Nuclear Proliferation - 1945 to 1963: a Timeline

Date	Event	Details
29/8/1945	**The United Kingdom examines possibility of independently developing nuclear weapons[1]**	UK prime minister Clement Attlee sets up the Gen 75 Committee (GEN.75) (known informally as the "Atomic Bomb Committee"), to examine the feasibility. In 1945, believing that the United Kingdom was extremely vulnerable to a nuclear attack to which defence was impossible, the Chiefs of Staff and the RAF first advocated a British nuclear deterrence: "It is our opinion that our only chance of securing a quick decision is by launching a devastating attack upon [enemy cities] with absolute weapons."
24/10/1945	**The United Nations is established[2]**	The UN officially came into existence 24 October 1945, upon ratification of the Charter by the five permanent members of the Security Council—France, the Republic of China, the Soviet Union, the UK and the US—and by a majority of the other 46 signatories.
24/1/1946	**UN calls for elimination of atomic weapons**	In its first resolution, the UN General Assembly calls for the complete elimination of nuclear weapons and sets up a commission to deal with the problem of the atomic discovery. [3]
5/3/1946	**Winston Churchill states that 'an "Iron Curtain" has descended' across the continent of Europe, referring to Soviet-dominated Eastern Europe[4]**	*From Stettin in the Baltic to Trieste in the Adriatic an "Iron Curtain" has descended across the continent. Behind that line lie all the capitals of the ancient states of Central and Eastern Europe. Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest and Sofia; all these famous cities and the populations around them lie in what I must call the Soviet sphere, and all are subject, in one form or another, not only to Soviet influence but to a very high and in some cases increasing measure of control from Moscow.*
21/3/1946[5]	**The US creates the Strategic Air Command—a system of bombers that could penetrate deep into enemy territory[6]**	Missiles capable of delivering strategic weapons (weapons that could threaten an entire country) were not yet available so the Strategic Air Command's long-range bombers were crucial. The SAC was headed by General Curtis LeMay (who had previously presided over the firebombing of Japan during WWII). In operations like Chrome Dome, SAC kept nuclear-armed planes in the air 24 hours a day, ready for an order to attack Moscow.
14/6/1946	**Acting for the US government, Bernard Baruch presents the**	In his 1961 book *Has Man a Future?* Bertrand Russell wrote 'Unfortunately, there were features of the Baruch Proposal which Russia

[1] https://en.wikipedia.org/wiki/Nuclear_weapons_and_the_United_Kingdom#Historical_weapons_programmes
[2] https://en.wikipedia.org/wiki/United_Nations
[3] http://www.icanw.org/the-facts/the-nuclear-age/
[4] https://en.wikipedia.org/wiki/Iron_Curtain
[5] https://en.wikipedia.org/wiki/Strategic_Air_Command#Establishment_and_transfer_to_USAF
[6] https://en.wikipedia.org/wiki/History_of_nuclear_weapons#Weapons_improvement

	Acheson-Lilienthal plan to internationalize the atomic energy. It is rejected by the U.S.S.R.[7]	found unacceptable, as, indeed, was to be expected. It was Stalin's Russia, flushed with pride in the victory over the Germans, suspicious (not without reason) of the Western Powers, and aware that in the United Nations it could almost always be outvoted. The Baruch Plan is often questioned on whether it was a legitimate effort to achieve global cooperation on nuclear control.'[8]
1/7/1946[9]	**First U.S. peacetime atmospheric nuclear test**	First U.S. peacetime atmospheric nuclear test at Bikini Atoll in the Marshall Islands. [10]
July 1946[11]	**Demonstrations are held in Times Square, New York, against nuclear testing**	
25/7/1946	**U.S. conducts test in which, for the first time, an atomic bomb is detonated under water**[12]	This test, slightly more powerful than the Hiroshima bomb, similar in design, and again conducted at Bikini Atoll in the Marshall Islands, was codenamed 'Baker'.
1/8/1946[13]	**President Truman signs Atomic Energy Act (the McMahon Act)**	Transferring the control of atomic energy from military to civilian hands in the form of the United States Atomic Energy Commission (AEC), it becomes effective on 1 January, 1947.[14] Its purpose is to control development & production of nuclear weapons & to direct the research & development of peaceful uses of nuclear energy. Implementing the McMahon Act created a substantial rift between United States and Britain. The new control of "restricted data" prevented the United States' allies from receiving any information, despite the fact that the British and Canadian governments, before contributing technology and manpower to the Manhattan Project had made agreements with the United States about the post-war sharing of nuclear technology. The McMahon Act fueled resentment from British scientists and Churchill, and led to Britain developing its own nuclear weapons.[15]
25/12/1946	**Soviet Union achieves its first nuclear chain reaction in Moscow**[16]	
31/12/1946 [17]	**The U.S. Atomic Energy Commission (AEC) takes over nuclear weapons program from the Army**	

