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THE DEVELOPMENT OF FRENCH NUCLEAR FORCES

MARTIN J. WISDA

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Submitted to the faculty of the Graduate School
in partial fulfillment of the requirements
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DEDICATION

To my loving wife, Vivian, and our daughter, Stefanie, whom I love and cherish beyond words.

ACKNOWLEDGEMENTS

I wish to acknowledge with thanks and great affection my wife, Vivian, whose love and support have been invaluable throughout the writing of this thesis and my studies in general here at Indiana University.

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TABLE OF CONTENTS

I. Introduction 1

II. Developments During the Third Republic 4

III. Developments During the Fourth Republic: 7

Institutions 7

Milestones 14

Policy 17

Opposition 18

Motivation 25

IV. Developments During the Fifth Republic: 39

Importance of de Gaulle 41

Institutions 43

Milestones 45

Policy 48

Opposition 70

Motivation 83

V. Conclusion 96

VI. Appendix: Tables 99

VII. Vita

LIST OF TABLES

1. Transformation of the French Nuclear Force 100

2. Characteristics of French Nuclear Weapons 101

3. French Defense Expenditures 102

I. INTRODUCTION

On 13 February 1960, at her Reggan proving ground in the Sahara desert, France exploded her first atomic device. With this successful test, France joined the United States, the Soviet Union, and Great Britain as members of the nuclear club. The purpose of this paper is to examine how and why the French undertook the development of their own nuclear force and through this examination, argue that the French nuclear force is not just a classic example of stereotypical French chauvinism. It is more in line with a nation realizing its potential in reacting to perceived threats to its national reputation, sovereignty, and security and the changes in the world arena brought about by the nuclear age.

In examining how the French nuclear force developed, the various stages of research, development, and deployment will be chronologically detailed. This chronology will cover policy as well as technological and economic considerations. It will begin with a discussion of the scientific heritage of the theoretical physicists of the Third Republic. It was their research and theories that established the conceptual foundation for further nuclear applications, including nuclear weapons development.

The next period of development to be examined will be the post-World War II Fourth Republic. It was during this period that nuclear research priorities were reinstituted.

This rejuvenated effort built upon the pre-war theoretical foundations. It led to actual research and development of a nuclear weapons potential and culminated in the 1958 decision to actually conduct the first nuclear test explosions. The key aspects of this period,in addition to those topics discussed relative to the Fourth Republic to be discussed are as follows:

1) the key bureaucratic institutions
2) the attitudes of successive governments toward the formation of nuclear weapons
3) the interaction between the bureaucracy and the governments that influenced policy development
4) key research milestones
5) dissent that had to be overcome or taken into account in policy decisions
6) the evolution of French policies, or in what context would nuclear weapons be used.

This discussion will be followed by a review of the developments under the Fifth Republic, first, during the presidency of de Gaulle and then of his successors, Pompidou, Giscard, and Mitterrand. The era of the de Gaulle presidency is of major importance since it was his leadership that

guided the actual planning, development, and progress of the initial force systems and also the planning and progress of subsequent nuclear weapons systems. De Gaulle's leadership was also the major factor influencing the nature of foreign policy. His effective use of the French nuclear force to implement this policy and to influence the domestic scene are of equal importance. His successors have had to deal with the Gaullist legacy and have been concerned with maintaining the nuclear force in an era of domestic constraints and international change. Key aspects of this period to be discussed are as follows:

1) the importance of de Gaulle to the notion of a national nuclear force
2) political and bureaucratic institutions
3) the planning for a deployment of successive generations of nuclear weapons systems
4) the development of strategic doctrine for both strategic and tactical nuclear weapons systems
5) constraints that affected policy decisions
6) the development of national consensus supporting a French nuclear force

Closely paralleling the discussion of how the French nuclear force developed are the primary justifications for

the independent French force. These justifications reflect both international and domestic concerns. They revolve around the following issues:

1) restoration of pre-war status
2) restoration of French confidence
3) past and present concerns about dependency on alliances and the notion of a national defense responsibility
4) fear of hegemony in a nuclear era
5) restoration of true deterrence
6) balance within an alliance and freedom of action
7) consideration of British precedent development of French policies
8) reintegration of military under national control
9) domestic revitalization

One must view the development of the French nuclear force with an open mind. Although it is difficult, as it should be, to accept any justification for the acquisition of nuclear weapons, one must appreciate the French situation. This thesis will help in an understandinf of why the French effort was undertaken and effectively pursued.

II. DEVELOPMENTS DURING THE THIRD REPUBLIC

France is traditionally considered by the casual

observer to be a nation of fine wines, excellent cuisine, contemporary fashion, fine furniture, classic art, and a revolutionary heritage. But when this same casual observer considers the applied atomic physics of nuclear science, the reputations of the American, German, British and Russian scientists seem to overshadow those of French scientists. However, as David Schoenbraun states in As France Goes, "There is no field of human enterprise more characteristic of the modern world than atomic science, and in this field the French have been among the great pioneers for more than half a century."[1] The theoretical development of applied nuclear physics which is the scientific heritage of pre-World War II France is largely ignored by more parochial non-French observers. Nevertheless, it was this scientific heritage which paved the way for the development of nuclear weapons in France and in all countries that share membership in the nuclear club.

If a book were to be written on the development of atomic energy, it would have to start with France. France and the Atom, an official French publication, begins with this short paragraph that sums it up well:

> The first chapter in the world history of atomic energy was written in Paris at the end of the last century, with the fundamental discoveries of Henri Becquerel and Pierre and Marie Curie. These were the first links in the chain of theories and experiments that led,

> in 1942 in the United States, to the placing in operation of the first atomic pile and, in 1945, to the first atomic explosion.[2]

The following chronology of the French effort can be extracted from this same publication:

> 1896 - Discovery of radioactivity by Henri Becquerel
>
> 1898 - Discovery of radioactive elements by Marie and Pierre Curie
>
> 1914 - Establishment of the Radium Institute in Paris
>
> 1932 - Irene and Frederick Joliot-Curie discover the emission of light particles, an important part in the discovery of the neutron
>
> 1934 - Discovery of artificial radioactivity by Irene and Frederick Joliot-Curie
>
> 1939 - Frederick Joliot-Curie, Hans Halban, and Lew Kowarski publish experimental confirmation of nuclear chain reaction and release of energy.

World War II interrupted French scientific progress in this field. Up to her collapse in the Spring of 1940, French scientists led by Joliot-Curie, worked with heavy water obtained from Norway on determining the precise conditions for a controlled chain reaction.[3] After the fall of France, the French teams were broken up and contributed to the efforts of the American effort and the Anglo-Canadian program.

To assume that France had no stake at all in the

development of nuclear weapons is to ignore the heritage of nuclear science that has been presented. This strong foundation was critical in providing the framework for the post-war Fourth Republic scientific effort and goes a long way towards payment of dues for French entry into the nuclear club. This does not mean to say that a strong scientific background automatically legitimatize the acquisition of nuclear arms. But in France's case, given her nuclear heritage and her perceived situation in the world, the development of a nuclear force was inevitable.

III. DEVELOPMENTS DURING THE FOURTH REPUBLIC

Although the first actual atomic weapons test was carried out under the auspices of de Gaulle's Fifth Republic, it was during the Fourth Republic, 1946-1958, that the nuclear weapons program developed from the scattered pieces of pre-war French nuclear science to the actual decision by Prime Minister Gaillard in 1958 to conduct the first series of tests. In examining this period one must first understand the key government and bureaucratic institutions that were involved and how they interacted to influence policy.

Institutions

The general nature of the system of government in post-World War II France and its handling of sensitive issues like the development of nuclear weapons is best described by

Lawrence Scheinman in Atomic Energy Policy in France Under the Fourth Republic:

> It has become almost axiomatic to assert that the governments of the Fourth Republic were not wholly masters of the policies which were promulgated during their terms of office. In shaping policy goals, the coalition Governments were rigorously limited in both the selection of policy alternatives and in the ability to produce positive policy decisions. The coalitions which were formed lacked stability, for they cut across political associations which often were antagonistic to one another with respect to the goals to be pursued and the means to attain these goals. The tenuous nature of coalitions demanded the avoidance of potentially devisive issues.[1]

During the key decade of the 50s, the governments of Mendès-France, Faure, and Mollet waivered in indecision, apathy, and instability. The National Assembly was of little importance to this issue. As Scheinman writes, "The failure of the government to define and promulgate a military atomic policy denied Parliament the opportunity of critically assessing the developing of such policy."[2] In fact, it would not be until the Euratom debates of 1956 that Parliament would debate the subject. Whether through lack of interest, lack of knowledge, or lack of party consensus, the legislature did not serve as a forum for a dialogue on nuclear policy.

Three successive governments serve as classic examples

of this political apathy. The first of these three governments to deal with the issue of nuclear weapons was the government of Prime Minister Mendes-France. In two separate interministerial meetings in 1954, the most decisive opinions he could muster were 1) leave the decision in abeyance and 2) not to close the door on the possibility of eventual military applications.[3] The next Prime Minister, Edgar Faure, initially came out in favor of atomic weapons in response to a British White Paper in 1955 on the issue. Referring to categories of nations possessing thermonuclear weapons and those not possessing them, Faure stated, "I ask myself whether France can relinquish her right to be in the former category."[4] Within a month however, Faure stated, "... we have decided to eliminate research devoted to specifically military uses. As a result we do not intend to devote any study to the creation of an H-bomb or any other bomb."[5] Whatever reasons were behind the switch, confidence in any sort of definitive policy was waivering at best. Guy Mollet, the next Premier, repeated the pattern of his predecessors. Initially in favor of limiting independent French nuclear weapons development under Euratom auspices, he shifted to the position, based on perceived support for the independent effort in the National Assembly, "... that France's juridical and material capacity to manufacture weapons... should not in any way be hindered by French membership in the Euratom

community."[6] One can readily detect the common thread of indecision that links these three governments which happened to be presiding over the most significant research phase advancements of the Fourth Republic nuclear weapons development program. What did provide the momentum was a well developed bureaucracy that saw the need for consistent effort in a sea of inconsistency.

With the executive and legislative political institutions unwilling or unable to deal decisively with the nuclear weapons issue, it was left to the French bureaucratic institutions, specifically, the Commissariat à l Energie Atomique (CEA), to propel the program forward. Given the strong tradition of centralization in France it is not surprising that the bureaucracy would follow through on its own. The bureaucratic institutions became more established in France as centralization became the dominant political trend. As Bertrand Badie and Pierre Birnbaum wrote, "... the steady increase of centralization was never disrupted from the Ancien Rigime to the nineteenth century and down to the present."[7] What they are essentially saying is that the bureaucracy has undergone a thorough institutionalizing process throughout much of French history. The Commissariat was only fulfilling its role consistent with the heritage of strong, centralized bureacratic traditions of Louis XIV, Napoleon, and so on.

The CEA was established in 1945 by the immediate post-World War II Provisional Government of de Gaulle and entrusted "with the mission of developing the uses of atomic energy in various fields of science, industry, and national defense."[8] From its very inception, this bureaucratic institution would have more of an impact on the nuclear weapons issue that its rival political bodies. It would be directly responsible to the Prime Minister and was provided, by ordinance, with a high degree of autonomy. Scheinman best sums up the ordinance that created the CEA:

> Reduced to its simplest terms, the potential effects of atomic energy on the military and economic life of the nation required close surveillance and control by the Executive Head of Government, while the need for rapid progress, to close the gap between France and the Anglo-Saxon nations, readily lent itself to an organization vested with a relatively high degree of autonomy.[9]

Although the CEA was organized under dual authorities, the scientific High Commissioner and the administrative Administrator-General, it would be influenced primarily by successive domineering personalities in alternate positions. Frederick Joliot-Curie was appointed as the first High Commissioner of the CEA. His administrative counterpart was former Armaments Minister Raoul Dautrey. Initially, the CEA tended to support strictly peaceful uses of atomic energy. As Scheinman puts it, "The predominant factor underlying this

development was the aggressive and domineering personality of the High Commissioner, Joliot-Curie."[10] His pre-war reputation in the field of nuclear physics and his notoriety as a Nobel Prize winner, combined with sympathies to the French Communist Party and his fellow scientists, all of whom retained strong pacifist tendencies, propelled him to the dominant leadership role. Removed from office in 1950 because of his Communist sympathies, Joliot-Curie's leadership gave way to the next Administrator-General, Pierre Guillaumat, who turned the tables on Joliot-Curie's successor, Frances Perrin. Under Guillaumat,the CEA took a decided turn towards a more military orientation.[11] In contrast with the pacifist Joliot-Curie, Guillaumat, a graduate of L'Ecole Polytechique, was seriously interested in the growth and industrialization of atomic energy, and especially, a military program.[12]

If any one piece of the puzzle remained, it was input into the CEA from the military itself. Guillaumat dealt with this issue quickly. In late December 1954, he summoned General Albert Buchalet from his paratroop command in North Africa to head a newly created Bureau d'Etudes Generales (BEG). This bureau was the cover organization for a secretly planned atomic weapons unit which in 1958 would become the Direction des Applications Militaires (DAM). Although not officially subordinate to the CEA, the BEG worked hand-in-

hand with the CEA to further militarize the nuclear program.[13]

What the CEA had accomplished was to firmly establish its bureaucratic autonomy under Joliot-Curie's dynamic leadership, gain consistency under Guillaumat's direction, and to militarize significantly with the close cooperation of the BEG. With the cooperation of a few right-wing Gaullist officials in key ministerial positions, the nuclear weapons program not only stayed alive without explicit government approval, but managed to thrive.

