US Strategic Nuclear Policy

Part 1

This is a documentary; an oral history of US strategic nuclear policy. Those who played a part tell the story. They summarize the evolution of a sixty-year history, from the dawn of nuclear weapons to the 21st century. The speakers address two fundamental questions. First, what has been the purpose of US nuclear weapons? Second, how have the policy, the weapons and the war plans evolved?

Foremost, this is a history of nuclear deterrence. The deterrent role of nuclear weapons has remained constant throughout the evolution of policy, world events, war plans and nuclear delivery systems. This is not a comprehensive history, but rather a primer to stimulate further thought about strategic nuclear policy and about the broader question of national security strategy. There are significant aspects not covered in this series: the role of the legislative branch; the development of non-strategic nuclear forces, specific weapons technologies and the role of the nuclear laboratories and the production complex. These are stories for another time.

History tells us where we have been and it can provide us some valuable insight for the future. This oral history is intended to provide a foundation for discussing some very important questions. What truly will be the role of nuclear weapons? What will be the requirements in the future for US nuclear forces, for the stockpile and for the nuclear weapons complex?

1.1 Strategic Precursors

When the US 8th Army force arrived in Britain in 1942, a doctrine of daylight high-altitude precision bombing, developed around the Norden bombsight.

George Quester, Professor of Government & Politics, University of Maryland

“We thought that we were going to be able to hit military targets and never hit civilian targets. We thought we could hit a pickle barrel from 18,000 feet. The British said you can’t do that because you’re never that accurate and if you fly by daylight you’ll lose too many planes to German interceptors. So they bombed by night, aiming at entire cities.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“It was an allied bomber offensive, with both the British and the Americans adopting different doctrines and bombing in different ways. It was much shorter distances that the bombers had to fly and it was against a different set of defences than you had in the Pacific. Air war in the Pacific was more ‘catch-as-catch-can’ in the way we had to adapt to it.”

Lynn Eden, Senior Research Scholar, Center for International Security & Cooperation, Stanford University

“Japan was understood as a special case. The Air Force was willing to do area bombing when it couldn’t do what they were counting as precision bombing, which also wasn’t that precise, but it was a different operational set-up and it was a different way of understanding what they were doing.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“The basic question was whether or not you would be able to break industrial structures – aircraft production plants, engine production plants, petroleum refineries, electrical grids, things like that – whether you’d be able to destroy those with your bombing campaign.”

In Germany, factories were highly concentrated and often segregated from residential areas, making them targetable by precision bombing; while in Japan, war industries were dispersed rather than concentrated and they were often intertwined with densely populated residential districts. The Japanese target complex prompted the operational commander, General Curtis LeMay, to change tactics.
George Quester, Professor of Government & Politics, University of Maryland

“When LeMay decided to take the B-29s, which were really very elegant bombers and had lots of equipment, he took a lot of the equipment out so they could fly with more bombs, more incendiary bombs, and sent them over in a night attack, rather than by daylight so they wouldn’t run into any Japanese interceptors.”

Robert McNamara, Secretary of Defense, 1961-68

“LeMay was the most effective combat commander of any service that I met in the three years I was in the Air Force. He had one objective; that was to destroy targets and, associated with that, the objective of reducing the number of crew members lost per unit of target destruction.”

Todd White, Command Historian 2002-2004, United States Strategic Command

“If you see LeMay in Europe, and if you see LeMay in the Pacific, Tommy Power is always there. It is my own belief that Tommy Power was probably more the strategist than LeMay, but I think that those two men worked very well together in terms of getting the most out of their equipment and their men.”

George Quester, Professor of Government & Politics, University of Maryland

“He tried out this approach very similar to the British in Europe of just bombing out all of Tokyo in one attack. Maybe if you burn an entire city which, in the case of Tokyo, involved 100,000 people being killed, the Japanese would quit.”

The first and the fiercest of these urban-area attacks came on 9th March, 1945. LeMay had abandoned the doctrine of high-altitude daylight bombing against military assets and reverted to the urban-area firebombing strategy practised by the British against Germany.

A half a world away from the carnage, in the high desert of New Mexico, scientists from Los Alamos made preparations to test a new and more lethal device; an atomic bomb. The foundation of strategic nuclear policy would arise from a confluence of this revolutionary new capability and the air-war strategy practised over Japan (low-level civilian-industrial area bombardment).

In July 1945, the US was facing a costly invasion of the Japanese mainland.


“Hospitals were being set up. There was one 20,000-bed hospital on Tinian, where I was stationed, alone. We could look across and see 1600 ships in the harbour at Saipan, preparing for the invasion.”

As American planners prepared to maximize direct military pressure on the Japanese government and the population. President Truman issued his final approval to the Secretary of War for the release of the atomic bomb. The atomic bombings were the culmination of the great fire bombing of Tokyo; a strategy that copiously provided that military pressure.

Robert McNamara, Secretary of Defense, 1961-68

“It was such a shock to the Japanese to see 80,000-100,000 people killed in Hiroshima and Nagasaki, in the most brutal way, that they reacted to it more than they did, I think, to the fire bombing; although, the extent of the firebombing is not well recognized and I have never seen an analysis of whether the nuclear could have been avoided if LeMay had been allowed another few weeks to carry on the fire bombing, as at one point he, I think, was suggesting.”
Rear Admiral Robert Wertheim, United States Navy (retired)

“When I went to Tokyo it was just absolutely devastated. The damage in Tokyo was a result of thousands of raids, thousands of sorties, by thousands of bombers; whereas, in the case of the atomic bomb, there was one airplane and one bomb and people were totally unprepared for what happened. Though the extent of the damage in Nagasaki was less than Hiroshima, the fact that there was a second bomb, and the implication was that there were more, I think that’s what finally tipped the scales.”