[7] http://www.atomicarchive.com/Timeline/Time1940.shtml
[8] https://en.wikipedia.org/wiki/Baruch_Plan
[9] https://en.wikipedia.org/wiki/Nuclear_testing_at_Bikini_Atoll#Weapons_tests
[10] http://www.theatomproject.org/en/about/nuclear-weapons-testing-timeline/
[11] http://www.atomicarchive.com/Timeline/Time1940.shtml
[12] Victor Sebestyen, *1946: the Making of the Modern World*, (London, 2014)
[13] http://www.atomicarchive.com/Timeline/Time1940.shtml
[14] https://en.wikipedia.org/wiki/United_States_Atomic_Energy_Commission
[15] https://en.wikipedia.org/wiki/McMahon_Act#International_relations
[16] http://www.atomicarchive.com/Timeline/Time1940.shtml
[17] http://www.atomicarchive.com/Timeline/Time1940.shtml

8/1/1947[18]	**The United Kingdom authorizes the development of nuclear weapons[19]**	
March 1947	**The Truman doctrine underlines the willingness of the US to help counter the communist threat in Greece and Turkey[20]**	In reality, it was a general commitment to come to the aid of states facing a communist takeover[21]
June 1947	**UK begins design of its plutonium bomb[22]**	Under the direction of William Penney
August 1947	**The United Kingdom builds its first atomic reactor[23]**	
1947	**Doomsday clock created**	Doomsday Clock is created by the Bulletin of the Atomic Scientists and is set at seven minutes away from midnight – which signifies the catastrophe of global nuclear war.[24]
February 1948	**Communist takeover occurs in Czechoslovakia**	
1/4/1948	**The Berlin Blockade begins**	One of the first major international crises of the Cold War. During the multinational occupation of post–World War II Germany, the Soviet Union blocked the Western Allies' railway, road, and canal access to the sectors of Berlin under Western control. The blockade ended on 12 May 1949, following the Western Allies successful organization of the Berlin airlift to carry supplies to the people of West Berlin.[25] '…the conflict changed Russian-American relations. There was a general feeling in America that if war had come, the atomic bomb would have been used. Neither Moscow nor Washington wanted war but both now prepared for war. The two leading world powers had clearly become adversaries and the term 'cold war' is an apt description of their relations from this point.'[26]
April 1948	**The US launches its Marshall Plan for Europe, which will continue for four years[27]**	The Marshall Plan was an American initiative, in which the United States gave economic support to help rebuild European economies after the end of World War II, with the aim of: rebuilding war-devastated regions; removing trade barriers; modernizing industry; making Europe prosperous again; and preventing the spread of communism.

[18] https://en.wikipedia.org/wiki/Nuclear_weapons_and_the_United_Kingdom#Historical_weapons_programmes
[19] http://www.atomicarchive.com/Timeline/Time1940.shtml
[20] https://en.wikipedia.org/wiki/Truman_Doctrine
[21] *Russia, America & the Cold War: 1949-1991*, Martin McCauley, p.1
[22] http://www.atomicarchive.com/Timeline/Time1940.shtml
[23] http://www.atomicarchive.com/Timeline/Time1940.shtml
[24] http://www.theatomproject.org/en/about/nuclear-weapons-testing-timeline/
[25] https://en.wikipedia.org/wiki/Berlin_Blockade
[26] *Russia, America & the Cold War: 1949-1991*, Martin McCauley, p.12
[27] https://en.wikipedia.org/wiki/Marshall_Plan

