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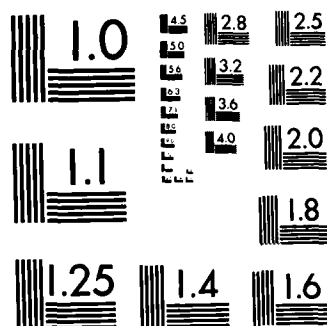
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PROFESSIONAL PAPER 368 / December 1982

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THE EVOLUTION OF SOVIET REQUIREMENTS FOR NAVAL FORCES—SOLVING THE PROBLEMS OF THE EARLY 1960s

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Robert G. Weinland

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THE EVOLUTION OF SOVIET REQUIREMENTS FOR NAVAL
FORCES--SOLVING THE PROBLEMS OF THE EARLY 1960s*

INTRODUCTION

Soviet intentions with regard to the objectives, conditions, and manner of use of their naval forces have undergone a number of significant changes over the last 20 years. So have those forces themselves. These changes are obviously related; but the character of that relationship is not as well understood as it should be, or might be. Clarifying the linkages between Soviet intentions and the capabilities they acquire to implement them is thus one of the two objectives of this discussion. Its second, and in some respects more important, objective is the identification of the role U.S. actions appear to have played in the evolution of Soviet intentions and capabilities during this period. Here not only the character of the relationship, but the question of its very existence (which has been challenged widely in the academic community) must be addressed.

* This is a personal assessment. As such, it does not necessarily reflect the views of the Center for Naval Analyses, the U.S. Navy, or any other component of the U.S. Government.

Neither subject can be examined effectively in isolation. Knowing how the Soviets decide to acquire and employ military forces, and how those decisions are implemented, is a prerequisite for identifying the antecedents of such actions. And identifying their antecedents is the key to assessing the degree to which they represent Soviet initiatives, or Soviet responses to others' initiatives--in effect, whether, and if so to what extent, the acquisition and employment of forces by the Soviet Union has been influenced by what the United States has done.

Fortunately, at least for this analysis, the period under examination opens with the United States taking a series of actions of such visibility and importance that the Soviets could neither overlook them nor fail to respond to them. The rapid, wide-spread, and far-reaching increase in U.S. strategic offensive forces initiated in 1961 by the incoming Kennedy Administration accounts for most of these actions. That increase, coupled with the comparatively narrow scope and slow pace of the strategic offensive force buildup the Soviets had been pursuing, and with their inability to modify their programs rapidly, led within a short space of time to a situation of massive strategic imbalance, with the Soviet Union starkly inferior--and vulnerable--to the United States on almost every important dimension of intercontinental military power.¹

As will be argued below, it appears to have taken the Soviets the better part of the 20-year period under examination here to correct the

situation to their satisfaction. Expansion and acceleration of their strategic offensive force buildup was the principal--but, significantly, not the only--step the Soviets took toward this end. Development of strategic defensive capabilities and reallocation of general purpose forces to strategic tasks were also involved.

Many of those steps seem not to have been perceived or interpreted accurately in the West. Identifying the reasons why is a necessary preliminary to their reassessment.

ALTERNATIVE APPROACHES TO THE EXPLANATION OF SOVIET BEHAVIOR

Some explanations of Soviet behavior have proved more accurate and illuminating than others. Two factors seem to account for most of this variation: the accuracy and completeness of the information on which those explanations are based, and the character of the frames of reference utilized in their development. Many of those frames of reference have been inappropriate to the task.

Two distinct types of such explanation have been attempted. In the first of these, which for purposes of convenience we can label the "scientific," one seeks to develop a set of generalizations that subsume all observable actions and identify principles that organize, and hence



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explain, each of those generalizations.* In the other, which can be labeled the "historical," one seeks to explicate a causal relationship in its own terms, without reference to general principles.**

Efforts to describe the workings of the U.S.-Soviet "arms race" --more precisely, the "competition" that appears to have come to characterize the superpowers' development and deployment of strategic forces--exemplify the "scientific" type of explanation. Most attempts to assess the Soviets' responsiveness to changes in the U.S. force structure have employed this approach as well. Efforts to identify Soviet objectives in acquiring particular submarine-launched ballistic missile (SLBM) systems, on the other hand, exemplify the latter, "historical" type of explanation. Both approaches have encountered significant difficulties.

Most attempts to develop "scientific" assessments of the extent to which modifications in Soviet strategic offensive forces represent Soviet initiatives, or responses to actions taken by the United States, have been stymied by the lack of appropriate data. The number of

* One can, for instance, explain the fall of a line of dominoes in terms of Newton's laws of motion.

