

NUCLEAR WEAPONS IN THE STRATEGIES OF THE UNITED STATES AND NATO STRATEGY OF MASSIVE RETALIATION AND FLEXIBLE RESPONSE

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Abstract:

The introduction of the hydrogen bomb to the nuclear arsenal turned out to be a breakthrough in the creation of the strategic deterrence system. It determined the evolution of the nuclear strategy on both sides of the "Iron Curtain". The appearance of high-power light thermonuclear bombs became an impulse for the creation of ballistic missiles. Globally, this type of weapon significantly speeded up reaching a nuclear stalemate and contributed to taking up efforts to seek measures of a limited nuclear war and a "flexible response" as an alternative to massive retaliation.

Keywords:

nuclear weapons, weapons of mass destruction, doctrines, strategies, strategy of massive retaliation, strategy of flexible response, the Cold War

INTRODUCTION

Assuming the leading role in the United States in 1953 by General Dwight Eisenhower meant a number of changes, both in foreign policy and military. The doctrine of "liberation" was the first political idea put forward by the Republican camp. Its aim was to liberate the countries from the communist yoke. However, military circles announced the strategy of the "New Look" and "massive retaliation". This was a clear announcement of shifting the center of gravity on nuclear weapons as a tool in the policy of deterrence.



1. POLITICAL AND MILITARY CONCEPTS OF “MASSIVE RETALIATION”

As far back as during the reign of the Truman Administration, the Republicans called for the creation of a new military strategy derived from the assumptions of the doctrine of a total war. They blamed their predecessors for the lack of ideas to fight against communism and carrying too passive policy consisting in accepting the post-war order instead of striving to regain influences and territories occupied by the Soviets¹.

The first coherent concept in foreign policy presented by the then new authority was the doctrine of “liberation”. Its author, James Burnham, presented three variants of conducting policy towards the Soviet Union. The first of them was the containment policy, which was a rational move only in the period immediately after World War II, when the United States was not strong enough to impose their conditions. The second one was the policy of “concessions”, and the third – the policy of “liberation”². For obvious reasons, the new administration had to reject the first idea and choose between the two others.

The doctrine of “liberation” adopted by Eisenhower implied freeing nations from both the Soviet Union and communism. The liberation of lands acquired by the Soviet Union before and after the World War II was also an important postulate to “push”³ communism away to the borders of the USSR and eliminate it in its homeland. The intention was to accomplish the task with all available forces and means, including the withdrawal of approval for governments of the new socialist countries, the formation of military units for the countries of Eastern Europe, and preparations for a possible armed conflict, and even a total war, in which the strategic Air Force of the United States and its allies were to play the main role⁴.

The program *New Look* developed in 1953 was the military variant of “liberation”. The program was the effect of the work of three independent expert teams whose task was to find the correlation between the interests of the United States and threats. Finally, four different concepts were submitted for the considerations, the first of which was based on the continuity of the doctrine of “containment” led by the former president. Another proposal was to follow the strategy of “deterrence”, setting a precise line around the Eastern Bloc, crossing which was associated with the use of weapons of mass destruction by the United States. The third option was the release of areas from the Soviet occupation under the policy of “liberation”. The last concept, rejected indeed by Eisenhower, was a preventive war aiming to destroy the nuclear potential of the Soviet Union and to prevent a situation in which the Soviet nuclear capabilities are

¹ The containment strategy was criticized for the lack of clearly defined objectives and prospects as well as the fact that it was mostly a patchwork of ideas, concepts and assumptions, See: J. Lider, *Doktryna wojenna Stanów Zjednoczonych*, Warsaw 1963, p. 103-107.

² *Ibidem*, p. 109.

³ Another term for the policy of “liberation” was the name: *roll-back*, that is *pushing*.

⁴ J. Lider, *Wojny i doktryny wojenne XX wieku*, Warsaw 1966, p. 112-113; J. Lider, *Doktryna wojenna Stanów...*, p. 109-113.

comparable with the US ones. Although President Eisenhower inclined to the first approach, the *New Look* was a combination of all three options. Notably, in the top-secret document NSC 162/2 approving the program assumptions of the *New Look*, it was stipulated that in case of hostile relations between the USA and the Soviet Union or Communist China, the United States would consider the use of nuclear weapons on an equal footing with other weapons⁵.

The *New Look* became the basis of the strategy of “massive retaliation” proclaimed in January 1954. In his famous speech, the Secretary of State John Dulles criticized the policy pursued by Harry Truman. As he claimed, it had forced the United States to continuous readiness for military action in every part of the globe, thus overburdening the national defense budget. He proposed a new way of doing politics so as to ensure the restoration of initiatives, while lowering expenses. However, his announcement that the consequence of any armed conflict with an enemy would be massive retaliation with the use of nuclear power passed into history⁶.

The concept announced by Dulles met with widespread criticism not only in the USA. This fact did not, however, influence the change of the course chosen by the Eisenhower Administration. In numerous speeches delivered in the following years by its members a number of issues were further specified. For example, the key elements of the doctrine were the ability of the US forces to a massive nuclear strike, development of strategic strike force of the Air Force, the completion of the ring of allied forces around the territory of the socialist world and the construction of air bases in close proximity to places of expected attacks⁷. The adequate preparation of the armed forces to wage war, both total and limited, was suggested as well. It was indeed impossible to deploy the US forces in every part of the world, but they could be in the constant readiness state and have the ability to the instant mobilization. These assumptions were to guarantee the US Armed Forces the ability to take immediate action through the use of nuclear weapons, which was then considered as conventional one. Although, there was the so-called doctrine of balanced armed forces, the main tasks were still to fall to. The US Air Force would take the lead in the world and bear the responsibility for strategic strikes⁸.

Doctrinal changes beyond the Ocean and the superiority of land troops persisting on the Soviet side caused changes in the NATO strategy. In April 1954 NATO considered it necessary to equip the US units stationed in Europe with tactical nuclear weapons⁹. In

⁵ J. L. Gaddis, *Strategie powstrzymywania*, Warsaw 2007, p. 201-203, 206.

⁶ *Ibidem*, p. 202-203; Lider, *Doktryna wojenna Stanów...*, p. 126-127.

⁷ S. Zapolski *Doktryna wojenna głównych państw Paktu Północnoatlantyckiego w latach 1945–1980*, Warsaw 1982, p. 18-19.

⁸J. Lider, *Doktryna wojenna Stanów...*, p. 123-125.

⁹ In May 1957 at the meeting of the NATO Council the concept of the use of tactical nuclear weapons in a possible conflict was approved. Not only the US but also other countries of the Alliance, including the Federal Republic of Germany, had to possess the means of delivery of nuclear weapons. See: A. Albert, *Najnowsza historia Polski 1945–1993*, Warsaw 1995, p. 375.

October, in turn, the Paris Agreements were signed, providing for the end to the occupation of FRG, granting it the right to form its own armed forces and the accession of West Germany into NATO and the Western European Union¹⁰.

In May 1957 the North Atlantic Council approved the first coherent concept of the strategy of "massive retaliation", encoded as *MC 14/2*. The basis for the development of the General Strategic Concept of the North Atlantic Area was the American *New Look*. The fact somewhat explains the emphasis in the new strategy on recognizing the ability of the Alliance to destroy the USSR completely and the announcement of a massive nuclear attack in the event of an enemy assault on any of the Member States. In addition, the document divides the NATO armed forces into "shield" and "sword" forces.

The armies of Western countries were to serve as the shield, while the role of the sword was played by the US strategic nuclear forces. At the time of the invasion on Western Europe the task of the latter was to carry out massive retaliatory strikes on targets in the Warsaw Pact countries. The US strategic Air Force were to deal with drops of nuclear bombs, the allied forces of the USA and NATO were responsible for marine operations, while conducting operations in Europe was to fall to land and air forces of the countries of the Old Continent¹¹.

NATO strategists had to be reckoned with the appearance of new, previously unknown problems, not only military but also political, economic or psychological ones, associated with the use of weapons of mass destruction. It was expected that a future war would have a nuclear character causing the greatest destruction in its first phase. As envisaged, it was to be distinguished by extreme violence and the massive use of nuclear and thermonuclear weapons, thus hindering mobilization and movement of troops, as well as communications and logistical support. For this reason, the duty of the Allies was to develop the capacity to absorb and survive a nuclear attack from an enemy¹².

In the eyes of the West the strategy of massive retaliation was an effective and inexpensive method of deterring the Soviet Union from aggression¹³ The US nuclear um-

¹⁰ J. Kukułka, *op. cit.*, p. 77, 113–114. The response of the socialist countries was the Treaty of Friendship, Cooperation and Mutual Assistance, called the Warsaw Pact, signed on 14 May 1955 in Warsaw between Albania, Bulgaria, Czechoslovakia, the German Democratic Republic, Poland, Romania, Hungary and the Soviet Union. Indeed, this Treaty constituted - next to the objection related to granting West Germany with membership in NATO - the highest form of institutionalization of the socialist camp in political and military terms. See: *ibidem*, p. 79.

¹¹ More: *Final decision on MC 14/2 (Revised). A Report by The Military Committee on Overall Strategic Concept For The Defense Of The North Atlantic Treaty Organization Area*, [in:] G. W. Pedlow, *The NATO Strategy Documents 1949-1969*, [online]. [available : 9 IX 2015], Available on the Internet: <http://www.nato.int/archives/strategy.htm>.

¹² *Ibidem*.