Apr / May 1948	**U.S. conducts atomic tests at Eniwetok Atoll**[28]	
4/4/1949	**NATO established**[29]	The first NATO Secretary General, Lord Ismay, stated in 1949 that the organization's goal was "to keep the Russians out, the Americans in, and the Germans down." The members agreed that an armed attack against any one of them in Europe or North America would be considered an attack against them all. Consequently, they agreed that, if an armed attack occurred, each of them, in exercise of the right of individual or collective self-defence, would assist the member being attacked, taking such action as it deemed necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.[30]
29/8/1949	**Soviet Union tests its first nuclear bomb**[31]	Soviet Union ends US monopoly, detonating its first atomic bomb, Joe 1, at Semipalatinsk in Kazakhstan. It is a copy of the Fat Man bomb and has a yield of 21 kilotons.
1/10/1949	**People's Republic of China established by Communist Party Chairman Mao Zedong**[32]	
30/10/1949	**General Advisory Committee of the U.S. AEC recommends that the more powerful atomic bombs should be built rather than hydrogen bombs**[33]	
27/1/1950	**Klaus Fuchs confesses that he gave atomic secrets to the Soviets while working at the Manhattan Project**[34]	
31/1/1950	**Truman announces the decision to proceed with development of the hydrogen bomb**[35]	According to some, President Truman made the decision on the basis of looking for a proper response to the first Soviet atomic bomb test in 1949.[36]
14/4/1950	**NSC-68, a top-secret policy paper is issued by the US. It was one of the most significant**	**National Security Council Report 68** (**NSC-68**) was a 58-paged top secret policy paper issued by the United States National Security Council during the presidency of Harry S. Truman. It involved a decision to

[28] http://www.atomicarchive.com/Timeline/Time1940.shtml
[29] http://www.atomicarchive.com/Timeline/Time1940.shtml
[30] https://en.wikipedia.org/wiki/NATO#Beginnings
[31] http://www.atomicarchive.com/Timeline/Time1940.shtml
[32] https://en.wikipedia.org/wiki/China#People.27s_Republic_of_China_.281949.E2.80.93present.29
[33] http://www.atomicarchive.com/Timeline/Time1940.shtml
[34] http://www.atomicarchive.com/Timeline/Time1950.shtml
[35] http://www.atomicarchive.com/Timeline/Time1950.shtml
[36] https://en.wikipedia.org/wiki/History_of_nuclear_weapons#The_first_thermonuclear_weapons

	statements of American policy in the Cold War.[37]	increase the pressure of Containment against global Communist expansion a high priority. Although not made public, NSC-68 was manifested in subsequent increases in America's conventional and nuclear capabilities. While NSC-68 did not make any specific recommendations regarding the proposed increase in defense expenditures, the Truman Administration almost tripled defense spending as a percentage of the gross domestic product between 1950 and 1953
June 1950	**Communist North Korea invades South Korea and the Vietnamese communists go on the offensive against the French colonial authorities**	
27/1/1951	**The first nuclear test at the Nevada Test Site occurs**[38]	
1951	**China signs agreement with the Soviet Union to receive technical help with weapons development**	China signs agreement with the Soviet Union to receive technical help in developing its own nuclear weapons in return for providing Moscow with uranium ore.[39]
29/3/1951[40]	**Julius and Ethel Rosenberg are convicted and sentenced to death in the U.S. for passing information on atomic weapons to the U.S.S.R.**	
June 1951	**First British nuclear reactor goes critical**[41]	
10/10/1951	**The Mutual Security Act launches a major American foreign aid program of grants to numerous countries, which continues until 1961. It largely replaces the Marshall Plan.**	Signed by President Harry S. Truman, its main goal was to help poor countries develop and to contain the spread of communism.[42]
Sept 1952	**A second U.S. nuclear weapons laboratory is established in Livermore, California**[43]	

[37] https://en.wikipedia.org/wiki/NSC-68
[38] http://www.atomicarchive.com/Timeline/Time1950.shtml
[39] http://www.theatomproject.org/en/about/nuclear-weapons-testing-timeline/
[40] http://www.atomicarchive.com/Timeline/Time1950.shtml
[41] http://www.atomicarchive.com/Timeline/Time1950.shtml
[42] https://en.wikipedia.org/wiki/Mutual_Security_Act
[43] http://www.atomicarchive.com/Timeline/Time1950.shtml