A scenario typical of the relationship between the CEA and the government took place immediately after Premier Faure had stated his government's opposition to weapons development. The minister responsible for atomic energy development at the time was Gaston Palewski. General Pierre Koenig was Minister of Defense. Both were Gaullists, traditional supporters of an independent French nuclear force. The two signed a protocol with Finance Minister Pflimlin which provided for the carrying out by the CEA of a nuclear weapons development program including the extension of the basic nuclear infrastructure and technical research. The Army agreed to help defray the cost of the CEA - furnished plutonium and weapon prototypes while the Navy helped defray costs for the CEA to plan and build a nuclear submarine.[14] Such a scenario might seem incredible given the

Premier's declaration against just this sort of development, but one must always refer back to the relative stability of the CEA versus the instability of the government.

Milestones

The next aspect of the Fourth Republic's development of nuclear weapons is the progress achieved in research and in creating a nuclear infrastructure. This process has three phases:

1) the formative years from 1946 to 1951

2) the First Five Year Plan from 1952 to 1956

3) the Second Five Year Plan from 1957 to 1961

During the formative years several priorities had to be met in order to get the nuclear program underway. Scientists and technicians had to be trained. The raw materials of nuclear science had to be procurred, particularly the most basic of all nuclear materials, uranium. The highlight of the training program was the establishment of an atomic research center at Chatillon, near Paris, with the dual purpose of providing training in nuclear physics and chemistry and serving as the site for an experimental reactor to complement and augment this instruction.[15] Three sources within France were discovered -Grury, Lachaux, and La Crouzelle, as a result of an extensive prospecting program

undertaken by French engineers and scientists, and when combined with some overseas territorial holdings, made France the leading uranium producer in Western Europe.[16] Reliance on doubtful external markets and fears of restricted export quotas of uranium were prime motivators in this independent search for raw materials. With the raw materials and the trained personnel, the French nuclear industry could then proceed to its second phase.

If the first phase of this period can be called the scientific phase, then the second phase can be referred to as the industrial phase and began with the adoption of the first Five Year Plan. Under this plan, the CEA budget was increased to allow for the construction of two high-power plutonium producing reactors, G1 and G2, at Marcoule.[17] The choice to produce these types of reactors was significant. CEA scientists favored the alternative choice of constructing research reactors that would require imported fissionable material from American or British reactors and harness atomic energy for purely industrial purposes. On the other hand, constructing reactors that produced fissionable material themselves guaranteed independence to the French effort. This independent fissionable material-producing capability also opened the door for independent French nuclear weapons development. Plutonium was chosen because production of uranium 235 was deemed too expensive.[18] These developments

coincided with the changeover on CEA administration from Joliot-Curie to Guillaumat and the decided shift towards the military applications.

By the end of 1954, France was self-sufficient at all industrial stages of uranium production: ore and conversion of ore. She was well on the road to constructing plutonium-producing reactors. These industrial conditions enabled France to draw-up and implement a military program. In 1955, a military atomic energy program was elaborated, calling for the joint efforts of the defense institutions and the CEA. The Armed Forces were put in charge of weapons experimentation by the Government including the establishment of military staffs and technical services and the construction of the Reggan testing facility. Under the proposed second Five Year Plan, the CEA was to construct a third plutonium-producing reactor, G3, and a plutonium plant at Marcoule. Another important decision in this plan was the authorization of initial funding for the construction of a gaseous diffusion facility at Pierrelatte for the production of uranium 235. Besides compensating for possible plutonium production shortfalls and providing nuclear fuel for nuclear powered submarines, the production of uranium 235 was key to the miniaturization of warhead and delivery systems which would lead to the development of the hydrogen bomb.[19] Wolf Mendl describes the greater significance of these costly

decisions:

> The decision to go ahead with the construction of the plant implied willingness to make enormous sacrifices in order to ensure national independence in the production and use of fissile material.[20]

The CEA also supervised the creation of the DAM responsible for further research and development and weapons manufacture.[21] Finally, in 1956, the Comite des Application Militaires de l'Energie Atomique was created to combine CEA officials, high military officers, and technical directors in consultations regarding joint research and development programs and allocation of funds for these programs.[22] Also, the Commandement des Armes Speciales was formed under the command of General Charles Ailleret, one of the most vocal military partisans of atomic weapons, and put in charge of studies and preparations for the first atomic tests.[23] By the time Prime Minister Felix Gaillard's decision on 11 April 1958 to prepare for atomic tests as early as 1960 was made, the program to actually conduct nuclear weapons testing had significantly achieved all key milestones. All the Premier's decision did, essentially, was to provide official government sanction for a policy already in place.

Policy

This policy centered on the development of an independent nuclear force. Nothing would be considered that

would in any way inhibit autonomous nuclear developments and, particularly, French nuclear weapons potential. Beyond this developmental policy, there was not much serious thought given to the policy of use of nuclear weapons. There were several reasons for this lack of serious consideration. The nuclear weapons program was still developing and actual deployment of systems was still too far in the future to mandate a decisive poplicy of how to use them. World disarmament talks were going on at this time in Geneva which might have altered the circumstances dictating a French nuclear force. Finally, reliance in the American nuclear shield was still a necessity in the absence of an independent deterrent and thus, an independent policy would be hard to pursue, much less formulate. It would be up to the leaders of the Fifth Republic to develop official policy governing the use of nuclear weapons as they came on line.

In response to these policy considerations dissent rose from various sectors. Critics from the military, scientific, and political communities made their concerns known, especially during the later years of the regime when the decided shift to military application took place.

Opposition

The military opposition is best summed up by Scheinman. First, the French Army of the Fourth Republic faced the

immediate problem of revolutionary warfare in Indo-China and then in Algeria. The nature of this guerrilla style of fighting necessitated large numbers of men and conventional material to fight the elusive enemy. Nuclear weapons were deemed inappropriate, if not useless. Second, the military was concerned with the problem of financing a military nuclear effort at a time when conventional forces had to be financed to meet existing French commitments to Europe and the colonies. Third, there was a natural wariness of the various services towards the severe budget and force cuts which they might suffer in the event of a military conversion. Fourth, most of the military leaders had confidence in NATO and the U.S. nuclear umbrella. As long as France was protected by American nuclear forces, what advantage would there be in the duplication of effort?[24]

The scientific community, with its already-mentioned ties to the Communist Party through Joliot-Curie, held strong reservations about the trend away from peaceful nuclear applications. They felt that France had neither the financial capacity, material, nor the personnel to undertake two simultaneous programs. They also felt that the military program would eliminate peaceful development programs because the Marcoule reactor could only furnish enough plutonium for military tests.[25] Scheinman also quotes from a petition signed by 665 scientists and engineers in the CEA to the High Commissioner of the CEA who stated:

> ...they were conscious of participating in a work of national interest and trusted in the official declarations affirming that the Commissariat works for the establishment of civil atomic energy to the exclusion of all military objectives. That is why they would now consider it an abuse of their confidence to ask them to work for a bomb, the manufacture of which, they have never envisioned participating in.[26]

In an article in Le Monde, Jean Planchais reinforced both the logistical and moral arguments of the scientists. He argued that French resources were too limited and that the nuclear program would seriously handicap a program for the industrial exploitation of atomic energy. M. Planchais also asked whether or not France's international prestige and moral reputation would not benefit more from remaining attached to the principle of peaceful development of atomic energy than from the possession of nuclear weapons. As it was, at the very time President Eisenhower was calling for an end to the nuclear arms race, the French government was planning the exact opposite.[27] Mendl refers to other critics who argued that uranium 235, even under peaceful use restrictions, could be imported from the U.S. for less than half the cost of the proposed Pierrelatte facility as well as some who argued that even nuclear-equipped medium powers could not escape the dual nuclear hegemony of the two superpowers.[28]

The political debate over the development of nuclear

weapons centered on the "context" of development and use rather than on the actual development program. This was best exemplified by the 1956 debate over the Euratom treaty for the proposed European Community. The opposition, led by "European" proponents such as Faure, Mollet, Jean Monnet, and Maurice Schuman, argued in favor of a more united, integrated, European approach. They favored joint development programs under strict Euratom treaty guidance. An independent French nuclear weapons capability was one more stumbling block in the way of a united Europe.[29] Only the Communist Party maintained a consistent stand against any military development. This party line was the obvious result of the strong party ties to the Soviet Communist Party as well as the purges of all Communists, for security reasons, from sensitive government positions that dealt with atomic energy.

There was also some dissent from the public sector as revealed in several popular opinion polls conducted during this period. Although a 1946 poll revealed that 56% of those asked wanted France to produce her own atomic weapons,[30] and a 1957 poll revealed that 51% of those surveyed felt that without atomic weapons a nation could not play a major role in world affairs,[31] an even greater majority, 64% felt that peaceful uses of atomic energy should have priority over military uses.[32] Further, 58% felt that France could assure

her security without the bomb.[33]

If one then considers this measure of opposition from the various sectors of the Fourth Republic, one must then ask how this opposition was overcome or taken account of by the decision-makers of the regime. Military opposition was gradually influenced by the opinions of general officers like Ailleret and Gallois who saw the future and the inevitable predominance of nuclear weapons. Placement of officers, who were proponents of nuclear conversion, into high command channels and in the Defense Ministry also helped. Also, it seems that throughout the 1950s, the Army had not yet felt significant budget cuts from shifting priorities and the conflicts in Indo-China and Algeria still dominated military affairs. With the removal of Joliot-Curie from the scientific side of the CEA, the opposition from that community also lost its impact. Scientists may have also felt that with the increasing militarization of the program, any suppression of weapons research might have put a brake on the atomic research program as a whole. On the political side, the compromise over the Euratom Treaty whereby France agreed not to conduct independent tests for 4 to 5 years in return for the freedom to research and develop nuclear applications as she saw fit, free of Euratom control, went a long way towards placating the "European" proponents. Communist opposition was not significant enough to stop

military interest. With their strong Soviet influence, the Communist Party actually served to limit other interest groups, who risked losing some appeal through identification with the Communists from joining them in opposition.[34] As far as popular opinion went, there are several factors that account for the insignificance of its opposition. First, as Mendl writes, "The public lacked the technical sophistication to understand the problem in depth."[35] This is not hard to understand, in part, when one considers the second reason, which is how the key decision-makers conducted the program. As Mendl writes:

> At first it was wholly theoretical and in the realm of speculation. In the last years of the Republic, when military preparations were actively pursued, official discretion and the so-called option prevented the matter from assuming great urgency. Unlike its experience in other spheres of national defense, the Fourth Republic was remarkably successful in keeping the secret of the growing military orientation of the atomic energy program.[36]

One must also remember that there was always a significant sector of the public that did support the notion of a French nuclear capability. With public opinion thus split, the government was able to avoid dealing with popular opposition to the issue. Finally, there is the concept of étatisme, or statism, as defined by Roy Macridis in Modern Political Systems - Europe. This principle rests on the belief that

"... the state represents and acts on behalf of the common good."[37] This produces two levels of concern. The state concerns itself at the level of the common good while individuals and associations are left alone to concern themselves with particular interests. In this framework, national defense or even national atomic policy, resides at the level of the common good and as long as it doesn't interfere with individual interests, the individual defers to the state's prerogatives. In France's case, it is significant that the state, below the ministereal level, coincides with the higher echelons of the bureaucracy. It is therefore the bureaucracy, in the role of state administrator, that is charged with looking after the common good. In this Republic, ministers came and went, but the bureaucracy remained consistent. This bureaucracy was insulated from opposition which could only be targeted at the ever-changing governments. It was thus allowed to interpret what was best for the good of France. In this context, it is readily apparent how the bureacracy managed to keep the nuclear program moving with little or no interference from the public sector.

Ultimately, one must conclude that opposition to weapons development during the Fourth Republic had little impact. The nature of the regime and the as-yet-to-be-realized status of the program were significant limitations, but the actual

motivations and incentives that provided the momentum for the weapons program must be considered as the ultimate factor in controlling dissent and forming a gradual consensus of support for a French nuclear weapons capability.

Motivation

The nuclear weapons program of the Fourth Republic was motivated by many factors, some of which were much more significant than others. They ranged from the ultimate restoration of pre-war French prestige to the domestic economics of developing a less expensive military force. What is important is that incrementally, these various factors propelled the nuclear weapons program gradually onward and forged an emerging consensus that led to Premier Gaillard's decision in 1958 to start nuclear tests. These factors can be classified as either external or domestic. The external, or international, factors will be examined first.

In order to fully appreciate how the nuclear weapons program developed under the Fourth Republic, one must better understand the international post-war situation in which France found herself. As Scheinman writes:

> Regardless of the nature of nuclear decision-making in France under the Fourth Republic, the evolution of nuclear policy can be fully appreciated only in the context of the external political and military

environment.[38]

What was obvious was that the post-war world was now dominated by the two major nuclear powers, the United States and the Soviet Union. On the European continent, the Soviet Union was the obvious threat to France and the rest of Western Europe. The communist coup in Czechoslovakia appeared to have intensified this threat.[39] Less obvious was the international situation that developed between France under the Fourth Republic and the three other major powers: the United States, Great Britain, and the Federal Republic of Germany. Frustrations and fears involved with each of these allies would serve to add impetus for the development of a French nuclear weapons capability.