George Quester, Professor of Government & Politics, University of Maryland

“The Japanese didn’t surrender in two days after Nagasaki because their military capability had been reduced very much, they surrendered because they had that this vision that his could happen every week and they couldn’t stand to have all those cities destroyed. And, in nuclear deterrence, if civilians get killed we can call that incidental damage or collateral damage but many people said that’s what really is the basis of deterrence, that the other side can’t stand having that many people killed.”

Hiroshima and Nagasaki ushered in the need to think differently about war with atomic weapons. Would the US adopt a de facto policy of urban area atomic bombardment? Were the cities of an adversary to be held hostage as a deterrent to aggression? How would the targeting of urban-industrial areas be reconciled with the tradition of precision bombing? And, as the accuracy of nuclear weapons systems improved, would more precise targeting introduce new concerns about the prospect of nuclear war-fighting? These questions and many others would inform the evolution of a strategic nuclear policy. Over time, policy would be derived from the influence of successive presidential administrations, dynamic world events as well as the evolutionary development of nuclear weapons systems.

1.2 The Atomic Bomb and Post-war Strategy

George Quester, Professor of Government & Politics, University of Maryland

“The mobilization in the conventional weapons field and the nuclear field are very parallel. In both cases, civilian needs trumped any military need. The one big difference is that we kept secret what was happening in the nuclear labs.”

Like most Americans in 1945, the scientists and their families at Los Alamos were anxious to put the war behind them. Many returned to the universities, leaving behind a scientific enterprise that faced an uncertain future and a new body of knowledge which continued to be shrouded in great secrecy.

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“There were very few people who actually understood the atomic bombs as they existed in the period right after World War II. The security restrictions were still intense, the development of atomic bombs, nuclear bombs, was still at an early phase.”

Lynn Eden, Senior Research Scholar, Center for International Security & Cooperation, Stanford University

“Everyone understood, kind of, outside of their official capacity, that the atomic bomb was a weapon of extraordinary devastation so they had this tool, this weapon, on the one hand and the knowledge base that they were building was for much more discriminate force.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“On the other hand, there had to be assumptions that would be made that would guide military planning. Would you or wouldn’t you use the atomic bomb?”
“A commander’s job is to demonstrate how to prevail in a war and, therefore, how to plan for that war and, as such, nuclear weapons, pretty much from the beginning have been treated as instruments of war.”

Todd White, Command Historian 2002-2004, United States Strategic Command

“These weapons were looked upon as being essentially larger conventional weapons. I think that Truman in particular had a very personal understanding of the damage that these weapons could do and I believe that Truman really didn’t want to use them.”

Paul Boyer, Professor Emeritus of History, University of Wisconsin

“Private reflections were quite apprehensive about what the implications of this were for the future of humanity. In terms of his public pronouncements he, of course, associated the bomb with victory in World War II and also, for a brief time period at least, Truman and the Truman administration seemed to seriously explore possibilities of international control.”

Harry Truman, US President, 1945-1953

“If they do not now accept our terms, they may expect a rain of ruin from the air, the like of which has never been seen on this earth.”

International Control of Atomic Energy - the Baruch Plan

Even as President Truman issued a final ultimatum before the second bomb was dropped on Nagasaki, he promised to redirect atomic power towards the maintenance of world peace. The stage was set for the development of a proposal for the international control of atomic energy by an expert board of consultants that included Robert Oppenheimer, who had led the development of the atomic bomb.

DOCUMENT: Department of State, Memorandum for the President, Subject: A Report on the International Control of Atomic Energy, 21 March 1946: “Following our discussion early in January about the need for intensive study of the problem of international controls of atomic energy, I established a Committee on January 7, under the Chairmanship of the Under Secretary to work on the matter. The other members of this Committee were Dr Vannevar Bush ...”

In less than a year, Bernard Baruch, a successful Wall Street speculator, was appointed as the US representative to the UN Atomic Energy Commission. There he presented the American proposal, which came to be known as the Baruch Plan. Almost immediately, the Soviet delegation raised objections to the plan’s proposed controls on fissionable materials and an on-site inspection regime that threatened ongoing secret work deep inside Russia.

DOCUMENT: Proposed Report of the United Nations Atomic Energy Commission, presented by the Delegations of France, the UK and the US, 15 April 1948: “The Atomic Energy Commission reports that it has reached an impasse in its work. It now recognises that the impasse has been present from the beginning of its meetings.”

David Holloway, Professor of International History, Stanford University

“The Soviet position was that, you know, we are going to expect another world war in, say, twenty years so we need to start preparing for it now. At the end of the war, the Soviet leaders made a number of speeches setting out their view of how international relations would develop after the war and Stalin said that Lenin’s theory of imperialism was still operative, and that as long as imperialism existed there would be wars.”

Kennan’s Long Telegram

When George Kennan, the American chargé in Moscow, reported on Stalin’s speech, official Washington first began to regard the Soviets as a threat.
“Kennan’s long telegram was meant to do several things. One, to alert Americans that Russia was not going to be easy to live with. Secondly, if we wait and wait and hold them in the long run, communism might lose its expansionist self-confidence. Kennan’s containment doctrine said that if you keep the Russians contained, keep them from expanding, they will look at their own article of scientific analysis that says the world is bound to have come under communist control and see that it’s wrong.”

But throughout 1946, the Soviets consolidated political power in a series of buffer states, forming what Winston Churchill would call an iron curtain.