3/10/1952	**UK tests nuclear weapon in Australia, becoming 3rd nation to possess nuclear weapons[44]**	The UK conducts its first nuclear test at Montebello Islands off the coast of Western Australia in what is known as Operation Hurricane[45] It later conducts a series of tests at Maralinga and Emu Fields in South Australia.[46]
1/11/1952	**US tests the first hydrogen bomb prototype**	The US raises the stakes in the nuclear arms race by detonating the first hydrogen bomb prototype at Enewetak Atoll in the Marshall Islands, in Operation Ivy.[47] The first detonation in this operation is dubbed Ivy Mike.[48] It is 500 times more powerful than the Nagasaki bomb.[49] However this design was impractical as a deployable weapon[50]
1953	**United States deploys its first tactical nuclear-armed rockets including the MGR-1 Honest John.[51]**	The M-31 had a range of 24.8 kilometres (15.4 mi) with a 20 kiloton nuclear warhead and was also capable of carrying a 680 kilograms (1,500 lb) conventional warhead.[52]
1953	**Scientists reset Doomsday Clock**	In response to the successful testing of thermonuclear, fusion or hydrogen bomb weapons by both the United States and the Soviet Union, the Bulletin of the Atomic Scientists resets the Doomsday Clock to only two minutes before midnight. It stays there for seven years until 1960. This is the closest the world has been to the dangers of global nuclear war since the clock was first set in 1947.[53]
5/3/1953	**Stalin, Soviet leader, dies**	
July 1953	**Armistice signed in Korea**	
12/8/1953	**The first ready-to-use thermonuclear bomb tested in USSR – though it was not a true multi-stage hydrogen bomb[54]**	"RDS-6s" ("Joe 4"), tested in the Soviet Union,[55] created concern within the U.S. government and military, because, unlike The U.S. device, Mike, it was a deliverable weapon, which the U.S. did not yet have. Though this first device was arguably not a true hydrogen bomb, it was a powerful propaganda tool for the Soviet Union[56]
12/1/1954	**US Secretary of State John Foster Dulles coins the term "massive retaliation"[57]**	Dulles stated: *We need allies and collective security. Our purpose is to make these relations more effective, less costly. This can be done by placing more reliance on deterrent power and less dependence on local defensive power... Local defense will always be important. But there is no local defense which*

[44] https://en.wikipedia.org/wiki/Nuclear_arms_race#Initial_nuclear_proliferation
[45] https://en.wikipedia.org/wiki/Operation_Hurricane
[46] http://www.icanw.org/the-facts/the-nuclear-age/
[47] https://en.wikipedia.org/wiki/Operation_Ivy
[48] https://en.wikipedia.org/wiki/Ivy_Mike
[49] http://www.icanw.org/the-facts/the-nuclear-age/
[50] https://en.wikipedia.org/wiki/Hydrogen_bomb#History
[51] http://www.theatomproject.org/en/about/nuclear-weapons-testing-timeline/
[52] https://en.wikipedia.org/wiki/MGR-1_Honest_John
[53] http://www.theatomproject.org/en/about/nuclear-weapons-testing-timeline/
[54] https://en.wikipedia.org/wiki/Nuclear_arms_race
[55] https://en.wikipedia.org/wiki/Hydrogen_bomb#History
[56] https://en.wikipedia.org/wiki/History_of_nuclear_weapons#The_first_thermonuclear_weapons
[57] https://en.wikipedia.org/wiki/Massive_retaliation#History

		alone will contain the mighty landpower of the Communist world. Local defenses must be reinforced by the further deterrent of massive retaliatory power. A potential aggressor must know that he cannot always prescribe battle conditions that suit him.
21/1/1954	**The United States launches the world's first nuclear submarine, USS Nautilus.** [58]	The nuclear submarine would become the ultimate nuclear deterrent.
1/3/1954	**US conducts massive "Castle Bravo" hydrogen bomb test**[59]	The US detonates a 17-megaton hydrogen bomb, "Bravo", at Bikini Atoll in the Pacific Ocean, contaminating a Japanese fishing boat, Lucky Dragon, and residents of Rongelap and Utirik,[60] becoming the worst radiological disaster in U.S. history.[61]
April 1954	**First operational British nuclear weapon becomes deliverable**	The first Blue Danube was delivered to stockpile at RAF Wittering in November 1953 although there were no aircraft equipped to carry it until the following year. No. 1321 Flight RAF was established at RAF Wittering in April 1954 as a Vickers Valiant unit to integrate the Blue Danube nuclear weapon into RAF service.
27/7/1954	**The UK government decides to begin development of a thermonuclear (hydrogen) bomb**[62]	These plans were publicly announced in February 1955
December 1954	**France launches efforts to build nuclear weapons**[63]	
9/7/1955	**Russell–Einstein manifesto issued**	Bertrand Russell, Albert Einstein and other leading scientists issue a manifesto warning of the dangers of nuclear war and urging all governments to resolve disputes peacefully.[64]
22/11/1955	**The Soviet Union detonates its first "true" hydrogen bomb, with a yield of 1.6 megatons**[65]	
1956	**France accelerates nuclear weapons program**	A secret Committee for the Military Applications of Atomic Energy was formed and a development program for delivery vehicles was started.[66] The intervention of the United States in the Suez Crisis that year is credited with convincing France that it needed to accelerate its own nuclear weapons program to remain a global power.

