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In recent years Robert McNamara and the revolutionary methods he brought with him to DOD have been the focus of considerable dissatisfaction voiced by military men as well as civilian critics of the Defense Establishment. Perhaps this is nowhere more evident than in Mr. McNamara's methods of analyzing and passing judgment on alternative weapons systems. By reexamining the now familiar arguments of both the former Defense Secretary and his critics in the context of a relatively unpublicized issue—the selection of conventional vice nuclear power for CVA-67—a better appreciation of the roles played by both the institutions and individuals involved may emerge. In this particular issue, the findings take exception to two basic tenets of the McNamara philosophy—the implied doctrine that the military did not know what was best for itself and the doctrine of sufficiency, which in effect states that second best is good enough.

CONVENTIONAL VERSUS NUCLEAR POWER FOR CVA-67: A STUDY OF DEFENSE MANAGEMENT

A research paper prepared
by
Professor Allan A. Spitz

Introduction. The foundations of a nuclear-powered navy were laid in 1946, shortly after the Second World War, when a number of naval personnel led by Capt. Hyman G. Rickover were assigned to study applications of atomic energy at Oak Ridge, Tenn. Following this initial effort, a joint Navy-Atomic Energy Commission (AEC) organization was formed, which in 1948 was assigned the task of building the first reactor suitable for naval propulsion.¹ The first fruit of this effort was the submarine *Nautilus*, which joined the fleet in 1954.

Under the guidance of Rickover, the reactor program and *Nautilus* proved successful; however, the Navy and the Defense Department, perhaps reflecting the “innate conservatism of the military,”² were slow to take advantage of

nuclear propulsion. Congress played a significant, perhaps decisive, role in overcoming the military's reluctance and prodding the administration into building a nuclear submarine fleet.³

Even before the battle on submarines was resolved, the effort to apply nuclear power to surface ships had begun with a program to build reactors for an aircraft carrier. The early progress of this program was unsteady. It was canceled once, in 1953, only to be reinstated in 1954,⁴ and in the last half of the 1950's, with the submarine program progressing, the Navy and the Department of Defense requested and were granted funds to construct three nuclear submarine prototypes, a guided missile cruiser (*Long Beach*), an aircraft carrier (*Enterprise*), and a guided missile frigate

(Bainbridge)⁵. During the same time period, 32 conventionally powered warships of destroyer size or larger were also funded.

The next 2 years brought a hiatus in nuclear surface ship construction approval, but funds were provided in a supplement to the 1958 budget to begin the guided missile *Polaris* submarine fleet, which was to become a mainstay of American strategic retaliation. Another conventional aircraft carrier was also funded; sources differ on whether the Navy wanted atomic power for this ship, but, at any rate, the Department of Defense ruled that the ship would be oil powered.⁶

In the 1963 Defense budget, the first "McNamara" budget, another aircraft carrier, designated CVA-67, was proposed. Once again the Navy requested, though perhaps with some ambivalence,⁷ that the ship be atomic powered, and again the Department of Defense refused. The proposal for a conventionally run carrier was sent to Congress, and although some thought this move a mistake, the matter did not become a major issue since neither the Navy, which lacked experience in the operation of nuclear surface vessels, nor Congress was prepared to fight for nuclear power at this time. By early 1963, however, congressional and naval apathy on this issue disappeared, and pressures increased to change the 1963 authorization to nuclear power. Who brought those pressures to bear, for what reasons, and with what results is the subject of this paper.

CVA-67 and the Nuclear Carriers: The Actors. The key elements of the pronuclear coalition formed around the Joint Committee on Atomic Energy (JCAE) of the U.S. Congress; a committee established following World War II, and given authority to oversee all aspects of nuclear energy, including all military applications.⁸ The structure of this committee was somewhat atypical

in that it was composed of both Senators and Representatives, with the chairmanship rotating on a year-to-year basis between the senior Senate and House Member. In the period that concerns us here, the alternating chairmen were Representative Chet Holifield of California and Senator John Pastore of Rhode Island, the latter being chairman in 1963. Another important member of this committee was Senator Henry Jackson of Washington, who headed the military applications subcommittee, and who had served on the committee as both a Representative and a Senator. Several other legislators of note served, including Richard Russell, but none of their roles is significant enough to be covered here, since members of the minority party played a negligible part in the nuclear controversy.

