is actively canvassing for changes in NATO nuclear policy, although its proposals are encountering opposition from the United States

⁶⁰ R. M. Timerbaev, *Russia and Nuclear Non-Proliferation: 1945-1968*.

⁶¹ *The Future of US Nuclear Weapons Policy*, National Academy of Sciences, Washington, D.C.: National Academy Press, 1997.

and the United Kingdom. Information on the details of their differences are not publicly available, but it is known that Germany is in favour of NATO accepting the principle of non-first use of nuclear weapons. This confirms its lack of nuclear ambitions.

However, another interpretation is also possible. Germany's initiatives may testify to its concern for nuclear questions in general, but not for the specific problems of disarmament in particular. We recall that India's radical proposals concerning the banning of nuclear weapons were the result not of its antipathy to nuclear weapons in themselves but of its unwillingness to be a non-nuclear State in a nuclear world. Might not Germany's present proposals be an effort to preserve the NATO procedures which without modernization would, in its opinion, not be viable? These doubts would be superfluous if Germany, in the name of the universality of the non-proliferation regime, were to proclaim its intention to renounce its own "share" of NATO's nuclear deterrent and live a modest non-nuclear life within range of the nuclear weapons not only of those officially entitled to possess them but also, possibly, of India, Israel and North Korea. There are no indications of this.

NATO's nuclear arrangements are not only a guarantee of the security of its members, as stated in the Alliance's Strategic Concept, they also serve as a sort of vaccination against the proliferation of nuclear weapons among the countries of the West. The problem is that, in these new political circumstances, this vaccination may be rejected by the global non-proliferation regime or it may destroy it.

It would seem that the world no longer fears a united Germany, but the question is would it fear a nuclear Germany. There are those in the world who surely would and others who might not. Behind the proposals to give up the anti-nuclear immunization of Germany through NATO may lie both the conviction that the threat of infection is past and a readiness to radically reconstruct the entire system of international relations. In its turn, the effort, with reference to Germany, to perpetuate NATO's nuclear arrangements could signify both a pragmatic caution and a no less pragmatic desire to exploit every reason for keeping the American presence in Europe. It is hard to say precisely which tendency will prevail.

European Defence Integration

The progressive incorporation of the Western European Union's (WEU) military-policy functions in the European Union means that the question of a European Security and Defence Identity now extends beyond the NATO framework. The EU, as distinct from the WEU, is not a subdivision of the North Atlantic Alliance. This, in addition to the old problem of the nuclear status of a single European State, were one to be established, is creating a new situation—the probability of the European Union taking upon itself the functions of nuclear deterrence which are currently the prerogative of NATO.

Meanwhile, the scale of European defence integration has not yet reached the point at which nuclear weapons would become a determining factor. If, however, the problem were to arise in the near future, it would be a question of the European Union as a nuclear federation with the attendant consequences. How this might affect the fate of tactical nuclear weapons in Europe would depend on the duration of the transitional phase.

If the transition to federal armed forces were to be a planned process with clear time lines, as with the introduction of a single currency, this would most likely make it easier to surmount the existing problems. Firstly, even if it were to continue, the American nuclear presence in Europe would cease to be a problem for the non-proliferation regime and would become a problem of cooperation among the nuclear Powers. Secondly, the new federal European State and Russia might begin a new disarmament process, unconnected with that between Russia and the United States. Thirdly, by entering upon the world stage as a constructive rather than a destructive force, the European Union would be able to undertake certain initiatives which would remove the objections on the part of many non-party States to the expansion of the "nuclear zone".

However, if European defence integration were to turn into a long-drawn-out process with uncertain aims, the situation would be less predictable. If the problem of a European Security and Defence Identity is considered in the non-proliferation context, the European Union has no advantages over NATO, just as France's tactical nuclear weapons have no advantages over those of the Americans in achieving extended

deterrence. A key question is that of extended deterrence itself. Obviously, in the event of rivalry between the EU and NATO, a nuclear presence in Europe would become for the United States the most significant confirmation of NATO's prerogative in organizing a collective defence. Consequently, global non-proliferation issues would become secondary to the effort to strengthen the transatlantic security mechanisms. Russia, in its turn, might try to exploit the differences between Europe and the United States, and not necessarily in favour of disarmament.

