### Uludağ Journal of Economy and Society/ B.U.Ü. İktisadi ve İdari Bilimler Fakültesi Dergisi Cilt / Volume 37, Sayı / Issue 2, 2018 ss./pp. 195-220

### THE NUCLEAR ARMAMENT POLICY OF THE UNITED KINGDOM: WHY DID THE UK GET INVOLVED IN THE **NUCLEAR WEAPON RACE?**

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#### **ABSTRACT**

37/2 Aralık 2018

The UK's nuclear armament activities began within the framework of cooperation with the United States. However, the problems in cooperation with the United States have forced the UK to act on its own. The UK in 1952 was the third country to develop its atomic bomb, after the Soviet Union in 1945 and the United States in 1949. This development has led the two countries to a re-establishment in the framework of the US-UK Mutual Defense Agreement signed in 1958. During the Cold War period, the Soviet Union regarded nuclear weapons as a deterrent whereas the United Kingdom considered them as a tool for power and prestige. The end of Second World War with an atomic bomb is one of the most important factors increasing the interest of states in nuclear weapons. Just like the other great powers, the reason for pushing the UK to a nuclear arms race is that the war has ended in this way. The effects of the two world wars (World War I and II) leading to the weakening of the British global power have made it necessary for the UK to identify new strategies. This study discusses the relationship between British nuclear and defense policies. It also analysis the reasons for nuclear weapons.

Key Words: United Kingdom, USA, Nuclear Armament, Cold War, Security.

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### İNGİLTERE'NİN NÜKLEER SİLAHLANMA POLİTİKASI: İNGİLTERE NEDEN NÜKLEER SİLAHLANMA YARIŞINA GİRDİ?

#### ÖZ

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İngiltere'nin nükleer silahlanma faaliyetleri ABD ile işbirliği çerçevesinde başlamıştır. Ancak ABD ile işbirliğinde yaşanan problemler İngiltere'yi bu konuda tek başına hareket etmeye zorlamıştır. 1945'te ABD ve 1949'da yılında Sovyetler Birliği'nin ardından 1952'de İngiltere kendi atom bombasını geliştiren 3. ülke olmuştur. Bu gelişme sonrasında iki ülke arasında 1958 yılında imzalanan Karşılıklı Savunma Antlaşması çerçevesinde işbirliği yeniden tesis edilmiştir. Soğuk savaş dönemi boyunca nükleer silahlar İngiltere için güç ve prestij aracı olduğu gibi, Sovyetler Birliği'ne karşı bir caydırıcılık unsuru olarak görülmüştür. 2. Dünya Savaşı'nın bir atom bombası ile sona ermesi, nükleer silahlar konusuna devletlerin ilgisini artıran en önemli faktörlerden birisidir. Diğer büyük güçler gibi İngiltere'yi de nükleer silahlanma yarışına iten sebeplerin başında savaşın bu şekilde sonlanmış olması gelmektedir. Bununla birlikte İki dünya savaşının (1. Dünya Savaşı ve 2. Dünya Savaşı) sonuçları itibariyle İngiliz küresel gücünü zayıflatıcı etkiler göstermesi, İngiltere'nin yeni stratejiler belirlemesini gerekli kılmıştır. Bu çalışmada İngiltere'nin nükleer silah politikası ile savunma politikaları arasındaki ilişki tartışılmış ve nükleer silahlanma sebepleri analiz edilmiştir.

**Anahtar Kelimeler:** İngiltere, ABD, Nükleer Silahlanma, Soğuk Savaş, Güvenlik.

#### INTRODUCTION

Nuclear weapons are highly destructive combat vehicles obtained by the explosion of energy that the atomic nucleus produces as a result of chemical reactions resulting from fission and fusion. Together with biological and chemical weapons, they are called weapons of mass destruction. In the history of mankind, firearms, such as spears, arrows, and swords, used in wars determined the course of wars. All these weapons are defined as conventional weapons. Conventional weapons are still the main determinants of wars and strategic elements in the balance of power between states. However, during the Second World War, nuclear weapons which came up with the name of the atomic bomb, revealed the difference between conventional weapons and the capacity to end the war. There are serious differences between conventional weapons and nuclear weapons in terms of explosion strength. The main difference between a nuclear weapon and a conventional weapon is that a nuclear explosion is thousands or millions of times stronger than the most powerful conventional explosion (Siracusa, 2008: 5). Unlike the power of conventional weapons, besides effects on the target area and people of the attack, nuclear weapons may have direct consequences that exceed the effects of the explosion in terms of situations they cause in the event of an explosion and the subsequent process (Denk, 2011: 96). These effects may include the place where the blast occurred and the effects exceeding the time.

The US has led the production of the Trinity bomb with the participation of UK and Canada, and has tested it in New Mexico on 16 July 1945 (Siracusa, 2008: 19). The severity of the explosion effect and the result has been the first sign of the beginning of the nuclear era. The New York Times correspondent William Lawrence described the explosion in the Trinity test as "the first cry of a newborn world". (Siracusa, 2008: 19). After the first test of the atomic bomb, they have made directly the second attempt on a city full of people. US President Truman ordered to blast the Little Boy and Fat Man bombs on the Japanese cities to speed up the end of the war (Siracusa, 2008: 23). The bombs exploding on Hiroshima and Nagasaki have caused the deaths of tens of thousands of people in the event of an explosion.