It appears that the Joint Committee on Atomic Energy was responsible for the promotion of atomic propulsion for submarines. In 1962 its interests in nuclear propulsion grew, and it began an investigation of surface ships, with an inspection of the newly commissioned *Enterprise* (CVAN-65), from which a recommendation that the use of nuclear power be considered for all future warships resulted.⁹ When opposition to the decision to make CVA-67 carrier conventionally fueled surfaced early in 1963, Senator Pastore, in a letter to McNamara, expressed the committee's stand favoring nuclear power¹⁰ and requested that McNamara keep the committee fully informed of developments in the case.

While the Joint Committee was the focus of the nuclear propulsion lobby, nuclear power for the Navy received support from other groups and organizations as well. In the 1963 controversy the most important of these groups was the Navy itself. The commanders of the nuclear-powered ships already in operation extolled the virtues of nuclear propulsion and spoke of how difficult it would be to tell their crews that their

ships in the future would be "less than the best." Allied with these officers was Admiral Rickover, head of the naval nuclear reactor program. Rickover's status within the Navy hierarchy is unclear. Twice, while involved in the early reactor program, he was passed over for promotion,¹¹ and his re-appointments to his present position have been delayed on several occasions for no apparent reason¹² (approval following only after strong congressional pressure). These delays have been explained as establishment prejudice toward Rickover's Jewish heritage. It seems equally likely, however, that his stubbornness and abrasiveness concerning Navy affairs—especially regarding the nuclear issue—made him unpopular with some fellow officers. His position with Congress, on the other hand, has been enviable. In conjunction with Congress he fathered the atomic submarine forces, and he remains popular with congressional advocates of nuclear power. His testimony before congressional panels continues to be received with respect and attentiveness.

Another powerful person in the Navy was the Department Secretary Fred Korth, who had replaced John Connally. Korth's stand on nuclear power changed greatly during his term of office. He was initially allied with the McNamara elements of the Defense Department and was not merely an "admirals' errand boy."¹³ In 1962, while testifying before the Senate Appropriations Committee, he mentioned the advantages of atomic power in naval vessels, but said that lack of experience and higher cost presently ruled it out (he estimated the cost of an atomic ship to be one-third to one-half higher than conventionally powered vessels).¹⁴ By early 1963, however, continued study and experience with the *Enterprise* had convinced him of the benefits of nuclear power; he requested that the Secretary of Defense approve the conversion of CVA-67 to atomic power.¹⁵ Later in

the controversy, Korth openly criticized McNamara's decision to keep CVA-67 conventionally powered and his rejection of several Korth-sponsored studies which recommended nuclear power.

A less powerful organization than the Navy in the controversy was the Atomic Energy Commission. It had worked to develop the reactors, and it recommended through its Chairman, Glenn Seaborg, an increased application of nuclear propulsion. The dominant motive of the Commission quite likely was a sincere belief that atomic power was right for the job. The AEC was not terribly active in the controversy, but it should be noted that Rickover was its employee, as well as the Navy's, so perhaps the Commission felt it had adequate representation. In addition, the battle soon shifted to issues not related to the Commission's sphere of competence.

One man, Robert McNamara, was opposed to these supporters of nuclear power. McNamara's role is vitally important because, in the controversy on CVA-67, he was victorious. It is important to understand why.

McNamara came to the Defense Department with the Kennedy administration. His goal was essentially to make Defense more efficient and to reassert civilian control of the military. The heart of his approach has been termed "cost-benefit" or "cost-effectiveness" analysis. There are two important assumptions underlying the McNamara method. The first is that there exists a scarcity of resources; thus, we cannot afford to build all the systems that are available, but must choose only those systems that can best accomplish the most necessary goals.¹⁶ The second is that decisions on weapons systems should be made "rationally, not emotionally"¹⁷ and that this rational analysis is neutral (i.e. not political or ideological in nature). Some have disputed the wisdom of such neutrality,¹⁸ since decisions on weapons must be made

according to different assumptions of strategic requirements, and under the McNamara system these decisions of strategy are isolated from the weapons decisions in such a way as to lose sight of them.