¹³ The main advantage of the strategy of massive retaliation was the unity of all the NATO states and their subordination to the United States. This dependency resulted from the financial, economic, and military advantage of the USA over the other states. European countries were devastated and incapable of creating own doctrinal concepts, therefore they accepted those presented by their greatest

rella extended over the European part of NATO was to balance the outnumbered armies of the Warsaw Pact, and provide a much less expensive substitute for respectively large number of conventional forces. Giving too much weight to nuclear weapons was the main reason to criticize President Eisenhower Administration. Opponents to his policy - the number of who was growing also in Europe¹⁴ - claimed that the use of nuclear weapons as a deterrent, consistent with the "orthodox" military strategy, could lead only to the destruction of the world or to the unconditional surrender of one of the parties. After all, a nuclear war was to be the reaction to even a slightest provocation from an enemy in every corner of the globe¹⁵. However, the concept of massive retaliation was unexpectedly fast nearing to an end.

Less than three months after the adoption of the new strategy by NATO the Soviet Union once again proved that nuclear superiority or the inviolability of the territory in the nuclear arms race are rather relative terms.

In August 1957, the Soviet Union informed the world about the positive results of the tests of ballistic missiles, and in October about the launch of the first artificial satellite of the Earth. This fact completely surprised the West, especially the United States, which led its foreign policy based on the assumption that the territory of the United States is safe, and the costs pursuant to a possible nuclear war would be only borne by enemies and Western European countries¹⁶.

NATO strategists' response to these events was the recognition that henceforth the whole Euro-Atlantic area was within the range of Soviet nuclear weapons, and that in the event of a war with weapons of mass destruction there would not be a potential winner¹⁷. The next step of the Alliance was to be the modernization of armaments, the increase in the number of armed forces of the Federal Republic of Germany and equipping it with nuclear weapons¹⁸.

The increasingly aggressive rhetoric of Soviet leader Nikita Khrushchev's statements made the situation more serious, as he announced the mass production of next rockets after subsequent satellites of the Earth had been launched into space. This state was understood in the West as the effect of neglecting the Soviet threat and the crea-

ally. Also the belief in the excellence and superiority in the sphere of nuclear weapons of the United States over the Soviet Union played a significant role. S. Zapolski, *op. cit.*, p. 22-23.

¹⁴ At the end of the 1950s the area of the United States was in the range of the Soviet nuclear weapons. Serious doubts began to appear among the allies whether the United States would decide to stand up for Western Europe, risking Soviet nuclear retaliation on its own territory.

¹⁵ J. L. Gaddis, *Strategie powstrzymywania...*, p. 230-231.

¹⁶ S. Zapolski, *op. cit.*, p. 28-29.

¹⁷ S. Zarychta, *Doktryny i strategie NATO 1949-2012*, Gdynia 2012, p. 55.

¹⁸ On 3rd April 1957, German Chancellor Adenauer spoke publicly for the equipment of the Bundeswehr in the nuclear weapons. In less than a year later, the Bundestag adopted a resolution on this issue. J. Kukułka, *Historia Współczesna Stosunków Międzynarodowych 1945-1996*, Warsaw 2001, p. 113.

tion of the “missile gap” between the potentials of both powers¹⁹. It turned out that in the late 1950s the Soviet Union had enough military potential to carry out a massive nuclear attack on Western Europe and the USA. This fact meant in effect that the basic assumptions of the ‘massive retaliation’ strategy became obsolete, and deterrence no longer played its role.

2. POLITICAL AND MILITARY CONCEPTS OF “FLEXIBLE RESPONSE”

At the end of Eisenhower's presidency in the 1950s the doctrine of “massive retaliation” underwent a crisis. The most important objection towards it was the lack of flexibility, as the only answer to the aggression of the Eastern Bloc countries was to be a massive nuclear attack. This concept could act as a deterrent only until the decisive nuclear superiority over the Soviet Union and “untouchability” of the US territory was maintained. However, at the end of the 1950s the awareness of the inevitability of a Soviet nuclear attack, or a nuclear retaliation, forced the United States and its allies to seek more flexible solutions.

The theories of a total war as well as a limited one were put at the forward. They varied solely in the scale of the use of nuclear weapons. Supporters of the war in a global context were divided into two groups, one of which promoted a pre-emptive strike, the second one - handling an enemy's attack, and then applying retaliatory attacks. Different concepts clashed in the first group, ranging from “massive retaliation” limited only to the territory of Europe through “a pre-emptive strike”, and ending with “a preventive war”. The first idea involved attacks on major economic, industrial and military facilities in the Soviet Union, but only in the event of conflict on the Old Continent. A “pre-emptive strike” was to rely on a massive nuclear strike carried out at the right time preceding an enemy's attack. While, a “preventive war” was confined to the destruction of industrial centers and the nuclear arsenal of an enemy before it would be ready for military action. The second group included sympathizers of the concept of the “second-strike” assuming a nuclear attack of the strategic Air Forces and the missile arsenal against strategic armed forces of an attacking enemy. The strategies of “limited and sustainable deterrence” were taken into consideration as well. The first of them pointed to cities as targets of a nuclear attack, while the second one both the enemy's armed forces and its cities²⁰.

¹⁹ In the late 1950s and early 1960s the US advantage in the field of nuclear weapons declined, as it did in the field of missile means of delivery. The Kremlin constantly expanded its system of inter-continental ballistic missiles with nuclear warheads, thereby consolidating its position as the undisputed leader in conquering space. In 1959 the Soviet Sputnik photographed the reverse side of the moon for the first time. See: A. Albert, *op. cit.*, p. 374, 434. In the early 1960s the Kennedy Administration recognized the “nuclear gap” as a myth. However, by mid-1964 the American nuclear arsenal increased by 150% and the number of means of delivery by 200%. See: J. L. Gaddis, *Strategie po-wstrzymywania...*, p. 301.

²⁰ J. Lider, *Wojny i doktryny...*, p. 122-124.

Proponents of the concept of “limited wars”²¹ called for the preparation of the United States not for a global war, but for those waged in smaller areas. Therefore, it was proposed to expand the arsenal of tactical nuclear weapons used selectively against military objectives located only on the battlefield, not the back. It was felt that also modern land and navy forces would be necessary to conduct the limited warfare²².

The new President John F. Kennedy Administration carried out the full review of the US military strategy. Its effect was the strategy of “flexible response” proclaimed in 1961. General. M. D. Taylor²³ was the ideologist of the new doctrine. In his book “*Uncertain signal*” he was the first to use the term “flexible response”, and he stated that the US forces should have been ready to participate in all kinds of wars, ranging from conventional, limited and partisan, to total and unconventional ones. Taylor also called for maintaining the ability to retaliate at all possible levels, from local threats to a total war. He marked, however, that the nuclear power could not be the only option in the fight against an enemy. He even believed that a total war involving nuclear weapons could be ruled out because of the mutually devastating consequences to which it would lead²⁴. General also proposed the reversal of the roles of the “shield” and the “sword”. Strategic nuclear forces were to assume the role of the “shield” and create the so-called nuclear umbrella, while conventional forces were to be the “sword”, equipped with tactical and operational nuclear weapons so as to enhance the effectiveness of operations.²⁵

Washington accepted most of Taylor’s postulates. In 1962 in his speech during the session of the National Security Council, President Kennedy finally clarified the three prin-

²¹ The American politician and strategist Henry Kissinger was the supporter and also the originator of the theory of a limited war. In his monograph of 1957 - *Nuclear weapons and foreign policy* he indicated two ways to adjust the US policy and military strategy to new circumstances. These included the improvement of the deterrence strategy in order to achieve the expected political benefits, and the development of a new model of wars in place of “massive retaliation”. As he argued, the United States could then impose their conditions to an enemy ‘from the position of strength’ - using the threat of a nuclear war or its implementation, but not in the form of a total, but a limited war. Tactical nuclear weapons owned by each branch of the armed forces were appropriate means for doing so. See: H. Kissinger, *Nuclear weapons and foreign policy*, New York 1957, p. 125-131, 174-202, 405-406.

²² *Ibidem*, p. 126.

²³ At that time General Maxwell Davenport Taylor was the Head of the Joint Committee of Chiefs of Staff.

²⁴ In 1955 the Federal Civil Defense Administration of the USA developed a report, which concluded that 92 areas of critical importance for the United States, inhabited by 68 million people, could be the objectives of a Soviet nuclear attack. However, according to the Command of Air Defense the potential objects of attacks were 170 cities with over 50,000 inhabitants, where 55% of the population lived and 75% of industry of the country was located. Only an attack on the 50 most important cities could mean the death of 40% of the population and the destruction of 60% of the industry. According to the most moderate calculations, 15-20 million people were to lose lives and 20-25 million became injured. See: H. Kissinger, *op. cit.*, p. 67, 70. See: H. Kissinger, *op. cit.*, p. 67, 70.

²⁵ J. Lider, *Ludzie i doktryny. O teoretykach i doktrynach wojennych Zachodu*, Warsaw 1969, p. 84-85; J. Lider, *Wojny i doktryny...*, p. 130.

ciples of the American military policy. The first rule related to the expansion of nuclear forces, the size of which was to make a decisive pre-emptive strike or, if necessary, also a retaliatory attack possible. Another rule proclaimed the need to increase the ability of NATO states to wage limited, conventional and special wars, thus creating favorable conditions for the United States and Great Britain²⁶ to wield massive nuclear attacks. The last principle concerned the proper preparation of the US forces for future military operations in the context of local, conventional or guerrilla wars²⁷.

According to the strategy of “flexible response”, in the first half of the decade the United States increased its nuclear arsenal. The number of nuclear warheads grew one and a half, and means of delivery twice. Moreover, the naval, land and air forces were extended in the framework of strengthening the capacity to wage limited and local wars²⁸.