France had two areas of concern with the United States that developed during this period. The first area of concern dealt with relative French status and independence among the Western Powers. The second area of concern dealt with the reliability and dependability of the United States as a nuclear guarantor and ally.

Wolf Mendl writes that in the immediate aftermath of the war, one of the major overriding purposes of the French government was "... to reassert its independence and position in the world. They wanted France to return to the concert of great powers from which she had been excluded at Yalta and Potsdam."[40] To fail to do so would be to deny the

traditional notion of "la France profonde" which is instilled deep in the soul of every Frenchman. If this sounds very Gaullist, one must remember that it was de Gaulle who dominated the immediate, post-war provisional government and who was already well on the way to creating a legacy that would inspire France, even in his absence. In any case, France saw herself as the major continental power in the West European arena and thus felt due the respect and prestige of a first-rate power in affairs dealing with that arena. What France experienced was, in reality, an inferior status to the predominant influence of the United States in West European political and defense matters. The United States, in her early days of nuclear hegemony, naturally felt that since it was American military might that served as the cornerstone of West European defense, then it should logically be the United States who controlled all defense matters. As France perceived the situation, because of her lack of a nuclear weapons capability, she had been relegated to the status of a second-rate power. For the present, French leaders realistically appraised their situation. Militarily, politically, and economically savaged by the war, France was in no position to go it alone. There were benefits to American hegemony. Liberated from the expensive requirement of European defense and aided in her economic rehabilitation by the Marshall Plan, France began to

reestablish herself. But it seemed that as benefactors, the French had to surrender much of their sovereignty and freedom of action in European affairs and it didn't promise to get any better. They had to resign themselves to following orders and plans of an essentially American High Command. Jean Planchais noted that SHAPE had become an American staff with the important decisions, command positions, and vital information reserved for the Americans.[41] France also lost out on post-war German reorganization and eventual German rearmament decisions that were made according to American designs. The leaders of the Fourth Republic really wanted"... that the United States would assume the role of guarantor against Russian domination without, however, dominating the West European scene."[42] To an ever-increasing number of key officials in France, it was becoming clear that to gain the desired prestige and influence upon Atlantic Alliance decisions, France would have to take steps to procure or develop her own nuclear weapons. French status within the Alliance would depend on it.

The reliability of the United States was important in its role as nuclear guarantor for France and the other West European countries. The American strategic nuclear umbrella was perceived as a reliable deterrent as long as the United States was immune to Soviet counter-strikes by virtue of its monopoly on strategic nuclear reprisal. With the further

development of Soviet nuclear weapons delivery systems, especially long-range strategic bombers that could reach the United States, and the Sputnik launch in October 1957 which demonstrated improved Soviet missile technology, it was felt that the Soviets were fast approaching a status of strategic parity with the United States. This put the reliability of American nuclear guarantees in question. Jacques Vernant expressed the French doubts when he wrote:

> ... from the days when this superiority disappears, when American territory tends to become as vulnerable as Soviet territory, the menace of this reprisal becomes less convincing for the adversary.[43]

These doubts started certain individuals in France to seriously consider either a complementary deterrent force or an alternative deterrent on the European continent itself. The idea of a complementary deterrent force implied the "trigger theory" which some thought would reinforce the American guarantee by making nuclear escalation more likely. Others felt that the only possible choice was for France to develop her own alternative nuclear deterrent in order to ensure her national security and freedom of action in case of waivering American support.

Aside from the question of reliability of its nuclear guarantees, French frustrations in dealing with the United States on nuclear matters and certain international crises led to French doubts as to the dependability of America as a

fully supportive ally. In nuclear matters, the United States was apprehensive regarding proliferation of nuclear weapons and dissemination of sensitive nuclear secrets. The Atomic Energy Act of 1946, amended in 1954, put severe restrictions on the sharing of nuclear information.[44] Official American policy towards proliferation of nuclear information to France was best illustrated by the comment of the Special Assistant to the Secretary of State for Atomic Energy and Disarmament when he said:

> The bar to our cooperation with France ... has not been security in the French defense establishment, but has been our own national policy of not assisting fourth countries to become nuclear powers.[45]

Mendl argues that this was not the whole truth. On a general basis, the Americans seemed upset at infringement on their nuclear superiority and strategic monopoly within the alliance. But more specifically, the Americans were concerned with the presence of a strong French Communist Party with influential ties to Moscow and with the fact that a declared Communist, Joliot-Curie, was in charge of the agency responsible for French nuclear development, the CEA.[46] Dissemination to the Soviets of any information given to the French was an assumed result. However, when American aid was still denied after Joliot-Curie's dismissal, French leaders could once again infer that they would have to conduct their

own independent program.

Beyond this lack of cooperation over nuclear information between France and the United States, there were two key crises during the Fourth Republic which gave France grave reservations about the dependability of her reliance on the United States. The two crises were the Dien Bien Phu debacle of 1954 and the Suez crises of 1956. American reluctance to intervene on the side of France in each of the crises raised the question of the extent to which France could rely on American support when peculiarly French national interests were at stake. Of the two crisis, the Suez affair was the most severe as far as nuclear repercussions were involved. At Dien Bien Phu, the United States merely refused to aid the French militarily, specifically denying the French any nuclear weapons assistance. It was the French who did themselves in. On the other hand, at Suez the United States actually turned against the French in the United Nations Security Council and joined with the Soviets in condemning the joint Anglo-French venture. Once again, doubts about the United States as a dependable ally were raised. Despite American guarantees against Soviet nuclear sabre rattling, the entire situation unnerved France. For them, "... it was a question of what the future held for France if she would always have to bend to atomic blackmail when French and American interests did not coincide."[47] From past

experience, France had finally learned to be wary of dependence upon American guarantees. American aid had almost come too late to save France in World War I. America's failure to back French desires to aggressively enforce post-war Versailles restrictions and the American retreat back into isolationism during the inter-war years played a significant role in France's reluctance to do anything but appease Hitler. And finally, the failure of the United States to come to France's aid in 1940 cast a dark shadow over future trust in America as an ally. Could France afford to wait again? When this record of the past was combined with the present difficulties that the Fourth Republic was experiencing with the United States, it is no wonder the French were inclined to be friends with the Americans but trust in their own nuclear defense.

Great Britain also proved to be an source of concern for French interests. The French were greatly influenced by the British acquisition of nuclear weapons and were extremely conscious about the seemingly privileged Anglo-American relationship. Wilfred Kohl refers to a speech by François de Rose, an official of the Quai d' Orsay at the time and later to become France's Ambassador to NATO, in which he expressed the French reaction to the publication of the British White Paper on Defense in the Spring of 1957:

> The publication of the White Paper demonstrated that the British effort,

> above all a political effort and an effort for prestige with the aim among other things of reestablishing the privileged cooperation with the United States, which had existed during the war, responded in 1957 to a military necessity. The intervention of the United States being no longer certain, England had to have at her disposal the means of strategic reprisal, in the event that she should be threatened by nuclear annihilation.
>
> For France, this was the moment when more and more vigorous pressures intervened on the part of political and military elements in order that a decision be taken to produce the atomic weapon.[48]

One can readily detect the French concern for the prestige, status, and independence which seemed to accompany the acquisition of nuclear weapons. There was also a hint of the philosophy of keeping up with one's neighbors. Mendl further argues that France followed the British lead for other reasons. Like the British, an independent French nuclear force program was, early on, considered the best way to gain eventual American technical and financial aid. An independent nuclear force was also seen by the French, as it was by the British, as a means of escape from the burden of maintaining large conventional forces. The French even patterned their initial "trigger theory" of using nuclear weapons to tie the Americans to Europe after the British, though that strategy was later refuted by the French.[49] There can be little doubt that Britain set an example for France.

The privileged Anglo-American relationship in nuclear affairs was a special concern for the French. Some of this apprehension can be attributed to jealousy as the French still wanted to cooperate with the United States on nuclear development. Despite the restrictions set out by the Atomic Energy Act of 1946 that were applied to the French, Great Britain entered into a cooperational arrangement with the Americans when the Act was amended in 1954 to allow cooperation with nations that had made substantial progress in the field. But more importantly, the French perceived that the post-war Western Alliance determining body of Great Britain, France, and the United States "... had given way to an Anglo-American directorate."[50] The French made the easiest and most logical conclusion that their inferior status and lack of influence was directly related to their lack of a nuclear weapons capability. This line of reasoning can be traced in the remarks of the last Prime Minister of the Fourth Republic, Felix Gaillard, in an interview with U.S. News and World Report. His remarks are applicable to both Great Britain and the United States. He stated:

> ... if, in the division of tasks within NATO in the matter of research and manufacture and in the precise conditions under which the nuclear arms are to be employed, France feels herself treated as an inferior partner, it is clear that she will be led much more easily to undertake her own effort.[51]

France could not be expected to watch passively as the United States and Great Britain relegated her to the role of silent partner in the Alliance. If her two allies had already taken their opportunity, given that France had come so far on her own, it was only fair that France take her turn when the opportunity to realize her nuclear potential arose.

Before moving on to French concerns elsewhere, one more point must be made about French concerns over American and British nuclear forces. The French were still aware of the fact that no continental West European nation had, as of yet, developed a nuclear capability. Neither of the two western nuclear powers within the alliance was physically tied to the west European theatre. The British had retained their air force at home in 1940 despite French pleas to engage the Luftwaffe on the French side of the Channel, while the American inertia has already been discussed. France, being the only continental power in a position to develop the bomb, moved steadily in that direction.

Along with French concerns about the United States and Great Britain, the Fourth Republic also had significant concerns about her position on the European continent vis-a-vis the new Federal Republic of Germany which influenced French progress towards nuclear weapons. After a long history of conflicts with her traditional foe, France had, not a paranoid, but a healthy fear of a revitalized Germany.

As Mendl wrote, "Remote as it seemed, the spectre of a revived and vengeful Germany haunted all Frenchmen who had lived through the years after the First World War."[52] In pursuit of a policy of security, France sought early on to prevent a revival of German power and continental influence. Cold war developments and failure of such collective defense measures as the European Defense Community frustrated French desires to limit the military role of the Federal Republic of Germany. The failure of the EDC was particularly frustrating because the French had initiated the plan and yet it was eventually turned down by the French Assembly over questions of French military sovereignty that arose during the bargaining process. With the United States pushing for a rearmed Germany in response to the Korean situation, the French ambassador to the United States succinctly stated the French view: "As far as we are concerned, we had no intention to promote, propose or accept the rearmament of Germany."[53] At the same time Germany was being encouraged to rearm, France's colonial stuggles in Indo-China and then in Algeria were draining her continental military resources. As Kohl put it:

> Compelled to pull out most of her ground forces assigned to NATO for service in Algeria, France's military, and hence political, position in the Alliance was steadily weakening. In security terms, atomic weapons were evoked as a way to preserve France's

> superiority over Germany, since the latter was denied the possibility of developing a nuclear capability under the 1954 Paris agreements.[54]

France obviously felt that she couldn't match Germany economically or industrially, and hence, conventionally, once Germany was back on its feet. All signs pointed to the one area of present and future advantage for France, nuclear weapons.

From this discussion of the relationships shared by the Fourth Republic and the United States, Great Britain, and Germany, one can see how this relationship between France and her three major post-war allies played on important role in influencing French opinion towards the development of nuclear weapons. It is interesting to note that, in regards to foreign policy and defense policy, "French nuclear weapons were thought of not so much as 'force de disuassion' than a 'force de persuasion.'"[55] More so than to act as an actual military deterrent against the Soviet Union, a nuclear weapons capability was used to persuade her allies that France deserved a more secure and influential role within the Alliance. French disarmament policy during this time also gives a clue as to French opinion regarding a nuclear weapons capability. It was felt that as long as the other major powers failed to eliminate nuclear weapons, it would be unwise for France to make the unilateral decision to refrain from advancing to a nuclear status also. Scheinman quotes M.

Pierre Lapie who said, "so long as the period of simultaneous and controlled general disarmament will not open the era of solely peaceful construction of atomic energy, France must have her independence assured by inventions, tests, and development of atomic devices."[56] Generally speaking, France began to perceive nuclear weapons as the price of achieving, or in her case, reestablishing her status as a great power.

Besides these international concerns, there were several domestic concerns that, though less influential, nevertheless are worthy of mention because they did affect certain bodies of French opinion. One of the more obvious expectations of nuclear weapons was that they were cheaper than conventional forces. They were also seen as the criterion of the military establishment of the future. Colonel Ailleret summed up these views in stating:

> Atomic weapons are... inexpensive weapons in contrast to classic weapons... and are as of now produced in the world in great numbers and henceforth constitute the criterion of a modern army, since an army which does not have them at its disposal can no longer seriously measure itself against an army which is provided with them.[57]

Implied in this argument is the revitalization of the French military. After its disastrous collapse in 1940 and the inability to prosecute successfully the Indo-China and Algerian conflicts, the French military was in need of

something to revive its confidence, esprit, and capability. But with nuclear weapons still in the theoretical stage, these factors were not quite as significant as they would become later on when both the French military and politicians would have to debate the funding of actual weapons systems and judge their overall impact on French interests.