Although the United Kingdom has begun nuclear activities with the US, the collaboration between the two has followed an unstable

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process. The US has ended its nuclear cooperation with the UK after the Second World War. This development has been annoying for the British government. A broad-based consensus has emerged on the need for the UK to have its own nuclear bombs. They have enhanced this idea based on two specific concerns. The first of these had been the almost stand-alone experience between 1939-1941 against Germany. The second concern, which had led the UK to build its own nuclear bomb was the possibility that the United States rashly gets involved in the war. Despite the fact that the U.S. being less vulnerable to be attacked than the UK, aiming to be a deterrent against the Soviet Union, and to impress the US by making its own nuclear bomb (Holloway, 2010: 389). Since the late 1940s, owning nuclear weapons has been a matter of national identity for the United Kingdom in international politics. This had been at the heart of the goal of the UK to become a major world power during the Cold War (Ritchie, 2008: 4).

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Scott D. Sagan has searched for answers about the question by stating: "Why Do States Build Nuclear Weapons?". "Getting an accurate answer to this question is critically important both for predicting the long-term future of international security and for current foreign policy efforts preventing the spread of nuclear weapons. Yet given the importance of this central proliferation puzzle, it is surprising how little sustained attention has been devoted to examine and compare alternative answers." (Sagan, 1997: 54). He has underlined the importance of this question in his article. So this study questions the nuclear armament policy of the UK. Owning a nuclear weapon for the UK has been seen as an indispensable milestone for power and prestige. In the cold war years, however, the main motivation of UK had been nuclear deterrence, as were the countries aiming to increase nuclear arsenals. Nuclear deterrence had been one of the most important foreign policy instruments in the Cold War period, stating the strategic level (Mehmetcik, 2015: 31). As the founder of neorealism, Kenneth Waltz, says: "Nuclear weapons lead strategic forces to one purpose: deterring attacks against the vital interests of a country." (Waltz, 2008: 13). The suspicion that the United States, a precursor of nuclear power, could be a protective umbrella for the West in the face of a possible Soviet nuclear attack has also prompted the UK to set up its own nuclear weapons power. It can be said that France has started nuclear work with similar concerns (Waltz, 1981: 9).

This study discusses the correlation between the UK's threat perceptions, defense policies, and its nuclear arsenal policy. It also analyses the reasons leading the UK to own nuclear weapons. As Sir William Armstrong (head of the bureaucracy) voiced; "After the Second World War the most important task of the British state apparatus was the ability to properly manage the fall of the Empire. In fact, between 1945 and 1974 the country has shifted from the weakest states of the great states to a medium-sized state." The power loss of the empire has created a growing gulf between the government's foreign policy ambitions and the resources; This has led to a periodic revision of security and foreign policy and defense doctrine (Göktepe and Bilgiç, 2014: 141-142).

UK's post-war power loss is the main factor affecting the armament policy. In this context, the problematic of the study examines the impact of the motivation of protection, arbitration and threat perceptions on nuclear arms policy during the Cold War period. This part of the study discusses especially the factors affecting the nuclear armament of the UK in the first years of the cold war period. It analyses how these factors have affected the nuclear armament activities of the UK during the Cold War period. The last part of the study gives information about the current nuclear capacity of the UK.

Looking at the literature in Turkey, the analysis made on nuclear arms race during the cold war years, show main actors like the US and the Soviet Union. That the nuclear improvement developments in the United Kingdom have been improved in the shadow of the US prevented the detailed examination of the issue. It should not be underestimated that the UK is the third biggest nuclear power. Namely; The NPT Treaty (Nuclear Non-Proliferation Treaty) signed in 1968 and entered force in 1970, granted a significant privilege to the five countries (US, USSR, UK, France, China). While they have prohibited other countries producing nuclear weapons, they have registered five countries, including the UK, in the "Nuclear Club". These countries have also been permanent members of the United Nations Security Council (UNSC) and are the decisive actors in world politics. In this context, to analyze the process of the UK's nuclear armament should contribute to the study of literature in Turkey.

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# 1. REASONS FOR THE UK TO BE A NUCLEAR WEAPON OWNER

The end of the Second World War with an atomic bomb which has lasted from 1939 to 1945 destroying many countries such as UK, Germany, and Japan, has emerged as the most important factor increasing the interest of nuclear weapons. Following a nuclear test by the US in 1945, the nuclear weapons race has started rapidly. In 1949, the USSR conducted its first nuclear test. Three years later, in 1952, UK had its first nuclear weapon. Nuclear weapons have been one of the most important factors affecting the balance of power in the international relations scene with France in 1960 and China having nuclear weapons in 1964.

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It is a fact that societies need weapons to ensure their security throughout human history. This phenomenon, which has existed since the early periods, attracted more attention to societies and states in the 20th century, with the developments in weapon technologies (Pirinççi, 2010: 71). The US and Soviet developments in nuclear weapons technology have led the UK to take action on nuclear armament. While defining the state's motivation for armament, Pirinççi said: "As a security tool, armament appears as a dynamic process without a boundary. Because advances in weapon technology until a while ago have met the security needs of a state; After a short time, it may become unable to respond to security needs. States do not consider it enough to spend a long time with a single weapon system to ensure their security at all times. They are constantly modernizing their inventories or buying new weapons". (Pirinççi, 2010: 80).