Kennedy Administration, especially after the Berlin²⁹ and the Cuban³⁰ Crises, put special emphasis on strengthening the conventional capabilities of NATO³¹. It cut off the use of the nuclear deterrent factor by the Alliance as the most effective and least ex

²⁶ In October 1952 Great Britain conducted its own nuclear test and became the third nuclear superpower in the world. More: M. Rojszczak, *Broń jądrowa. Boży gniew*, Edition 2001, [online]. [available: 13 I 2014], Available on the Internet: <http://www.atominfo.pl/archiwum/atominfo.pdf.40-45>.

²⁷ S. Zapolski, *op. cit.*, p. 36.

²⁸ J. L. Gaddis, *Strategie powstrzymywania...*, p. 301; J. Lider, *Wojny i doktryny...*, p. 132-133. From the beginning of the 1960s, the armed forces of the United States were divided into the traditional and functional structures. Land, air and navy forces were consistently a traditional component. While functional forces included: air and missile defense strategic forces, suitable for early detection and liquidation of objects in the airspace; general purpose forces, which were to be used to a limited or a total war with the use of nuclear weapons; strategic offensive forces equipped with intercontinental missiles, bombers, nuclear submarines, air tankers; forces and means of strategic transport of troops and reserves of the armed forces. More: S. Zapolski, *op. cit.*, p. 46-47.

²⁹ The unregulated case of Germany, in particular of Berlin, exacerbated relations between East and West at the turn of decades. Nikita Khrushchev's ultimatum regarding the establishment of West Berlin a free and neutral city was rejected by the West and ended up closing the border between the capital of East Germany and West Berlin, and the construction of the Berlin Wall in August 1961. More: J. Kukułka, *op. cit.*, p. 114; M. McCauley, *Rosja, Ameryka i zimna wojna 1949-1991*, translated by R. A. Galos, Wrocław 2001, p. 46-51.

³⁰ The Soviet attempt to create a direct nuclear threat to the United States through the deployment of nuclear installations within Cuba in 1962 led to the biggest Cold War crisis after the World War II, putting the world on the threshold of a nuclear holocaust. Contrary to assumptions of the Kremlin, the United States having detected medium-range missiles on the territory of Cuba responded very categorically, demanding their immediate removal. Despite pressure from the Pentagon on the use of nuclear weapons, Kennedy limited their activity to the blockade of the island, hence stopping the supply of rockets. The crisis was resolved only after a series of secret negotiations between Washington and the Kremlin, which was the result of the withdrawal of Soviet missiles from Cuba and the end of the sea “quarantine”. See: J. Tyszkiewicz, E. Czapiewski, *Historia powszechna. Wiek XX*, Warsaw 2012, p. 653–654; M. McCauley, *Rosja, Ameryka i...*, p. 52-54.

³¹ While in 1959 the overall ratio of conventional forces in Europe was 2.7: 1 in favor of the Soviet Union, whereas ten years later it was only 1.7: 1 (from 2: 1 to 1.3: 1 in terms of number of soldiers,

pensive means to discourage the Soviet Union from an attack with prevailing conventional forces. An important argument of Washington on this issue was to increase the number of operational variants before introducing nuclear weapons as the ultimate solution. The new strategy, especially the idea of reversing the “shield” and “sword”, were not welcomed in Europe with enthusiasm. According to the American allies, moving the center of gravity on conventional weapons could mean a loss of confidence in the US nuclear weapons as a fundamental element of deterrence³². Therefore, the revision of strategies and structures for the allied armed forces in this respect encountered a strong resistance on the part of the Allies³³.

The control over the use of nuclear weapons by NATO became one of the most important issues in the mutual relations between the United States and its European allies³⁴. Disputes arising while discussing this matter significantly delayed the implementation of NATO's new strategic arrangements. Finally, after 7 years³⁵ of the USA's proclamation of the strategy of “flexible response” the Alliance adopted the Overall Strategic Concept of the Defense of the North Atlantic Treaty Organization Area - MC 14/3.

As in previous strategies, the main assumption was to deter an enemy from aggression against members of the Alliance, using both nuclear and conventional potential. In the event of a war, three types of response were already anticipated. The first one was to be the so-called direct defense, which consisted of the repulse of an enemy's aggression by any means, including nuclear weapons, as well as preventing the enemy from the realization of its goals. The second type of response was to be slow escalation, that is repelling aggression by intensifying, or where possible, by controlling the scale and intensity of combat operations. Among others, demonstrations of nuclear force and selective attacks on chosen targets were allowed. The third and the last and at the same time the most overwhelming response was to be a massive nuclear response, taken only when the Soviet Union would launch a nuclear war. It was assumed that the targets of the attack would be military objectives and, if the situation required, the urban and industrial facilities. The document strongly emphasized the role of strategic nuclear forces, and tactical nuclear weapons remaining at the disposal of the main

from 4: 1 to 2.4: 1 in terms of the number of combat units and from 8: 1 to 3.5: 1 in the number of tanks). See: R. Kupiecki, *Siła i solidarność. Strategia NATO 1949-1989*, Warsaw 2012, p. 243.

³² Changes in the US strategy were read in the West as significant weakening of the USA's readiness to deliver a nuclear blow against the USSR. The outbreak of a nuclear conflict in Europe threatened similar retaliation in the United States. See: Lider, *Wojny i doktryny...*, p. 135, 221. Aspirations of European nuclear powers, i.e. Great Britain and France, also played an important role since their nuclear arsenal henceforth served as the shield rather than the sword. See: S. Zapolski, *op. cit.*, p. 37-38.

³³ J. L. Gaddis, *Strategie powstrzymywania...*, p. 299-300.

³⁴ While conventional forces were integrated under the joint NATO command, strategic air forces, i.e. the main nuclear power of the Alliance, remained under the national American command. The major challenge for NATO in political and defense spheres was also the withdrawal of France from NATO's military structures in 1965. This decision, being a kind of protest against the American hegemony, forced NATO to verify defense plans as well as withdraw the US and allied troops from France.

³⁵ The NATO Council adopted the document encoded as MC 14/3 not until January 1968.

commanders of the NATO. Along with conventional weapons they were the effective means of deterrence and potential tools to inflict disastrous losses on an enemy.³⁶

In 1969 the strategic concept *MC 14/3* was supplemented with *Means of Implementation of the Overall Strategic Concept of the Defense of the North Atlantic Treaty Organization Area (MC 48/3)*, which set out the requirements for the execution of defense of NATO countries as well as the priority was to increase the capacity to conduct operations using conventional forces, with maintaining the possibility of nuclear escalation³⁷.

The fourth strategic concept of the Alliance lasted 24 years and became the longest binding strategy of NATO. Despite numerous events in the international arena, several modifications of doctrines and strategies in the United States and frequent disagreements and divergent views on various issues within the Pact, its main assumptions remained unchanged until the end of the Cold War.

The end of the 1960s witnessed the further struggle for dominance in the world. The Vietnam War was a painful defeat for the Americans³⁸. Its enormous costs, not only in financial and military terms, for many years did not allow the American society to enjoy the “fruits of peace”, which the gradual reduction of worldwide military presence of the United States had brought with itself³⁹. Despite the advent of the “détente era”⁴⁰ the continuing high arms rate of both powers resulted in acquiring the ad-

³⁶ More: *Final decision on MC 14/3. A report by The Military Committee to The Defence Planning Committee on Overall Strategic Concept For The Defense Of The North Atlantic Treaty Organization Area*, [in:] G. W. Pedlow, *The NATO Strategy Documents 1949-1969*, [online]. [available : 9 IX 2015], Available on the Internet: <http://www.nato.int/archives/strategy.htm>.

³⁷ S. Zarychta, *op. cit.*, p. 57.

³⁸ Not considering it in terms of a local conflict, but as the next step in the Communist aggression in the world, in the first half of the 1960s the United States provided the South Vietnam with military and economic aid and launched direct combat operations on its territory in 1965. The gradual increase of the military contingent (in 1968 it was composed of 540 thousand soldiers) and the large-scale use of incendiary materials and herbicides did not bring the expected effects. In American and international societies there was growing opposition to the war, the violent images of which were shown on TV around the world. This fact, as well as the losses of peoples' lives and enormous costs of waging war decided on the gradual withdrawal of the US troops. They did not abandon, however, further financing and supplying the South Vietnamese army. Only a drastic reduction of support in the mid-70s, due to the removing of the government of President Richard Nixon from power, contributed to the defeat of the South and the establishment of communist Vietnam. See: J. Kukułka, *op. cit.*, p. 170–173.

³⁹ Economic considerations, caused inter alia by the recession, meant that the President Johnson Administration, followed by the Nixon and Ford Administrations, in its military policy was to take into account the anti-arming sentiments not only in the US Congress. In the 1950s budget cuts on national defense averaged 1.7 billion per year, while in the next decade it was over three times more. Savings were sought in many fields, from the reduction of the military presence on other continents to the maintenance of “sufficiency” in place of the previously applicable desire to “gain an advantage” primarily in strategic weapons. See: J. L. Gaddis, *Strategie powstrzymywania...*, p. 382-383, 435.

⁴⁰ In the early 1970s, a period of relaxation began in the relations between the East and the West and lasted ten years. Its forerunner was the Proclamation on “The US Foreign Policy in the 1970s. The New Strategy for Peace” delivered by US President Richard Nixon in 1970. Nixon announced the de-

vantage by the USA in the number of men under arms for the first time after the World War II, on the other hand the Soviet Union's gradual catching up with the US military potential. As early as in 1970 the Soviet Union had more intercontinental missiles than the United States. However, the overall advantage in nuclear weapons still remained on the side of the latter⁴¹.