** One can just as well explain the fall of the last domino in line as a consequence of a push applied to the first.

different systems the Soviets have deployed, and hence the number of independent observations from which generalizations can legitimately be developed, is limited. Moreover, information about the development and deployment of individual systems is understandably scarce. Efforts to compensate for these deficiencies by employing surrogate data--estimated annual expenditures on strategic offensive forces--have encountered significant difficulties and enjoyed little success.² They assume the development and deployment of strategic offensive forces by one party actually represent its response to another party's development and deployment of strategic offensive forces--not just part of that response (the remainder lying in developments in strategic defensive or general purpose forces, or outside the military sector) or more than that response (additional factors having served as stimuli). And even where the magnitude of expenditures for strategic offensive forces has been estimated accurately, the problems associated with allocating annual expenditures among individual systems, and distributing totals across system lifetimes have generally proved insuperable. The resulting data series tend to be unreliable. They cover less, or more, than they should. And in what they do cover, they mask the most important factor structuring the action-reaction sequences they are supposed to reflect: the time required to recognize a change in the situation, select an appropriate response, and implement that decision.³ That analyses of Soviet behavior employing this approach tend to obscure more than they clarify is not surprising.

Many attempts to employ the "historical" approach in specifying the intended combat functions of Soviet SLBM systems have foundered on an entirely different kind of problem: inference from inappropriate, largely implicit, premises.⁴ In some instances, inferences regarding Soviet objectives in acquiring particular weapon systems have been based on net assessments of the demonstrated capabilities of those systems once operational--i.e., the net of their estimated capabilities and the known capabilities of their opposition.⁵ Explanations based on such assessments assume --implicitly--not only that the actual performance of the system in question at least meets Soviet expectations, but that the capabilities of its potential opposition do not exceed Soviet expectations. Such assumptions are not necessarily valid. Systems do not always work as well as originally anticipated; and the opposition sometimes turns out to have become more difficult to deal with than anticipated. As will be outlined below, this appears to have happened to the Soviets with their Yankee class SSBN.

In other cases, Soviet acquisition of weapon systems is treated, at worst, as non-goal-directed behavior, or, at best, as undertaken in pursuit of sub-national goals.⁶ Neither is characteristic of Soviet military decision-making, which in the course of the last two decades has become in many respects an epitome of "goal-directedness" and "rationality."

The priorities the Soviets assign the threats and opportunities they perceive in their environment are those of the political leadership and General Staff. They may or may not coincide with those of the Navy. The same holds true for their allocation of resources to attempts to deal with those threats and opportunities. This is characterized by central direction, integrated planning, and a combined arms philosophy of mission assignment. Where the acquisition and employment of naval forces represents the Soviets' solution to a problem--and convincing evidence that, thus far, it has represented anything other than that has yet to surface--what that problem is and what an appropriate solution to it may be is defined not by the Soviet Navy but by its masters.

THE APPROACH USED HERE

The "historical" approach to explanation will be employed in the discussion below. In a sense, this might be thought inappropriate. On the surface the discussion focuses on the evolution of Soviet requirements for naval forces over the last two decades, and covers a variety of specific actions undertaken to meet those requirements. Underlying that, however, is an examination of the nature and extent of Soviet responsiveness to the evolution of U.S. capabilities: in particular, their response to the expansion in U.S. strategic offensive capabilities (and upgrading of general purpose capabilities) initiated in 1961 by the incoming Kennedy administration. Ideally, of course, assessment of a generalized characteristic such as responsiveness should be approached

"scientifically"--by isolating the antecedents of a number of independent Soviet actions, assessing the initiatory or responsive character of each, and identifying their central tendency. The real world, however, is harsh on ideals. As the argument below suggests, the deployment and implementation of a satisfactory Soviet response to that expansion in U.S. capabilities took the better part of the two decades under review here, and represented a significant--perhaps the dominant--factor in the evolution of Soviet requirements for all types of naval forces throughout much of the period. In a sense, then, there is only one case under examination here. That case encompasses a number of individual Soviet actions, but they were not independent--and, hence, not the proper subject of an attempt at "scientific" explanation. In that sense, the "historical" approach to this aspect of Soviet behavior is appropriate.

In implementing that approach, this discussion attempts to avoid both of the interpretative pitfalls outlined above. It treats significant modifications in Soviet naval intentions and capabilities as attempts to effect naval (or combined arms, including naval) solutions to national problems. And it treats the acquisition and employment of weapon systems in terms of their antecedents, not their consequences--that is, in terms of the requirements the Soviets hoped to satisfy by developing and deploying them.

Requirements*

Identifying Soviet requirements for the performance of specific military functions, and for the forces necessary to perform them, is tenuous business. Direct insights into those requirements are few and far between. For the most part, we must rely on inference.