That states do not feel sufficient to provide their security with a single weapon system has been one of the most important motivations in the nuclear arms race. Following the first nuclear test in the UK and the successful implementation of the test, UK has sped up its efforts to increase the number and variety of its nuclear weapons. It manifests their search for armaments because of security-based approaches for states. Nuclear weapons are one of the most important and effective means of securing status. However nuclear arming is on the agenda of states with some different motives than security. Political objectives such as realizing foreign policy goals and increasing the strength and

prestige of the nation, together with the security problem, lead states to gain nuclear weapons (Pirinççi, 2010: 97).

Becoming a global power for the UK has started with the establishment of overseas colonies and trade centers in the 16th and 17th centuries. And it did not take long years to become so. In 1922 one fourth of the world population came under the rule of the British Empire and the British territory spread over 33.6 million square meters. With the Second World War, the British global power had lost its power. The bombardment of London by German planes during the war, the power loss of the British Navy and the inability of the British air force to be exposed can be considered as the blows to the global power. Many countries (Poland, Norway, the Netherlands) that UK guaranteed the protection of the pre-war lands had been under German occupation damaging the political prestige of the British Empire. Although the the UK had been among the winners of the war, it had lost its character of being a global power in Second World War. Everyone's assurance, including Winston Churchill, was the end of the British Empire. (Fromkin, 1999: 1).

After losing its character of global power, the UK has tried to continue its international activity by acting with the new global power of the world. This draw had been the main motivation of the private relationship. One area where special relations would add value in this period was the atomic bomb. The atomic bomb has been developed as an American-British joint project during the war years. Although there have been problems and disruptions in the nuclear activities there had been a complete co-operation in the relations between the two countries until the United Kingdom has successfully

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The concept of Special Relationship is frequently used by politicians, academics and many others to define the close relations between the UK and the United States. Although there is no consensus on the meaning and limits of this concept, the general acceptance is that the United States and UK have a network of relations separated from other countries. From the 1940s on wards, almost every British Prime Minister has mentioned the special relationship between the two states. The first person to use the concept is the British Prime Minister Churchill. In 1946, Churchill, who emphasized Anglo-American collaboration in his famous iron screen ('Iron Curtain Speech') at Westminster College in 1946, became the architect of the special relationship concept. Fulton, Missouri / US, dated March 5, 1946. https://winstonchurchill.org/resources/speeches/1946-1963-elder-statesman/the-sinews-of-peace/.

carried out its first nuclear test in 1952. "Gowing has argued that both the UK and France entered their respective nuclear programs because of the 'great power' status theory. Gowing describes the 'great power' status as the phenomenon of past powerful states looking to regain/retain at least a minimal amount of their past or current power." (Smith, 2016).

In this context it is possible to summarize the factors that require the UK to have nuclear weapons;

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- The UK's desire to continue its international presence by acting together with the world's new global power after losing its own.
- During the First World War and the next 30 years (1915-1945) British society and leaders have known the nuclear era: an inevitable vulnerability.
- The motivation to maintain its prestige and power by gaining nuclear weapons (being a nuclear power was perceived as the first condition of having a say in world politics).
- The necessity of developing new war vehicles in the psychological environment of the Second World War.
- Nazi Germany's work on the atomic bomb has made UK uneasy (Einstein's letter).
- The attempts of the USSR to get atomic bombs and the UK's threat perception.
- The destruction power of the atomic bombs thrown into Hiroshima and Nagasaki and the capacity to end the war.

### 2. THE FIRST STEPS IN THE NUCLEAR WEAPON PROCESS OF THE UK AND THE COOPERATION WITH THE U.S.

In the 1930s and 1940s Nazi Germany, the US and the Soviet Union continued to work nuclear armament. So did the UK. British physicist Sir James Chadwick has iscovered the structure of the neutron in 1932 (Siracusa, 2008: 3). Chadwick's invention has paved the way for nuclear division, atomic energy, atomic and hydrogen bombs.

UK's nuclear weapons policy officially has begun in early 1940 with a statement to the government by two British scientists, Otto Robert Frisch, and Rudolf Peierls. This work known as the Frisch Peierls Declaration (Stanford Uni.) mentions the possibility of producing a super bomb with a nuclear chain reaction in Uranium (Holdstock and Barnaby, 2003: 11). In their statement Frisch, and Peierls described their predictions as follows: "The energy released by the explosion at the time of the explosion of a super-bomb is equal to the energy released in the explosion of 1000 tons of dynamite" (Stanford Uni.). The British government which established a committee to conduct research on the scientific feasibility of the results of the work of Frisch, and Peierls, became the first government to accept the possibility of the atomic bomb and put forth the will to do so (Holdstock and Barnaby, 2003: 11). The committee which has become later, known as the Military Application of Uranium Detonation, worked on how to use nuclear energy in weapons production.

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The work on the atomic bomb in the UK continued in 1941 with the Tube Alloys program. Tube Alloys had been a research and development project aimed at developing nuclear weapons, implemented with the authorization of the British government during the Second World War and with the participation of Canada. The work carried out within the Tube Alloys project followed at the UK cabinet level and has included many leading scientists such as James Chadwick, Sir George Paget Thomson, John Cockcroft, Rudolf Peierls, Mark Oliphant, Francis Simon, and Otto Frisch (Cathcart, 2004).

In 1943, scientists and experts working on the Tube Alloys project joined the Manhattan Project under the Quebec Treaty (Atomic archive). One of the most important reasons the United States has taken action about nuclear studies had been the studies carried out in Nazi Germany. In a letter to US President Roosevelt, Einstein has mentioned Enrico Fermi and Leo Szilard's experiments on uranium and that an important source of energy could emerge, and that this energy would make powerful bombs. Einstein has stated that the Nazi's have been involved in this field and that the US government should act before the Nazis (Siracusa, 2008: 12).