[58] https://en.wikipedia.org/wiki/Timeline_of_Events_in_the_Cold_War
[59] https://en.wikipedia.org/wiki/Castle_Bravo
[60] http://www.icanw.org/the-facts/the-nuclear-age/
[61] https://en.wikipedia.org/wiki/History_of_nuclear_weapons#The_first_thermonuclear_weapons
[62] https://en.wikipedia.org/wiki/Nuclear_weapons_and_the_United_Kingdom#Historical_weapons_programmes
[63] http://www.theguardian.com/world/2014/jan/15/truth-israels-secret-nuclear-arsenal
[64] http://www.icanw.org/the-facts/the-nuclear-age/
[65] https://en.wikipedia.org/wiki/Nuclear_arms_race

[66] https://en.wikipedia.org/wiki/Nuclear_weapons_and_France

31/10/1956	**Hungarian Uprising of 1956 begins**	It was a spontaneous nationwide revolt against the government of the Hungarian People's Republic and its Soviet-imposed policies and lasted until 10 November 1956[67] when it was put down by Soviet forces
November 1956	**Anglo-French-Israeli plan for the invasion of Egypt to capture the Suez Canal undertaken during the Suez Crisis[68]**	This led the Russians to threaten to intervene on the Egyptian side[69]
15/5/1957	**The UK test a two-staged nuclear weapon, launching Operation Grapple**	Detonated over Malden Island in the Central Pacific Ocean, this device (code-named *Short Granite*) marked the first test of Operation Grapple.[70] Grapple was the first of a series of British nuclear weapons tests of very-early hydrogen bombs. Subsequent Grapple tests occurred on 31 May 1957 and 19 June 1957, with disappointing results, though the UK used them to claim it had become a thermonuclear (hydrogen bomb) power.[71]
21/8/1957	**USSR conducts world's first successful intercontinental ballistic missile test[72]**	the R-7 flew over 6,000 km (3,700 mi)
4/10/1957	**The Soviet Union launch Sputnik 1, the first artificial Earth satellite[73]**	Through the Sputnik 1 launch, the Soviet Union shows the world that it has missiles able to reach any part of the world.[74] It marks the start of the Cold War space race. It uses the same R-7 missile launch vehicle tested two months previously[75] The launch of Sputnik 1 highlighted the technological achievements of the Soviets and sparked some worrying questions for the politicians and general public of the US. Although US military and civilian agencies were well aware of Soviet satellite plans, Eisenhower's announcements that the event was unsurprising found little support among the US public. Political opponents seized on the event, and Eisenhower's response, as further proof that the US was "fiddling as Rome burned." John F. Kennedy stated "the nation was losing the satellite-missile race with the Soviet Union because of … complacent miscalculations, penny-pinching, budget cutbacks, incredibly confused mismanagement, and wasteful rivalries and jealousies."[76] In an atmosphere of paranoia, the USSR's capability with ICBMs was exaggerated by US politicians.

[67] https://en.wikipedia.org/wiki/Hungarian_Revolution_of_1956
[68] https://en.wikipedia.org/wiki/Operation_Musketeer_%281956%29
[69] *Russia, America & the Cold War: 1949-1991*, Martin McCauley, p.4
[70] https://en.wikipedia.org/wiki/Operation_Grapple
[71] https://en.wikipedia.org/wiki/Operation_Grapple#Individual_explosions
[72] https://en.wikipedia.org/wiki/Intercontinental_ballistic_missile#Cold_War
[73] https://en.wikipedia.org/wiki/Sputnik
[74] https://en.wikipedia.org/wiki/Nuclear_arms_race
[75] https://en.wikipedia.org/wiki/Intercontinental_ballistic_missile#Cold_War
[76] https://en.wikipedia.org/wiki/Missile_gap#Playing_for_the_public