In general, initiatives with respect to tactical nuclear weapons could simplify the transitional stage of European defence integration: no weapons means no problems, although perhaps no motivation either. However, such initiatives could not significantly affect the solution of the problems of the end state, since they are linked with the nuclear status of the United Kingdom and France in general, and not with their tactical nuclear weapons in particular.

PROSPECTS FOR REDUCING THE ROLE OF TACTICAL NUCLEAR WEAPONS IN EUROPE

In the light of these circumstances, it is possible to assess the strengths and weaknesses of the various initiatives concerning tactical nuclear weapons in Europe as follows.

Non-First Use of Nuclear Weapons and Negative Guarantees

There is no simpler way of restricting the right of nuclear weapons to exist than to refrain from using them first in any circumstances. The next step—agreeing not to use them at all in any circumstances—would be equivalent to turning nuclear weapons into museum pieces. As experience shows, repudiating nuclear weapons is not easy. However, the nuclear countries must do so if they intend to implement the interpretation of the NPT on which its indefinite extension was based.

The declaration of non-first use of nuclear weapons by the Soviet Union was perceived in the West as more of a political gesture that did not fit in with the actual status of its nuclear forces. Therefore, Russia's official deviation from previous promises and its acceptance of less binding Western formulas, may be attributed to the greater sincerity of the Russian as compared to the Soviet leadership. However, the Chinese formula—a simple and clear commitment never and in no circumstances to make first use of nuclear weapons—is difficult to fault. It might be objected that the special military-policy conditions allow China to be noble. However, what special conditions are preventing NATO and Russia from doing the same with respect to tactical nuclear weapons in Europe?

The attitude of the European nuclear-weapon States is hard to explain in terms of intra-European missions. NATO has repeatedly declared that large-scale warfare in Europe is unlikely and the circumstances in which nuclear weapons might have to be used are

extremely remote.⁶² Even more remote are circumstances in which NATO might be the first to use them. Nevertheless, NATO refuses to restrict itself by making a corresponding declaration. So the reason for wanting to keep its hands free must lie outside Europe. However, it cannot be North Korea, or India or Pakistan, since the B-61 bombs stationed in Europe cannot be a threat to these countries.⁶³ That leaves the Near East, the Maghreb and terrorists whose “pain spots” lie within the radius of action of NATO’s dual-capable aircraft. Perhaps the specifics of the threat they represent call for the unpredictability of the means chosen by the Alliance and this is worth the reproaches aimed at NATO to the effect that its nuclear arrangements violate the NPT. In any event, a declaration that NATO’s nuclear weapons in Europe are not intended for European missions and that NATO would not make first use of them for those purposes would be confirmation of the situation that exists *de facto*.

Russia has more reasons to regard its tactical nuclear weapons as European. However, these, too, are not always sound. Russia often refers to events in Kosovo as an example of NATO’s policy of hegemonism, which Russia has no choice but to resist. However, the military aspects of operation Allied Force should reassure Russia rather than worry it. NATO proved to be unprepared for a land operation and was forced to appeal to Russia for political help in ending the conflict with Yugoslavia on acceptable terms. At the same time, as shown by its action in Chechnya, Russia is capable of conducting a successful land war, even in the midst of an economic crisis and under external pressure. NATO is technologically more advanced but this does not yet constitute an actual military advantage over the entire spectrum of possible missions. Russia

⁶² The 64th paragraph of the Alliance’s Strategic Concept reads: “... NATO’s ability to defuse a crisis through diplomatic and other means or, should it be necessary, to mount a successful conventional defence has significantly improved. The circumstances in which any use of nuclear weapons might have to be contemplated by them are therefore extremely remote.”