“With the onset of the Cold War symbolised by Churchill’s speech [at Fulton, Missouri, March 1946], increasingly, the emphasis was on maintaining nuclear supremacy, preparing America and the West militarily for this long and desperate struggle.”

Churchill’s suspicion of Joseph Stalin at the end of World War II had been confirmed and he cautioned Truman to protect and maintain the American monopoly of the atomic bomb.

“The fact that that came more or less simultaneously with the other effort to promote international control, I think shows the ambivalence of that period.”

As he contemplated the possibility of an emerging Soviet nuclear capability, Truman was also determined to maintain civilian control of the bomb and appointed David Lilienthal chairman of the newly created Atomic Energy Commission. In April 1947, its first report warned of “serious weaknesses in the situation from the standpoint of the national defense and security.”

“One thing we really don’t know today is how much did the Soviets know about how few functional atomic bombs we had in 1946 and ’47. By many measures we had none. What we had was on a shelf in a state that would take weeks to get ready for use. These would have been very manpower-intensive nuclear weapons that had to be kept ready, and we weren’t doing that because there wasn’t the motivation to do it and we weren’t expecting the Cold War, weren’t expecting to use weapons against the Soviet Union.”

1.3 The Cold War

In 1946, the Truman Doctrine, ensuring the independence of Greece and Turkey, drew a line preventing further Soviet expansion in Europe.

“One of the primary objectives of the foreign policy of the United States is the creation of conditions in which we and other nations will be able to work out a way of life, free from coercion.

“You have to remember that the United States was doing something that was revolutionary through World War II and immediately beyond. We were making decisions that we would enter and remain engaged in the world in a way that we had never done before.”
Daniel Harrington, Historian, United States Air Force

“The United States had loaned Europe about $11 billion in various aid programmes to kind of kick start the French and British economies and, in late ‘46, early ‘47, economic progress begins to slow and so there’s this growing sense of emergency.”

George Quester, Professor of Government & Politics, University of Maryland

“In 1948, the collapse of Czechoslovakia to communist rule shook us up in that Czechoslovakia had been the only democracy in eastern Europe between the wars and it seemed like this was the last straw.”

David Holloway, Professor of International History, Stanford University

“But I think it’s the Berlin crisis that really begins to give this a kind of military edge. But when Stalin imposed the blockade, he was resisting what he saw as moves to create a separate West Germany.”

George Quester, Professor of Government & Politics, University of Maryland

“The blockade on Berlin shook us up more. It was the second blow within a short period of time in 1948 and it directly involved American forces. It seemed to be an attempt, maybe, to set dominoes going to affect all of Germany. We mainly bet on a non-military approach. We were using military transports to fly coal and food to West Berlin. But as a back-up for that, we also did make a big move of American bombers to Britain.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“I think it’s fair to say that the contingency planning by ‘46 and ‘47 was focused on the fear that you may have a war with the Soviet Union.”

George Quester, Professor of Government & Politics, University of Maryland

“We warned the Soviets that if they did some things they could easily do – shoot down our planes or send tanks into Berlin - that we were moving (allegedly) the nuclear forces into Britain.”

David Holloway, Professor of International History, Stanford University

“I think sending the B-29s to Europe was a kind of reminder that the US had the atomic bomb. But Stalin knew that; he didn’t need to be reminded. To stop the airlift he would have had to escalate the situation. I think that’s what he didn’t want to do. He knew there were limits to the confrontation.”

Daniel Harrington, Historian, United States Air Force

“Just the mere existence of atomic bombs in 1948, I think, helped restrain him.”
George Quester, Professor of Government & Politics, University of Maryland

“The American hints at using nuclear weapons in 1948 shows that when you have a monopoly you can lightly play with nuclear threats and get some results.”

With the prospect of conflict on the horizon in western Europe, it had become clear to the Truman administration that there was now a critical need for some fundamental guidance about the use of atomic weapons.

1.4 The Emergence of a US Nuclear Policy

The Berlin Crisis of 1948 was the first of several critical drivers of US strategic nuclear policy. As they prepared contingency war plans, the Joint Chiefs of Staff sought guidance on the use of atomic weapons.

Daniel Harrington, Historian, United States Air Force

“I don’t think there’s really any clearly defined US policy toward whether nuclear weapons will be used and how they might be used before the Autumn of 1948 and that is what makes NSC-30 and the NSC-20 series so important is that they begin to come to grips with some of those issues.”

DOCUMENT: NSC-30 - A Report to the National Security Council by the Executive Secretary on US Policy on Atomic warfare.

NSC-30 declared that the US was prepared to use atomic weapons in the event of war and the decision to do so would rest with the president.

Daniel Harrington, Historian, United States Air Force

“The President will decide to use them when he wants to. He would hate to use them ever again, but if it is necessary, he will.”

NSC-30 first established a deterrent role for atomic weapons as a counterbalance to Soviet forces in Eastern Europe. The National Security Council also developed NSC-20/4.

DOCUMENT: NSC-20/4 – A Report to the President by the National Security Council on US Objectives with Respect to the USSR to Counter Soviet Threats to US Security, 23 November 1948

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“But what we now had was a settling down into the rhythm of the Cold War. We are now settling down into the Soviet Union as the enemy. We are now settling down into the United States’ strategy for deterring the Soviet Union and, if deterrence fails, having to fight a war with the Soviet Union based around nuclear weapons. We are settling down into that rhythm where there is a process that guidance flows into the planning system and that guidance was going to come out of the Security Council mechanism.