2/11/1957	**J. B. Priestley writes article for *New Statesman* magazine, "Britain and the Nuclear Bombs", advocating unilateral nuclear disarmament by Britain.**[77]	*"In plain words: now that Britain has told the world she has the H-bomb she should announce as early as possible that she has done with it, that she proposes to reject, in all circumstances, nuclear warfare*." (J. B. Priestley)
8/11/1957	**UK conducts Grapple X test over Kiritimati or Christmas Island**	Following the disappointment of the initial Grapple tests, This was close to being the real hydrogen bomb Britain wanted[78]
31/1/1958	**The United States launches Explorer 1, its first satellite** [79]	The Space Race showcased technology critical to the delivery of nuclear weapons, the intercontinental ballistic missile (ICBM) boosters, while maintaining the appearance of being for science and exploration[80]
17/2/1958	**CND launched in the UK**	The Campaign for Nuclear Disarmament in the UK holds its first meeting [81] at Central Hall, Westminster, attended by five thousand people.[82]
4-7 April 1958	**The first major Aldermaston march at Easter takes place in UK**[83]	It was organised by the Direct Action Committee Against Nuclear War (DAC) and supported by the recently formed CND. Several thousand people marched for four days from Trafalgar Square, London, to the Atomic Weapons Establishment to demonstrate their opposition to nuclear weapons.
28/4/1958	**UK conducts the Grapple Y hydrogen bomb test**	This bomb had an explosive yield of about 3.0 megatons, and it was the largest British nuclear weapons test ever executed anywhere, and was a true hydrogen bomb[84]
3/7/1958[85]	**1958 US-UK Mutual Defence Agreement signed in Washington**	The 'Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation on the uses of Atomic Energy for Mutual Defense Purposes' was signed after the UK successfully tested its first hydrogen bomb during Operation Grapple. This put an end to independent nuclear weapons development by the UK in favour of a program that was closely based on the American designs.[86]

[77] https://en.wikipedia.org/wiki/Campaign_for_Nuclear_Disarmament#The_First_Wave:_1957.E2.80.9363
[78] https://en.wikipedia.org/wiki/Operation_Grapple#Grapple_X
[79] https://en.wikipedia.org/wiki/Explorer_1
[80] https://en.wikipedia.org/wiki/Nuclear_arms_race
[81] http://www.icanw.org/the-facts/the-nuclear-age/
[82] https://en.wikipedia.org/wiki/Campaign_for_Nuclear_Disarmament#The_First_Wave:_1957.E2.80.9363
[83] https://en.wikipedia.org/wiki/Aldermaston_March
[84] https://en.wikipedia.org/wiki/Operation_Grapple#Grapple_Y
[85] http://web.archive.org/web/20041221225546/http://basicint.org/nuclear/1958MDA.htm
[86] https://en.wikipedia.org/wiki/Operation_Grapple#Cooperation_with_the_USA

22/8/1958	**UK Commences Operation Grapple Z, a four-bomb test series[87]**	Subsequent test took place on 2 September, 11 September and 23 September. The 23 September bomb was the last nuclear explosion carried out in the atmosphere by the UK and demonstrated all the technologies needed to produce a one-megaton hydrogen bomb
31/10/1958	**A bilateral moratorium on nuclear weapons tests between the USSR and the US, officially begins[88]**	It holds until 1 September 1961
28/11/1958	**First successful US ICBM test**	The first successful flight of an Atlas missile to full range occurs[89]
December 1958[90]	**de Gaulle defines idea that France needs independent nuclear capability**	Upon his return to power, de Gaulle solidified the initial vision into the well-defined concept of a fully independent *Force de Frappe* capable of protecting France from a Soviet or other foreign attack, independent of NATO, which de Gaulle considered to be dominated by the US to an unacceptable degree.[91]
January 1959	**First armed version of a US ICBM declared operational**	The first armed version of the Atlas, the Atlas D, was declared operational at Vandenberg, although it had not yet flown. The first test flight was carried out on 9 July 1959, and the missile was accepted for service on 1 September.[92]
9/2/1959	**The first strategic-missile unit (ICBM) becomes operational at Plesetsk in north-west Russia.[93]**	
1/12/1959	**Nuclear tests banned in Antarctica**	The Antarctic Treaty opens for signature. It establishes that "any nuclear explosion in Antarctica and the disposal there of radioactive waste material shall be prohibited".[94]
20/7/1960	**USS *George Washington*, the first US missile submarine, successfully launches the first Polaris missile from a submerged submarine[95]**	The Polaris missile, a nuclear armed, submarine-launched missile, replaced the earlier Regulus cruise missile. The USS George Washington embarked on its first deterrent patrol in November 1960, joining existing US nuclear-armed bomber patrols and land-based intercontinental ballistic missiles, thus completing the so-called nuclear triad.[96] By 1962 the USSR would also have completed its nuclear triad.[97]