It is a significant paradox that atomic policy under the Fourth Republic began with the 1946 statement by Alexandre Parodi before the United Nations upon the establishment of the CEA that"...the goals the French Government has assigned to the research of its scientists and technicians are purely peaceful..."[58] and ended with Premier Gaillard's 1958 decision to go ahead with a nuclear testing program. It not only illustrates the complete reversal of official French attitudes on the subject, but also the influence of the various factors that have been discussed on the development of a French nuclear program. It was this program that de Gaulle inherited and put into action under the French Fifth Republic.

IV. DEVELOPMENTS DURING THE FIFTH REPUBLIC

French nuclear forces have become a reality under the Fifth Republic. From the first series of nuclear tests conducted in 1960s, they have developed into a modern nuclear triad of strategic weapons systems complemented by tactical nuclear weapons systems. The Fifth Republic's nuclear force

program has survived strong initial opposition and has gradually built up a strong consensus of approval. Its nuclear policies have gone from radical isolationism to a more realistic, cooperational framework. French technology has taken the nuclear force potential from the initial atomic bomb, through the development of the hydrogen bomb, to the modern multiple reentry vehicle (MRV) capability. The French have even developed their own neutron bomb. Through four heads of state, the nuclear program has experienced consistent growth and modernization. In short, what was conceived under the Fourth Republic has grown to maturity under the Fifth Republic.

The simplest way to organize any discussion of developments under the Fifth Republic is to discuss how the program for nuclear weapons developed during each of the four Presidencies: de Gaulle from 1958 to 1969, Pompidou from 1969 to 1974, Giscard from 1974 to 1981 and Mitterrand from 1981 to the present. One should note the gradual swing from the political right of de Gaulle and Pompidou to the political left of Mitterrand. One might think that this would tend to inhibit an independent nuclear program, but that has not been the case. French nuclear policy has continued to develop over the first 29 years of the Fufth Republic. Just as with the Fourth Republic, a logical analysis will examine the institutions, milestones, policies, opposition, and

motivations involved in the nuclear program. But when one discusses the Fifth Republic's program, one must first discuss the preeminent role of Charles de Gaulle, the founder of the Republic.

Importance of de Gaulle

Through his experiences as a maverick in the two world wars and his brief but dramatic leadership of the post-World War II Provisional Government, de Gaulle had firmly established his reputation as a free-thinking, charismatic, authoritative, and deeply patriotic leader. In 1958, he reemerged, not entirely without his own initiative, onto the French political scene to restore stability to his country which was facing a serious challenge to its political integrity over the Algerian situation. Army troops in Algeria and on the island of Corsica had already revolted. The crumbling political institutions of the Fourth Republic called on de Gaulle to form a new government with powers to make constitutional reforms. His patriotism and military reputation were counted on to rally the support of the people and the loyalty of the Army. Order was restored. A referendum overwhelmingly approved the new constitution proposed by de Gaulle on 28 September, 1958.[1] De Gaulle became the first President of the new Fifth Republic. How preeminent de Gaulle became in policy formation becomes clear

in the following passage describing the typical decision-making process during de Gaulle's presidency:

> When he deals with the foreign policy, the General goes into seclusion and plunges into prolonged meditation. He seldom consults experts or advisers, even those very close to him. For a long time he mulls over the questions that need to be resolved. Then, suddenly, often without even informing his ministers, he announces his decision. The Minister of Foreign Affairs, and certainly the Council of Ministers, are called upon only to execute and apply the decision which the General made entirely by himself. There is usually no real debate on diplomatic issues within the Government.[2]

It is not hard to conclude from this passage that most, if not all, of the major decisions and policies that emerged in the crucial early years of the new Republic bore the personal stamp of de Gaulle. When one reads the literature on French foreign and defense policy of the Fifth Republic, one is constantly aware of the consistent references to the Gaullist legacy to which all major diplomatic decisions are compared. This legacy rests on the politics of grandeur and independence. This is not to say that de Gaulle conceived French nuclear forces. It can be correctly argued that de Gaulle merely picked up where his Fourth Republic predecessors left off. But de Gaulle provided the dynamic leadership and consistent guidance which was necessary to overcome the domestic and international barriers that would have impeded

the French nuclear program. Through his dramatic leadership and sometimes intransigent posturing, France began to reclaim a prominent role on the international stage. His ability to rally the French behind him goes a long way in explaining the general consensus of support that his basic policies have enjoyed. He was able to do this because as Luigi Barzini described, de Gaulle's policies were not ".. arbitrary infatuations of his own but the expression of ancient irrational longings deep in the hearts of his countrymen."[3] In this context then, it is reasonable to expect that a "Gaullist" aura would surround any aspect of French nuclear policy.

Institutions

Now that the relative importance of de Gaulle has been established, the next subject areas to be discussed are the political and bureaucratic institutions. One of the principal aims of the new constitution was to create a strong executive leadership embodied in the office of President. This central authority was to provide the decisiveness and consistency that the successive governments of the previous regime had failed to exercise. In applying this new decisiveness in political leadership to the nuclear weapons program, Scheinman sums it up best in writing:

> Gaullist leadership ... forged the reluctant preparations of the Fourth

> Republic into the political and military banner of the Fifth. ... The continuity which prevailed was given positive and effective leadership by a Government which stated what it needed and was courageous and audacious enough to pursue the ends decided upon.[4]

The continuity that is mentioned refers to the continuity of the bureaucratic institutions which had provided the momentum during the Fourth Republic. This continuity was maintained through the transition as de Gaulle and his successors correctly judged that if something works, it doesn't need fixing. Thus, there was little change to the CEA and its related agencies.

If the Parliament of the previous republic had been frustrated due to a lack of any official policy to debate, it would only seem logical to assume that, in view of a definitive statement of official policy, the National Assembly of the Fifth Republic would have a more significant impact in the decision-making process. There was significantly more reaction to nuclear weapons policies, as will be discussed later on, but, once again, the nature of the new regime came into play. In the constitutional framework of the Fifth Republic, the strong executive was to be complemented by a parliament with limited political and legislative powers, a "rationalized" parliament, as referred to by Macridis.[5] Constitutionally, the government had within its power the means to override most parliamentary opposition or simply to

bypass it through decrees. The ultimate constitutional weapon which the government can use to force its will upon the National Assembly is the attachment of government responsibility to a bill as provided for in Article 49, paragraph 3 of the Constitution. An absolute majority vote of censure is then required to stop passage of the bill.[6] A strong Gaullist majority in the initial National Assembly didn't threaten the government's position either and the subsequent establishment of a popularly elected President only strengthened the office in relationship to the Assembly. The significance of this development lies in the fact that opposition to the program for nuclear weapons was strongest during the early 60s but this was also the high tide of de Gaulle's presidency. In managing the nuclear weapons programs during successive presidencies, de Gaulle's successors have effectively and realistically guided the development and modernization of the nuclear force so as to gradually build and sustain a fairly strong consensus in support of the program. Only during the latter third of Mitterrand's presidency, when cohabitation was necessary between a Socialist President and a Gaullist Prime Minister, Chirac, supported by a conservative majority in the Assembly, has the consistency of the government been subject to question.

Milestones

The next aspect of the development of a nuclear force during

the Fifth Republic to be discussed deals with the major milestones reached during each presidency. These milestones involve planning, development, and deployment of nuclear weapons systems.

Early in his presidency, de Gaulle realized that long range planning was essential to the realization of a nuclear force. The scientific, technical, industrial, financial, and political obstacles that had to be overcome necessitated the system of successive, four-year "lois de programme." This was not a new concept. The Fourth Republic had its Five-Year Plans. But de Gaulle had two more specific objectives in mind for the lois de programme. Politically, he wanted to render his decisions in a more serious and direct fashion and to oblige a stubborn Parliament to support his decision, while militarily, he wanted to affirm his priorities and impose a progressive reorganization on the armed forces.[7] This reorganization was to be essential in the shift from a large conventional force centered on infantry to a smaller and more modern force structured around nuclear weapons. The first loi de programme (1960-1964) established a foundational plan that continued A-bomb-and H-bomb-research, created a stock of A-bombs, and developed a strategic bomber, the Mirage IV.[8] The second loi de programme (1965-1970) was more ambitious. It was also more costly with the first weapons systems coming on-line. It covered deployment of up to 36 Mirage IV bombers with two A-bombs each. It also covered the

development and deployment of the first nine surface-to-surface ballistics missiles (IRBM) on the Albion Plateau in southeastern France. Finally, it covered the development and deployment of the first ballistic missile submarine (SSBN).[9] These first two defense plans also dealt with the restructuring of the armed forces. The armed forces were now divided into (1) the Territorial Defense Forces (DOT), (2) the Mobile Forces, and (3) the Strategic Nuclear Force (FNS). Other Presidents were involved with less significant alterations to the force structure.[10] Those changes under de Gaulle were more important because they established the ultimate priority of the FNS.

The French nuclear forces have developed in three phases. The first phase involved the testing of both A-bomb and H-bomb and the development and deployment of the first strategic weapons system, the Mirage IV.

One of the key elements in the research and testing program was the construction of the Pierrelatte enriched uranium plant. This plant was designed to produce the necessary U235 for the H-bomb and nuclear submarine reactors.[11] Another milestone of the testing program and the establishment of a testing facility in the Gambier Islands in the southwest Pacific.[12] The H-bomb was first tested at this new site.

The first phase, the establishment of the foundation of the force, was completed during the de Gaulle presidency. Under his successor, Pompidou, the second phase began. This involved the

completion of the strategic nuclear triad by adding the initial land-based IRBMs and the initial 3 missile submarines (SSBN). Phase three of the force development began during the last two years of Pompidou's presidency and carried into the Giscard years. This phase saw the development of both air and land-based tactical nuclear weapons (ANT). Giscard also presided over the deployment of the fourth and fifth SSBNs. Under Mitterrand, modernization has been the major theme. The sixth SSBN became operational, as did the French neutron bomb capability. Multiple Reentry Vehicles (MRV) were developed and maximum warhead capacity was increased from 150 kt to 1 megaton (MT). Ranges of all systems have been increased and future plans call for the Hades tactical system, which can hit East Europe from French soil, to replace the current Plutons, and a mobile land based IRBM, the SX, to replace the fixed, silo-based missiles on the Albion Plateau.[13] Finally, the neutron bomb was developed, although deployment is still a vague issue.[14] Tables 1 and 2 in the appendix relate specific data on the nuclear force.

Policy

The next aspect of how the Fifth Republic developed the French nuclear force is the matter of policy. This is a matter of much more significance than policy adopted during the Fourth Republic. The weapons then were still in the development phase. Now, they were being deployed as weapons systems at the

strategic, and, later, tactical levels. Policy formation during the Fifth Republic has also been significant because it has been the product of a growing and maturing process in French foreign and defense attitudes.

If there was a radical period of French nuclear weapons policy, it was during de Gaulle's years in office. This is not to say that all of the essential premises of nuclear weapons policy developed during that period have become invalidated by more realistic, modern trends. Its just that during his presidency, de Gaulle and his nuclear strategists seemed to get somewhat carried away and began to espouse some rather fanciful interpretations of France's role in the nuclear era. What one must remember, however, is that the essential premises at the core of French policy have remained constant because of their sound applicability to a medium nuclear power.

The first aspect of policy to be discussed is the nature of deterrence. The French nuclear force is seen as the ultimate deterrent of any war being fought again on French soil. This policy rests on the premise that France cannot allow another war like the previous two to happen. The French stress the dissuasive influence of nuclear weapons. War must become an inconceivable course of action. The American policy of flexible response was seen by the French as making war improbable, but still possible. General Andre Beaufre makes these points quite apparent in the following passage:

> The well-intentioned but naive disarmament plans, or the stabilization formulas sometimes advocated in America... can only lead to the reduction of the dissuasive value of nuclear arms till the reopening of the possibility of large-scale conflict such as those which Europe had to endure two times in this century.
>
> Because of this experience, Europe, instinctively is resolutely hostile to any formula which allows for forms of limited war, which would render the outbreak of hostilities more probable.[15]

General Ailleret reinforced this argument for an ultimate deterrent value when he stated that the threat of immediate strategic nuclear reaction "... is still the best pledge of the elimination of external warfare as a political instrument."[16] Suffice it to say, French strategic planners had faith in the deterrent value of nuclear weapons. This foundation of deterrence gave rise to a related policy decision. French strategic nuclear weapons would be demographically targeted as opposed to counter-force targeted. General Pierre Gallois argues that "... the nation adopting the policy of dissuasion must not take its aggressors' armed forces but its civilian population as its target."[17] Using counter-force targeting methods only serves to dilute the deterrent value of nuclear weapons. It makes them more "usable." One must remember that the ultimate value of strategic nuclear weapons is their non-use. If they have to be used, the policy of deterrence has failed. But it

is also the choice of the potential aggressor to make as far as the French are concerned. He can choose to threaten French sovereignty and risk his major civilian concentrations and the future capability to wage war or he can back off from any direct threat to France. This might seem like a rehashing of Douhet's old theory of using airpower to destroy the will of the opposition, but the French would argue that strategic nuclear bombs may just have validated that theory at last.