Besides featuring a strong emphasis on methodology, McNamara's system was highly centralized. The individual heads of the component Departments (Army, Navy, etc.) were no longer representatives of the individual department interests, but rather administrators representing the final decisions of McNamara and his analysts. The Joint Chiefs of Staff were also controlled. Their power to reflect the individual viewpoints of their services was restricted, and they were required, more or less, to be spokesmen for the McNamara "line."¹⁹ Thus, the battle over CVA-67 was not fought solely over the merits of atomic energy, but also over the assumptions and methods of the decisionmaking process itself.

CVA-67 and the Nuclear Carriers: The Issues. The surface issue in the 1963 dispute was the issue of the CVA-67 itself, its cost, and military effectiveness. Underlying this question were several more basic concerns: first, the methods by which comparative costs were computed and the question of whether the Navy's ships should be the best or merely sufficient; second, the question of the future strategic role of this particular carrier and, beyond that, of the Navy in general; finally, the merits of cost-effectiveness decision-making and its application to national defense. Each of these topics deserves considerable discussion.

The most important issue in the CVA-67 controversy was the relative military value and cost of the proposed nuclear carrier. Much of the battle was fought over whether atomic power was worth the extra cost, and indeed, over exactly how much extra cost was in-

involved. Everyone, including McNamara, spoke of the *Enterprise* and the other nuclear vessels as far superior to conventional ones.²⁰ A nuclear-powered ship could sail long distances at top speeds without refueling and so would not be dependent on oil tankers²¹ (a conventional carrier was limited to 3 days sailing at top speed before requiring fuel, while the *Enterprise* could sail 180,000 miles from a single fueling); in addition, it would be able to carry 50 percent more fuel and ammunition for its planes.²²

Balanced against these advantages was the cost differential. However, there was no agreement as to exactly what it amounted to. Early in 1962, when the choice of conventional power was not yet controversial, Secretary Korth had estimated that the cost of atomic power would be one-half to one-third higher than conventional fuel. One Navy estimate was that at \$440 million the *Enterprise* had cost \$80 million more than a comparable conventional ship. McNamara, on the basis of some questionable accounting, saw a nuclear carrier costing \$160 million more than a conventional carrier.²³ Later estimates released by the Joint Committee on Atomic Energy showed that over the projected 25- to 30- year lifetime of a nuclear ship, extra costs might be as little as 3 percent more.²⁴ It is difficult to determine which of the estimates was most correct, but the approach leading to some of the lower figures seems to be more valid. The determination of relative cost is complicated by the fact that each of the nuclear ships contained innovations in addition to atomic energy; however, there are indications that McNamara's cost calculations were exaggerated.

McNamara apparently based his estimation of relative costs on the cost of construction of a nuclear carrier versus a conventional one. Upon inspection, the flaws in this method are obvious. First, the construction costs of a nuclear ship

include the initial fuel for its atomic reactor.²⁵ In the early ships this amounted to fuel adequate for 4 or 5 years of operation; newer atomic ships may run up to 13 years on their original uranium. Estimates of conventional ship costs, on the other hand, include no estimate of oil costs or the cost of tankers required to transport this oil or the escort ships which might be needed to protect the tankers in wartime.

McNamara also added to the projected costs of the nuclear carrier the cost of the additional warplanes it would be able to carry, even though the Navy had stated that it had no intention of asking for these planes, and even though, had this been the intention of the Navy, this cost (which was estimated as one-third the differential of the cost) could not reasonably be charged to nuclear power.²⁶

Even if McNamara's accounting had not been defective, his total analysis remained faulty. While admitting in general terms the superiority of nuclear power, he declared that this superiority was not worth the additional costs, without systematically totaling up advantages to balance the extra expense or attempting to express these advantages in concrete economic terms. Several years after the controversy, another Secretary of the Navy expressed anguish over the failure of cost-effectiveness analysis to consider the real advantages of atomic energy in this case.²⁷

Beyond the bickering over the actual costs lay different conceptions of the kind of quality required. McNamara seemed to have a "big war" fixation; he thought the carrier added little to our power against a direct Soviet threat and said that because of America's overall naval superiority, she did not need the extra strength.²⁸ Our conventional power might be second rate, but it was sufficient. Further, McNamara stated that America would be foolish to buy the most technologically advanced weapons—that was not the policy of his

department.²⁹ This idea was sharply challenged by many, especially in the Navy. The commanders of the three present atomic ships wanted the best for their men, and as Rickover said several years later, the Navy should always build the best.³⁰ In fact, the Navy expressed its willingness to make do with fewer ships, if the remaining ones began to use atomic energy for propulsion³¹ (the Navy claimed that five nuclear task forces were as effective as six conventional ones³²—apparently without citing any facts, McNamara replied that he was "absolutely sure" that this was not correct).³³