In 1971 the modification of the US military strategy took place. Taking over the power by the Administration of President Richard Nixon resulted in the introduction of the new strategic concept called "realistic deterrence". It was the continuation of "flexible response", in which it was decided to increase the effectiveness of "deterrence". After all, the new strategy maintained the concept of flexible handling of nuclear and conventional potential⁴².

The main assumptions of the new strategy was the creation of a volunteer army, the reduction of the number of American troops, the expansion of conventional forces while maintaining the strategic role of nuclear weapons, reducing military spending and financial assistance for the modernization of the armed forces allied for the USA. The most important changes in the new strategy, however, was a departure from the principle of "two and a half wars" to "half a war", the replacement of the principle of "assured destruction" with the principle of "strategic prudence", as well as "basing on the advanced frontiers" with "strategic mobility". In other words, the theory of "realistic deterrence" assumed the maintenance of the US conventional forces capable of conducting only one major war. The possibility of military intervention simultaneously on several fronts, e.g. in Europe and Asia, or against national liberation movements in Latin America and Africa, were abandoned. While the role of naval and air forces whose task was to ensure the movement of conventional troops in any corner of the globe was increased⁴³.

The strategy of "realistic deterrence" ushered in the rapid development of the strategic offensive forces of the USA and other NATO countries. Under the so-called "ocean strategy" a part of the strategic nuclear weapons were moved from land to sea. The idea was to reduce the number of targets of an enemy's nuclear strikes in the United States. At the same time, considerable attention was paid to maintain the reign on the Atlantic Ocean and the seas surrounding Europe. It was to be a necessary condition for the success of a war in the European Theatre of Operations⁴⁴.

sire to maintain stable peaceful relations in the world and the introduction of the 'era of negotiations' instead of confrontation in relations with the communist states.

⁴¹ At that time the United States had more multi-head missiles at disposal. See: A. Gromyko, W. Łomiejko, *Życie, czy zagłada jądrowa?*, translated by R. Ciszewski, Warsaw 1985, p. 51.

⁴² S. Zapolski, *op. cit.*, p. 48

⁴³ *Ibidem*, p. 49-53.

⁴⁴ S. Zarychta, *op. cit.*, pp. 59-60.

In 1976 the strategy of “realistic response” was expanded by the concept of “selective choice”.⁴⁵ It assumed the multivariate use of strategic strike forces, however, with the emphasis on a limited nuclear war. In its course the potential nuclear strikes were to be directed only against the armed forces and military objects of an enemy, thus limiting civil losses to a minimum⁴⁶.

The following year, after two years’ discussions, the North Atlantic Alliance adopted the so-called “double-track strategy” in dealings with Eastern Bloc. The impetus for its achievement was the disturbed balance of power in the Central Theater of Military Operations triggered by the deployment of multi-head medium-range missiles by the Soviet Union in Eastern Europe. The answer to this move was to be the increase in the Alliance possibilities of real deterrence by strengthening continually the military potential of NATO and the deployment of the American Pershing II missiles in Western Europe, as well as parallel search of relaxation in relations with the Soviet Union and other Warsaw Pact states. The strategy of “double-track”, realized anyway by the Alliance to the end of the 1980s, put the strong emphasis on the continuation of negotiations on arms control⁴⁷.

The war in Afghanistan⁴⁸ began by the Soviet Union in 1979 ended the period of détente, which lasted nearly a decade and at the same time became a stimulus for further modifications to the American foreign policy and military strategy. Jimmy Carter

⁴⁵ The concept developed by James Schlesinger, the former Secretary of Defense, is also known as the “Schlesinger Doctrine”.

⁴⁶ *Ibidem*, pp. 60; S. Zapolski, *op. cit.*, p. 54.

⁴⁷ S. Zarychta, *op. cit.*, p. 60. The maintained “balance of terror” between the USA and the USSR led in Europe to both a feeling of nuclear fatalism and willingness to counter the threat actively. It was manifested in numerous demands on the ban of nuclear weapons and disarmament proposals and counterproposals. The first agreement on limiting nuclear weapons was the treaty banning nuclear tests in three environments: in the atmosphere, outer space and under water signed in 1963. The next step was the “Treaty on the Non-Proliferation of Nuclear Weapon” signed on 1 July 1968, which obliged not to transfer nuclear weapons, information and devices for their production by countries possessing weapons of mass destruction to countries being not in possession of them. The SALT II and I proved to be the milestone towards limiting nuclear arms race in the form of reduction of strategic weapon systems. More: M. Żuber, *Proliferacja broni jądrowej a bezpieczeństwo globalne*, (in:) *Problematyka bezpieczeństwa w administracji publicznej*, collective work ed. by T. Okrasa, Warsaw 2010, p. 75–100; J. Kukułka, *op. cit.*, p. 136–139; Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and under Water, [online]. [available: 23 IX 2015], Available on the Internet: <http://www.fas.org/nuke/control/lbtbt/text/lbtbt2.htm>; *Interim Agreement between the United States of America and the Union of Soviet Socialist Republics on Certain Measures with Respect to the Limitation of Strategic Offensive Arms* [online]. [available: 23 IX 2015], Available on the Internet: <http://www.fas.org/nuke/control/salt1/text/salt1.htm>; *Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Strategic Offensive Arms, Together with Agreed Statements and Common Understandings Regarding the Treaty*, [online]. [available: 11 IX 2015], Available on the Internet: <http://www.fas.org/nuke/control/salt2/text/salt2-2.htm>.

⁴⁸ The nine-year war of the Soviet Union supporting the Afghan communist regime against the Mujahedin guerrilla supported by the USA cost the lives of thousands of Soviet soldiers and was called the Soviet Vietnam. More: J. Kukułka, *op. cit.*, p. 318–321.

presented changes to its assumptions during the Presidential Proclamation in January 1980. Carter announced the desire to maintain the position of the superpower by the United States and the desire to hamper communism and fulfill the role of a defender of the West. These proposals were to be achieved through political and military alliances and the construction of military bases mainly in the Middle and Far East. New strategic objectives were set out in "Presidential Directive 59" signed half a year later. Basically it determined the new directions in the planned use and development of nuclear weapons. Therefore, the Directive anticipated the capability to conduct a long-term though a limited nuclear war and – which did not fall already under the "flexible response" – allowed the possibility of pre-emptive, massive or selective attacks on selected targets of an enemy, while still retaining the ability to further nuclear assaults. Nuclear missiles, already characterized by much greater accuracy, were to harm both opposing forces as well as objects of strategic importance to an enemy, that is political and administrative centers for governing the state, command posts, areas of nuclear weapons deployment and communications nodes. What is particularly important, the Directive 59 did not rule out nuclear strikes on civilian targets in the form of all major cities of the Warsaw Pact countries⁴⁹.

Although the findings of the doctrine outlined in the last year of the term of Jimmy Carter were not rejected by his successor, the electoral victory of Ronald Reagan meant a mandate to change that course and strengthen the American power. From the very beginning of holding his office the new President criticized the policy of détente relating to the Soviet Union. He even argued that the deviation from détente meant reducing the risk of a nuclear war by pushing both parties to negotiate an agreement on all issues diverging them. According to the assumptions developed in 1983 in the Directive No. 75 of the National Security Policy, the Reagan Administration sought to "deter and over time fend off the Soviet expansionism through effective confrontation in all areas of international politics". Within its framework there was planned the development of the arsenal of nuclear and conventional weapons, the introduction of economic sanctions, the promotion of human rights, as well as covert support for anti-Soviet movements in Eastern Europe⁵⁰.

Reagan did not approve the concept according to which a stabilizer of the international system would be the balance of nuclear potentials. He thought that the easiest way to overcome the "evil empire", as he called the Soviet Union, was pulling it in the grueling arms race. Its reactivation took place already in 1982, when the Pentagon developed a very costly 5-year program of armaments, including the production of neutron weapons, multi-head ballistic missiles, bombers and submarines. In turn, in March of the following year the so-called Strategic Defense Initiative (SDI) was put forward, in which the idea of "star wars" and the implementation of the project to build a strate-

⁴⁹ More: M. Getler, *Carter Directive Modifies Strategy for a Nuclear War*, "The Washington Post" of 6 VIII 1980, p. A10; S. Zapolski, *op. cit.*, p. 59-62, 70.

⁵⁰ More: *U.S. Relations with the U.S.S.R (NSC-NSDD-75)*, [online]. [available: 11 IX 2015], Available on the Internet: <http://fas.org/irp/offdocs/nsdd/nsdd-075.htm>.

gic missile defense system were adopted. Under this project the United States intended to deploy in space and on earth the evaluative anti-missile system. The cost of its implementation was estimated at \$ 25 billion⁵¹.

The response of the Soviet Union seeking to restore the balance of powers was the deployment of operational-tactical missiles of extended range within the territories of the GDR and Czechoslovakia, and increasing the number of submarines equipped with missiles with nuclear warheads, operating near the territorial waters of the United States⁵².