Both Hoyt Vandenberg, who was Chief of Staff of the Air Force, and the Joint Chiefs themselves were beginning to ask the question, ‘If we had to execute the contingency war plans that we have tomorrow, what would happen?’ Teams were sent out to look at the readiness of Strategic Air Command. They came back with very negative reports.”

Daniel Harrington, Historian, United States Air Force

“So Vandenberg looked around, the senior World War II leadership is gone and LeMay is head and shoulders above everybody else so he gets he call.”
“LeMay was a brilliant operator and, I probably think it’s fair to say, a brilliant commander. Very dynamic, very energetic and he wanted a force that could in fact fight a nuclear war.”

“LeMay was continually concerned about the lack of photographic intelligence. They began the atomic targeting based on maps and some captured German reconnaissance photographs.”

“So they took the analytical inputs and they sat down and said, ‘The weapon will go here; here’s how we’re going to get there...’”

“... and that you would also employ the same ideas that had been used during World War II for deep interdiction strategic bombing, that is to take out the enemy’s industrial capacity. Now, of course, industrial capacity was also co-located with cities and so they would have a tremendous amount of disruption using nuclear weapons on those targets.”

Le May’s primary objective was to ensure that SAC [Strategic Air Command] would have the capability to deliver a single, massive attack, and for this, he would require a force of new, long-range bombers.

“Harry Truman came to office without a lot of experience; certainly no experience in foreign affairs to speak of. The one thing that he brought to the White House was a very fine-tuned look at how you did budget making and he insisted that Forrestal stick within very, very tight constraints.”

James Forrestal became the nation’s first Secretary of Defense in the midst of a brutal budget battle among the newly formed Joint Chiefs. Forrestal tried but failed to resolve the differences. In February 1949, Eisenhower was brought in to mediate the dispute over budget priorities that favoured the Air Force’s new B-36 atomic bomber.

“The Navy saw this as a threat to its ability to project power from aircraft carriers. They saw the Air Force, perhaps, as threatening the control of sea-based aviation.”

“The Navy is posing some very serious questions about American nuclear strategy and reliance on strategic bombing, and that to me is the more important dimension to the Admirals’ Revolt. What they’re saying in a sense is what some people in the Air Force itself had admitted – General Harmon did an analysis of the strategic bombing campaign and concluded that it will do serious damage to the Soviet Union but it’s not an assured war-winning strategy.”

DOCUMENT [26.12]: Report by the Ad Hoc Committee (consisting of Lieut. General Harmon, USAF, et al) to the Joint Chiefs of Staff on Evaluation of Effect on Soviet War Effort Resulting from the Strategic Air Offensive: “Psychological Effects: 12. The atomic offensive would not, per se, bring about capitulation, destroy the roots of Communism or critically weaken the power of the Soviet leadership to dominate the people. 13. For the majority of Soviet people, atomic bombing would validate Soviet
propaganda against foreign powers, stimulate resentment against the United States, unify these people and increase their will to fight.”

Soon, decisions would be made by Forrestal’s successor, Louis Johnson, ensuring that SAC would get its atomic bombers. In early summer 1949, they represented the only US strategic capability to deter the Soviets. In July, the Senate would ratify the NATO treaty and now atomic weapons would underpin Article 5 of this new security commitment. One month later, an event unfolding deep inside the Soviet Union would seriously challenge this deterrent capability.

1.5 The End of Atomic Monopoly

On 3rd September, 1949, a specially-equipped B-29, flying east of the Kamchatka peninsula, detected the presence of radioactive residue from the blast of Joe-1, the first Soviet atomic test. Only months before, the AEC had deployed a system for the sampling and analysis of evidence from an above-ground nuclear detonation.

Harold Agnew, Director, Los Alamos Scientific Laboratory, 1970-1979

“Some of us were not surprised. Some of us thought they would be right on our heels, so to speak, and clearly they were. There were other people, primarily in the government, that thought that it would take them a much longer time.”

Herb York, Director, Livermore Laboratory, 1952-1957

“There were a couple of important people who said it would take a long time; General Groves and Vannevar Bush. But even Vannevar Bush said it will take twenty years, unless they give it the highest priority, which is exactly what they did.”

James Schlesinger, Secretary of Defense, 1973-1975

“So we underestimated the speed with which they could move. We failed to understand the degree of assistance, in 1948-49, that the Soviets had obtained from spies in the West.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“The detection of the test immediately put in train a number of actions by the President. In the next month, for example, he approved a request by the JCS to very largely increase the capability for producing nuclear materials.”

DOCUMENT [28.41]: 10 October, 1949, Report to the President by the Special Committee of the National Security Council on the Proposed Acceleration of the Atomic Energy Program.

The approval of the special advisory committee’s recommendations set in motion a series of events: increased production of fissile material at the plutonium processing facility in Hanford, Washington, accelerated production of the new Mark-4 bomb at Los Alamos and construction of nuclear weapons storage facilities around the country.

Herb York, Director, Livermore Laboratory, 1952-1957

“Then they increased everything. They not only increased the production of U-235 and plutonium, they began a vigorous exploration of the Colorado plateau to find more uranium.”
John Foster, Director, Livermore Laboratory, 1961-1965

“I think they were making it up as they went along. We were all making it up as we went along. The executive branch, on the one hand, and the legislative on another. No question. It was a very revolutionary time. We were dealing with something that nobody had ever had before.”

The Soviet possession of the atomic bomb ended the United States’ nuclear monopoly. This would profoundly affect defence policy and war planning.

DOCUMENT [29.40] 23 September, 1949, Statement by the President: “I believe the American people, to the fullest extent consistent with national security, are entitled to be informed of all developments in the field of atomic energy. That is my reason for making public the following information. We have evidence that within recent weeks an atomic explosion occurred in the USSR.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“The military strategy depended completely on the capacity for our monopoly of nuclear weapons to deter and counterbalance the very large conventional forces which the Soviet Union had.”