The second area of contention was strategic doctrine. One thing that became clear in the course of the controversy was that McNamara conceived of the aircraft carrier largely in terms of its direct strategic capability against the Soviet Union,³⁴ and he seemed to have serious questions about the ability of the carrier to effectively perform this role. In truth, the aircraft carrier was not at its best, strategically, in the narrow European waters near the Soviet Union, and much of its capability would be wasted as a launching platform for massive nuclear bombing missions—it could hardly compete in this mission against ICBM's. The carrier's advantage was not to be found in idling around the edges of a fixed target area, but rather in its ability to respond with overwhelming force in widely separated areas in the tactical terms of limited warfare.³⁵ McNamara's fixation with weapons useful only in strategic situations is difficult to square with his supposed introduction of the doctrine of flexible response into the Defense Department.

During the late 1950's and 1960's, the strategic role became less appropriate while at the same time, limited war doctrine was being developed slowly.³⁶ The Defense Department was giving serious consideration to reducing the number of attack carriers³⁷ and, in fact,

the advantages of nuclear power were not so salient in a strategic context. Much of the discussion of the fate of CVA-67 was carried on under these influences. There was, however, a recognition of the importance of some limited warfare roles, such as air support in a war like Vietnam, but McNamara did not seem to consider these possibilities at all, viewing carriers only as inefficient equivalents of intercontinental rockets.

Rickover thought that one possible reason for McNamara's decision for a nonnuclear carrier was a desire to reduce the future role of the Navy.³⁸ A related decision which reduced the Navy's future role was handed down at approximately the same time as the final carrier decision. The Navy had bid for a greater role in the Indian Ocean, where only a few minor ships were stationed from time to time. Nuclear-fueled ships would have enabled the Navy to operate in this arena without the necessity of an elaborate series of bases. The Navy's request was denied, and two Army officers were given responsibility for this region.³⁹

The final issue considered was the validity of cost-effectiveness methodology to military decisionmaking. Some of the flaws of the system as McNamara applied it to this case have been mentioned (the accounting practices and the failure to consider the operational advantages associated with atomic propulsion). In truth, these were not so much failures of the basic analysis idea as they were flaws in its execution. However, where the system did break down, the scientific aura that surrounded it prevented some due criticism. Beyond these weaknesses there was a belief among some critics that the military should have the right, within reason, to decide what kind of weapons they wanted.⁴⁰ Even more basic was the belief that vital national defense could not be judged by economic criteria and that the defense needs of the country were in fact being sacrificed to penny-

pinching.⁴¹ Of course, Secretary of Defense McNamara denied this, but after his testimony before the Joint Commission on Atomic Energy, late in 1963, many people simply did not believe him.

The Decision Is Made. The struggle to convert CVA-67 to atomic propulsion was joined early in 1963. It is hard to determine the precise catalyst in the controversy, but the role of the Navy was probably most important. Originally, the Navy had justified not requesting that its new carrier use nuclear propulsion because of its lack of operating experience with the *Enterprise*.⁴² By the late autumn of 1962 it could no longer make that claim. *Enterprise* had been a part of the task force participating in the Cuba blockade, and according to the task force commander, Admiral Hayward, had performed superbly—even uniquely, as the admiral expressed in a letter to Secretary Korth.⁴³ As a result of this information, together with letters from the Naval Research Advisory Council and the Atomic Energy Commission Chairman, plus some mysterious internal politicking, Mr. Korth reversed his decision and in February asked Secretary McNamara to reconsider the issue, which McNamara agreed to do, pending further study.⁴⁴