Complete change in the relations between the two powers led to the selection of Mikhail Gorbachev the Secretary-General of the Communist Party of the Soviet Union (CPSU) in March 1985. He presented his "new thinking" based on the principles of "transparency of the political life, reconstruction and acceleration"⁵³ and the break with the so-called Brezhnev Doctrine⁵⁴, which was received in the West as a kind of revolution in the Soviet political strategy. Announcing the resignation from interference in the internal affairs of satellite states and the defense of the Soviet sphere of influence in Europe as well as denying the arms race was a rupture with the decades-long tradition of the rule of the communist Kremlin. The progressive processes of détente between the East and the West began to increasingly undermine the sense of the existence of ideological, political and military divisions. Political and military blocs functioning from the end of World War II gradually abandoned the hostile rhetoric and propaganda and looked for new areas for agreement⁵⁵. The avalanche of events that suddenly and with full force moved in Eastern Europe and the Soviet Union turned out

⁵¹ J. Kukułka, *op. cit.*, p. 262. B. Koszela, S. Wojciechowski, *Zimna Wojna (1946-1989) i jej konsekwencje dla ładu międzynarodowego*, Poznań 2007, p. 31-32.

⁵² B. Koszela, S. Wojciechowski, *op. cit.*, p. 31.

⁵³ The proclaimed Gorbachev's reform slogans were better known under their Russian names: *glasnost'*, *perestroika* and *uskorienije*.

⁵⁴ Brezhnev Doctrine, also known as the doctrine of "limited sovereignty" of the communist camp countries, meant in fact the right of "fraternal parties" to defend socialism threatened by the forces of counter-revolution operating in collusion with "external enemies".

⁵⁵ In March 1985 the parties returned to START (Strategic Armaments Reduction Talks), which had been begun in 1982 and then suspended by the Soviet side. The negotiations concerned problems of space, nuclear strategic and medium-range nuclear weapons. In 1986-1987, the two parties proposed a number of new projects of agreements. The most important ones included the Soviet proposal made in Reykjavik on the total destruction of nuclear weapons and the Treaty of the 1987 on the elimination of the medium- and shorter-range INF (Intermediate Nuclear Forces) missiles. Another agreement became the basis of the "Treaty on the reduction and limitation of strategic offensive weapons" (START I) adopted after almost ten years of tough negotiation *Control Agreements*, [online]. [available: 21 IX 2015], Available on the Internet: <http://fas.org/nuke/control/>; *Strategic Arms Reduction Treaty (START I) Chronology*, [online]. [available: 21 IX 2015], Available on the Internet: <http://fas.org/nuke/control/start1/chron.htm>.

to be a surprise on both sides of the “Iron Curtain”. The nuclear arms race and the Cold War ended more quickly than any of the politicians and strategists could have imagined⁵⁶.

3. NUCLEAR CONCEPTS OF “MASSIVE RETALIATION” AND “FLEXIBLE RESPONSE”

The strategy of “massive retaliation” was, to an extent, the continuation of the “containment” strategy. As in the previous period, the basic tool of deterrence was still nuclear weapon. Indeed, it became very quickly the foundation of all the military plans of the United States. Their blatant acknowledgement was the creation of powerful strategic strike forces capable of launching attacks both preventive and those of typical massive retaliation⁵⁷.

Although the doctrine of “massive retaliation” did not rule out the possibility of waging limited wars, it treated them rather marginally, allowing their launching only in the so-called peripheral areas. Its supporters called for the need to reduce the scale of the use of nuclear weapons to its tactical version, seen by many as weapon of “small” power and, in case when used for strategic purposes, applying to selectively chosen military targets directly on the battlefield, and also on its back. Cities, industrial facilities and communications nodes were to be covered with the contractual prohibition of attacks.⁵⁸

Strategists thought that the common form of a conflict was to be, however, a total nuclear war, using the overall security of the United States territory and the overwhelming US advantage in the nuclear arsenal and means of delivery. Its nuclear concept focused mainly on Europe and assumed that nuclear weapons would be used to the full extend and from the very beginning of each serious conflict⁵⁹.

⁵⁶ Great systemic changes that occurred in the late 1980s and 1990s in Central Europe began to undermine the meaning and usefulness of the existing structures of the Eastern Bloc. The issue of the Warsaw Pact as a key instrument to sanction political and military hegemony of the Soviet Union was put forward. Despite the fact that the Soviet Union postponed the symbolic act sealing the collapse of its empire, the liquidation of the Bloc military structures took place on 1 April 1991, while the final termination of the Warsaw Pact three months later. The CMEA constituting the second pillar of the socialist camp collapsed together with the liquidation of the military alliance. The last and final act of dismantling the post-war world order was the disintegration of the Soviet Union, which was officially announced on 30 December 1991 in Minsk. The termination of the Warsaw Pact and the CMEA, the failure of the referendum on the preservation of the USSR as a renewed federation and the failed coup in Moscow greatly accelerated the internal break-up of the country. More: J. Kukułka, *op. cit.*, p. 451–455.

⁵⁷ The development of nuclear weapon systems, including tactical weapons, and equipping all branches of armed forces with them proved to be much cheaper than the development of costly conventional forces. In the first three years of the policy of the “New Look”, the defense budget of the United States was reduced by approx. 20%, while the Air Force as the main performers of the new strategy was extended at the same time, and spending on the development of new means of delivery increased. See: R. Kupiecki, *op. cit.*, p. 157.

⁵⁸ More: J. Lider, *Doktryna wojenna Stanów...*, p. 279-293; B. Chocha, J. Kaczmarek, *Wojna i doktryna wojenna. Wybrane problemy*, Warsaw 1980, p. 254.

⁵⁹ S. Zapolski, *op. cit.*, p. 20-21; B. Chocha, J. Kaczmarek, *op. cit.*, p. 252.

Under the so-called strategy of the “sword and shield”, the Americans and their allies rejected the possibility of a capitulation or planned retreat from the European territory. While its defense assumptions were based on conventional delaying measures of the Western armies, giving the necessary time to prepare and carry out massive bombing within the strategic nuclear attack of the American Air Force⁶⁰. The *Overall Strategic Concept For The Defense Of The North Atlantic Treaty Organization Area MC 14/2*, based on the document (NSC-162/2) of the US National Security Council, allowed the possibility of the outbreak of a total nuclear war, launched by the aggression of the Soviet Union on Western European countries. It was expected that the start of such a war would be a powerful nuclear offensive carried out in a very short time and with great intensity, aimed at the elimination by the USSR of NATO nuclear weapon delivery systems and other strategic military targets. Moreover, it was assumed that the only way to prevent the loss of the Alliance territory would be the immediate and massive use of nuclear weapons at both strategic and tactical levels. The first phase of a war, lasting no longer than a month, was expected to be characterized by the largest number of nuclear strikes⁶¹. While the second and last phase of the war, of the duration difficult to determine, was to be spent on reorganization, replenishment and achievement of specified military objectives enabling the end to the conflict⁶².

In connection with the probability of the drastic reduction in mobilization bases of both warring parties, and taking into account the decisive importance of operations conducted in the first phase of a war, the NATO's Military Committee prioritized the separation of the active forces capable of achieving success at the beginning of a conflict. On the one hand, they were to ensure an immediate and devastating nuclear counterattack carried out using all available forces and retain the ability to receive and survive an enemy's attack, on the other hand to deprive it of nuclear capabilities, eliminate from the fight and destroy its resources and communications systems⁶³.

The adoption by NATO of the nuclear deterrent factor as the most effective means, at the same time generating the lowest costs, was considered the best way to discourage the Soviet Union from launching attacks on Western Europe with conventional forces. This resulted in the deployment on the territory of Europe of tactical nuclear weapons and medium-range ballistic missiles⁶⁴.

⁶⁰ R. Kupiecki, *op. cit.*, p. 156.

⁶¹ The first days of a nuclear conflict were to be of decisive importance for the fate of a war. It was expected that then warring parties would earnestly try to gain an advantage, fully using their arsenals and making huge destruction.

⁶² *Final decision on MC 14/2 (Revised). A Report by The Military Committee on Overall Strategic Concept For The Defense Of The North Atlantic Treaty Organization Area*, (in:) G. W. Pedlow, *The NATO Strategy Documents 1949-1969*, s. 288, 290, [online]. [available: 9 IX 2015], Available on the Internet: <http://www.nato.int/archives/strategy.htm>.

⁶³ *Ibidem*, p. 290, 293.

⁶⁴ The US nuclear weapons deployed in Europe would remain under the control of Washington.

The era of “balance of terror” which began in the early 1960s, associated with the emergence of the so-called principle of mutual assured destruction⁶⁵, in fact ended the period of definite nuclear retaliation in the event of the Soviet aggression and initiated much more flexible response. Under the new strategy, the United States began preparations to conduct various types of wars below the threshold of a total nuclear war. This did not mean, however, hampering of the development of a nuclear arsenal but, on the contrary, focusing on the expansion of strategic nuclear forces. According to the concept of the strategic triad,⁶⁶ there were introduced, among other things, new long-range bombers⁶⁷, intercontinental missiles⁶⁸ and ballistic missiles launched from sub-

⁶⁵ Its source was the concept of the so-called guaranteed damage developed in 1963. As a result of numerous transformations, in 1967 it finally adopted the form of the principle of “mutually assured destruction”. In essence, this concept boiled down to the conviction that any attack on the part of one of the superpowers would trigger a retaliatory strike, resulting in losses of a similar or larger scale. See: R. Kupiecki, *op. cit.*, p. 220.

⁶⁶ The concept of the strategic triad assumed the creation of three independent means of delivery of nuclear weapons to ensure, regardless of the loss, carrying out effective nuclear strikes.

⁶⁷ The bombers B-52 entered service in 1955 and constituted the core of the US military strategic forces during the Cold War. They replaced the aircraft Convair B-36 and the Boeing B-47 Stratojet. In 1963 already 650 strategic bombers stationed in 42 divisions at 38 airfields served in the US strategic Air Forces. See: S. Zarychta, *op. cit.*, p. 133.