Contingency War Plans: Halfmoon, Trojan, Offtackle

As early as August 1947 the Joint War Plans Committee began drafting a series of contingency war plans that authorised an ever-increasing role for atomic weapons: Halfmoon was the first of these plans, approved during the Berlin Crisis of 1948.

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“There’s a witch’s brew of names that you have from those days, as you move from Halfmoon to Trojan to Offtackle to what-have-you, and there’s all the supporting war plans, etc. etc. Basically, you have a joint outline war plan and you have supporting plans for it, and the joint outline war plan that the JCS approved will take whatever the strategic concept is and put it into play.”

Lynn Eden, Senior Research Scholar, Center for International Security & Cooperation, Stanford University

“In the absence of detailed, higher level guidance, those involved in nuclear war planning carried over what they knew from World War II, including a sense that they were involved in an enterprise of precision targeting, they carried over the same sense of target categories, they carried over the same sense that nuclear weapons were primarily blast weapons.”

Rear Admiral Robert Wertheim, United States Navy (retired)

“A nuclear weapon has, in addition, radiation and fire, which are difficult to predict. They are difficult to calculate. The planning of nuclear weapons tends not to include these effects simply because they are so difficult to calculate; but they are there. The earliest weapons, of course, were uranium bombs, fission bombs. These were delivered by high altitude, long-range bombers. But the accuracies of these early systems were measured in terms of large fractions of a nautical mile, and maybe even a couple of nautical miles, so the suitable targets had to be large area targets.”

In late 1949, a new emergency war plan, dubbed ‘Offtackle’ called for attacks on 104 urban targets with 220 atomic bombs, plus a re-attack reserve of 72 weapons. The prime targeting objective was to disrupt the Soviet will to wage war.

Lynn Eden, Senior Research Scholar, Center for International Security & Cooperation, Stanford University

“The targeting categories were completely consistent with targeting philosophy and some operations in World War II. The first one was BRAVO, which stood for blunting of nuclear forces and nuclear capability; the second one was DELTA which stood for destruction of the urban-industrial base and the third one was ROMEO which stood for retarding an enemy’s ability to mobilize.”
Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“This was our short-term war plan and within the next 18 months there was nothing other than the air offensive and, within the air offensive, specifically the nuclear component of it, which carried any chance of affecting the outcome of the war early on.”

What impact would this have on the defence of Western Europe? Would the President be more cautious in the face of Soviet provocation? By the end of 1949, Truman was forced to re-examine national security policy in light of a nuclear armed adversary.

1.6 How Much is Enough for Deterrence?

Richard Garwin, Senior Fellow for Science & Technology, Council on Foreign Relations

“With the explosion of the first Soviet atomic bomb, the United States felt vulnerable for the first time. How much is enough for deterrence? Herb York in his book says that logically it would have been enough to have fission weapons, and I believe that, but politically it is not enough, especially when you say of the other side that because we might think of a super-weapon, they might think of a super-weapon and build it.”

Herb York, Director, Livermore Laboratory, 1952-1957

“The primary reason for the development of the ‘super,’ for ultimately instituting a fairly aggressive programme to develop the ‘super’, was fear of the Russians.”

Paul Boyer, Professor Emeritus of History, University of Wisconsin

“People who, a year or so before, had been committed to the idea of international control of atomic weapons, now have made a dramatic shift toward the idea of keeping ahead of the Russians.”

Knowledge of the ‘super’, as the hydrogen, or thermonuclear, bomb was first known, was closely-held in the fall of 1949. Its development was the focus of a vigorous debate among fewer than one hundred people in the US government. Senator Brien McMahon, Chairman of the powerful Joint [Congressional] Committee on Atomic Energy, and General Omar Bradley, Chairman, Joint Chiefs of Staff, were among those who supported building a ‘super’ bomb and believed that ‘we should get ahead as quickly as possible.’

DOCUMENT [34:49] Letter to the President from the Joint Committee on Atomic Energy, 1st November, 1949

Truman also heard from those who opposed its development.

Herb York, Director, Livermore Laboratory, 1952-1957

“The Atomic Energy Commission itself, that is the five Atomic Energy Commissioners, were divided on the subject. The President set up a special sub-committee to study the question.”

The special committee of the National Security Council consisted of AEC Chairman, David Lilienthal; Secretary of Defense, Louis Johnson and Secretary of State, Dean Acheson.
Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“That committee met for two months and at the end of January it reported to Truman, essentially recommending that he go forward with the development of hydrogen weapon. That was something that was very much contested and argued about and debated within the administration, but nevertheless the committee recommended it and President Truman, in about seven minutes, approved it.”

DOCUMENT [35:27] Memorandum for the president – National Security Council: “It is recommended that the President: (a) Direct the Atomic Energy Commission to proceed to determine the technical feasibility of a thermonuclear weapon...; (b) Direct the Secretary of State and the Secretary of Defense to undertake a re-examination of our objectives in peace and war...”

Edward Teller, Designer of the Thermonuclear Weapon

“He had no doubt in his mind that it has to be done if it works. The idea that something is too good for us to work on just did not make any sense to him. He never said that, but that is my feeling of him.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“He also directed his principal advisors on security to produce for him a study as to how US strategy would be affected by this development. It looked at the wider question of what should we do about our relations and policy toward the Soviet Union.

Delivered to the president on 5th April 1950, NSC-68 was a seminal policy document on US national security. Written largely by Paul Nitze, NSC-68 reaffirmed the character of the Soviet threat contained in the earlier NSC-20/4, but now the threat was seen as imminent.