In agreeing to review the matter, McNamara included the requirement that the studies submitted to him focus on the issue of whether the nuclear carrier would provide equal defense for the same expenditure as conventional ships and on the question of future applications of nuclear power to naval goals.⁴⁵ The Navy prepared two studies for Korth, which were forwarded to McNamara. The first, in April, was rejected for not conforming to the Defense Secretary's required methodology. The second, in September, was more comprehensive and focused specifically on cost differentials, but it was

not accepted either.⁴⁶ It would not be surprising to find out that the Navy never did understand what the substance of their studies should be. At any rate, the character of McNamara's testimony later gives rise to serious doubts that the Navy could have done anything to change his mind. The Navy's September report had taken a hard line in favor of the application of atomic power to all major future vessels, so there was no evidence that it was backing down,⁴⁷ but with the rejection of this report, the issue was settled to McNamara's satisfaction. On 9 October, 1963 he directed Korth to proceed with the construction of a conventional carrier.⁴⁸

In a letter dated that same day, the Chairman of the Joint Committee on Atomic Energy, Senator Pastore (who was annoyed at the failure of the Defense Department to keep the committee informed on the deliberations on the nuclear propulsion issue), inquired about published reports that the decision against nuclear power had already been made.⁴⁹ Pastore had written McNamara earlier in the year, expressing his committee's interest in and support of nuclear power for the CVA-67, and reminding the Department of Defense of his committee's legitimate interest in the matter. In response to Pastore's letter was a letter from Roswell Gilpatric on 11 October, denying that the final decision had been made.⁵⁰ That same day Navy Secretary Korth personally requested that McNamara withdraw his decision. McNamara declined to do so; a "violent" shouting match was reported by *The New York Times* to have taken place between the two men.⁵¹ Korth's resignation was submitted the same day.⁵²

The actual reasons for Korth's resignation are not entirely clear, and there should be caution against ascribing the move solely with the carrier issue alone. Korth had been involved in conflict of interest charges in connection with the TFX case, and he may have become a

political liability. The official reason (accepted by the *Times*, at least) for his resignation was misuse of official Navy stationery,⁵³ but not directly in the context of the TFX involvement (for which his resignation was supposedly requested). Korth's letter itself pleaded "pressing personal matters," and he denied being asked to quit, which was not refuted.⁵⁴ Mollenhoff supports the conflict of interest explanation,⁵⁵ but the coincidence of the reported argument over the nuclear issue is, at the very least, suggestive. It appears no definite conclusion can be reached.

In his letter Pastore had informed McNamara that hearings would be held on the nuclear propulsion controversy beginning 30 October. Just 5 days before the scheduled opening date, McNamara again ordered lame-duck Secretary Korth to proceed with construction of a conventional carrier. Understandably, this move angered the Joint Committee of Atomic Energy members, who felt that they were being deprived of their rightful advisory role and also that Gilpatric's former letter to them had been a lie.

Three days of hearings were held in late October and early November. Most of the witnesses, including Korth and Rickover, criticized McNamara's decision sharply. The only firm stand against nuclear propulsion was taken by McNamara himself. He repeated that the benefits of atomic power were not sufficient to offset the high costs, which he claimed were excessive. Almost every statement he made on the issue was challenged. He mentioned several names of persons who, he said, supported his position, but who, in fact, supported atomic propulsion in their own statements.⁵⁶ Finally his backers were reduced to one nonnaval officer, who recommended that no carrier be built at all.⁵⁷

McNamara's performance at the hearings was judged below par by observers. In previous appearances before congress-

sional panels, he had been well prepared and self-assured and was able to back up his statements with much statistical evidence. There was little of that now. His analysis was challenged, his positions rebuked, and in the end it seemed obvious that the decision, if not made solely on his personal whim, at least was not really justified by the evidence. He left convinced that he was right, his opponents equally convinced that he was wrong.

In December the committee reported—unanimously—that the Defense Department's decision was a mistake. McNamara's arguments were called "incorrect," "illogical," "misleading," "misinformed," and "not realistic."⁵⁸ The evidence he cited from individuals and studies was rejected, and the committee reported that it still "does not know of any qualified technical person or group who recommended to the Defense Department that nuclear propulsion not be installed in the new aircraft carrier."⁵⁹ Nuclear propulsion was seen as possessing significant military advantages, with extra costs that were minor. The recommendation was that all future first-line warships, beginning with CVA-67, should have nuclear power⁶⁰ and that research and development in the field should continue. In spite of this report, McNamara's decision was allowed to stand. Early in November McNamara had convinced Kennedy that he was correct; some claim that McNamara did not tell Kennedy the whole story. Interestingly enough, one of the arguments that Kennedy would use to justify McNamara's position was that if more nuclear carriers were built, they would require additional nuclear escorts⁶¹ (but that's another story!). No further action was taken on the Joint Committee on Atomic Energy report at this time. The appropriations bill of 1964, which would have had to be amended to add the extra funds for the nuclearization of CVA-67, was not modified,

"lacking a request from the Defense Department."⁶² The contracts for the ship, having been delayed a year, were carried forward with unusual rapidity—some suggest this was to avoid the chance of the decision being reversed.