⁶³ If the basing of B-61 bombs in Turkey is not regarded as basing in Europe, then Iran and Iraq should be excluded from the list of possible targets. Strictly speaking, NATO’s vault-based TNWs in Europe are not a threat even to the main Russian land mass—if they were used against Russia, this would mean that the war would be waged on the territory of Ukraine, Belarus and the Baltic States. See R. MacNamara, *Blundering into Disaster*.

is far from having its back to the wall and has room for manoeuvre, including in the area of nuclear concepts.

Thus, the acceptance of the concept of non-first use of tactical nuclear weapons in Europe, in other words, the renunciation of European missions for NATO and Russian TNWs, is a perfectly feasible step capable of preventing a slide into a new Cold War.

However, the regional segregation of non-first use commitments has its problems. Firstly, there is the difficulty of separating the nuclear concept of the United States from that of NATO. Secondly, this disarticulation of Europe is fraught with possibilities of aggravating cultural divisions. In connection with the first of these points it should be noted that it is actually a question of the United States imposing limits on itself with respect to a clearly defined weapon, namely, nuclear bombs intended for NATO tactical missions, and this is not a big obstacle. As for the second aspect, much will depend on the form the solution takes. It could be sought within the framework of measures to strengthen confidence in Europe outside the context of global non-proliferation problems or within the framework of a confidential dialogue between NATO, Russia, Ukraine and other interested countries or else be conceived as a public first step towards achieving more general objectives. There could also be a regional European approach to the question of negative guarantees offered by nuclear to non-nuclear States. However, under the conditions of the European security system, this would be a question of inter-coalition competition rather than of non-proliferation and disarmament. The Soviet Union espoused what was known as the “Kosygin formula”, i.e. undertook not to use nuclear weapons against non-nuclear States not having nuclear weapons on their territory. This was a strong move against NATO’s nuclear arrangements. This type of guarantee might well be revived, if Russia were to decide that the time had come to exert pressure on the United States’ European allies or if NATO were to decide to use it as a means of forestalling the extraterritorial basing of Russian weapons.

It is scarcely possible to count on the Chinese negative guarantee formula—never to use nuclear weapons in any circumstances and not to threaten their use against non-nuclear States—as long as the present NATO nuclear arrangements remain in place. However, negative

guarantees for European non-nuclear States given by the United States, Russia, France and the United Kingdom would be reasonable within the context of a serious review of NATO policy and the development of new measures to build confidence in Europe.

Renunciation of Extraterritorial Basing

In 1991, the United States and Russia declared that they would no longer base tactical nuclear weapons on board ships in peacetime. In addition, because of the changed circumstances, the USSR and then Russia withdrew onto their national territory all nuclear weapons based on the territory of former allies and Union republics. In 1998, British WE-177 tactical bombs were removed from Germany. Thus, at present, in Europe only the American B-61 bombs are stationed outside national territory.

In November 1999, it was reported in the press that the United States intended to withdraw from Europe all the nuclear weapons still remaining there, while preserving NATO's nuclear arrangements and infrastructure.⁶⁴ Although this was officially denied at the next session of the NATO Council, it is obvious that the question is being seriously discussed.

The extraterritorial basing of battlefield nuclear weapons is not restricted by the NPT or any other agreement. There are unilateral United States and Soviet Union initiatives (later confirmed by Russia) and undertakings on the part of the new independent States due to the fact that the West was ready to accept the break-up of the Soviet Union only on certain conditions. However, these initiatives and undertakings relate to conditions essentially different from those of today. NATO expansion signalled to Russia that many previous non-protocol arrangements were no longer operative. Russia reacted sharply and now there is no reason to expect it to abide by its renunciation of extraterritorial basing. Moreover, there is no reason to exclude the possibility of Russia imitating

⁶⁴ M. Butcher, *NATO Nuclear Policy Between Disarmament and Pre-Emptive Nuclear Use*, BASIC, 18 November 1999, <http://www.basicint.org/nato-nov99-nukpolicy.htm>.