⁶⁸ The first American intercontinental ballistic missiles (ICBM) were Atlas missiles constructed in 1956 and introduced into service in 1959. They had a two-stage drive and five liquid propellant engines, providing transfer of a nuclear warhead with a capacity of 1.44 Mt and 3.75 Mt (depending on the version) on a distance of 14000 km. Atlases were launched from underground silos. Due to the low accuracy they were intended to destroy cities and industrial centers. In the early 1960s the ICBM Atlas missiles were replaced by the new generation of Minuteman I. Unlike predecessors they were driven by solid fuel and carried the W59 warheads with a capacity of 1 Mt. In 1966 “Ones” were superseded by more advanced missiles Minuteman II. Their range was extended from 10000 km to 12,500 km, accuracy increased by 200 m and new heads W-56 with a capacity of 1.2 Mt were used. The last ones of the series - Minuteman III missiles - have been in service since the late 1960s. They are characterized by very short start time, the speed of 24000 km / h (approx. 20 Mach), accuracy of up to 120 m and the ability to carry three independently guided warheads W-78 with a capacity of 335-350 kt. See: SM-65 Atlas, [online]. [available: 30 IX 2015], Available on the Internet: <http://www.org/nuke/guide/usa/icbm/sm-65.htm>; LGM-30 Minuteman III, [online]. [available: 30 IX 2015], Available on the Internet: http://www.org/nuke/guide/usa/icbm/lgm-30_3.htm.

marines⁶⁹. Equipping with modern nuclear weapons for tactical and operational purposes covered all types of troops, including those stationed in Europe⁷⁰.

In 1958, the NATO Council approved the document MC 70, containing a comprehensive plan for development of the armed forces of Member States for the next five years. It placed particular emphasis on the equipment of Western armies in means of tactical nuclear weapons delivery and the strengthening of the Bundeswehr, which was to become the strongest army in the Central European Theater of Military Operations⁷¹.

In the 1960s also the concept of using nuclear mines in the system of operational-tactical barrages appeared in the military plans of NATO. Although, the Member States accepted the principles of their use under the name of the Trettner Plan⁷² not until 1964, preparations for their development began in 1950. Initially the construction of operational barrages strips only along the eastern border of West - East Germany was assumed. Ultimately, however, the Trettner strip reached the length of 650 km at the depth of 100 km and stretched from the Baltic Sea to Austria⁷³.

According to the adopted concept, nuclear mines⁷⁴ were planned to use both for putting self-barrages, as well as the construction of barrages combined with conventional engineering means. It was expected that in this configuration it could effectively stop an enemy's actions, hinder its troops' maneuvers and push them to assembly areas, a strike at which with the use of conventional weapons and nuclear power was to be prepared in advance. Depending on the covered direction and tasks performed, mines

⁶⁹ The first American medium-range submarine launched ballistic missile Polaris were introduced into service in 1960. Three different versions thereof (A1, A2, A3) were characterized by a range from 2200 to 4500 km, and the capability to deliver a warhead of 1 Mt or - as in the case of A3 - three heads of 200 kt. Poseidon was the successor of the SLBM Polaris, the world's first operational missile equipped with 14 independently guided warheads with the capacity of 50 kt. each (according to the START I limitations, the number of warheads was reduced to 10). The reduction of the power of nuclear weapons was possible due to much higher accuracy than its predecessor's, not-exceeding 450 m. In the early 1970s, 31 American nuclear-propelled submarines were equipped with 496 Poseidon missiles. See: Polaris, [online]. [available: 30 IX 2015], Available on the Internet: <http://www.org/nuke/guide/usa/slbm/a-3.htm>; Poseidon C3, [online]. [Accessed on: 30 IX 2015], Available online: <http://www.org/nuke/guide/usa/slbm/c-3.htm>.

⁷⁰ In the same period, the Soviet Union launched eight new or modified ICBM systems, two new SLBM systems and a new type of strategic bomber enabling reaching the territory of the USA. In 1970-1977, the United States reduced its armed forces by approx. 207,000 soldiers, while the Soviet army, which was almost twice larger, increased its ranks by further 262,000 soldiers. See: J. L. Gaddis, *Strategie powstrzymywania...*, p. 434.

⁷¹ S. Zarychta, *op. cit.*, p. 84-85.

⁷² General Heinrich Trettner, one of the most important western German commanders, was a big supporter of the concept of development of nuclear barrages.

⁷³ H. Krzeszowski, *Zasady wykorzystania i zabezpieczenia min jądrowych*, „Myśl Wojskowa Tajna”, 1969, vol. 2, p. 146.

⁷⁴ The first nuclear mines were constructed in 1950 in the United States on the basis of nuclear missiles being withdrawn from use.

were intended to be set individually at nodes, sections and strips of nuclear barrages⁷⁵. Their placement was also affected by the terrain, a type of planned combat operations, as well as the capacity of nuclear weapons, the span of which ranged from 0.01 to 47 kt. Nuclear mines could be placed underground, under water, on the ground and inside buildings to be destroyed⁷⁶.

According to the Polish data from the beginning of the 1980s, the number of all prepared chambers in West Germany exceeded 7,000, where 1,252 nodes with 4501 chambers⁷⁷ were recognized by intelligence. An extremely important issue was the fact that NATO treated mines as defensive measure and planned their use in both nuclear and conventional wars. According to Western strategists, the use of nuclear mines of very low power should not be considered as initiating a nuclear war, but only as the use of conventional barrages of increased power⁷⁸.

Another nuclear conception of that period, this time aimed at limiting civilian casualties, was the Single Integrated Operational Plan (SIOP-63), containing a list of targets attacked in the Warsaw Pact countries. These targets, in line with the assumptions of "flexible response", were limited to those of primarily military importance. They were divided according to the following hierarchy:

- targets Alpha: the destruction of the Soviet strategic forces and political and military command centers located outside the urbanized area;
- targets Bravo: the destruction of military facilities, including barracks, airfields and air defense units deployed outside the cities;
- targets Charlie: the destruction of military nuclear facilities, political and military command centers and 70% of industrial centers located in urban areas.

⁷⁵ Mines set individually were intended to destroy particularly important field, military and industrial objects. While the task of nuclear barrage nodes composed of a few mines was the creation of separate areas of nuclear destruction and radioactive contamination for tactical purposes. Sections of nuclear barrages made by connected nodes were to serve to create zones of destruction and radioactive contamination of the area at operational and tactical levels. Strips of nuclear barrages set along state borders or in front of important defensive frontiers were intended to create continuous destruction and contamination zones for hundreds of kilometers along and dozens deep. According to the tactical standards in force in NATO, a continuous nuclear barrage composed of mines with the capacity of 10 kt. spaced about 350-500 m apart was projected to be constructed in the plain and open field, especially on the main direction of an enemy attack. Their distribution according to the scheme: 2- 6 minutes on the area of 100 km² was designed to provide the total power of a nuclear explosion of 20-60 kt. See: B. Skulski, *Wpływ skażeń po wybuchach min jądrowych na działania wojsk armii ogólnowojskowej na Północno-Nadmorskim kierunku operacyjnym*, the doctoral thesis, ASG, Warsaw 1982, p. 15.

⁷⁶ B. Skulski, *op. cit.*, p. 14-15. The optimum depth of placing a mine, ensuring destruction of a target and the greatest the possible radioactive contamination of an area, depended on its power and ranged from 9 m with the capacity of 0,01kt to 162 m with the capacity 47 of kt. See: B. Pawłowski, *Wykorzystanie min jądrowych w armiach głównych państw NATO oraz ich wpływ na prowadzenie działań bojowych przez wojska własne*, the doctoral thesis, ASG, Warsaw 1987, p. 32.

⁷⁷ B. Skulski, *op. cit.*, p. 18.

⁷⁸ B. Pawłowski, *op. cit.*, p. 74.

The above targets were to be attacked in accordance with five specific variants:

- a) Preventive strikes on targets Alpha with 3,200 bombs and missiles (including multi-head ICBMs) to destroy 1700 objects;
- b) Preventive strikes on targets Alpha and Bravo with 3,500 nuclear warheads to destroy 2200 objects;
- c) Preventive strikes on targets Alpha, Bravo and Charlie with 4200 nuclear warheads to destroy 6500 objects;
- d) Retaliatory strikes on targets Alpha, Bravo and Charlie with 4,000 nuclear warheads to destroy 6400 objects;
- e) Retaliatory strikes on targets Alpha and Bravo with 3200 nuclear warheads to destroy 2,100 objects⁷⁹.

In practice their implementation meant firstly the elimination of an enemy's capability to carry out a nuclear attack, and only then the limitation of its arms capabilities by destroying industry and reducing the ability to deploy its troops on the territory of the Alliance.

This concept was slightly modified in 1976, after the United States had introduced the Schlesinger Doctrine and the principle of "selective choice" providing the flexible use of nuclear weapons against selected targets.⁸⁰ In line with this strategy, the strength of strikes performed and selected targets were to remain in close association with political objectives of a war conducted. It was assumed that a limited number of strikes with strategic forces would be performed under favorable conditions, manifesting in this way the willingness and ability to escalate hostilities. The significant accuracy of strikes was to allow the reduction of a number of possible targets of attack, and the conscious abandonment of planning attacks on urban centers was to reduce losses not directly related to military operations⁸¹.