As a result, the US has carried out the Manhattan project and has made significant progress in achieving the atomic bomb. The reason the UK had transferred its work from the Tube Alloys project to the

Manhattan project because they had limited resources. Until 1942 both the United Kingdom and the United States had been concerned about their cooperation in the nuclear field until 1942. However, the possible launch of an atomic bomb before Germany can be considered as a factor speeding up cooperation. In June 1942, Churchill has knocked Roosevelt's door on nuclear cooperation. (Kocamaz, 2011: 54-55). Later, the UK's efforts to establish cooperation continued and, eventually, with the signing of the Quebec Treaty because of the UK's diplomatic initiatives, British scientists have been allowed to travel to the US and to take part in the nuclear project under the Manhattan project (Bernstein, 1976: 202).

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ilBF Dergi 37/2 Aralık December 2018 With the Quebec Treaty ratified by Franklin D. Roosevelt and Winston S. Churchill on August 19, 1943, the two countries have agreed on the conclusion of the Tube Alloys project at the earliest. According to the Quebec Treaty, the United States and the United Kingdom have agreed on:

- Two countries will never use this initiative against each other
- The results (atomic bomb) can't be used against third parties without the consent of both countries.
- There will be no information about Tube Alloys, except for the consent of both parties (Atomic Archive).

In the framework of the Quebec Convention, two different bombs, "Fat Man" and "Little Boy" have been produced because of the Manhattan Project." Fat Man" had a more complex structure (Siracusa, 2008: 20).

Truman has concluded that the way to finish the war was to use these bombs on Japan. With the instruction of Truman, on August 6, 1945, the atomic bomb "Little Boy" had been left on the Japanese city of Hiroshima, which had a population of 350,000. Hiroshima, the second largest military industry of Japan in those years, had lost between 80,000 and 140,000 people because of the explosion. Over 100,000 people had been seriously injured. The Fat man bomb exploding over the city of Nagasaki 3 days later had caused great losses (Siracusa, 2008: 23).

Japan had been surrendered, the war had been over, and the project to produce the atomic bomb that the UK had been an important part of had clarified that the nuclear era had started. Shortly after the Second World War, the US Congress has passed the Atomic Energy Agreement (Nuse, 1965), which had abruptly ended cooperation between the UK and the United States (Holdstock and Barnaby, 2003: 1). With this arrangement known as the McMahon Agreement, the US Congress has limited to share information with foreign countries on nuclear technology. With this arrangement, the US wanted to prevent the emergence of a new nuclear power and to continue its nuclear monopoly. After proving the destructive effects in Hiroshima and Nagasaki cities, the ambition to have nuclear weapons alone has led the US to ignore its "special relationship with the UK".

# 3. NUCLEAR ARMAMENT ACTIVITIES OF THE UK DURING THE COLD WAR

Because of the McMahon Agreement the US has deprived the UK of nuclear weapons support. Therefore, the UK looked for alternative ways. When the Soviet Union has become a nuclear power in 1949, UK's perceived threat to the Soviet increased. However, in a possible nuclear war between the US and the Soviets, the UK's position as a deterrent has sped up its action in developing its own nuclear weapon. British Prime Minister Attlee used the following statements; "We have to determine our position in front of Americans. We have to think about our own defense and our industrial future. We cannot agree with Americans about America's desire to have atomic energy alone. (Holdstock and Barnaby, 2003: 12). In January 1947, the cabinet of the Gen 163 has made the British nuclear bomb. In line with this decision, projects have been initiated in Sellafield for the start of construction of two reactors (Taylor, 2007: 10). It can be said the negativity of the McMahon Agreement for the UK has become positive as it paves the way for its own nuclear weapons production.

The UK has developed its first nuclear weapon because of the attempts to produce atomic bombs that started with the Tube Alloys initiative and then the experience gained under the Manhattan Project. The first attempt, Operation Hurricane in Australia on October 3, 1952, has successfully carried out the test and has entered the nuclear club as the 3rd Nuclear power (Siracusa, 2008: 6).

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Becoming a proven nuclear power with the storm operation, the UK has also developed the first ready-to-use atom bomb called Blue Danube carried by the V-Force. The term V-Force comes from the names of planes forming the nuclear strike force of the Royal Air Force (RAF). Valiant, Victor, and Vulcan are known as V-Force or V-Bombers. The V-Force airplanes have operated in the Royal Air Force in 1955 and have become an important factor in the UK's nuclear deterrent by moving Free-Fall Bombs until 1969 (RAF, 231).

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iiBF Dergi 37/2 Aralık December 2018 After the UK's has successfully carried out its first nuclear test, the US has launched its own first hydrogen bomb (h-bomb, thermonuclear bomb)<sup>2</sup> followed by the USSR. The first hydrogen bomb (h-bomb, thermonuclear bomb)<sup>3</sup> has been tested by the US in 1954 in the Marshall Islands. The thrown bomb had been 500 times more powerful than the bomb thrown into Hiroshima (Siracusa, 2008: 6). These developments have caused the UK to speed up its work on the hydrogen bomb. On July 27, 1954, the UK government has developed a thermonuclear bomb and has declared this decision in February 1955. The British performed the first hydrogen bomb test on the Malden and Christmas (Kiritimati) islands in the Pacific Ocean under the Grapple Operation. Operation Grapple includes 9 tests performed between 1957 and 1958. Because of these tests, UK has become the

Thermonuclear bomb: Hydrogen bomb or h-bomb. After the UK's first nuclear test was successfully carried out, the US was then first called the USSR, the first hydrogen bomb (h-bomb, thermonuclear bomb) [Thermonuclear bomb: Hydrogen bomb or h-bomb. This is a nuclear fusion process where hydrogen isotopes are transformed into a helium atomic structure by a chain reaction under very high heat. An uncontrolled thermonuclear energy is generated by the explosion of the hydrogen bomb. For details, see Thermonuclear bomb, Encyclopaedia Britannica, http://global.britannica.com/EBchecked/topic/591670/thermonuclear-bomb., Accessed on: 02.11.2014.].