United States policy—smaller numbers and greater transparency but a higher state of technical readiness and the use of tactical nuclear weapons for establishing indissoluble bonds with allies.⁶⁵

Generally speaking, in order to bring its arrangements into line with the objectives and principles of nuclear non-proliferation, NATO needs to give up those that allow non-nuclear members of the Alliance to participate in preparing nuclear missions, in which case the stationing of TNWs outside national territory could be retained. On the other hand, removing the B-61 bombs from Europe while retaining the existing infrastructure and procedures would be sensational, but would not bring NATO much closer to the new interpretation of the objectives of the NPT. In this case the word “removal” itself would be politically effective but deceptive, since it would actually mean a reversible reduction in the degree of readiness of the nuclear forces, not a step closer to disarmament. However, unless something extraordinary happens, neither the abandonment of NATO’s nuclear arrangements nor even a reversible removal of American nuclear bombs from Europe is to be expected.⁶⁶

The factors that will determine the fate of the American tactical nuclear weapons in Europe can be ranked as follows. First and foremost, we have the relations between North America and Europe, then the relations between NATO and Russia and, finally, the future of the global non-proliferation regime. The desire to ensure transatlantic solidarity outweighs any other consideration. However, if it refuses to change its nuclear policy, NATO will be forced to respond to the negative reaction on the part of Russia and the New Agenda Coalition. NATO will probably try to solve the resulting problems by means of separate negotiations. Clearly, Russia will be offered a dialogue on nuclear issues, which would make NATO and Russia really close partners in this narrow area. If the

⁶⁵ The United States tactical nuclear weapons in Europe, unlike Russia’s, are stored in special vaults directly under the hangars. The Russian tactical weapons are stored outside the hangars in separate structures.

⁶⁶ “We are pleased to note that Alliance nuclear forces, command and control systems and nuclear support infrastructure have been thoroughly reviewed and found to be fully compliant with the requirements of the changeover to the next millennium.” (Tenth paragraph of the Nuclear Planning Group press communiqué M-DPC/NPG-2(99)157, 2 December 1999.)

dialogue were taken far enough, this might lead to a genuine recognition of Russia's special role in Europe, which Russia would find hard to refuse. If Russia accepted NATO's proposal, the main force capable of inducing the United States to give up basing tactical nuclear weapons in Europe would disappear. Just what NATO might propose to the New Agenda Coalition is still unclear—perhaps simply nothing (in proportion to the level of the real threat they represent).

In general, even if NATO clings to its present policy, it could still relieve the stress on Russia —this would be no small thing and is plainly necessary. However, in principle, there is another possibility. If the pressure exerted by Russia, the New Agenda Coalition and certain NATO members were sufficiently strong and uncompromising, the remnants of extraterritorial basing of tactical nuclear weapons in peacetime could disappear without a significant loss of NATO cohesion. This would be a broader and less stressful compromise.

Inclusion of Tactical Nuclear Systems in the START Process

A proposal along these lines has been made by the United States, but Russia has so far rejected it.⁶⁷ This disarmament project would require a substantial political investment, but if a deal were struck, it might indeed produce a universal result. The basis for this exists.

The long history of the START process indicates that big trade-offs are possible. When each party possesses something that is valuable for it and, at the same time, a "headache" for the other party, there is a basis for reductions. The START-1 Treaty was based on reciprocal limitations imposed by the Soviet Union on heavy missiles with multiple warheads and by the United States on *Ohio* submarines carrying *Trident-2* missiles. START-2 became possible thanks to Russia's desire to emerge from the

⁶⁷ *US Nuclear Policy in the 21st Century: A Fresh Look at National Strategy and Requirements.*

Cold War with minimum geopolitical losses and its readiness to pay for this by eliminating its ground-based MIRVed missiles.⁶⁸

At present, the bargaining chips that would enable a compromise to be reached are as follows.

On NATO's side:

- The United States "hedge" capability of redeploying its strategic nuclear weapons;⁶⁹
- American tactical nuclear weapons in Europe;
- France's tactical nuclear weapons;
- The open-door policy of NATO enlargement.

On the Russian side:

- An arsenal containing many thousands of tactical nuclear weapons;
- A veto on the modernization of the ABM Treaty;
- The ability to smash the global armament control regime.