From this discussion, the policy of a national deterrent emerges. Strategic nuclear weapons were perceived as purely national in character. The reasoning was simple. No nation would dare to use nuclear weapons and condemn herself automatically to a devastating nuclear retaliation unless her vital, and the term "vital" is stressed, interests were at stake. National survival must be at stake because if strategic nuclear weapons are used, national survival will be forfeit. Since nuclear weapons can only be used, when national survival is at stake, then the nuclear deterrent must be national in character. It then follows that a nation can only be protected, or "sanctuarized," by its own deterrent force.[18] This was one argument for the independence desired by de Gaulle in defense matters. This national character required that the French nuclear force be independent to be truly credible. A deterrent tied to

multilateral commitments would not be perceived as credible in this context. The credibility of the small French nuclear force in relation to the nuclear arsenals of the superpowers was answered by the French doctrine of proportional deterrence, or, deterrence of the strong by the weak. This doctrine relates the risks of nuclear retaliation by France to any possible gains an aggressor might obtain from an invasion. Surely, France could not totally destroy the Soviet Union, as could the United States, but it could "tear off an arm," so to speak.[19] AS Kohl puts it:

> The heart of the proportional deterrence principle is that a small national atomic force designed for use in a massive retaliation strategy has a deterrent value against a potential great power aggressor nation, since the consequences such a force could inflict on the great power would exceed the value to the latter of taking over or destroying the small or medium-sized state.[20]

Once again referring to the national character of the deterrent, it was to be used only when French sanctuary was threatened. Essentially, this meant that for France, the Federal Republic of Germany was a shield. An attack on the Germans would not necessarily trigger the French strategic nuclear forces. To have that commitment would be to violate the essence of the national deterrent as defined earlier. One can already see how this policy of sanctuarization would seem to go a bit too far towards alienating France's allies.

First, Germany would not appreciate being written off so easily nor act as a shield to protect France without commitments from France. France was digging herself into this hole by favoring her growing nuclear force in lieu of the conventional forces that could help defend Germany, in the interest of France. Second, it implied to the Soviets that a limited intervention into Germany might not be opposed by the French since it did not threaten French sanctuary.

This national deterrent must also be retained under the strict control of the head-of-state. By constitutional mandate he is charged with national security. To take away even part of this prerogative and, for example, give the National Assembly a role in the decision-making process, would be to condemn France to the errors of past governments that lacked the capacity to make a rapid and decisive decision when crises demanded it. This was one of de Gaulle's major purposes of redefining the nature of the presidential office in the Fifth Republic.

Several other aspects of French nuclear thinking during this period seemed to be carried to extremes. Gallois, expanding on the arguments for a proportional independent deterrent, asserted that every nation should possess a proportional nuclear deterrent. In his view of the strategic nuclear era, no major hostilities could ever break out due to the ultimate threat of even a small nuclear reprisal.[21]

Although Gallois was an influential strategist, the proposed argument just discussed was an extreme example of French thinking and was not adopted as official policy.

One extreme strategy that did become official policy was the concept of "tous azimuts," or defense "in all directions. This policy developed gradually over a period of years, but it became the ultimate symbol of French isolation among the Western Powers. At a press conference in 1959, de Gaulle stated that "... since France can be destroyed eventually from any point in the world, it is necessary that our force be made to act wherever it might be on the earth."[22] As de Gaulle's efforts to improve France's position within the Atlantic Alliance were frustrated, the desire to be truly independent grew. De Gaulle strove to develop a Franco-Soviet detente to enhance French political influence. The vision of a pan-European network of nations independent of the two superpowers with France at the helm by virtue of its nuclear force was espoused. By 1967, General Ailleret described the nuclear force that was to guarantee this independence. He asserted that the French should develop a system of defense worldwide in scope, able to counter a threat from anywhere on the globe. This omni-directional policy was christened "tous azimuts."[23] It was seen primarily as a counter to mobile intercontinental missiles launched from land-based mobile platforms or nuclear

submarines. However, it was a sign of the times, and of relative French isolation, that France was perceived as taking no sides, trusting noone, and aiming at everyone.

In light of this policy and France's break from NATO in 1966, it seemed that France had turned her back on her allies and was charting a completely independent course. But this was a misconception on the allies' part stemming from a failure to understand the basis of French independent policy. As has already been discussed, a nuclear deterrent must be a national deterrent. The French must be in control of their own destiny. In a speech on 21 February 1966, de Gaulle expressed the fear that a general conflagration between the two superpowers could develop from a peripheral struggle, such as Cuba, and in light of American domination of NATO, this conflict would involve Europe and specifically, France, when France might have no interest whatsoever in the struggle.[24] But de Gaulle added that in no way does France intend to turn her back on the Atlantic Alliance. He expressed French willingness to cooperate fully with all her means in the defense of Alliance interests, but French sovereignty had to remain intact.[25] In the face of de Gaulle's intransigence on this matter, the other Western Powers failed to adapt their attitudes towards de Gaulle's France. But one must conclude from all available evidence that it was French policy to remain firmly in the Alliance.

If Europe was threatened, French nuclear weapons would respond accordingly. Only the context of her membership had changed.

One can sympathize with the other allies however on one point. At that time, with only a small strategic force and no conventional forces to contribute to Alliance defense, it seemed that France's nuclear policy was an "all or nothing" approach. Either France launched her deterrent, and thus ignited a nuclear conflagration, or France was relegated to doing nothing. To her allies, France seemed to be hiding behind a nuclear Maginot Line intended to defend only France. This glaring inconsistency between de Gaulle's expressed policy and actual developments was another sign that French nuclear policy had some maturing to do and was still experiencing some growing pains.

The year 1968 signaled a change in French attitude about nuclear policy. The Soviet invasion of Czechoslovakia and the domestic crisis within France both served to burst the French bubble of complete nuclear independence. As Kohl wrote, "The invasion of Czechoslovakia and the new French domestic difficulties led to a reappraisal of Soviet intentions and an unequivocal statement that France planned to remain in the Atlantic Alliance."[26] With a less threatening Soviet relationship and the domestic stability to bolster the development of a truly independent nuclear role

for France, de Gaulle had been able to push through his policies of grandeur and independence. However, the refusal of the Soviet Union to lessen its influence over Eastern Europe and domestic undercutting quickly reminded French leaders that true independence might be an unrealistic goal for any country, let alone a medium power such as France. French policy would have to adapt, and it did.

In March of 1969, de Gaulle's Chief of Staff, General Aerienne M. Fourquet gave a speech that signaled the change in French nuclear policy. The following passage summarizes the issues:

> But though, on the one hand, certain military imperatives lead us to make clear and stress the primary role, hitherto potential, of the strategic nuclear forces, on the other hand, one can think of a number of circumstances in which the alternative of "all or nothing" would make our posture less realistic and less credible.[27]

Fourquet also introduced the notion of French tactical nuclear weapons, closer cooperation with NATO forces, and the French view of graduated response. The French still fundamentally disagreed with the American strategy of flexible response. To the French, the American strategy sought to limit, not prohibit, the out break of hostilities. The French strategy of graduated response seeks to prohibit or end as quickly as possible any outbreak of hostilities by using tactical nuclear weapons as a warning that the

strategic nuclear threshhold might be lower than was originally perceived. Despite this fundamental difference, French nuclear policy has evolved into a realistic set of expectations. It has been within this realistic framework that de Gaulle's successors have continued to mold nuclear policy.

Nuclear policy under Pompidou firmly entrenched those adjustments made in the last year of de Gaulle's presidency. The basic premise of an independent nuclear deterrent based on proportional deterrence and under firm executive control were still in evidence, but so too was an expressed desire to cooperate more closely in Alliance defense matters.[28] Pompidou's policy decisions reflected changes in both domestic and international arenas. As Kohl described it, "Under President Pompidou, the development of the French nuclear force is being continued, but on a more modest scale than once envisioned by the General, a scale compatible with French resources."[28] Cuts were made in planned deployments, such as deploying only 18 of the originally called for 27 IRBM systems, and some deployments were postponed, such as that of the fourth SSBN. These reflected the domestic constraints that impacted on Pompidou's policies. But his decisions also reflected the shift from the Gaullist notion of a French-centered, pan-European confederation to a more realistic French role in the Atlantic Alliance. This shift

made the deployment cutbacks and postponements easier to accept for most French strategists.

The French White Paper on Defense, put out in 1973, is the clearest expression of French nuclear policy during the Pompidou era. It repudiates the "all or nothing" theory of pure strategic deterrence.[30] It confirms the dissuasive value of nuclear forces.[31] It reaffirms the national character of the independent French force and refutes the value of integrated defense which, as the French see it, weakens the credibility of a nuclear deterrent.[32] According to French policy, nuclear weapons are only credible if the nation that intends to use them to protect its vital interests has complete and unfettered control of those weapons. Integrated defense commitments, even those that make allowances for independent action in case of national emergency, would add layers of controls and administration that would take time to peel off in order to gain the freedom to act independently. Integration also inevitably ties the weaker parties to the interests of the major power within an Alliance, but not necessarily creating the opposite effect. Again, the American-Soviet showdown over Cuba serves as an example of this scenario. It would have been impossible for France to avoid being dragged into the conflict along with the rest of Europe if one had ignited. On the other hand, the Suez crisis of 1956 points out how the major power is not

necessarily tied to the interests of the lesser powers. It was also perceived that the will to use nuclear weapons, which is inherently tied to national sovereignty and which is crucial to the credibility of a nuclear deterrent, would be dissipated in an integrated system. Once again, the lesser powers in the integrated alliance would be indirectly responsible to the major power. According to French policy, an independent French force working in close cooperation within the Alliance would provide the optimum deterrent credibility and guarantee of French interests.

Although tactical nuclear weapons were not deployed during Pompidou's term in office, the White Paper clearly expressed French policy in this area. Tactical nuclear weapons were to signify to the aggressor that if the attack persisted, a strategic nuclear reprisal was inevitable.[33] In this role, tactical nuclear systems were significant in the overall dissuasive policies of French strategic defense. They were essential to the French view of graduated deterrence. Although Pompidou strove to normalize French relations with NATO and the United States, three events that took place in 1973 reaffirmed the Gaullist views supporting an alliance less dominated by the Americans. The first event was the June Nixon-Brezhnev agreement on avoiding nuclear war.[34] This was all well and good for the two superpowers whose only threat to each other was nuclear. However, it

seemed to ignore the possibility of a conventional war in Europe which would devastate the region. To the French leaders, this smacked of condominium. The second event was the American unilateral move to alert status during the October War between the Arabs and Israelis. In response to Soviet threats to intervene on the side of Egypt, the United States put all of its forces, including those assigned to NATO, on full alert.[35] None of its allies were consulted. It seemed that what de Gaulle had been preaching all along about American hegemony had come to pass. The NATO front had become a de facto American threat to the Soviet Union in case of a superpower conflict. Therefore, the Europeans would be dragged into a struggle not of their choosing. The final development of 1973 was the attempt by American leaders to redefine the Atlantic Alliance. As M.M. Harrison described it:

> The Year of Europe exercise...was designed to ensure that the rhetorical American vision did not materialize in a serious West European challenge to the United States in vital issue areas. For Kissinger and his colleagues assigned a clear priority to the Soviet-American bilateral relationship, and in 1973 they were undertaking to ensure that stability at this level would not be undermined by unruly allies capable of upsetting delicate superpower restraints and understandings ostensibly required for detente and global equilibrium.[36]

This entailed the linkage of political, military, and

economic issues in Atlantic relations. This American power play only encouraged the Europeans, especially the French, to favor the notion of a separate European entity, exactly the opposite of what Washington desired. One can already see how the more realistic foundations of Gaullist diplomacy were being incorporated into French policy-making.

It was up to the next president, Giscard, to establish a truly reconciliatory relationship with the United States and the Atlantic Alliance, including NATO. The first concrete sign of this trend was Giscard's cooling of French reaction to the American "Year of Europe" initiative.[37] In return, the United States, in the Ottawa Declaration of 1974, recognized the positive contribution towards deterrence made by the French nuclear force within the Alliance.[38] An example of the tone of Giscard's nuclear policy was the concept of extended sanctuary. General Guy Mery first mentioned this theory in a speech on 15 March, 1976. He explained that "... such a concept must allow us to intervene with the whole or a part of our forces throughout the entire zone where the security of this territory may be most immediately threatened, that is to say, Europe and its immediate approaches."[39] In effect, he was stating a French policy that actually entailed active defense coordination with NATO. This involved interoperability training and coordinated planning of tactical nuclear targets. What really set it apart from previous

French doctrine was the call for stronger conventional forces to balance those of Germany and the expressed desire for a political union of Europe which would ultimately control the French nuclear force.[40] The major Gaullist premises were still there. The policies of proportional deterrence, dissuasion of potential combat as opposed to limiting conflict, and independence of decision were all highlighted. The repudiation of the "tous azimuts" and "all or nothing" theories reflects the latter and post-de Gaulle retrenchments. But Giscard was taking the policy of cooperation to the very brink of integration and actually calling for a future European scenario that would foster integration as the logical mode for defense. It is not surprising that Giscard's defense policy should have taken this attitude. His party, the Union for French Democracy (UDF) was the most European of all French parties and Giscard was a major proponent for integration in the European Community. It is also significant to note that tactical nuclear weapons, Pluton for the Army and Jaguar and Mirage III's for the Air Force, were first deployed during Giscard's term of office. The French nuclear force, by now often referred to as the "force de dissuasion" as opposed to the more Gaullist" force de frappe," was in full bloom. The strategic triad was complete with strategic bomoers, IRBMS, and SSBNs and the third phase, the tactical systems, was now on line. It would seem

significant that as the independent nuclear force had finally matured, so too had the notions of a European defense come to the fore in French policy making. Why then, were Giscard's European ideals not put into practice?