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Grapple Operation: The test series performed between 1957-1958 on the Malden and Christmas Islands in the Pacific. For more information, see Richard

third country with a thermo-nuclear weapon and has made significant progress in the nuclear race.

Table 1: British Nuclear Tests Between 1952-1958

Test Series	Test Name	Location	Date	Yield	Explosion Conditions
	Hurricane	Monte Bello (off Trimouille Is)	3 Oct 1952	25 kt	Ocean surface burst (HMS Plym)
Totem	Test 1	Emu Field	15 Oct 1953	10 kt	Tower
Totem	Test 2	Emu Field	27 Oct 1953	8 kt	Tower
Mosaic	G1	Monte Bello (off Trimouille Is)	16 May 1956	15 kt	Tower
Mosaic	G2	Monte Bello (off Alpha Is)	19 June 1956	60 kt	Tower
Buffalo	One Tree, Round 1	Maralinga (One Tree)	27 Sept 1956	15 kt	Tower
Buffalo	Marcoo, Round 2	Maralinga (Marcoo)	4 Oct 1956	1.5 kt	Ground
Buffalo	Kite, Round 3	Maralinga (Kite)	11 Oct 1956	3 kt	Airburst over land
Buffalo	Breakaway, Round 4	Maralinga (Breakaway)	22 Oct 1956	10 kt	Tower
Grapple	Grapple 1/Short Granite	Malden Is, Pacific	15 May 1957	200-300 kt	Airburst over ocean
Grapple	Grapple 2/Orange Herald	Malden Is, Pacific	31 May 1957	720 kt	Airburst over ocean
Grapple	Grapple 3/Purple Granite	Malden Is, Pacific	19 Jun 1957	150 kt	Airburst over ocean
Antler	Round 1	Maralinga (Tadje)	14 Sept 1957	1 kt	Tower
Antler	Round 2	Maralinga (Biak)	25 Sept 1957	6 kt	Tower
Antler	Round 3	Maralinga (Taranaki)	9 Oct 1957	25 kt	Balloon-burst over land
Grapple X	Round C	Christmas Is	8 Nov 1957	1.8 Mt	Airburst over ocean
Grapple Y	Grapple Y	Christmas Is	28 Apr 1958	2 Mt	Airburst over ocean
Grapple Z	Pennant 2	Christmas Is	22 Aug 1958	~1 Mt	Balloon-burst over land
Grapple Z	Flag Pole 1	Christmas Is	2 Sept 1958	2.5-3 Mt	Airburst over ocean
Grapple Z	Halliard 1	Christmas Is	11 Sept 1958	2.5-3 Mt	Airburst over ocean
Grapple Z	Burgee 2	Christmas Is	23 Sept 1958	1 kt	Balloon-burst over land

Source: http://nuclearweaponarchive.org/Uk/UKTesting.html

Shown in Table 1, UK has carried out numerous nuclear trials between 1952-1958. During this period of limited US cooperation, the UK tried different bombs in various regions with the names of Totem, Mosaic, Buffalo, Grapple and Anter. After 1958, the UK carried out nuclear action in cooperation with the United States.

After performing its first nuclear test with the Storm Operation, experiments in the Pacific Ocean led the UK to take a step back from the US position in the McMahon Agreement. Undoubtedly, among the reasons for this step backward, the progress made by the Soviets on nuclear armament cannot be ignored. The nuclear cooperation between the United Kingdom and the United States has been resumed

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Moore, US Nuclear Weapons, The Nuclear History Working Paper, Mountbatten Center for International Studies (MCIS), Southampton, 2003.

in 1958 with the US-UK Mutual Defense Agreement (MDA). The agreement envisaged cooperation in the design, production, testing and nuclear reactor technology of nuclear weapons (Mills, 2014).

This agreement resulted in a close cooperation between the United States and the United Kingdom, and the United Kingdom has benefited from the US nuclear weapons program more extensively. Thanks to the MDA, UK has become economically very helpful in the design and production of warheads (Quinlan, 2009: 117). Many historians view the 1958 Reserve Defense Agreement as a turning point in UK's nuclear history (Moore, 2010: 64).

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ilBF Dergi 37/2 Aralık December 2018 The US Strategic Air Command (SAC) and the Royal Air Force (RAF) have made common arrangements for the deployment of nuclear weapons against the Soviet Union. For the UK, these arrangements are very important steps for their relations with the United States. However, the United Kingdom provided the US with bases for the US Air Force to attack the Soviets. The training received by the Royal Air Force (RAF) to transport nuclear weapons and equipment, and RAF aircraft to carry the equipment, has been an important part of the cooperation. (Kocamaz, 2011: 114). This cooperation has been a strategic factor against the Soviet threat for the UK, creating an Anglo-American nuclear deterrence.