[87] https://en.wikipedia.org/wiki/Operation_Grapple#Grapple_Z
[88] https://en.wikipedia.org/wiki/List_of_nuclear_weapons_tests_of_the_Soviet_Union
[89] https://en.wikipedia.org/wiki/Intercontinental_ballistic_missile#Cold_War
[90] https://en.wikipedia.org/wiki/Charles_de_Gaulle#1958.E2.80.9362:_Founding_of_the_Fifth_Republic
[91] https://en.wikipedia.org/wiki/Force_de_frappe
[92] https://en.wikipedia.org/wiki/Intercontinental_ballistic_missile#Cold_War
[93] https://en.wikipedia.org/wiki/Intercontinental_ballistic_missile#Cold_War
[94] http://www.icanw.org/the-facts/the-nuclear-age/
[95] https://en.wikipedia.org/wiki/Polaris_missile
[96] https://books.google.co.uk/books?id=ZqPmAgAAQBAJ&pg=PA123&lpg=PA123&dq=USS+George+Washington+US+triad&source=bl&ots=kS1aJv2tnB&sig=32MWiqTmTDoJNtIzVGddVCXx-IY&hl=en&sa=X&ved=0CEUQ6AEwB2oVChMI_aziypj2xwIVx7UaCh3j9Q5x#v=onepage&q=USS%20George%20Washington%20US%20triad&f=false

13/2/1960	**France tests its first nuclear weapon, becoming the 4th nation to possess nuclear weapons[98]**	France explodes its first atomic bomb in the Sahara desert, the test being codenamed 'Gerboise Bleue'.[99] It has a yield of 60–70 kilotons. It later moves its nuclear tests to the South Pacific. These continue up until 1996.[100]
1/5/1960	**A US U-2 spy plane is shot down in Soviet airspace[101]**	The aircraft, flown by Central Intelligence Agency pilot Francis Gary Powers, was performing aerial reconnaissance. Coming roughly two weeks before the scheduled opening of an East–West summit in Paris, the incident was a great embarrassment to the United States and prompted a marked deterioration in its relations with the Soviet Union.
Oct 1960	**UK Labour Party votes in favour of unilateral nuclear disarmament**	Having lost the 1959 election, the Labour party carries motions at its party conference calling for unilateral nuclear disarmament, despite leader Gaitskell's speech opposing this, declaring that he and his allies would "fight and fight and fight again to save the Party we love".[102] This end to Labour's support for the UK's nuclear weapons capability for the first time[103] represented CND's greatest influence and coincided with the highest level of public support for its programme. The decision, however, was overturned at the 1961 Conference.[104]
22/10/1960	**The Committee of 100 is launched at a meeting in London with a hundred signatures[105]**	Set up by Bertrand Russell (who resigns from CND), Ralph Schoenman, Reverend Michael Scott and others, its supporters use mass nonviolent resistance and civil disobedience to achieve their aims.[106] It becomes, in effect, the direct action wing of CND.[107]
20/1/1961	**John F. Kennedy sworn in as President of the United States[108]**	Kennedy implemented the 'Flexible Response'[109] defense strategy, replacing the 'Massive Retaliation' policy that had been outlined in 1954. Rather than relying on a nuclear retaliation, flexible response emphasized that the US also needed to be able to respond to Soviet aggression with conventional forces, allowing the Americans to apply the right amount of force, without escalating the situation and having to rely on all-or-nothing options. This strategy was based on the principle of Mutually Assured Destruction (MAD), and relied on the US being able to hit the Soviets with a 'second strike' in the event that the USSR launched a nuclear attack on the US. In the event of Soviet nuclear aggression, the Soviets would know that

[97] https://en.wikipedia.org/wiki/Mutual_deterrence#Early_Cold_War
[98] https://en.wikipedia.org/wiki/Nuclear_arms_race#Initial_nuclear_proliferation
[99] https://en.wikipedia.org/wiki/Gerboise_Bleue
[100] http://www.icanw.org/the-facts/the-nuclear-age/
[101] https://en.wikipedia.org/wiki/1960_U-2_incident
[102] https://en.wikipedia.org/wiki/Labour_Party_%28UK%29_leadership_election,_1960
[103] https://en.wikipedia.org/wiki/Nuclear_weapons_and_the_United_Kingdom#End_of_bipartisan_support
[104] https://en.wikipedia.org/wiki/Campaign_for_Nuclear_Disarmament#The_First_Wave:_1957.E2.80.9363
[105] https://en.wikipedia.org/wiki/Committee_of_100_%28United_Kingdom%29#History
[106] https://en.wikipedia.org/wiki/Committee_of_100_%28United_Kingdom%29
[107] https://en.wikipedia.org/wiki/Campaign_for_Nuclear_Disarmament#The_First_Wave:_1957.E2.80.9363
[108] https://en.wikipedia.org/wiki/John_F._Kennedy#Presidency
[109] https://en.wikipedia.org/wiki/Flexible_response#Development_of_the_strategic_triad