Harrison describes one of the reasons why Giscard had to concede to the Gaullist legacy. He wrote:

> One reason Giscard has not tried to change the basic France NATO settlement of 1966 is that he would face resolute domestic opposition from his suspicious Gaullist allies, and from the various leftist parties, all of which have become committed to France's status as a nonintegrated and theoretically independent ally.[41]

One must also consider that as French attitudes became more realistic, NATO attitudes towards France also become more tolerant. Therefore, a gradual satisfactory relationship had already been established that still incorporated the Gaullist foundations of nuclear policy. Where Giscard did succeed in breaking the Gaullist mold was in the area of nuclear disarmament talks. Traditional Gaullist disarmament policy was founded on the following factors: 1) the major problem in the nuclear era is the overstocked nuclear arsenals of the two superpowers, not the proportional nuclear forces planned for France, 2) negotiations and agreements on atmospheric test bans and non-proliferation do not serve the purpose of arms reduction, only the monopoly of the superpowers is maintained, 3) as

long as actual reduction of nuclear weapons is not the issue, France refuses to participate in any such negotiations and will continue to advance her own nuclear capabilities. Giscard, however, took an active role in seizing the initiative and proposing negotiations. In an official policy statement of 25 January 1978, a European disarmament conference, was proposed whose competence would stretch from the Atlantic to the Urals.[42] But in general, the policy of Giscard followed along the lines of de Gaulle's and Pompidou's more realistic nuclear policies. The paradox was thus manifested of a "European" French president pursuing a more Gaullist, independent nuclear policy. Up to 1981, the political Right dominated French politics and, hence, foreign and defense policy. After the presidential election of 1981, it became a question of what nuclear policy the Left would follow under during François Mitterrand's term of office.

If two words can describe the nuclear policies of Mitterrand, they are modernization and ambiguity. Each concept rests firmly on the reformed "Gaullist" platform of the independent French nuclear force. Initially against the concept of French nuclear weapons, Mitterrand and his Socialist compatriots realized that a consensus favorable to the nuclear program was forming and would continue to do so, with or without the Socialists. Mitterrand maintained that the military policy of General de Gaulle had been accepted by

the French people and that atomic weapons were now an irreversible reality. Mitterrand's own words were as follows:

> I said during my presidential campaign of 1965 that I would stop the force de frappe. I could no longer say that today. The military politics of de Gaulle have been approved by the French people who reelected him before electing the successor of his line. Soon our atomic armament will become an irreversible reality.[43]

Therefore, Mitterrand read and understood the handwriting on the wall. The legacy of de Gaulle's nuclear independence was an accepted fact. It had become a non-issue. If there was any doubt, one only had to consider incidents like the one described below:

> Any prominent politician who dares to question the viability of the force de frappe is greeted by almost instant opprobrium. Michel Pinton, the Secretary-General of the opposition UDF Federation...described the French independent deterrent as "une nouvelle ligne Maginot. He was criticized from all sides and even his own party leaders disavowed his comments.[44]

It was up to Mitterrand to begin the modernization effort that would sustain the viability of the nuclear forces. His priorities in this effort reflect the "Gaullist" legacy. The nuclear missile submarines were the first priority. Not only were they to be retrofitted with MRV warheads but a new design was approved for a new generation

of submarines that would act in concert with a new satellite control network. The Hades tactical system, designed to replace the shorter range Pluton, could hit East European targets from within French territory, unlike the Pluton which had to move with French conventional forces into Germany. Both the SSBN and Hades programs reinforced the independent control of the French nuclear force in that they remained under the ultimate control of the French head-of-state.[45] The demographic targeting of the MRV warheads reinforced the dissuasive premise of the deterrent force.

But Mitterrand has also shown himself to be a master of ambiguity. He has rejected his predecessor's concept of extended sanctuary and yet he has also established closer ties with NATO forces committed to the defense of Germany.[46] His ambigiuos tones serve two purposes. It keeps the Russians unsure of French reactions, thus enhancing deterrence, and it also serves to smooth over any ruffled public opinion that might arise from Mitterrand's commitment to Alliance defense plans.

In recent years, Mitterrand has faced three major issues that have had an impact on his policies. He has supported American deployment of the so-called Euro-missiles as a realistic check to the destabilizing SS-20 missiles of the Soviet Union.[47] A more significant development has been the phenomenon of cohabitation brought about by a rightist

majority in the 1986 National Assembly. The Gaullist Prime Minister, Jaques Chirac almost immediately took a more integrated and "flexible response" oriented view of defense which forced Mitterrand to retrench even further into a Gaullist stance of non-integration and strict executive control over the deterrent forces, strategic and tactical. For example, Mitterrand wants to retain strict executive control over tactical nuclear systems to retain their dissuasive warning character. Chirac wants to integrate these systems into the conventional forces which would be engaged with, and thereby closely coordinated with, NATO forces.[48] In effect, the tactical nuclear forces would augment the capabilities of the French conventional forces by dissuading Soviet tactical nuclear strikes on French troops fighting in Germany and also to prevent Soviet troops from massing in overwhelming local superiority against the French forces.

This new schism also has produced conflicting priorities in view of the ever-present financial constraints which have plagued every French president since de Gaulle. In a unified government, consistent priorities only have to be adjusted within the constraints. But in the split government, priorities often conflict, which only complicates the impact of the limited resources. For example, Mitterrand wants to modernize the SSBN fleet, which he sees as the principal

component of French deterrence, and to push the Hades program forward which would also enhance the separate nuclear deterrent. Chirac, however, wants to develop a new, mobile surface-to-surface IRBMs to replace the current silo-based IRBMs, as well as modernizing the Mirage IV air fleet.[49] In the remaining months of this current term of office, there will have to be some tough compromises made because it is recognized by both sides that French fiscal constraints won't allow for both priorities to be met.

The third major issue that has affected French thinking on nuclear matters is the most recent INF agreement between the United States and the Soviet Union. Obviously, the removal of the Euromissiles from Western Europe would put into question the notion of deterrence as the French see it. It would also seem to bolster the French nuclear force as an important factor in European defense planning. If this development has any impact on French nuclear forces, it would seem to this student that the French would put more emphasis on the longer range, tactical nuclear Hades system. But it remains to be seen just what French official policy will be, if and when the INF agreement is put into action.

What then can one summarize from this discussion of French nuclear policy during the Fifth Republic? It has matured most definitely. Those more realistic premises on which de Gaulle based his nuclear power have been retained in

the form of the "Gaullist" legacy which has permeated French policy through three succeeding presidents. Executive control, an independent and non-integrated deterrent posture, a dissuasive view of possible conflict, and demographic targeting have been constant policy building blocks over the last twenty nine years. Although fundamental differences in strategy in the nuclear era remain, the French and the other members of the Atlantic Alliance have established a consistent and satisfactory policy relationship. French nuclear policy has been influenced to a great degree by financial constraints and to a lesser degree by other factors in opposition. The next portion of this paper will discuss the nature of dissent over nuclear policy in this era and how French leaders either overcame it or took it into account in their formation of policy.

Opposition

Just as with the Fourth Republic, there was opposition to the nuclear policies of the Fifth Republic from the military, political, and public sectors. One will note that many of the opposing arguments paralleled those of earlier opponents to the program. One will also see that the dissent had little impact on the development of nuclear policy, and for many of the reasons earlier expressed. This is just another aspect of the continuity concerning nuclear weapons which has been maintained from the days of the Fourth

Republic into the Fifth Republic.

It is another sign of his preeminence in this issue, that most of the opposition to French nuclear policy was both encountered and resolved during the presidency of de Gaulle. After him, it was no longer a question of France possessing her own deterrent, but rather of how to use it. De Gaulle's first challenge came from the military. The Army was still fighting in Algeria in 1960. Why siphon off resources for a strategy that was not applicable to that struggle? NATO was still firm. Why duplicate the American nuclear shield? But since the potential for nuclear weapons systems had finally been realized, the previously theoretical arguments were now serious issues that would have to be dealt with. Cuts were going to be made. Priorities were going to shift. Forces were going to be reorganized. The military had just finished toppling the previous republic. But de Gaulle effectively diffused this threat. In Defense and Dissent in Contemporary France, Philip Cerny describes how de Gaulle resolved the Algerian crisis by negotiating a settlement, transferred key supporters of nuclear weapons into higher headquarters (General Aillert was made Chief of Staff), and actually applying Article 16 of the Constitution (full emergency powers exercised directly by the President) to purge the officer corps through new military courts. Thus, military opposition was effectively undercut and had little or no

impact on the prioritizing of the nuclear forces. Inter-service rivalries that would later flare up were calmed by allocations of tactical nuclear systems to each service that lacked a strategic nuclear role. The Army received the Pluton while the Mirage III and Jaguar tactical bombers went to the Air Force.

Political opposition was also similar in many ways to that which was expressed during the Fourth Republic. The first major eruption of opposition came during the National Assembly debates over the first loi de programme in 1960. There were four major points of contention. The first was that there seemed to be a contradiction between a national, independent French nuclear force and the concept of a united European Community.[51] The Treaty of Rome in 1958 had seemingly established the priority of an integrated European system. The second argument was more practical. The only delivery system that the French had at the moment were the Mirage IV strategic bombers. By the time they could be equipped with nuclear bombs, due in about 3 to 4 years, the weapon system would be obsolete in view of improved Soviet air defense and air intercept capabilities.[52] The resources that would be wasted could be diverted to other areas, which leads to the third opposing point of view. The conventional capabilities of France's military were going to be sacrificed to the nuclear priority. This would hurt the on-going

Algerian effort and also raised some concerns about Germany, who was meeting her conventional mission in NATO. M. Paul Reynaud argued that by 1970, France would only have six conventional divisions to Germany's twelve. Germany, having fulfilled her NATO obligations and also having the largest army in Western Europe, would be in a strong position to seek a revision of the Treaty of Paris which would free her from restrictions on developing a German nuclear force.[53] This argument was echoed by M. Jaques Douzaine who put forth the opinion that the French force would become a persuasive force rather than a dissuasive force.[54] This point of view favored more allocations to conventional forces and if a nuclear force had to exist, then it should be a European force. This would serve to keep both the Soviets and Germans in check. The fourth argument referred to France's isolation from her allies which was becoming more and more apparent during the early 60s. The French nuclear capability was the crucial factor that was allowing de Gaulle to be intrasigent on some issues, free to act on others. Disciples of this argument felt that the force should be curtailed before France went beyond the point of no return. The challenge to de Gaulle's policy was of such a degree that Premier Debré made the bill a question of responsibility. The mandated censure vote fell 27 votes shy of rejecting it.[56] Opposition was sparked again in 1962 when Premier Pompidou proposed a supplementary bill

to cover a 200 million franc shortfall in funding for the Pierrelatte facility.[57] The main argument centered once again on the government's refusal to Europeanize the deterrent force. Pompidou resorted to the matter-of-confidence tactic and the bill survived censure by 34 votes. It is significant that this was the only point of contention in the debate. The other major issues had already been resolved by de Gaulle. He had set about establishing a separate Franco-German detente to diffuse that issue. The revolt of key military leaders in 1961 over the Algerian settlement, if anything, supported Gaullist reforms and adjusted priorities. And finally, Raymond Aron summed up much of the feeling on relative French isolation. In his book, The Great Debate, he wrote:

> But such vociferous moral indignation would not necessarily imply that the return in times of prestige is all negative; indignation by no means excludes admiration. A country that acquires those weapons...despite or perhaps because of the invectives hurled at it will be regarded as one of the big powers of this world.[58]

Despite his supportive argument on this issue, Aron raised probably the most condemning arguments against de Gaulle's nuclear grandeur. He argued that de Gaulle had put too much stake in the issue of French independence and that his tactics had raised serious questions about the general

security of the Alliance to which the national security of France was inherently related. He concluded his argument with these words:

> To value the power of independent choice between war and peace above national security may once have been a sign of greatness. But I do not believe that in the thermonuclear age this should be considered an appropriate goal for the national ambition of a nation such as France.[59]

To a great extent, the maturing of French nuclear policy, from the late 60s up to the present, into a more realistic understanding of the nature of independence and security within an alliance has resolved this question.

Of the four major political parties, only the Gaullists were consistently in favor of an independent nuclear policy. The most conservative of the four, they, in a sense, still support de Gaulle's original "all or nothing" policy by urging the construction of up to 15 more SSBNs, the principal strategic deterrent. There is really no room for any consideration of a limited nuclear exchange on a tactical level.[60] The other political group of the Right, the more moderate and centrist Giscardian political coalition, is actually made up of two parties with differing points of view on nuclear weapons. Giscard's own Parti Republican (PR) believes in a uniquely French deterrent but also in the more NATO-like concept of flexible response.[61] The Catholic Centre des Democrates Sociaux (CDS) takes a more

integrationist stand on strategic nuclear weapons as well as tactical nuclear systems. Deterrence must be European and Atlantic.[62]

The two major political parties of the Left are the Socialists and the Communists. The Socialists were initially skeptical of the Gaullist deterrent force. Their traditional sense of pacifism, a strong faith in the Atlantic Alliance, and doubts about a Gaullist republic all served to inspire early opposition to de Gaulle's nuclear policies.[63] Eventually, the Socialists acknowledged the fact that the French nuclear deterrent was an accepted tact accepted by most French people and therefore adjusted their views. The will to disarm remained. But as long as everyone else had nuclear weapons the French would maintain theirs.[64] Jolyon Howorth, in an article on Mitterrand's defense policies, describes how Mitterrand guided his government's nuclear policy into the Gaullist strategy that it is today.[65] One faction favored absolute strategic deterrence. Another faction favored unilateral disarmament. Neither policy was acceptable. He therefore, by process of elimination, fell into the Gaullist mode, a strategic deterrent with a tactical force to provide early warning. The other party of the Left also gradually swung into line behind the current independent French policy. Initially, the Communists were against any nuclear deterrent concentrated against the Soviet threat.