⁷⁹ W. Burr, *The Nixon Administration, the SIOP, and the Search for Limited Nuclear Options, 1969-1974*, "National Security Archive Electronic Briefing Book" 2005, no. 173, [online]. [available: 30 IX 2015], Available on the Internet: <http://www.nsarchive.gwu.edu/NSAEBB/NSAEBB173/index.htm>.

⁸⁰ The guide developed in 1985 by the General Staff of the Polish Armed Forces concerning the nuclear weapons of NATO countries indicated the categorization of targets into four priority groups in the fight against nuclear weapons: Priority No. 1 - supreme military management centers, command posts and communications nodes, storages of nuclear weapons, start positions of strategic and strategic-operational missiles; Priority No. 2 – airfields for aircrafts-carriers or a runway of the length of over 3 km, anti-aircraft defense control centers, positions of means of nuclear weapons delivery, troops assembly areas, command posts; Priority No. 3 – the air defense system (airfields, positions of anti-aircraft defense missiles, etc.), large military warehouses and ports, crossing very wide water obstacles, large radio-technical equipment, large management and command control centers; Priority No. 4 - all other airfields with runways longer than 1.8 km, important elements of the operational formation of the front and the army, logistic devices, communications nodes, warehouses, ports and crossing wide water obstacles. See: B. Pawłowski, *op. cit.*, p. 70.

⁸¹ R. Kupiecki, *op. cit.*, p. 291. In practice this meant that the more accurate a bomb the less capacity of a warhead needed to destroy a particular target. Lower capacity of warheads and greater accuracy

The so-called Presidential Directive 59 (PD-59) prepared in 1980 under the leadership of Head of the National Security Council Zbigniew Brzezinski introduced further modifications to the assumptions of the nuclear strategy of the United States. The objectives of nuclear attacks on the part of the United States were to be enemy armed forces, as well as the political and administrative centers for governing a state, command posts⁸², nuclear weapons deployment areas and communications nodes. Equally important, the document assuming flexibility and variability of nuclear plans tailored to a current situation on the battlefield did not rule out strikes on civilian enemy targets, namely 200 Soviet cities⁸³.

Meanwhile, treaties on the limitation of strategic arms (SALT I and SALT II) and ABM (Antiballistic Missile) systems concluded between the United States and the Soviet Union in the 1970s led to the balance of the nuclear arsenals of both superpowers⁸⁴ (Table 1). Under the strategy of “mutually assured destruction”, the guarantor of security supported by the presumption that neither party dares to carry out a surprise attack were imperfect self-defense and high risk, almost certainty, of a retaliatory strike.

of bombs would allow the use of nuclear weapons with no fear of causing the death of millions of people by an explosion or radioactive fallout.

⁸² It is worth noting that the targets of direct attacks included the Soviet leaders and the High Command. See: R. Kupiecki, *op. cit.*, p. 292.

⁸³ S. Zapolski, *op. cit.*, p. 64-67. *The Assessment of threat posed by weapons of mass destruction to operational troops and the territory of the state* developed in the early 1970s for the needs of the General Staff of the Polish Armed Forces predicted that in the first massive strike NATO could carry out 220 - 300 nuclear strikes with the total capacity of several megatons, including approx. 30% of ground strikes, causing contamination of approx. 50% of the Polish territory. In addition, as a result of the first massive strike of an enemy on the front troops it was assumed that 30-40% of first-line tactical units could become contaminated and would require decontamination. To increase the impact of the use of nuclear weapons an enemy was to use chemical weapons in the form of highly toxic organophosphorus contaminants and incendiary agents, mainly napalm. See: the Archives of the Ministry of National Defense (AMON), 786/93/35, k. 9, *Plan rozwoju wojsk chemicznych w latach 1976–1990*, Warsaw 1973. The incomparably larger scale of the use of nuclear weapons by NATO forces was mentioned in the conclusions of the threat assessment developed in 1989. It concluded that “the accumulated potential of nuclear weapons allows an enemy to carry out 430 - 650 strikes in the first massive nuclear attack (including 100 ground ones) on operational troops and facilities deployed on the territory of the country”. The follow-up were expected to be large areas of contamination of land covering 30-40% of the front line and up to 50% of the remaining parts of the country. The direct attack of an enemy with 100-150 nuclear charges against the political, administrative and industrial centers, thereby causing the loss of population of up to 2,5-3,8 million people, was taken into account as well. See: AMON, 786/93/100, k.11, *Stan i kierunki rozwoju wojsk chemicznych. Materiał na posiedzenie Kolegium GZSiB WP*, Warsaw 1989.

⁸⁴ The 1970s began in the world under the sign of balancing military capabilities of the United States and the Soviet Union. In 1970 the army of the latter had 17 divisions and 5 brigades equipped with missiles of medium and intercontinental range. In 1975, having already 2 thousand of such missiles it achieved the “nuclear parity”. See: F. Puchała, *Sekrety Sztabu Generalnego pojątańskiej Polski*, Warsaw 2011, p. 30.

However, the American deterrence capability balanced by the Soviet Union put into question the ability of the USA to implement the allied guarantees in Europe⁸⁵.

The situation was further complicated in 1977 when the USSR started to deploy 250 multi-head high-precision medium-range missiles SS-20⁸⁶, directly threatening Western countries⁸⁷. In this way, the American “nuclear umbrella” spread over Western Europe proved to be insufficient. This fact soon was repeatedly used by the Soviet Union for blackmail and attempts at intimidation directed against European allies of the USA.

For the first time the Soviet Union tried to act from the position of strength in 1978, when Western European countries in order not to irritate Moscow did not agree to the offer of Washington regarding the equipment of NATO in Europe with neutron bombs⁸⁸, which were to balance more than twice as many as the number of tanks of

⁸⁵ The policy of détente and the SALT I agreement was seen beyond the Ocean as a clear sign of weakness towards the Soviet activity in the international arena. Too conciliatory attitude of the United States and its allies resulted in the loss of their overall military advantage. In the years 1975-1981 the US nuclear arsenal in the field of intercontinental ballistic missiles remained stable and amounted to 2,251 missiles, while the Soviet one increased from 2277 to 5977 missiles. The advantage of the USSR in the number of underwater launchers reached 25%, and the number of tanks was already four times greater. While, the Americans retained twice as many advantage in the Air Forces, and also prevailed in the number of multi-head missiles. However, significant disparities were in spending on arming: the USA allocated to them 6% of the national income, while the Soviet Union 15-20%. Cf. Table of US Nuclear Warheads, (in:) Archive of Nuclear Data From NRDC's Nuclear Program, [online]. [available: 6 X 2015], Available on the Internet: <http://www.nrdc.org/nuclear/nudb/datab9.asp>; Table of USSR/Russian Nuclear Warheads, (in:) Archive of Nuclear Data From NRDC's Nuclear Program, [online]. [available: 6 X 2015], Available on the Internet: <http://www.nrdc.org/nuclear/nudb/datab10.asp>; A. Albert, *op. cit.*, p. 673–674. The unfavorable for NATO ratio of forces did not change in the following decade. Both in nuclear and conventional weapon (according to data from the land forces of the Warsaw Pact and NATO related to the area from the Atlantic to the Urals) the clear advantage was on the side of the Warsaw Pact: in the nuclear arsenal of 1.6: 1; in tanks of 2.4: 1; in infantry combat vehicles of 6.1: 1; in artillery, artillery missile launchers and anti-tank guns of 3.3: 1; in anti-aircraft missiles of 5.7: 1; in armed helicopters of 2.0: 1; in bombers of 1.6: 1; in ground-attack aircrafts of 1.0: 1 and in fighter aircrafts of 5.5: 1. See: *Informacja w sprawie raportu amerykańskiego senatora C. Levina pt. Nie tylko ilość ale i jakość*, MON, Szt. Gen., Zarząd II, Warsaw 1988, Annex: Raport senatora Carla Levina, *Nie tylko ilość ale i jakość. Realistyczna ocena stosunku sił konwencjonalnych w Europie (translated from English)*, p. 25.

⁸⁶ SS-20 Saber (in the Soviet nomenclature RT-21M) was a mobile (launched from a vehicle platform) two-stage ballistic missile with the range of 5000 km. It was equipped with a single warhead with the capacity of 1 Mt or three homing seekers with the capacity of 150 kt. By 1986, a total of 441 combat systems of SS-20 had been deployed along the western border of the USSR. See: RT-21M/SS-20 SABER, [online]. [available on: 5 X 2015], Available on the Internet: <http://www.fas.org/nuke/guide/russia/theater/rt-21m.htm>.

⁸⁷ R. Kupiecki, *op. cit.*, p. 293.

⁸⁸ The neutron bomb is a kind of a thermonuclear (hydrogen) bomb, the essential damage factor of which is the wave of high-energy neutrons that is deadly to living organisms. Tactical neutron charges were designed to destroy primarily the crews of tanks and combat vehicles of an enemy. Importantly, neither armor nor walls of shelters protect from neutron radiation. See: M. Rojszczak, *op. cit.*, p. 19.

the Warsaw Pact⁸⁹. However, in the same year in the sense of Soviet domination, the Allies decided to set up in Europe the early warning system against a nuclear attack (AWACS)⁹⁰.

The attempt to counterbalance the Soviet missile system SS-20 and the new arsenal of short-range missiles was to be the deployment of 108 new generation missile launchers Pershing II⁹¹ and 464 multi-head cruise missiles Tomahawk⁹² in Belgium, the Netherlands, Germany, Great Britain and Italy. The move was one of many elements of the new armament program adopted in the early 1980s by the President Ronald Reagan Administration. In addition to the equipment of its allies with the new offensive weapon capable of having a direct impact on the Soviet Union territory, the Pentagon also decided to restore the production of neutron weapons, start the program of building the multi-head ballistic missiles MX⁹³ system, producing the bombers B-1 and the new submarines, as well as initiate works on the construction of the strategic anti-missile defense, the so-called Strategic Defense Initiative⁹⁴ (SDI)⁹⁵.