Before the Mutual Defense Agreement, which re-established British-US cooperation in 1958, there had been a limited cooperation in 1957. The launch of the Sputnik satellite into the space of the Soviets and its work on intercontinental missiles brought the US to launch missiles into Europe. British Prime Minister Macmillan has approved the deployment of medium-range missiles to East Anglia, whereas the United States has supported the UK in the Blue Streak missile project (Kocamaz, 2011: 63).

UK has taken the US Skybolt missile program to the agenda because the Blue Streak missiles cannot provide the nuclear deterrent and the production costs are very high. The sale of Skybolt missiles, which Eisenhower had promised to the UK, was incomplete. The US has introduced the Polaris missiles in order to meet the UK's demand for missiles (Kocamaz, 2011: 115). President Kennedy proposed to

Macmillan the sale of Polaris missiles (Dawson and Rosecrance, 1996: 42).5

The platform on which the sale of Polaris missiles had come on the agenda has been the Nassau Summit. The Nassau Summit has been a turning point for the future of the UK's nuclear deterrent and the membership of the EEC. UK has gained a significant advantage in the nuclear field by receiving the US approval for Polaris missiles. However, this summit has been an important factor in France vetoing the UK membership of the European Union (Kocamaz, 2011: 69). France and the United States have well known the position of France on this issue. However, Anglo-American cooperation and nuclear deterrence, especially for the UK, has been a priority issue rather than the membership of the EEC. In the period following the agreement signed in 1958 (MDA), the Macmillan government's keeping the United Kingdom at the same level between the years 1958 and 1961 could be regarded as a remarkable achievement. The mutual defense alliance focused on the nuclear issue has been one of the most important tools of this success. In this context, American ballistic missiles have been transported by the Royal Air Force and deployed against a Soviet threat to the east of UK (Moore, 2010: 25). It is possible to say the relations between the two countries entered a restoration process especially between 1961-1963 led by Kennedy and Macmillan (Kocamaz, 2011: 64).

The UK has obtained the Polaris missiles (submarine-launched ballistic missile / SLBM) from the USA in 1963. The deployment of missiles to submarines have been completed in the following years. Thanks to the Polaris program the UK's strategic nuclear capability has transformed, and the UK's second strike capacity made it sure of its nuclear deterrence (Ritchie, 2010: 4). To deploy Polaris missiles, the construction of submarines has begun in 1964. The Royal Navy's

to the fact that the Blue Streak missile system was too costly in the development phase and would be vulnerable to a preventive strike. The Blue Streak was then allocated to Space Studies as part of the European Launcher Development

Organization (ELDO) project.

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The UK concluded that free-fall bombs would not be sufficient to have an independent nuclear deterrent, but that ballistic missiles were necessary. Because of the McMahon Agreement, he couldn't buy from the USA and therefore he launched the Blue Streak (MRBM) missile project. The project was canceled due

submarines had the name Resolution-Class. Resolution-class submarines contain four different submarines; Resolution, Repulse, Renown, and Revenge. The construction of 4 submarines have been completed in 1968 and the HMS Resolution submarine has first been launched in 1968. The UK has ensured that at least one submarine is on the sea patrol to ensure continued deterrence. The Polaris Program introduced the British nuclear weapons system by installing it in the first submarine. With the deployment of US nuclear missiles, the UK has made progress in nuclear deterrence. Polaris comprises 4 Resolution-class submarines as a ready-to-use system. Each submarine deployed 16 of the Polaris A-3 ballistic missiles. A-3 missiles can send 3 nuclear warheads.

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One of the critical agenda items for the 1960s, when Polaris missiles had been the most important item of nuclear armament, have been the Non-Proliferation Treaty on Nuclear Weapons NPT (IAEA, 1970). ). The NPT includes the use of nuclear energy for peaceful purposes, the prohibition of nuclear weapons by states other than those with nuclear weapons and the reduction of nuclear disarmament or nuclear armament. NPT has been one development that the US's concern of continuing its nuclear monopoly with the McMahon Agreement has been manifested. This time, the US has included other nuclear weapons countries in the process and has managed a process it could not prevent with other nuclear forces. The UK has been one of the important supporters of this process.

After the NPT Agreement, states owning nuclear weapons before 1 January 1967 have been called nuclear weapon State (Denk, 2011: 110-112). When the NPT Agreement had been signed, the club had 5 members. The United Kingdom has taken part in this club with the US, the Soviet Union, France and China (Siracusa, 2008: 144). The nuclear arms race continued at a great pace after the NPT. The antiballistic missile-ABM missile systems developed by the Soviet Union have shown that the UK should reconsider its possibilities for nuclear deterrence. The UK has found it appropriate to revise the Polaris program, considering that Polaris missiles cannot provide sufficient deterrence against the Soviet anti-ballistic missiles. At this stage, Poseidon missiles have been taken from the United States to develop the Polaris system. But in June 1967 the governing Labor party has declared the need of new warheads to replace the Pillaridon missiles instead of Polaris (UK Government 2005: 5). In 1967 the Wilson

government has made the first attempt within the Chevaline program in order to develope the Polaris system. The 1970-74 Heath government approved the program and it has consequently been put into operation by the second Wilson government (UK Government, 2005: 4).