However, as the French deterrent took on a more anti-American character, the Communists grudgingly supported it. There was also some fear on the part of the Communists of a large, professional army which has always been the bane of the working class. The restructuring of the military around the nuclear priority lessened this concern.

In general, the opposition from the Left gradually gave way to a common desire to be independent of any superpower hegemony. Both parties saw this independence as crucial towards the fostering of socialist advances within France. The one period in which the notion of this independence was threatened by integrationist attitudes was during Giscard's presidency. The two parties of the Left joined with the Gaullists in resounding opposition which forced Giscard to rethink and reorient his nuclear policy.

Two more factors that are important when one discusses opposition to the nuclear force and what impact it has had, are cost and popular opinion. There are two aspects about cost that became issues. One issue was the decision-making within the military as to which forces received priority in the allocation of scarce resources. De Gaulle resolved this issue by prioritizing the nuclear force and then purging the high command of any officers who disagreed with the restructuring and new priorities. Thus, the question of allocation of scarce sesources was no longer a matter for

discussion and the nuclear priority was solidly supported by the high command. The other cost aspect refers to the public burden. This cost factor becomes significant when the cost of a certain program either starts interfering with other programs that are directed more towards the public sector or directly affects the individual through increased taxes to pay for the program. How then did the French nuclear program in this context resolve this issue of cost?

Table 3 gives a year-by-year cost breakdown of the defense budget and nuclear force as a percentage of the state budget and of the gross national product. If one looks carefully at the figures, it becomes apparent that from the years 1960 to 1968, defense spending actually decreased. There are two ways to view this. De Gaulle was able to keep defense spending within certain limits that were actually below Fourth Republic spending levels.[66] By itself, this would seem to avoid bringing overt and dissenting attention to his overall military policy. He managed this by reorganizing and restructuring the military based on his nuclear priority. The initial research and development costs of the nuclear systems was more than offset by the savings produced by the "demobilization" of the mass conscript forces involved in Algeria. In many aspects, de Gaulle was able to get by "on the cheap" in advancing his nuclear policy. In light of this fiscal environment, it is not surprising that

the politics of grandeur which had France at the forefront of a united Europe challenging the hegemony of the superpowers gained momentum and led to such grandiose policies as "tous azimuts." However, Edward Morse looked at this period from a different angle. In his argument, the policies of de Gaulle ignored certain domestic undercurrents that were coming to a boil just as his foreign policy, with its nuclear force underpinnings, was going into full swing. As Morse put it:

> What de Gaulle had not reckoned... was that the desire for improved economic well-being on the part of French citizens would present an insuperable set of domestic constraints on his plans for defining an important role for France in international politics.[67]

Although defense spending seemed reasonable in comparison to previous levels, it was still taking a large chunk of national resources away from a public sector that had taken the new economic planning policies of the previous regime to heart. In short, as de Gaulle's nuclear program was developing, so too were the demands of a people who had too long mired themselves in "Malthusian" economics and were anxious to partake in the new French economic environment. In 1968 this all came to a head and was the dominant domestic factor in the reconsideration of French nuclear politics. If one looks at the expenditure table again, one can see how figures that were decreasing gradually, took an even bigger

plunge. Morse argues that something had to give in order to pay for the increased benefits offered to appease striking workers, for example.[68] The energy crisis and subsequent world recession that came on the heels of this 1968 domestic upheaval served to reinforce the resource constraints that would, from then on, impact significantly on French nuclear policy. The already mentioned Mitterrand-Chirac conflict on modernization is a good example of this influence. But it must also be noted that French defense expenditures have remained fairly constant after the late 60s and early 70s adjustments in policy. This is significant because it illustrates that successive nuclear policy-makers have been able to meet these constraints and still advance the overall nuclear program.

The final factor that must be dealt with in the discussion of opposition to nuclear policies is public opinion. During the Fifth Republic, the public actually watched as France developed her nuclear arsenal, unlike the hypothetical goals of the previous republic. But, in reality, French popular opinion was not much better informed about the issue than before 1958. Morse quotes Debre about the principle involved in using the public media to limit public awareness and potential opposition:

> The state has the obligation to intervene in order to defend at the same time both the individual and the nation. On the other hand, the basic

> facts of modern life give the public authority an obligation to explain to its citizens the reasons for its policies. The government in a democracy is the expression of the majority which has delegated its power to assure the management of its business. In the end, some control is necessary.[69]

De Gaulle himself was a master at influencing the masses through directed media pronouncements. The French leaders were also very good at telling the good side and ignoring the bad side of the nuclear issue. It is in this context, combined with the age-old statism complex previously discussed, that public opinion results must be viewed. As it will be seen, French public opinion was not completely fooled by public officials, but it was disjointed enough not to be a serious threat.

Between the years 1962 and 1966, the question was asked whether or not France must have her own nuclear force. In 1962, 39% said yes and 27% said no, with 34% undecided; by 1966, 46% said yes and 42% said no, with 22% undecided.[70] This is a good example of both the split opinion and the large percentage of undecided which characterized much of the public reaction to nuclear policy. Two survey questions in 1963 elicited a majority response against the Gaullist policy. In 1963, 52% said that France could not meet the demands of an independent nuclear deterrent; only 15% said that it could, with 33% undecided.[71] When asked if France

should sign the 1963 Limited Test Ban Treaty, even if it meant interrupting French nuclear advancement, 53% said yes while only 18% said no, with 29% undecided.[72] But in 1963 the questions was also asked if the French people thought that the politics of de Gaulle would be more or less favorable to France in the future. The more favorable response garnered a 49% response with only 11% supporting the less favorable attitude, while 40% were undecided.[73] And finally, when asked if they were satisfied or not with the actions of de Gaulle as President, in 1965, an average of 60% said yes with an average of 30% saying no,[74] while in 1969, those satisfied still accounted for an average of 50% with an average of 35% dissatisfied.[75] This data concerning confidence in de Gaulle's policies is backed up by the 56% show of confidence in his foreign policies in 1967.[76] From these survey polls one can conclude that, as in most democracies, there is a broad range of public opinion on almost any critical issue. The French pattern is no different. Although on a few issues, a slim majority is against declared policy, in most cases, public opinion is either evenly split or in favor of Gaullist policy in general. What this may be saying is that while nuclear weapons are inherently undesirable, the French people can still support the nuclear program in the context of the total Gaullist philosophy. And in light of what has already been

discussed about the government's capabilities in the public relations field, it is easy to see how any resistance that might have amounted to anything could be readily handled. It would take almost a decade for dissent to really make itself known and have an impact. Even then, amidst the turmoil of the late 60s and early 70s, the nuclear policies were merely rationalized to a more appropriate scale, as opposed to being cancelled.

With the support today of the military, the political parties, and a large portion of public opinion, it is readily understandable how a solid consensus could have developed in favor of an independent French nuclear policy. What remains to be discussed now, are the major factors that motivated French decision-makers in the formation of this policy during the Fifth Republic.

Motivation

It is a sign of continuity in the development of French nuclear weapons that many of the factors which motivated the nuclear policy-makers of the Fifth Republic had much in common with, or were even the same as, those forces that molded nuclear policy during the Fourth Republic. Just as before, there were international as well as domestic concerns which impacted on French nuclear policy-making. The primary international arguments that supported the notion of a French nuclear force were prestige and security. The major domestic

factors were resubordinating the French military to national authority and restablishing the confidence of the people in themselves as a nation. In his role as preeminent policy-maker during the first eleven years of the Republic, it was de Gaulle who was primarily responsible for constructing a foreign and defense policy platform that answered these concerns. These policies would not only further the advancement of the nuclear weapons program but were inherently dependent upon the nuclear force to remain viable. Although it must be said that, because of unrealistic goals, some of de Gaulle's's policies became rather far-fetched, especially in the areas of prestige and security, what finally did emerge from the turmoil of the late 60s was a realistic set of foreign and defense policies that *incorporated an independent French nuclear force* and that satisfied those areas of concern which had inspired the policies in the first place. It is significant that by the conclusion of de Gaulle's era, the nuclear force had become the accepted cornerstone of French foreign and defense policy and that its priority was firmly established on a firm foundation of national consensus. De Gaulle had succeeded in turning the nuclear force "... into a core symbol of the change implied by the Fifth Republic."[77] With this overall context in mind, the first concerns to be discussed will be the international goals of prestige and security.

The issues of prestige and security are serious concerns of all the French. De Gaulle himself best expressed the French concern for prestige when he wrote in 1954:

> All my life, I have had a certain notion of France. Sentiment inspires it as well as reason. Briefly, in my judgement, France cannot be France without grandeur.[78]

Throughout centuries of history, France had been a great nation. Her people had become wedded to the concept of "la France profonde." In short, being an important and respected nation had become a habit. Throughout those same centuries, security had become an ingrained passion among the French. From her earliest struggles with England to her more recent conflicts with Germany, the French people have demanded of their government that security be provided above all else. They have already suffered too much to expect any less.

In the nuclear age, prestige and security have become intertwined with nuclear weapons. There was the "... intangible prestige associated with membership in the nuclear club."[79] Without nuclear weapons, security was a serious concern. As de Gaulle himself said, "A great state which does not have them [nuclear weapons], while others have them, does not command its own destiny."[80] Even official French policy highlighted the issue of security in justifying the deployment of nuclear weapons. Their two major contentions were that a wider variety of nuclear weapons have been

developed that can threaten France and that talks aimed at reducing these weapons had failed.[81] But there were also questions of prestige and security that dealt with France's membership in the Atlantic Alliance.

Within the Atlantic Alliance, France was concerned over her inferior position to the Anglo-American condominium. It was de Gaulle's intention to restructure French strategic posture around nuclear forces" ... in an effort to rescue it [France] from what appeared to him as a limbo of second rank status within the Western Alliance."[82] De Gaulle particularly disliked the predominance of American commanders in NATO command channels. This seemed to imply that France was incapable of commanding in the defense of her own interests and was completely dependent upon the Americans for security. His ultimate feelings on this issue were revealed in the following statement:

> I refuse to accept the fact that the defense of France may depend on a foreign general. We will never sink to the level of American vassals.[83]

De Gaulle's first move was to upgrade French status within the Alliance by virtue of her soon-to-be-realized nuclear capability. In a 1958 memorandum to President Eisenhower, de Gaulle laid claim to France's rightful position of importance, proposing a tripartite decision-making council that would involve the United States, Great

Britain, and France as equal partners in Alliance defense matters in nuclear matters. When the Eisenhower Administration denied coequal status to France in favor of maintaining the status quo, de Gaulle was justifiably frustrated. But there would be other signals from her two allies that implied France was still considered a second-rate member. Just as was the case with the Fourth Republic's nuclear program, the Fifth Republic encountered little or no cooperation from the United States or Great Britain in nuclear matters. This intransigence manifested itself in several policies that infuriated de Gaulle. The restrictions on the sharing of American nuclear information included in the McMahon Act of 1946 were still being enforced against France in the 1960s, but Great Britain was not being excluded from cooperation in nuclear matters. The Kennedy Administration denied support to France on the grounds of nuclear nonproliferation policy, while once again extending nuclear cooperation to Great Britain under the Nassau Accord of 1962.[85] Raymond Aron adequately expressed French bewilderment when he wrote:

> ... neither General de Gaulle nor any other French government will agree to Washington's official doctrine that the dissemination of nuclear weapons becomes dangerous when they pass the Channel but not when they cross the Atlantic.[86]

When the French sought direct links with the British nuclear

program, United States pressure to follow previous agreements and to maintain American favor forced Great Britain to cancel out of several deals which had already been contracted for. One might reasonably conclude that between them, the United States and Great Britain did everything possible to deny France the improved status she sought within the Alliance. De Gaulle and his advisors logically assumed that if nuclear weapons could not guarantee French influence as a member of the Alliance, France would seek her prestige by withdrawing from her NATO military integration and proclaiming her own version of independence based on her own nuclear capability. As has already been discussed, this did not reflect French desires to turn her back on the Alliance; it was only a signal that France would make her own decisions from now on. In effect, France was granting herself the status of a first-rate power.