Table 1. The US and Soviet nuclear arsenals in the years of 1960-1991

End of year	The USA						The USRR					
	Strategic warheads				Non-strategic war-heads	TOTAL	Strategic warheads				Non-strategic war-heads	TOTAL
	ICBM *	SLBM**	BOMB S	TOTAL			ICBM *	SLBM*	BOMB S	TOTAL		
1960	13	34	6954	6874	13433	20434	2	32	372	406	1200	1606

⁸⁹ Production of neutron weapons was accompanied by serious political and moral controversy. Under its influence as well as the wave of public protests inspired by the Soviet Union in Western Europe, its production was suspended until the early 1980s.

⁹⁰ A. Albert, *op. cit.*, p. 751.

⁹¹ Pershing II was an improved version of the tactical ballistic medium-range missile constructed in the early 1960s, carrying single nuclear warheads W50 with the capacity of 400 kt. Pershing II was characterized by significantly better accuracy than its predecessor (up to 50 m), the increased range of up to 1,800 km and the new warhead W85 with the capacity of 5 to 50 kt. designed to selectively destroy military facilities. See: Pershing 1, [online]. [available: 5 X 2015], Available on the Internet: <http://www.fas.org/nuke/guide/usa/theater/pershing1.htm>; Pershing 2, [online]. [available: 5 X 2015], Available on the Internet: <http://www.fas.org/nuke/guide/usa/theater/pershing2.htm>.

⁹² The tactical subsonic cruise missile designed to destroy ground and surface targets, carrying both the nuclear warhead W80 of 200 kt. and conventional one. See: BGM-109 Tomahawk [online]. [available: 5 X 2015], Available on the Internet: <http://www.fas.org/man/dod-101/sys/smart/bgm-109.htm>.

⁹³ MX (Missile Experimental) was a heavy intercontinental ballistic missile, designed as a successor to the Minuteman missiles. It was characterized by the range of 11000 km and the possibility of transferring up to 12 thermonuclear warheads W87 with the capacity of 300 kt. or 475 kt., and accuracy up to 40 m. See: *Amerykańskie raketowe systemy strategiczne w okresie postzimnowojennym*, [online]. [available: 5 X 2015], Available on the Internet: <http://www.nowastrategia.org.pl/amerykańskie-raketowe-systemy-strategiczne-w-okresie-postzimnowojennym/>.

⁹⁴ SDI was one of the pillars of the Reagan nuclear strategy, which assumed the vision of security resulting from owned defense capabilities, not the threat of a nuclear war. This objective was to be achieved by airborne means to destroy strategic ballistic missiles of an enemy. See: R. Kupiecki, *op. cit.*, p. 301.

⁹⁵ J. Kukułka, *op. cit.*, p. 262.

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End of year	The USA						The USSR					
	Strategic warheads				Non-strategic warheads	TOTAL	Strategic warheads				Non-strategic warheads	TOTAL
	ICBM*	SLBM**	BOMBS	TOTAL			ICBM*	SLBM*	BOMBS	TOTAL		
1961	60	84	6730	7211	20085	27297	11	60	401	471	2000	2471
1962	213	151	6847	7211	20085	27297	38	72	412	522	2800	3322
1963	627	168	6303	7098	21151	29249	104	72	462	638	3600	4238
1964	952	605	6471	8028	22723	30751	201	72	548	821	4400	5221
1965	897	1882	6567	9345	22297	31642	295	76	559	929	5200	6129
1966	1054	3545	6633	11232	20468	31700	437	79	573	1089	6000	7089
1967	1096	4452	6861	12409	18484	30893	859	76	605	1539	6800	8339
1968	1096	4452	6690	12238	16645	28884	1068	126	605	1799	7600	9399
1969	1096	4452	6421	11969	14940	26910	1338	204	596	2138	8400	10538
1970	1306	4452	6465	12223	13896	26119	1546	301	596	2443	9200	11643
1971	1516	5107	6252	12875	13489	26365	1616	380	596	2592	10500	13092
1972	1726	5594	7360	12363	12615	27296	1600	481	596	2678	11800	14478
1973	1936	6132	6991	15059	13276	28335	1635	584	596	2815	13100	15915
1974	2041	6569	6788	15398	12772	28170	1666	722	596	2985	14400	17385
1975	2251	6586	6911	15748	11305	27052	2277	869	596	3743	15700	19443
1976	2251	6670	6647	15568	10388	25956	2607	1002	596	4205	17000	21205
1977	2251	6686	6592	15530	9569	25099	2,838	1309	596	4744	18300	23044
1978	2251	6720	6264	15235	9008	24243	3666	1531	596	5793	19600	25393
1979	2251	6653	6252	15156	8951	24107	4833	1605	596	7035	20900	27935
1980	2251	5914	6239	14404	9360	23764	5630	1636	596	7862	22200	30062
1981	2251	5090	6244	13586	9445	23031	5977	1976	596	8549	23500	32049
1982	2246	5006	5820	13072	9865	22937	6596	1959	596	9152	24800	33952
1983	2242	5208	5663	13113	10041	23154	6993	1947	764	9704	26100	35804
1984	2231	5611	6118	13960	9267	23228	7135	2140	756	10031	27400	37431
1985	2220	5645	6180	14044	9090	23135	7154	2377	966	10497	28700	39197
1986	2276	5712	6493	14481	8772	23254	7153	2394	1176	10723	30000	40723
1987	2417	5914	6624	14955	8535	23490	7216	2631	1313	11159	27700	38859
1988	2593	5578	6624	14795	8282	23077	7277	2841	1512	11630	25700	37330
1989	2592	5410	5965	13967	8207	22174	7382	3085	1651	12117	23700	35817
1990	2591	5474	5330	13395	7816	21211	7285	3045	1485	11815	21700	33515
1991	2128	3626	3400	9154	9152	18306	6411	2932	1329	10672	18933	29606

* Intercontinental Ballistic Missile ** Submarine Launched Ballistic Missile

Source: Own study based on: Table of US Nuclear Warheads, [in:] Archive of Nuclear Data From NRDC's Nuclear Program, [online]. [available: 6 X 2015], Available on the Internet: <http://www.nrdc.org/nuclear/nudb/datab9.asp>; Table of USSR/Russian Nuclear Warheads, [in:] Archive of Nuclear Data From NRDC's Nuclear Program, [online]. [available: 6 X 2015], Available on the Internet: <http://www.nrdc.org/nuclear/nudb/datab10.asp>

The Secretary of Defense in the Reagan Administration, Caspar Weinberger, claimed that the new US strategy “focused on the prevention of a war by keeping appropriate military forces and determination to use them in case the need arose”. Therefore, the

deterrence factors included maintaining the capacity for retaliation of own forces against effects of a pre-emptive strike, and credibility based on the strong willingness to use appropriate force guaranteeing the win in a potential war. The combination of means of effective defense, credible retaliation and escalation of military action as the way to adapt them to the level of threat were to ensure the effectiveness of deterrence⁹⁶.

The implementation of the Reagan plans turned out to be the great military and political challenge for the Soviet Union. The start-up of the new arms race threatened with the collapse of the excessively militarized and economically inefficient Soviet economy, and the possible creation by the Americans of weapons effectively neutralizing enemy nuclear strikes constituted a serious violation of Moscow's position as a global superpower.

The end of the 1980s, however, brought the unexpected solution: the end to the Cold War and the collapse of the Soviet empire. Undoubtedly, the paradox can be seen in the fact that it occurred at the time when the Soviet Union reached the highest military potential and nuclear superiority.

CONCLUSION

The strategy of "massive retaliation" adopted in the early 1950s by the President Eisenhower Administration served as the effective and inexpensive method of deterrence not only in the assumptions. The US nuclear umbrella spread over the European part of NATO discouraged the Soviet Union from aggression, as well as it rebalanced the numerical superiority of the Warsaw Pact forces in Europe. However, the announcement of giving nuclear weapons the decisive role in any, even the smallest conflict posed a threat of the outbreak of the total nuclear war.

The extremely important moment in the creation of the system of strategic deterrence was the introduction of the hydrogen bomb to the nuclear arsenal. It determined the evolution of the nuclear strategy on both sides of the "Iron Curtain". The advent of the light thermonuclear bombs with high capacity became an impulse for the creation of ballistic missiles. Globally, the creation of this type of weapon significantly speeded up attaining the nuclear stalemate and contributed to searching for measures of a limited nuclear war and "flexible response" as an alternative to "massive retaliation".

Military conditions changing from the early 1960s quickly ruled out the use of nuclear power as the only way of conducting any military operations. The new strategy introduced first in the United States and then in NATO was based upon flexible handling of both nuclear and conventional potential. Although, the intensive expansion was set about in the case of the latter, the growing in parallel arsenal of nuclear weapons, as a much cheaper substitute for the huge land forces, retained its strategic role. Its constant development resulted in the introduction of tactical nuclear weapons, and later the implementation of costly and high technology nuclear arms programs. Nucle-

⁹⁶ R. Kupiecki, *op. cit.*, p. 301.

ar weapons, despite a few modifications to the “flexible response” strategy, rich in new concepts for the selection of targets (avoiding strikes on the cities) or a limited war, remained a symbol of assured destruction and the political-strategic element of deterrence until the end of the Cold War.

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