		enough U.S. nuclear capability would survive their strike to destroy their cities and industry. Robert McNamara argued for the definition of what was "unacceptable" to the enemy as the destruction of 50% of industry and 25% of the population.[110] The ability to launch a reliable second strike depended on the so-called strategic triad of nuclear weapons delivery options: strategic bomber aeroplanes, intercontinental ballistic missiles and submarine-launched ballistic missiles. The purpose of this was to significantly reduce the possibility that an enemy could destroy all of a nation's nuclear forces in a first-strike attack; this, in turn, ensures a credible threat of a second strike, and thus increases a nation's nuclear deterrence.[111]
12/4/1961	**USSR Cosmonaut Yuri Gagarin becomes the first human in space[112]**	
25/5/1961	**John F. Kennedy proposes national goal of "landing a man on the Moon and returning him safely to the Earth" by the end of the 1960s[113]**	Human spaceflight programs served as a highly visible means of demonstrating confidence in missile reliability, with successes translating directly to national defense implications. The US was well behind the Soviet Union in the Space Race, so U.S. President Kennedy increased the stakes with the Apollo program[114]
13/8/1961	**Border between East and West Berlin closed by communist East Germany and construction of Berlin Wall starts soon afterwards[115]**	
30/8/1961	**Nikita Khrushchev announces the end of a three-year moratorium on nuclear testing [116]**	Soviet tests recommenced the following day on 1 September
30/10/1961	**Largest ever bomb test conducted[117]**	The Soviet Union explodes the most powerful bomb ever: a 58-megaton atmospheric nuclear weapon, nicknamed the "Tsar Bomba", over Novaya Zemlya off northern Russia.[118]

[110] https://en.wikipedia.org/wiki/Flexible_response#Assured_Destruction
[111] https://en.wikipedia.org/wiki/Nuclear_triad
[112] https://en.wikipedia.org/wiki/Space_Race
[113] https://en.wikipedia.org/wiki/Apollo_program#Background
[114] https://en.wikipedia.org/wiki/Intercontinental_ballistic_missile#Cold_War
[115] https://en.wikipedia.org/wiki/Berlin_Wall#Construction_begins.2C_1961
[116] https://en.wikipedia.org/wiki/Operation_Dominic
[117] https://en.wikipedia.org/wiki/Tsar_Bomba
[118] http://www.icanw.org/the-facts/the-nuclear-age/

25/4/1962	**US resumes nuclear testing, initiating the Operation Dominic test series[119]**	Operation Dominic was a series of 31 nuclear test explosions with a 38.1 Mt total yield conducted in 1962 by the United States in the Pacific. This test series was scheduled quickly, in order to respond in kind to the Soviet resumption of testing after the tacit 1958-1961 test moratorium.
14/10/1962	**US aerial photos locate Soviet missiles in Cuba[120]**	
16-29/10/1962	**Cuban Missile Crisis occurs**	A tense stand-off begins following the US discovery of Soviet missiles in Cuba. The US blockades Cuba for 13 days. The crisis brings the US and Soviet Union to the brink of nuclear war.[121] The crisis resulted from the Soviets' wish to counter US dominance in ICBMs by placing Soviet missiles on the doorstep of the US.[122] The Crisis was later seen as the closest the U.S. and the USSR ever came to nuclear war and had been narrowly averted by last-minute compromise by both superpowers. Fears of communication difficulties led to the installment of the first hotline, a direct link between the superpowers that allowed them to more easily discuss future military activities and political maneuverings.[123]
5/8/1963	**Partial Test Ban Treaty opens for signature**	A treaty banning nuclear testing in the atmosphere, outer space and under water is signed in Moscow, following large demonstrations in Europe and America against nuclear testing.[124] The Treaty was signed and ratified by the governments of the Soviet Union, the United Kingdom, and the United States.[125] Much of the initiative for the treaty had its focus in what was the rising concern about radioactive fallout as a result of nuclear weapons testing underwater, in the atmosphere, and on the ground's surface, on the part of the nuclear powers.[126]

[119] https://en.wikipedia.org/wiki/Operation_Dominic#cite_note-LT_1-1
[120] https://en.wikipedia.org/wiki/Cuban_Missile_Crisis#Aerial_images_find_Soviet_missiles
[121] http://www.icanw.org/the-facts/the-nuclear-age/
[122] *Russia, America & the Cold War: 1949-1991*, Martin McCauley, p.8
[123] https://en.wikipedia.org/wiki/History_of_nuclear_weapons
[124] http://www.icanw.org/the-facts/the-nuclear-age/
[125] https://en.wikipedia.org/wiki/Nuclear_testing_moratorium

[126] https://en.wikipedia.org/wiki/Nuclear_testing_moratorium#Background