The two heaviest "weights" on the opposite sides of the scales are America's "hedge" capability and Russia's TNWs. Possible imbalances could be redressed by using smaller "weights". The main thing is that disarmament questions should not be decided by means of geopolitical trade-offs, which would be likely to create as many problems as they solved.

Russia wants practical confirmation of its special role in international affairs. It might well try to swap its consent to the modernization of the ABM Treaty for reduced American involvement in the fate of the new

⁶⁸ When it turned out that the ending of the Cold War did not bring it big dividends and led to the disastrous weakening of its geopolitical position, Russia changed its attitude towards the START-2 Treaty.

⁶⁹ Reductions of United States strategic forces under START-2 are to be implemented mostly by downloading warheads and stockpiling many of them for possible redeployment, and not by eliminating delivery systems as it planned for Russia. This is the United States "hedge" against a worsening strategic situation.

independent States. It would be better for the new European security architecture if Russia's special role were confirmed in some other way. A large-scale disarmament deal within the framework of the START process might help.

For example, it is possible to envisage the following alternative. Russia ratifies the START-2 Treaty and proceeds to make drastic reductions in its tactical nuclear arsenal, possibly with substantial technical assistance from the West. Russia also agrees to the modernization of the ABM Treaty and joins the West in settling the issues of control over military technologies and non-proliferation. The United States responds by eliminating its "hedge" capabilities and withdraws its tactical weapons from Europe (possibly while retaining NATO arrangements). France also cuts back or eliminates its tactical nuclear weapons. Clearly, such an agreement would return Russia (or give it the opportunity to return) to a leading role in world politics and would make unnecessary any secret arrangements of a geopolitical nature.

The Creation of Nuclear-Free Zones

Some time ago, on the eve of the NATO decision to expand, the idea of creating a nuclear-free zone in Central and Eastern Europe again appeared on the agenda. Some time before this, before the break-up of the Soviet Union, consideration was given to the possibility of a nuclear-free zone in the Baltic region, which would have included the Soviet Baltic republics. As the prospects for integration into the European and Euro-Atlantic security structures became increasingly realistic for the potential participants in these zones, their nuclear-free enthusiasm faded and in time was replaced by unconditional support for NATO's nuclear policy, often more resolute than that of certain Western European members of the Alliance themselves. Now the spotlight has shifted to a region which has only just begun to receive the attention of the West, namely, Central Asia.

The creation of internationally recognized nuclear-free zones is one of the programmed objectives of the global non-proliferation regime (Decision 2 of the 1995 NPT Review and Extension Conference). However, good intentions are not always enough, even in Europe. The

serious interest and political commitment of the European States are also necessary. In this respect, it is useful to consider the motivation of the potential nuclear-free zone participants and the nuclear States.

The potential members of these zones may have two reasons for having them established. Firstly, purchasing security on the cheap. In this case the zone could not be established without clear guarantees that it would be recognized by the nuclear Powers. Secondly, obtaining security by not resisting evil by force. In this case international recognition is not obligatory; more important is the magnitude of the "sacrifice" of the States declaring the zone.⁷⁰ It is possible to regard the declaration of a nuclear-free zone as a way of declaring neutrality in a cold or hot war, but this applies more to individual States than to groups of States. In this case a decision would have to be made as to whether such a move was naive or wise.

As far as the nuclear States are concerned, their motives for recognizing nuclear-free zones might be as follows: it costs them nothing (under European conditions this is unlikely), the alternative to a nuclear-free zone would be the proliferation of nuclear weapons among its potential members, or recognition of the zone would settle certain problems affecting relations with other nuclear Powers.

The idea of nuclear-free zones in Europe has now been relegated to the background. For non-nuclear States the cheapest means of ensuring their security is now partnership with NATO, and the last thing the policy of that organization with respect to its partners requires is a refusal to regard NATO's nuclear weapons as a guarantee of security in Europe.

However, it would be premature to rule out the idea of nuclear-free zones in Europe, or the idea of a nuclear-free Europe. These ideas might be revived if:

⁷⁰ It is interesting to note that the NPT Extension Conference focused precisely on internationally recognized nuclear-free zones. It was not so much that the delegates to the conference considered self-proclaimed nuclear-free zones fatal to security as that simply no one believed in self-sacrifice.