Of the men recommending nuclear power, both Pastore and Holifield were politically proadministration. They had no partisan axe to grind. Though McNamara claimed at the hearings that he would not feel justified going back to Congress for the needed additional funds, there is little evidence that Congress would have denied his request. Nongovernmental opinion, too, was critical of the decision. Hanson Baldwin, respected military analyst of the *Times*, thought it was a mistake,⁶³ and the *Times* editorial page backed him up.⁶⁴ *U.S. News & World Report* declared that the CVA-67 (eventually named the *John F. Kennedy*) was obsolete before it was built.⁶⁵ But built it was. McNamara was willing and able to force the decision through on his own, and Congress did not seem to know how to go about stopping him. When faced with Defense Department reluctance on future naval power issues, Congress was later to prove more aggressive, and successful.

Evaluation of the Decision. If the CVA-67 decision is taken as a good example of cost-effectiveness in action, then there was something seriously wrong with the system. The original decision in 1962 to use conventional power for the ship, though made against the Navy's weak protest, was perhaps not blatantly mistaken, on the part of the Defense Department. The Navy, on the other hand, wasted, by its lack of direction and indecisiveness, a real opportunity to put the project into proper perspective; it was apathetic toward an idea that it eventually supported strongly. If the original authorization for nuclear power had been intensively supported by the Navy in

1962, it would have at least aroused more controversy in Congress. By 1963-64, when the Navy was ready to back atomic energy unequivocally, the time was late, and the delay had already provided the Department of Defense with an excuse to cancel another ship.⁶⁶ By this time any proposal to change the ship would have necessitated starting from scratch, and congressional inertia seemed to forestall this course of action. But even if Congress had solved its problem, the final decision of conventional power for CVA-67 would probably not have been different. As Congress discovered during a related controversy several years later (the issue of nuclear escort ships), it is difficult for the legislative branch to force action on the executive departments.

In the final action taken, the role of the Defense Department was decisive. The position it took under the McNamara "whiz kids" is difficult to justify. The strategic assumption that the only eventuality for which to prepare was a direct threat from the Soviet Union and that, consequently, naval forces might well be reduced in the future, was somehow at odds with the doctrine of flexible, limited response to provocation (in fact, McNamara later backed down from his attempt to directly reduce naval force levels,⁶⁷ though his reluctance to request funds for new ship construction certainly aged the Navy and reduced its effective power). The evidence points to the conclusion that the cost-accounting methods used by the Department of Defense to compare nuclear-powered and conventionally powered carriers were generally invalid; it appears that no attempt was made to calculate systematically the military benefits of atomic energy, which should be at the heart of defense strategy. Exception may also be taken to two other tenets of the McNamara philosophy, especially the implied doctrine that the military did not know what was best for itself, and the doctrine of sufficien-

cy, which states that, in weaponry, second best is good enough.

The military should know best its needs, and, in the case explored here, the Navy was certainly cautious and conservative in its behavior. Its role throughout the whole nuclear naval period was skeptical, beginning with the *Nautilus* in the early fifties; it did not rush to spend the taxpayers' money on nuclear trinkets. Thus, when after much thought the Navy embraced the idea of nuclear propulsion for surface vessels, it should have been evident that this was not a whim, but a well-thought-out decision. When the Navy offered to trim its appropriations in other areas, in order to offset the costs of nuclear power, it was told that this was unacceptable. The Navy was not even considered qualified to judge the relative merits of its own weapons systems and the percentage of total allocation which should go to them.