If de Gaulle and France could not count on her major allies for the recognition she felt was her due, then it is not too unreasonable to assume that French reliance on those allies for security might also be in doubt. Besides the already mentioned prestige factors, there were several other more strategic reasons why French security seemed to demand an independent nuclear capability. First of all, there was the age old belief, justified time and time again, that total reliance on collective defense measures was fruitless. Mendl

made the following remarks concerning the historical context of this issue:

> The Alliance system before 1914 and the organization of collective security before 1939 had both failed to spare France great suffering and defeat. Thus it became the aim of French leaders, de Gaulle most of all, to lay the foundations of a truly independent system of national security..."[87]

Besides doubts about the benefits of collective defense policies in general, there were particular French concerns about the United States as a nuclear guarantor of Western Europe. As was feared by the previous regime, de Gaulle and his advisors had serious doubts about the American nuclear guarantee in an age of nuclear parity with the Soviet Union. There was also serious concern over the subsequent American strategy of flexible response. As has already been presented, American policy seemed bent on limiting potential superpower conflict to a conventional or even limited nuclear battle fought conveniently within the confines of Western Europe. France wanted no part of any potential struggle. De Gaulle perceived the American hegemony in its domination of European defense priorities and the dual hegemony of the superpowers in its domination of world defense issues as realistic threats to French security and vital interests. The general French view of the national and independent character of nuclear weapons has already been discussed. In

light of the specific context being analyzed, the only logical alternative was for France to deploy her own nuclear deterrent. Through the notion of proportional deterrence, France could promise any aggressor a severe reprisal that would not be worth any possible gains that might result from an attack on France. And Beaufre's argument for an indirect strategy, whereby Soviet aggression against France would seriously impinge on her parity with American strategic forces forcing the Soviets to seriously reconsider any proposed aggression against France or Europe as a whole, provided a way for France to feasibly maintain her independence and faith in deterrence and support the Atlantic Alliance at the same time.[88]

If there were any further doubts about the need for an independent nuclear force, de Gaulle only had to reinforce the above mentioned arguments with recollections of his personal experiences with American forces in World War II. The Strasbourg incident of December, 1944 is the classic example. During the Battle of the Bulge, Eisenhower ordered Free French forces under General de Lattre to evacuate the Alsatian capital of Strasbourg which had been liberated by the French only weeks before. To de Gaulle, it seemed that Eisenhower was first of all, condemning the civilian populace of Strasbourg to Gestapo retribution and secondly, ignoring the moral and national symbolism of a provincial capital. De

Gaulle countermanded the order to withdraw. After threats and counterthreats, Eisenhower rescinded the order. But it was clear to de Gaulle that when American and French interests diverged, the Americans would act as they saw fit, even if only out of ignorance, without considering the views of "lesser" allies.

A minor security concern of de Gaulle's was the Franco-German relationship. Whereas the major concern of the Fourth Republic was maintaining some sort of superiority over a potential threat, Gaullist policy towards Germany "... was firmly based on the concept of partnership in which France should play the leading role thanks largely to the existence of the French nuclear force."[90] Because of the cooperational framework that developed between France and Germany in non-security related matters, such as the European Community, the German threat to French security was not as much of a serious threat as was perceived by the Fourth Republic.

Thus, in order to regain a measure of prestige and security within the Atlantic Alliance, France felt compelled to pursue and independent nuclear policy. If de Gaulle had stopped there, a lot of inter-allied recrimination could have been avoided. But whether de Gaulle was overreacting to continued American dominance, overestimating the potential of his country's nuclear forces, or just overestimating his own leadership qualities, he gradually pushed the goals of

prestige and security beyond reason in view of existing European realities. His politics of grandeur envisioned France, by virtue of her nuclear forces, at the head of a united Europe challenging the hegemony of the superpowers. He felt that a Europe that had placed its faith in the French system of deterrence could finally rid itself of the American dominance in European affairs. His desire to foster an independent security eventually led to a policy of "active neutralism" employing the strategy of "tous azimuts." It would take the collapse of 1968 to bring de Gaulle's vision back to reality, which would, in turn, lead to a reconciled understanding between France and her allies over the issue of her independent nuclear force. Now that the international factors have been analyzed, one must consider the domestic concerns of the leaders of the Fifth Republic.

De Gaulle faced two major domestic concerns in 1958. The first was the attitude of the French people. De Gaulle was concerned that the people had lost confidence in themselves and in their government. The second domestic concern was the threat posed by the military to political sovereignty. After a series of setbacks culminating in the Algerian crisis, the military had lost faith in the political institutions and had lost touch with the national charter that is the raison d'etre for the military force of any country. In each area of concern, nuclear forces were to

play the primary role in establishing policies that resolved these concerns.

Since World War I, the confidence of the French people in themselves and their nation had taken a severe beating. Following the nightmare of that first titanic struggle in which France barely staved off defeat with American aid came the debacle of 1940 and German occupation during the Second World War. Liberation brought a momentary respite followed by three successive national setbacks in Indo-China, Suez, and Algeria. By 1939, the French had just about lost their confidence in themselves as a great people. In his "Elan Vital of France," John Wolf described a French woman who typified this lost spirit as she noticed an air raid shelter. His description was as follows:

> "'Over there [in Germany],' she said with a choke in her voice, 'the shelter will be safe, ours will be faulty.' She wanted to be proud of the nation for which her husband had given up his life in 1916; she wanted to believe in the community that had given her nurture, but she had lost faith, and with it, her nerve."[91]

Given this attitude it was not surprising to see French civilians surrendering towns before their own forces could defend them and the general acceptance of the Vicky Regime. One must conclude that the brief euphoria over the Liberation was shattered by the repeated failures of the French on the international stage during the 1950s. Kohl refers to de

Gaulle's statement on the seriousness of this issue. De Gaulle said that "... there is nothing more important for the French people than to be made to believe again that France is a great power."[92] In the post-war nuclear era, the obvious answer to this question of status was a demonstrated nuclear capability. A statement by Anton De Porte and Hugh De Santis seemed to justify the use of a nuclear force to reinstill pride in the traditional notion of "la France profonde." They wrote:

> The French nowadays pride themselves on the absence of neutralism and pacifism in their country and attribute this happy fact to the sense of self confidence their nuclear weapons give them, just as de Gaulle had wished.[93]

In short, the nuclear force made the French feel once again that they were masters of their own destiny. It restored their self confidence and national pride.

The second major domestic concern of the leaders of the Fifth Republic was the stabilization of the military. Under the previous regime, the military, especially the Army, had been involved in three costly and embarrassing fiascos and was having grave doubts about which institutions actually represented France's best interests. The constant service overseas and subordination to NATO command structures on the continent seriously weakened the army's commitment to its ultimate role of national defense. De Gaulle expressed his

concerns over this development when he said:

> The gradual return of our military forces from Algeria is enabling us to acquire a modernized army; an army which is not, I daresay, destined to play a separate or isolated role, but one which must and can play a role that would be France's own. Finally, it is absolutely necessary, morally and politically, for us to make our army a more integral part of the nation. Therefore, it is necessary for us to restation it, for the most part, on our own soil; for as to give it once again a direct responsibility in the external security of the country; in short, for our defense to become once again, a national defense.[94]

Harrison states that "De Gaulle himself saw the coup attempt of April 1961 as proof that the Algerian experience had sapped the army's loyalty to France, and only a national defense mission could be effective in recalling the Army to her service."[95] Thus, de Gaulle would have to force the armed forces to return to political obedience and genuine service to France, by taking on a national identity and mission that required a national character and independent French command. The centerpiece of this revitalization of the military was the French nuclear force. By its very nature, a nuclear force must be national and independent. De Gaulle also recognized that effective civilian political authority had to be reestablished over the armed forces. This matter was resolved in making control of the nuclear forces directly responsible to him. It has already been

discussed how the restructuring took place but it suffices to say that the revamped military that emerged in the mid 60s was loyal to France and committed to its nuclear mission. It was a visible priority in French planning, it was receiving modern weapons systems, it was unhindered by integrated defensive commands, and there was a strong, decisive regime in power. It would seem that the Armed Forces of the Fifth Republic were in as good a situation as could possible be expected. The fact that twenty years later, the cornerstone of the Armed Forces is still the nuclear force, is a truer indication of the accepted importance of its contribution to the resolution of the domestic concerns that de Gaulle and his advisors had to deal with. For the same essential reasons, that the French nuclear force is still a fundamental aspect of foreign and defense policies, the relevance of the nuclear capability to the resolution of the international concerns was just as significant.

V CONCLUSION

This discussion has covered over 100 years of modern French history. From the first French scientific discoveries of radioactivity in the late 1800s to the most recent decisions of the Mitterrand government to modernize the SSBN fleet, the potential to develop a nuclear capability has been clearly evident. Although there has been a strong emphasis

on the development of peaceful nuclear applications, which has not really been discussed but which needs little justification, France felt impelled by the world around her and by realities at home to develop her own national and independent force of nuclear weapons. Based on fairly realistic interpretations of the French experience over the last century, French leaders felt justified in developing their own nuclear capability. It was not a sudden process, but a gradual accumulation of insecurities about French prestige, national survival, and domestic stability that required a firm and reliable solution. Finding herself in the nuclear age, France, in her best traditions of international pride took up the medium of the period, which was nuclear force. It is significant that the French themselves felt that a nuclear weapons capability was needed. It is as significant that this nuclear force makes them believe in their international importance and domestic stability. It is also significant that France developed the nuclear option on her own. As Mendl put it, "... it is clear that the decision to take up the nuclear weapons option will in the last resort depend on the peculiar position of each country."[1] One must then conclude that the French themselves are the best judge of the their own situation. In this student's opinion, with the exception of the Suez crisis interpretation and the most extreme of the Gaullist policies,

like "touz azimuts," French interpretations of the international and domestic scenes were accurate and their subsequent reactions justified.

On a more practical level, the French have held firm to the dissuasive nature of nuclear weapons. This is manifested in their determination through nuclear deterrence to avoid war and their firm belief in a "proportional" deterrence which precludes any thought of a first strike capability which is the ultimate destabilizing threat in the nuclear era.

Ultimately, it is philosophically difficult to justify the existence of nuclear weapons at all, much less for a medium power such as France. It becomes more a question of whether it was inevitable that France would choose the nuclear option. Hopefully, this discussion has successfully illustrated that in France's unique case, it was inevitable.

APPENDIX

TABLE 1

Transformation of French Nuclear Forces

Year	Strategic	Tactical
1966	42 Mirage IV As	
1974	42 Mirage IV As 18 IRBMs (S-2) 3 SSBN (M-20)	42 Plutons
1983	34 Mirage IV As 18 IRBMs (S-3) 5 SSBNs (M-20)	42 Plutons 30 Mirage III Es 45 Jaguars 36 Super Entendards
1987	18 Mirage IV As 18 IRBMs (S-3) 4 SSBNs (S-4) 2 SSBNs (M-20)	30 Plutons 30 Mirage III Es 45 Jaquars 36 Super Entendards

Sources: Laird, Robbin F. French Nuclear Forces in the 1980s and 1990s, (Alexandria, Va.: Center for Naval Analyses, 1983)

France, Ambassade de France, French Defense Statistics 1987, (London, 1987)

TABLE 2

Characteristics of French Nuclear Weapons

Weapon System	Warhead	Range	Payload
SSBN	*16 x M-20 16 x M-4	3000 Kms. 6000 Kms.	1 ea 1 Mt. 3 ea 150 Kt.
IRBM	5-2 5-3	2,750 Kms. 3,500 Kms.	1 ea 150 1 ea 1 Mt.
Mirage IVA	AN-22	**1500 Kms.	1 ea 70 Kt.
Pluton		120 Kms.	1 ea 15-25 Kt.
Hades	ERW	350 Kms.	1 ea 20-60 Kt.
Jaguars	AN-52	720 Kms.	2 ea 15 Kt.
Mirage III E	AN-52	800 Kms.	2 ea 15 Kt.
Mirage 2000	ASMP	1300 Kms.	1 ea 100-300 Kt.
Super Etendard	ASMP AN-52	820 Kms. 720 Kms.	1 ea 100-30 Kt. 2 ea 15 Kt.

* 16 Tubes Per Submarine
**Without In-Air Refueling

Source: Robbin F. Laird, French Nuclear Forces in the 1980s and 1990s, (Alexandria, Va.: Center for Naval Analyses, 1983), p. 29.

TABLE 3

French Defense Expenditures

President	Year	Defense Expenditures % State Budget	Defense Expenditures % GNP	*FN Expenditures % State Budget	*FN Expenditures %GNP
DeGaulle	1960	28.2	6.34	0.92	0.21
	1961	26.3	6.00	1.37	0.31
	1962	24.3	5.52	1.70	0.39
	1963	23.9	5.39	2.98	0.67
	1964	22.6	4.91	4.24	0.92
	1965	22.4	4.81	5.41	1.17
	1966	21.2	4.69	5.37	1.19
	1967	19.5	4.68	5.15	1.23
	1968	19.1	4.66	4.70	1.15
	1969	17.7	4.17	3.64	0.86
Pompidou	1970	17.3	3.94	3.20	0.73
	1971	17.8	3.76	3.09	0.65
	1972	17.4	3.62	2.80	0.58
	1973	17.4	3.54	2.73	0.55
	1974	16.9	3.48	2.66	0.50
Giscard	1975	16.1	3.61	2.24	0.50
	1976	16.7	3.56	2.24	0.48
	1977	16.1	3.57	2.19	0.48
	1978	16.5	3.67	2.24	0.50
	1979	16.1	3.66	2.27	0.52
	1980	16.2	3.74	2.27	0.52
	1981	16.0	3.79	2.33	0.54
Mitterrand	1982	15.1	4.01	2.17	0.58
	1983	14.7	3.82	2.14	0.56

*FN = Force Nucleaire = FNS + **ANT

** ANT= Tactical Nuclear Systems

Source: Jaques Percebois, "Economie de l'Effort d'Armament" in L'Aventure de la Bombe ed. Instut Charles de Gaulle (Paris: Plon, 1985), p. 118.

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