- Friendship with NATO stopped being cheap (this could happen in view of the Alliance's new slogan that security does not come cheap);
- Russia somehow demonstrates that partnership with NATO does not solve the problems of the relations of the partner with Russia;
- NATO agrees to begin dividing up spheres of influence with Russia, for example, under threat of Russia's taking a destructive position on non-proliferation issues.

None of the many plans to create nuclear-free zones in Europe has been realized, but without these plans Europe might today be less secure. For non-nuclear States nuclear-free zones are a permanent alternative to participation in nuclear coalitions and allow them to distance themselves from the nuclear Powers if the latter adopt a destructive policy, without having to throw down a challenge. In this sense, the idea of nuclear-free zones in Europe and the idea of a nuclear-free Europe cannot be considered unsuccessful.

From this review of popular disarmament ideas relating to tactical nuclear weapons in Europe we can draw the following conclusions:

1. There are two initiatives that stand a good chance of being implemented: acceptance of the concept of the non-first use of nuclear weapons by NATO and Russia and renunciation of the extraterritorial basing of nuclear weapons in peacetime. These initiatives would be most likely in regional or even separate form—as the rejection of European missions for NATO and Russian tactical nuclear weapons and the confidential exchange of information between NATO and Russia on the basing of and operational plans for these weapons. The rejection of European missions would also be a form of negative guarantee for the non-nuclear European States;
2. There is a possibility of a universal solution of the problems of tactical nuclear weapons in Europe within the framework of an extended START process. However much the state of affairs in this area may seem to have reached a dead end, it is impossible not to note that the situation is essentially “pre-Treaty”. There is a chance of the American “hedge” and extraterritorial basing being traded for radical cuts in Russian tactical nuclear weapons, ratification by Russia

of the START-2 Treaty and cooperation on questions of ABM defence and non-proliferation. France and the United Kingdom might join in this process, which would also make it possible to solve certain problems concerning the relations between North America and Europe;

3. Under present conditions, the eternally green and eternally alternative idea of nuclear-free zones in Europe is impracticable. Nevertheless, it may be expected to resurface. The arrogance of nuclear strength might force the non-nuclear States to seek alternatives to nuclear coalitions. In general, the keys to non-nuclear zones in Europe lie in the hands of the United States, Russia, France and the United Kingdom.

CONCLUSION

In the last ten years stocks of tactical nuclear weapons in Europe have been sharply reduced. They have almost disappeared in a treacherous fog of contradictory political considerations. However, there is a force driving them back into the material world of military necessity. The point is that they provide a minimum nuclear deterrent. The dragon lives and is not to be trifled with.

The functions of the NATO and Soviet tactical nuclear weapons have shifted from primarily military to primarily political. The Soviet threat has narrowed down to Russian unpredictability and has been displaced far to the East. However, in 1997, NATO also set out for the East in its wake and this has led to a further exacerbation of the nuclear problem. Obviously, NATO felt it had good reasons for taking this step, but whatever means may be chosen for enabling Western values to penetrate deep into Eurasia, it is worth making an effort to ensure that this great advance is not accompanied by nuclear disaster. Nuclear weapons are not the weapons of democracy—the roots of both American and Russian nuclear missile technologies extend deep into Hitlerian totalitarianism—and if they again come to play a leading role in our world there is always the possibility that their true owner will come back from non-existence to demand that his stolen property be returned.

At present, United States, Russian and French tactical nuclear missiles are deployed in Europe. The United Kingdom, in keeping with its revised nuclear policy, has given up battlefield nuclear weapons and entrusted tactical missions to its sea-based strategic systems. Thus, all the tactical nuclear weapons on the continent are under the national control of the United States, Russia and France.