The sufficiency doctrine is another point of contention. In principle, it is difficult to disagree completely with this concept. Certainly, defense expenditures are not justifiable in themselves; certainly, defense must be gauged to the capabilities of the expected opposition. But this is probably more applicable to total budget levels than to individual weapons. Besides, it is difficult to predict what margin of superiority will be sufficient. The best weapons of today are often not equal to tomorrow's challenges, and what is merely obsolescence today may soon be criminal negligence.

On the whole, the actions of the Defense Department left much to be desired. Besides the doubtful assumptions and the shoddy accounting practices, the Department failed in its duty to keep the Joint Committee on Atomic Energy up to date on its plans. Then, when the decision to reject nuclear power was made in October, the Defense Department was not candid about the decision. Finally, there is a

strong suspicion that the Department of Defense acted purposely to avoid the will of the Congress,⁶⁸ and did not even feel constrained to offer a serious justification of its decision.

The Joint Committee's actions were generally commendable. It had, in the past, more or less forced the development of nuclear submarines. With its report on the *Enterprise* tour, it had established its position early and set out some respectable evidence on the significance of nuclear propulsion, sounding the opening gun in the CVA-67 battle. In 1962, two of its members, while serving on the House Armed Services Committee, had attempted unsuccessfully to add nuclear propulsion to this ship,⁶⁹ and Pastore's letter of early 1963 repeated the Joint Committee's unanimous position to Secretary McNamara. The hearing held in the fall of 1963 examined McNamara's case, found it wanting, and explained why. The hearing of that year, together with those in 1966, 1967, 1968, 1969 and 1970 served as valuable forums, and their reports were important ammunition for pronuclear advocates. But in 1963 the Joint Committee could do no more when the Appropriations Committee and the Congress as a whole declined to take action, and so this battle was over.

Epilog. CVA-67 was eventually completed as a conventionally powered warship, in accordance with the Defense Secretary McNamara's dictum. It was to be the last of its kind. A certain low-key attack was kept up over the general issue of future use of nuclear propulsion for warships, but for the next 2 years the Department of Defense, perhaps chastened by its experience at the hands of the Joint Committee on Atomic Energy, sought to avoid the issue by failing to request funds for construction of any major surface ships.⁷⁰ Though no nuclear ships were authorized, research and development continued, with the result that a two reactor propulsion

system was perfected. *Enterprise* had used eight reactors, and a nuclear CVA-67 would have required four; reducing the number of reactors led to a substantial saving. The *Enterprise*, *Long Beach*, and *Bainbridge* continued to earn accolades for their performances. In addition, McNamara was finally dissuaded from his attempt to reduce major carrier strength. To say which of these events was the most important to actions subsequently taken is not possible, but some authors stress the role of the fight waged by the Joint Committee on Atomic Energy in 1963⁷¹ as the most significant.

For whatever reason, McNamara eventually reversed his stand. His budget for 1967 requested funds to start a second atom-powered carrier,⁷² the first of three projected over a 5-year period. Even before the battle on nuclear carriers was won, the field of battle shifted to the question of atomic propulsion for escort vessels, with this controversy continuing, in some sense, up to the present. With the escort issue were introduced new technical and strategic concerns and a new actor, Repre-

BIOGRAPHIC SUMMARY



Professor Allan A. Spitz did his undergraduate work at the University of Mexico and earned a master's degree and doctorate from Michigan State University, specializing in comparative government in China, Japan, and Southeast Asia and in the developing areas. He has traveled extensively and resided in Asia (served from 1956 to 1959 with the U.S. Government in Hong Kong) and has written numerous articles dealing with contemporary Asian affairs for *Asian Studies*, *Asian Survey*, and the *Indian Journal of Political Science*. Professor Spitz is currently serving as Professor of International Relations and Dean, College of Liberal Arts, at the University of New Hampshire.

sentative L. Mendel Rivers of South Carolina. His actions in the 1963 debate were not particularly notable, but several years later, having assumed the Chairmanship of the House Armed Services Committee, he prodded Congress into several direct challenges to the

Executive on this issue⁷³ and was eventually victorious, at least in part. This second round of the nuclear surface vessel construction controversy is in many ways more interesting than the first, but its exploration must necessarily await a later study.

FOOTNOTES

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10. *Ibid.*
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. . . the problem of nuclear propulsion for surface warships affects the whole future strength of our Navy and the defense of our Nation. It could affect our survival.

VADM Hyman Rickover, USN, House Appropriations
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