DOCUMENT NSC-68 [36.29] A Report to the National Security Council, 5th April, 1950

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“In 1954 it was called a year of maximum danger. It assumed that they would have about 200 weapons and that this would be quite sufficient to do tremendous harm to the United States.”

Herb York, Director, Livermore Laboratory, 1952-1957

“... which, in my view, was greatly exaggerated. Various of Nitze’s estimates, then, before that and after that, about where the Russians were and where they were going to be, were, all of them, greatly exaggerated.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“Paul Nitze was a very skilled, in-fighting bureaucrat in the way that he conducted NSC-68; he talks about it freely in several of his books. NSC-68 was delivered – Dean Acheson as Secretary of State, basically with Nitze, had made the fundamental decision that they didn’t want to lay the budget figures out in front of Truman, so NSC-68 was kind of the start of the debate, when it gets delivered to the White House in the spring of 1950.”

But Truman wasn’t about to take Nitze’s, or Acheson’s, word for it and set about evaluating the implications, as well as the probable cost, for the massive nuclear and conventional build-up called for in NSC-68. Within two months, however, this careful and deliberative effort would be cut short by a new military imperative.
By the middle of 1950, the North Koreans had a fully trained and equipped army; the Russians had seen to that. The day came when it was revealed what had all along been a communist plan – the invasion and seizure of South Korea. The invasion got underway on the morning of Sunday 25th June, 1950.

The invasion of South Korea was a surprise, like the Berlin blockade of 1948 and the Soviet atomic test of 1949. Individually, these events prompted the evolution of US strategic nuclear policy. Taken together, they sparked a massive build-up of the nation’s nuclear and conventional forces.


“Many people attached that build-up to NSC-68. I, myself, have never been sure that there was quite that close a connection. We had a war on our hands; we had tremendous concern and sense of danger in Europe.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“The Korean War hit and the nature of the decision-making process becomes different almost overnight, and NSC-68, it’s one of those peculiarities of history that it happened to be available at the time it did.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“But it was really the shock of the Korean attack which led Truman immediately to take the lid off the defence budget.”


“In the United States, there had been great shock: first, that war had come about, and there was shock in Europe as well because it looked as though the Soviets might be on the march. That’s when the European countries decided to ask the United States to send Eisenhower to be the commander.”

In the autumn of 1950, intelligence assessments delivered to Truman suggested that a ‘window of vulnerability’ had now opened. Would the US become more vulnerable while it was increasingly drawn into the Korean conflict and before rearmament could restore the strategic balance? The prospect of a Soviet invasion of Western Europe now deeply concerned Truman and Eisenhower.

Newsreel [40:52]: By winter the US forces faced, once again, the possibility of being driven from Korea. Discouraged, outnumbered, ill-equipped to handle the cold, they barely hung on through the freezing Korean winter.

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“After we had poured, basically, all the ready forces we had available into the Korean conflict, it was anybody’s call as to where Korea was going to go at that point; whether we would lose the war, whether the Soviets would intervene, things of that sort. It was a very desperate situation.”


“There was a good deal of talk about trying to estimate what was called the ‘date of maximum danger’. Many proposals were in the air that, if this was going to happen, it should be headed off.”
Scott Sagan, Co-Director, Center for International Security & Cooperation, Stanford University

“After the Soviets tested in 1949, it was understandable that the United States began to contemplate whether it would be appropriate, and indeed necessary for national security, to attack Soviet nuclear targets. But Harry Truman rejected the notion that the United States would deliberately precipitate a war against the Communist adversary. At the same time there were a number of military officers who rejected Truman’s view.”

Herb York, Director, Livermore Laboratory, 1952-1957

“And so, people like LeMay and others in the early fifties, when we were way ahead of the Russians in the development of bombs and in the accumulation of them, took the view that war is inevitable and the longer we wait before it comes, the worse off we were going to be.”

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“Stuart Symington, who was the Chairman of the National Security Resources Board, previously had been the First Secretary of the Air Force, delivered a report to the National Security Council: ‘Recommended policies and actions in light of the grave world situation’. In the fall of ’50 or ’51, the call for preventive war, the serious calls that would be considered by the National Security Council, was NSC-100, in my estimation. ‘... any further Soviet aggression, in areas to be spelled out, would result in the atomic bombardment of Soviet Russia itself’. Declaratory policy: atomic bombardment automatic. The closest you get to a call for preventive war is this document, in my estimation and the National Security Council discussion makes it clear that, even the principal sponsor of the document himself was not calling for preventive war. Now it’s a very different question as we get into the Eisenhower years, of how you best use the nuclear stockpile of the United States as a psychological tool.”

DOCUMENT NSC-100 [43.00] – A Report to the National Security Council by the Chairman, National Security Resources Board: ‘Recommended Policies and Actions in Light of the Grave World Situation’ – a call for a declaratory policy of preventive war:

As nuclear weapons became more firmly rooted in US defence policy, their growth in yield would become central to the psychology of deterrence.

1.8 Building the ‘Super’

Richard Garwin, Senior Fellow for Science & Technology, Council on Foreign Relations

“In just a few years after 1949, we had weapons, pure-fission weapons, 50 kilotons instead of 10-20 kilotons. They were very fine nuclear weapons and we didn’t have to have a hydrogen bomb – a ‘super’ – and, besides which, we didn’t know how to make it. Other people felt that we had to have enormously superior power, in order to destroy the Soviet Union.”