The Chevaline program, as an initiative to develop Polaris missiles, focuses on issues such as the strengthening, hardening and drilling/penetration of warheads. The first Chevaline test has been carried out in 1974, inspired by the US Super Antelope project. Chevaline has made its first patrol mission in 1982 with the HMS Renown submarine, and the complete deployment of the Chevaline defensive helmets have been completed in 1987. Polaris missiles powered by Chevaline warheads are defined as "Polaris A-3TK Chev. This system had been in the service of the Royal Navy until 1996 the last patrol of HMS Repulse submarine (Moore, 2003: 6).

Table 2: British Nuclear Weapons

Name	Туре	Weight	Deployed	Yield
Aircraft Bombs				
Blue Danube	fission	5 tonnes	1953-62	up to 40 kilotons
Red Beard	fission	1 tonnes	1961-71	up to 20 kilotons
Violet Club	fission	4 tonnes	1958-60	500 kilotons
Yellow Sun	thermonuclear	3 tonnes	1961-72	1 megaton
WE177-A	thermonuclear	272 kilograms	1966-84	200 kilotons
WE177-B	thermonuclear	431 kilograms	1966-96	400 kilotons
WE177-C	fission	classified	1971-92	10 kilotons
Missiles				
Blue Steel	thermonuclear	6,800 kilograms	1963-70	1 megaton
Polaris A3TK	thermonuclear	16,200 kilograms	1967-92	225 kilotons
Trident D-5	thermonuclear	57,700 kilograms	1992-	100 kilotons

Source: Douglas Holdstock, Frank Barnaby, The British Nuclear Weapons Programme 1952–2002, London, 2003, s. 146.

The UK has successfully carried out its first nuclear test, and after taking its place among the member states of the nuclear club, types and features of bombs and missiles have been contained in the nuclear arsenal. Shown in Table 2, after the first grenade has been obtained from Blue Danube, the UK had both fission and fusion bombs to be

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used by bombers. In response to the rapid development of the Soviets on the nuclear arsenal, that free all bombs had been insufficient in terms of nuclear deterrence led the UK to provide nuclear missiles.

Following the Blue Steel missiles to be fired from bombers, the most important element in British nuclear deterrent have been submarine-fired missile programs. The process, which has started with the Polaris program continued with the strengthening of Polaris missiles with Chevaline warheads. The last link of this process has been that the UK had been on the agenda of Trident missiles, a system that submarines can fire.

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37/2 Aralık December 2018 The UK had considered that the US's Trident missiles will be more useful than other alternative missile systems to revise the UK's nuclear deterrent according to the conditions of the day. Interviews with the US over the Trident, even from the Cabinet, began in Callaghan. The negotiations have continued during the Thatcher period (Kocamaz, 2011: 117). After the conservative party government powers in May 1979, Thatcher has set up a cabinet and has launched a system to replace the Polaris system. In 1980, the Thatcher government has announced the decision to buy the Trident 1 missile system from the United States. In 1981, The Unites States has revised the UK's acquisition of Trident 1 (Trident C4) missiles. As a result the production of these missiles have been suspended. Instead of Trident C4, an agreement for the Trident C5 missiles, with more advantageous features in terms of nuclear deterrence, has been signed between the United States and the United Kingdom (United Kingdom Government, 2005: 7). After this stage, Trident missiles became the most important element of UK's nuclear deterrent.

The most important part of the British nuclear deterrent, the Trident missiles launched in the 1980s, continued to work in the post-cold war period. In 1998, the United Kingdom has identified Trident missiles as the sole factor in nuclear deterrence under the Strategic Defense Review. The UK has commissioned its submarines in a single nuclear deterrent by decommissioning the WE177 nuclear bombs with this decision. The 1998 Strategic Defense Review reveals a point of view confirming the Trident system will play a role in Minimum Nuclear

Deterrence<sup>6</sup>. To achieve this minimum of nuclear deterrence, UK has always been on patrol for a submarine (Holdstock and Barnaby, 2003: 142).

UK has deployed Vanguard-class (Vanguard, Victorial, Vigilant, Vengeance) submarines armed with Trident missiles in HMNB Clyde (Faslane) in Scotland. Each submarine has 16 Trident II D-5 missiles. Each missile has 3 warheads. Trident missiles can hit targets up to 7,000 miles and can drive at 13,000 miles per hour (Royal Navy).

Table 3: World Nuclear Forces-2014

Country	Year of first nuclear test	Deployed warheads <sup>a</sup>	Other warheads	Total Inventory
United States	1945	1920	5380	7300
Russia	1949	1600	6400	8000
United Kingdom	1952	160	65	225
France	1960	290	10	300
China	1964		250	250
India	1974		90-110	90-110
Pakistan	1998		100-120	100-120
Israel			80	80
North Korea	2006		6-8	6–8
Total		3970	12 350	16 300

source: SIPRI Yearbook 2014 (Oxford University Press: Oxford, 2014).

a 'Deployed' means warheads placed on missiles or located on bases with operational forces.

Source: Nuclear forces", http://www.sipri.org/research/armaments/nuclear-forces, (03.03.2017)

Shown in Table 3, it is estimated that the UK owns 160 nuclear warheads, 160 of which are ready to use. The UK foresees a 25 % reduction in nuclear arsenal through the 2010 Strategic Defense and Security Review. It plans to reduce the number of ready nuclear warheads from 160 to 120. In addition, the UK has continued the

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Minimum Nuclear Deterrence refers to the possession of arsenal of nuclear weapons sufficient for a retaliatory attack that the opponent cannot afford. For further information on the UK's minimum deterrence policy, see the United Kingdom. Nick Ritchie, UK nuclear weapons policy: deconstructing, Minimum deterrence,, British International Studies Association (BISA), http://bisa.ac.uk/index.php? Option ... 1 ...,

Trident system which provides the current submarine nuclear deterrent and to renew it. In the 2010 review, it has been predicted that Vanguard-class submarines carrying Trident missiles can be used until the end of the 2020s - early 2030s (The Strategic Defense and Security Review, 2010).