It is estimated that the United States has about 200 B-61 bombs in Europe. They are apparently all being kept in new storage facilities, namely, special vaults built directly beneath the hangars. Another approximately 600 B-61 bombs, earmarked for NATO missions, are

deployed on United States territory. In general, the composition of the United States nuclear forces in Europe is characterized by a small number of systems at a high level of readiness and the technical possibility of increasing that number substantially.

France has about 80 ASMP tactical missiles with nuclear warheads which can be carried by both land-based and sea-based aircraft. Thus, France has about half as many tactical nuclear weapons deployed in Europe as the United States. As distinct from those of the United States and Russia, the vessels (more precisely, vessel) of the French fleet carry tactical nuclear weapons on board in peacetime. Recently, France has made several attempts to squeeze the United States out of the "market" in the provision of nuclear guarantees for Europe. This suggests that the United States is not the only obstacle along the road to the renunciation of extended nuclear deterrence.

The data on Russia are contradictory. It is assumed that Russia has several thousand TNWs in service. However, it is quite possible that out of these thousands there are not even a couple of hundred at the same level of readiness as the American B-61 bombs in Europe. The composition of Russia's non-strategic nuclear forces is characterized by a multiplicity of systems and a variety of functions. For example, the strategic ABM defence systems and anti-ship systems can be counted as tactical nuclear weapons in Europe only with reservations, although they cannot be excluded from consideration.

For ensuring its security Russia is relying increasingly on nuclear weapons. This could lead to these weapons being reintroduced into its land forces. In time, the new *Iskander* ground-based tactical missile may prove to be the most combat-ready part of Russia's tactical nuclear forces.

One of the sources of sharpest disagreement between the United States and Russia is the difference in their approaches to nuclear deterrence. Russian deterrence is cast in the classical mould, being directed against a powerful enemy, which could be the United States and its NATO allies. On the other hand, the American nuclear deterrent is increasingly being aimed at deterring hostile proliferators (usually weak countries trying to compensate for their weakness by developing nuclear weapons). In other words, the American nuclear deterrent is being

converted into a counter-proliferation instrument. The problem is that the nuclear forces available for counter-proliferation purposes are the same forces, albeit reduced in number, as were used to deter the Soviet Union, and they have not lost their previous capabilities. As a result, what the United States regards as counter-proliferation, Russia views as a return to the Cold War. This disagreement between the two sides is being exacerbated by differences in their perception of their own vulnerability. For Russia, mutual vulnerability is a natural feature of the international system to which it has grown accustomed over the centuries. For the United States, mutual vulnerability is a vexatious situation peculiar to the second half of the twentieth century from which it would like to escape as quickly as possible. This again raises the question of the indivisibility of security under conditions of minimum nuclear deterrence.

There are several interrelated factors determining the present and future of tactical nuclear weapons in Europe. These are the global non-proliferation regime, the relations between NATO and Russia, Germany's status with regard to military policy, and European defence integration. An analysis of these factors leads to the following conclusion: the main obstacle to the attainment of zero levels of tactical nuclear weapons in Europe is not so much ensuring an effective defence as ensuring a common defence. Everything else is interwoven with this.

The re-nationalization of the defence of the developed countries of the West potentially involves the emergence among them of new nuclear States. Tactical nuclear weapons in Europe are preventing this, but they encourage nuclear confrontation with Russia and nuclear proliferation in the rest of the world. NATO is trying to place the blame on Russia by pointing to its ten times greater nuclear arsenal, but this looks like a game of "the quick fox and the lazy dog". The problems of tactical nuclear weapons in Europe have ceased to be problems of numbers and are now problems of the ultimate purpose of the non-proliferation regime.

Never since the NPT was signed has there been a consensus on the question of its ultimate purpose, only a prevailing interpretation. Up to 1995 (when the NPT was extended indefinitely) this interpretation was that it was intended to prevent nuclear war. Now, at least on paper, the goal is general and complete nuclear disarmament. Preventing nuclear war and complete nuclear disarmament are two objectives with different

and sometimes mutually contradictory optimal implementing strategies. According to the prevailing pragmatic view of the nature of things, the prevention of nuclear war can be guaranteed only by deterring a potential aggressor or potential proliferator with the threat of nuclear force. General and complete nuclear disarmament means giving up the nuclear deterrent.