Edward Teller, Designer of the Thermonuclear Weapon

“The policy, as I understood it, was a clear understanding that our purpose was one of deterrence; that we should be ready with something more powerful. Some nuclear weapons made deterrence much stronger.”

Herb York, Director, Livermore Laboratory, 1952-1957

“The development of the hydrogen bomb at Los Alamos was part of a much bigger effort to expand our entire nuclear weapons programme, including the production of materials, the mining of uranium, etc.”
**Doug Lawson**, Nuclear Policy Analyst, Sandia National Laboratories

“In 1950, there were 8 sites and 55,000 employees. There were 20 sites, three years later, and 142,000, and this very dramatic growth continued in the 1950s and the 1960s.”

Immediately following the detection of the first Soviet atomic test, President Truman authorised successive expansions of the nuclear weapons complex, including plans for a second laboratory in Livermore, California. Meanwhile, at Los Alamos, Edward Teller and his colleagues fervently sought a practical design for the hydrogen bomb, based upon a fusion reaction within liquid deuterium.

**John Foster**, Director, Livermore Laboratory, 1961-1965

“There were contributions from a number of people, but the driving force was Teller. I mean, he was relentless and took it up with everyone he could interact with.”

**Richard Garwin**, Senior Fellow for Science & Technology, Council on Foreign Relations

“Stan Ulam came in to see him at Los Alamos, a mathematician who had been at Los Alamos for quite a while, and said ‘You know, Edward, if we compress this liquid deuterium, we can make it work. The reaction rate will be bigger, and all that.’”

**Herb York**, Director, Livermore Laboratory, 1952-1957

“The idea was that you put a nuclear weapon inside a container and, for a few moments, the container will contain not only the bomb but the energy it produces and that energy can be used for other things such as, perhaps, compressing a secondary.”

**Richard Garwin**, Senior Fellow for Science & Technology, Council on Foreign Relations

“Teller said, ‘Well, it won’t work but, if you were going to do it, you should use the radiation, because all of the energy comes off in thermal radiation and that goes faster and can be tailored more simply.’”

**Edward Teller**, Designer of the Thermonuclear Weapon

“At that time, I presented a new design, in which I had full confidence. We needed the powerful, concentrated energy of a primary to make the compression. Once you made it, the secondary worked much better, and that was the whole secret.”

**Richard Garwin**, Senior Fellow for Science & Technology, Council on Foreign Relations

“Now, Teller asked me to devise an experiment to demonstrate that this concept would work. By July 25th, 1951, I had a big sketch of what turned out to be ‘Mike’.

**Edward Teller**, Designer of the Thermonuclear Weapon

“There were no new ideas, but a competent write-up as to the actual proposal and how it should manifest itself and be proved in a test.”
Herb York, Director, Livermore Laboratory, 1952-1957

“Mike was tested in November of 1952, just a few months after Livermore was established so Livermore, of course, had nothing to do with it, although the press often gave us the credit and we were not allowed to deny it, for reasons of secrecy. So the weaponization took place entirely at Los Alamos. The development of an emergency capability, based directly on a deliverable version of Mike …”

Richard Garwin, Senior Fellow for Science & Technology, Council on Foreign Relations

“The emergency capability weapons were sometimes produced by the Atomic Energy Commission before the concept was tested. It was so urgent, they felt, to have these capabilities that, if a test was successful, then they would have had the weapons in the stockpile capable of delivering.”

Harold Agnew, Director, Los Alamos Scientific Laboratory, 1970-1979

“After Mike, we had the ‘dirks’ operation, where we went through the development of the Jughead, the Runts and the Shrimp. When Runt worked so well, then that was our first, so-called ‘deliverable’ 20-ton thermonuclear device. When thermonuclear weapons were first developed, what it did was gave you more megatons for the buck, so to speak.”

Richard Garwin, Senior Fellow for Science & Technology, Council on Foreign Relations

“Before, and in the early stages of the thermonuclear weapon, attention was focused on the very large yields (energy releases) available. In fact, the impact of the thermonuclear weapon was not that of enormous yield; it was to make it possible to have vastly more weapons with a limited stock of uranium-235 or plutonium-239.”

Doug Lawson, Nuclear Policy Analyst, Sandia National Laboratories

“In 1950, there were approximately 300 weapons in the stockpile; a decade later there were 22,000.”

Herb York, Director, Livermore Laboratory, 1952-1957

“There was a decision to build more coming from Truman. There was a decision to build more power; there was the invention of more powerful versions coming out of Mike and the things related to Mike.”

Doug Lawson, Nuclear Policy Analyst, Sandia National Laboratories

“The large growth that we saw in the 1950s and 60s was primarily driven by the capacity of the complex, and not truly by requirements.”

Leon Smith, Nuclear Weapons Systems Engineer, Sandia National Laboratories

“It was our policy at that time not to wait for requirements from the military, but to find out from the technologies then available what the art of the possible would be.”
John Foster, Director, Livermore Laboratory, 1961-1965

“Technology offers opportunities; offers possibilities. We didn’t understand what the objectives ought to be. We didn’t know what kind of policies or even what plans and programmes ought to be laid to achieve those objectives.”

1.9 A Basic National Security Policy

Dwight Eisenhower, President, 1953-1961

“We face the threat, not with dread and confusion, but with confidence and conviction. We hold it to be the first task of statesmanship to develop the strength that will deter the forces of aggression and promote the conditions of peace.” (Inaugural address)

Dwight Eisenhower assumed the presidency in the months following the detonation of the world’s first thermonuclear device at Eniwetok [Atoll, Marshall Islands]. Throughout the campaign, Eisenhower had promised to “re-examine the balance between security and solvency,” but the initial concern of the new president and his advisers would be resolving the matter of Korea.