#### **CONCLUSION**

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The UK has established its global power in the 16th and 17th centuries by establishing overseas colonies and trade centers. In 1922, a quarter of the world's population has came under the rule of the British Empire, and the British territory has spread over 33.6 million square meters. As the results of the two world wars have undermined the British global power, to identify new strategies. The effort to have a nuclear bomb has been one priority as a requirement of this strategy of UK. There have also been changes in defense policies in the declining impact of UK on international politics and increasing threat perceptions following World War II.

Nuclear activities in the framework of cooperation with the United States at the time of the Second World War have directly been related to UK's power and threat perceptions. In particular, the US and the Soviet Union have successfully carried out their first nuclear weapons experiments and the US is ending its nuclear cooperation with the UK; It has increased the threat perceptions of UK. The United Kingdom was the third nuclear power in 1952, making its own nuclear bomb with the motivation to restore power and prestige it had lost, and to provide a nuclear deterrence against the Soviet Union. Because of this development, nuclear cooperation with the United States has been reestablished. In addition, UK's ability to build his own bomb and to develop a nuclear arsenal within the framework of cooperation with the United States has made the UK feel safe against the Soviet Union.

Nuclear power has been a determining factor in the developments during the Cold War period. The UK has maintained its influence in international politics as a country with this power. NPT (Nuclear Non-Proliferation Treaty) Treaty signed in 1968 and 5 countries registered as nuclear clubs have undoubtedly been a privilege for the UK. Nuclear weapons have become indispensable for the UK in power and prestige policies. It has been a priority of the UK's defense

policy to ensure deterrence in the face of a nuclear attack from the Soviet Union in the conditions of the Cold War. As a result, the UK has made its own nuclear bomb and has secured its special relationship with the United States during the entire cold war and has maintained its nuclear deterrence against the Soviet Union, considering possible fluctuations in cooperation with the United States.

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#### ÖZET

220 İİBF Dergi 37/2 Aralık December Günümüzde dokuz devletin nükleer silah sahibi olduğu bilinmektedir. ABD, Rusya, Çin, Fransa ve İngiltere Nükleer Silahların Yayılmasının Önlenmesi Antlaşması (NPT)'na taraf olan devletlerdir. NPT ile birlikte 1 Ocak 1967'den önce nükleer silah sahibi olan devletler "nükleer devlet (Nuclearweapon State)" olarak tanımlanmıştır. NPT'ye taraf olmayan Kuzey Kore, Pakistan ve Hindistan nükleer silah sahibi olan diğer üç devlettir. İsrail ise bu konuda nükleer belirsizlik politikası benimsemiş durumdadır ancak nükleer silah sahibi bir devlet olarak kabul edilmektedir. Nükleer silahlar, 2. Dünya Savaşı yıllarından beri uluslararası ilişkilerin en önemli konularından birisidir. İngiltere, Almanya, Japonya gibi birçok ülkeyi yerle bir eden 2. Dünya Savaşı'nın bir atom bombası ile sona ermesi, tüm devletlerin nükleer silahlar konusuyla yakından ilgilenmesini beraberinde getirmiştir. ABD'nin nükleer testi gerçekleştirerek 1945 yılında nükleer silah sahibi olmasının ardından hızla nükleer silahlanma yarışı başlamıştır. 1949 yılında SSCB ilk nükleer testini gerçekleştirmiş, ardından üç yıl sonra, 1952'de İngiltere ilk nükleer silahını elde etmiştir. 1960'te Fransa ve 1964'te Çin'in de nükleer silaha sahip olmasıyla, uluslararası ilişkiler sahnesinde güç dengesini etkileyen en önemli unsurlardan biri nükleer silah olmuştur. İngiltere, nükleer silahlanma yarışına ABD'nin desteği ile girmeye çalışmış ancak ABD'nin bu konuda ilk yıllardaki belirsiz tavrı İngiltere'yi kendi nükleer silahını geliştirmeye zorlamıştır. Fırtına Operasyonu adıyla 3 Ekim 1952'de Avustralya'da gerçekleştirilen deneme sonucunda ilk nükleer silahını elde ederek 3. nükleer güç olmayı başaran İngiltere, 1952-1957 tarihleri arasında Avustralya topraklarında 12 atmosferik nükleer deneme gerçekleştirmiştir. 1958 yılında ABD ile imzalanan anlaşma ile birlikte (ABD-İngiltere Karşılıklı Savunma Antlaşması) her iki ülke nükleer silahların geliştirilmesi konusunda yakın işbirliği yapmıştır. Bu anlaşma ile birlikte İngilizler nükleer denemelerini ABD'deki Nevada test bölgesinde gerçekleştirmeye başlamıştır. Bu çalışmada İngiltere'nin nükleer silahlanma süreci detaylı olarak analiz edilmeye çalışılmıştır. Bununla birlikte çalışmanın temel sorunsalı, İngiltere'yi nükleer silah sahibi olmaya ve silahlanma yarışını sürdürmeye iten sebeplerin neler olduğunu tespit etmektir.