The process of nuclear disarmament in Europe has come to a fork in the road. At levels of a few hundred warheads it is pointless to argue about the next steps until the aim is clearly understood, whether it be zero levels or minimum nuclear deterrence on the part of a minimum number of countries. None of the nuclear Powers has shown any intention of striving for the former. At the same time, most (maybe the overwhelming majority) of the participants in the 1995 conference failed to see the point of extending the NPT indefinitely if the aim was to achieve the latter.

The extended nuclear deterrence practised by NATO is, at one and the same time, a fundamental obstacle to a nuclear-free world and the basis for the maintenance of stability in a world of minimum nuclear deterrence. Russia's nuclear weapons are a quantitative problem and as such not a fundamental obstacle to a nuclear-free world since each successive reduction will be a further step in that direction. On the other hand, NATO's extended nuclear deterrence is a qualitative problem, since it cannot be progressively cut back but only given up at a stroke. Until it is given up, the road to a nuclear-free world will remain closed. Thus, it turns out that precisely the fate of NATO's tactical nuclear weapons in Europe—several hundred warheads or even the procedures for their use—should provide the answer to the question of the nature of the global non-proliferation regime in the twenty-first century.

Clinging to a common defence based on nuclear weapons means endeavouring to perpetuate the extended nuclear deterrent. The call for the universal application of the NPT on the part of the advocates of an extended nuclear deterrent is equivalent to calling for the perpetuation of inequality with respect to the right to a nuclear self-defence. However, this is not the purpose of the NPT. The Treaty was extended indefinitely because of the need for general and complete nuclear disarmament. There is no contradiction here if it is accepted that nuclear non-

proliferation is a broader phenomenon than a particular treaty. The United Nations Security Council, the International Atomic Energy Agency (IAEA) and NATO have sufficient authority to make article II of the NPT binding irrespective of the status of the Treaty as a whole. NATO's nuclear arrangements and policy are not a relic of the Cold War but a non-proliferation regime running parallel to the NPT.

The pragmatic partisans of minimum nuclear deterrence have clearly gained the upper hand over the liberal advocates of a nuclear-free world. However, this has not made the situation more stable. Tactical nuclear weapons in Europe are associated with a certain conflict potential. This applies to the global non-proliferation regime, to the relations between NATO and Russia and to the relations between North America and Europe. The problems will not solve themselves. The Western pragmatists must, firstly, agree among themselves, secondly, not allow irrational behaviour on the part of Russia and, thirdly, try to preserve the universality of the NPT. There are ways of achieving this.

NATO could announce that it was giving up European missions for its nuclear weapons. This would not only help to erase the dividing lines in Europe but would also constitute a form of negative guarantee for the non-nuclear European countries. NATO could approach this unilaterally, although a joint NATO-Russian declaration would seem preferable.

A possible slide into a new Cold War between NATO and Russia could be avoided by means of an intensified dialogue on nuclear issues. This could take the form of confidential consultations or of broader confidence-building measures.

Despite the numerous problems, there is a genuine opportunity for far-reaching denuclearization in Europe within the framework of an extended START-3 process. This might be based on the United States giving up its "hedge" capabilities and on Russia giving up its surplus arsenal of tactical nuclear weapons. This would also provide the impetus for the comprehensive solution of other problems such as those posed by the United States nuclear weapons in Europe, the modernization of the ABM Treaty and France's tactical nuclear weapons.

These initiatives, together with certain others, might relieve the stresses generated by the perpetuation of minimum nuclear deterrence. However, they would not ensure the containment of the “nuclear genie” within the strict limits of that system of deterrence. The fundamental problem of the ultimate purpose of the non-proliferation regime has not been solved—there are more questions than answers.

The pragmatists do not believe that a world without nuclear weapons would be stable and see in these weapons a means of frustrating tyrants and villains. However, this same pragmatism, which insists on seeking a cure for evil in the possession of force, suggests (must suggest in order to remain pragmatic) that thought should be given to creating immunity to the cure itself.