“Shortly after Eisenhower took office, and had started the process of developing a fabric of security policies and plans, in the Soviet Union Generalissimo Stalin died.”

David Holloway, Professor of International History, Stanford University

“When he dies, there’s an almost immediate change of policy in Moscow, which is discussed with the North Koreans, which says we’ll now take a series of steps to try to bring the war to an end.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“Both he and Dulles thought you must have a coherent strategy. They decided that they would put a major study of alternative policies toward the Soviet Union for the purpose of hearing really thought-through alternative possibilities.”


“They decided on that in the Solarium of the White House mansion so it took the name Solarium as the result of that.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“And there were really three approaches that were essentially put forward; each assigned to one team. Task force ‘A’ was supposed to consider the prospects of a containment policy; ‘B’ was called ‘drawing the line’, that if they took any measures to expand they would run the risk of a massive response; and ‘C’ was given essentially the assignment of defending a policy of roll-back, with the idea of trying to force the Soviet Union to capitulate by coercion.”

“At the end of our work, which went on for five weeks in complete secrecy here in Washington, we met in the library of the White House ...”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“... and each of the teams had a time for a full presentation of its case.”


“At the end of it, Eisenhower jumped up and said, ‘Now, I’d like to summarize and comment on what we’ve heard,’” and he spoke for 45 minutes without a note, pulling the whole thing together. In doing so, he showed his intellectual ascendancy over every man in the room.”

Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“... most of the qualities which the press later on simply disregarded.”

In the end, Eisenhower reaffirmed a policy of containment. The President was under no illusions of what a nuclear war with the Soviets would be. It would be a war of utter devastation.

Herb York, Director, Livermore Laboratory, 1952-1957

“The ‘Joe 4’ explosion in August of 1953 had a major psychological impact on us. The details were secret, so all the American public, and all most of the members of the Congress and other American leaders knew was the Russians had exploded a hydrogen bomb.”

At the National Security Council, the detonation of a Soviet nuclear bomb underscored the urgency of preparing a new national security policy.

Michael Wheeler, Senior Defense Analyst, Science Applications International Corporation

“All of this flows together, in the fall of 1953, into a set of decisions which lead to NSC-162/2. He wanted to pay as much attention as possible to how you could take the psychology of nuclear weapons and turn them into making the strategy as deterrent as possible. Also was his reading, I think, of the Soviets as a fairly conservative group of decision-makers. He didn’t think they wanted war either.”

DOCUMENT: NSC-162/2 of 30 October, 1953

NSC-162/2 emphasised a nuclear response: “(b)(1) In the event of hostilities, the United States will consider nuclear weapons to be as available for use as other munitions.” A statement, the true intent of which would be debated for decades.
Robert Bowie, Head of Policy Planning Staff, 1953-1957, US Department of State

“The defence strategy had two purposes. One was to deter the Soviet Union; the other was to reassure the NATO allies, and therefore they would require really a higher degree of certainty in order to be reassured than the Soviets did to be deterred.”

In February 1952, the NATO defence ministers met at Lisbon and agreed to commit 96 divisions in a forward defence of Western Europe.

Doug Lawson, Nuclear Policy Analyst, Sandia National Laboratories

“Within a year after making that commitment at Lisbon, it became clear that NATO had neither the resources nor the political will to field a force of that size.”

Eisenhower would use increasing numbers of both strategic and tactical nuclear weapons to deter the Soviets in Western Europe. In November 1953, he directed Admiral Radford, Chairman of the Joint Chiefs of Staff, to implement the ‘New Look’; a military strategy that placed heavy reliance upon nuclear weapons for the long haul.

James Schlesinger, Secretary of Defense, 1973-1975

“Eisenhower decided that we were spending too much on the Department of Defense and cut back the planned level of expenditures. This was the ‘New Look’. We, in the judgment of the administration, could not stand up against the hordes of Soviet soldiers that would be sent against the West, and therefore nuclear weapons were a substitute for maintaining massive conventional forces.”

Doug Lawson, Nuclear Policy Analyst, Sandia National Laboratories

“Nuclear weapons got at the heart of NATO strategy very quickly, from their initial deployment in 1953, although the exact role – exactly how and when they were going to be used – was often confusing and ambiguous.”

James Schlesinger, Secretary of Defense, 1973-1975

“NATO intelligence tended to exaggerate the Soviet threat over the [Urals?]. The prevailing presumption was a ‘worst possible case’; to wit, that the Soviet Union would be bending every resource to build up their military forces against the West as rapidly as possible.”

Doug Lawson, Nuclear Policy Analyst, Sandia National Laboratories

“And so a lot of our training and plans were geared on that premise. MC-14/2 – Massive retaliation or the ‘tripwire’ strategy was basically that, should this massive invasion occur, massive nuclear forces would be used; there would be all-out nuclear war. It was all or nothing.”

DOCUMENT: MC-14/2 (23 May 1957) Overall Strategic Concept for the Defence of the NATO Area.

In the notes of a meeting, prepared by Colonel Goodpaster, the President’s close personal aide, Eisenhower laid out a deterrent nuclear posture that would set in motion a 20-year build-up of nuclear weapons deployed in Western Europe.

DOCUMENT: Memorandum of Conference With the President, 22-Dec-54

Goodpaster wrote: “He [DDE] indicated his firm intention to launch a strategic air force immediately in case of alert of actual attack. He stressed that a major war will be an atomic war.”

“My reading was that, if actual attack were made on our forces in Europe, or in the United States, the likelihood of escalation to nuclear war was very, very high, and the Soviets knew that.”