What we really want to know, of course, is what the Soviets think they need. The driving factor in all such assessments is a definition of the present situation, including conclusions drawn from the present about the future. At the minimum, what specific military functions is it considered necessary to have performed? What additional functions is it considered desirable to have performed? To what extent is it considered feasible for those functions to be performed by current forces? What additional forces are, or will be, required?

To some extent, the answers to these questions can be gleaned from what the Soviets say and do--in a few cases directly, but more often only by inference. As pointed out above, however, and as should become clear before this discussion concludes, the frame of reference employed

* The whole of this discussion is an exercise in what Michael McGwire has referred to as "requirements analysis." It differs significantly in form and content from his many and varied excursions into that realm. It nevertheless employs the same organizing concept, and is consequently in his/their intellectual debt.

in drawing such inferences is a major determinant of the conclusions reached in the process.

The only reasonable anchor point for that frame of reference is the objective situation: the potential threats and opportunities that constitute the Soviets' relevant military-political environment. They will, of course, perceive those threats and opportunities subjectively, assigning a magnitude and likelihood of realization to each. However, their starting point, and the starting point of those who would attempt to explain their behavior, is that same objective situation.

THE OBJECTIVE SITUATION

What follows is an attempt to capture essential features of the military-political situation in which the Soviets found themselves as the Kennedy Administration took office and began to implement their policies. Preceding events, the intentions of the Administration, and many of the actions they eventually took have been described in great detail elsewhere, and do not need to be recounted here.

The principal focus here is on the then current state and foreseeable future of U.S. and Soviet strategic offensive forces, primarily their missile component. This is an area in which, at the time, uncertainty abounded. Much of what the United States already had

done in developing its strategic forces, and planned to do, was reasonably well-known. That was not the case with the Soviet Union. Much of what it had done, and subsequently did, was not revealed until later--and then understandably in less than great detail. Some of the original uncertainty has thus been eliminated. Some has not.

On those two grounds, completeness and accuracy, the account developed below might be held open to challenge. It does, nevertheless, present the essential features of the situation, and the information it presents should be reasonably accurate.* And, as will be argued later, the logic of the situation was so commanding, and the "fit" between that logic and Soviet actions is so "tight," that to explain Soviet actions differently than they are explained below would require a body of evidence different from that given us by history.

Kennedy Administration Actions

Apparently convinced that the Soviet Union was engaged in a massive buildup of strategic offensive forces, and fearing that unless they acted decisively that buildup would rapidly produce a situation of significant U.S. strategic inferiority, the incoming Kennedy Administration

* That information is drawn not only from the responsible public sources of the time, like the annual editions of The Military Balance published by the IISS or Jane's Fighting Ships, but also (as note 9 below details) from more recent retrospective analyses based on recently declassified U.S. intelligence estimates.

took immediate steps first to accelerate and then to expand the buildup of U.S. strategic offensive forces that had been initiated by their predecessors. They also intensified the development of strategic defense capabilities, and took steps to improve general purpose forces.⁷ Actually, U.S. strategic offensive forces were as much in the process of being restructured as built up. Missiles were replacing aircraft, central systems were replacing peripheral systems, and protected or untargetable basing modes were being emphasized.

The minimum objective of the Kennedy Administration was the acquisition of a force of such size, based in such a manner, that it could not be disarmed by a Soviet missile attack. There probably were additional U.S. objectives, which could have included acquisition of the capability to disarm the Soviet missile force. Whether, in fact, that was the case is not material to this argument. What is material is that the incoming Administration intensified the restructuring process significantly, increasing substantially both the number of missiles to be included in the force and the pace at which they were to be deployed.

Indeed, whether the Soviets perceived the U.S. as intent upon disarming their strategic missile force is not material either. What is material is the objective situation: the United States was rapidly acquiring--probably already possessed--the capability to disarm their strategic strike force.

What the situation implied will be discussed further below. What the situation was must be outlined first.

January 1962

A glance at figure 1 reveals most of what needs to be said about the situation in January of 1962.⁸ The Kennedy Administration had been in office for a year, most of its decisions with regard to strategic offensive forces had been taken, and the end state of the restructuring process was--at least in gross terms--readily predictable: a very large number of land-based ICBMs* deployed in silos, a large number of sea-based IRBMs deployed in nuclear-powered submarines, and a large residual U.S.-based bomber force (a substantial fraction of which would be on airborne alert). Given its size and the way it was deployed and operated, this force promised to be extremely difficult, even impossible, to disarm. It also promised to give the United States a strike capability significantly greater than it already possessed--which was by any measure then substantial.

The Soviet's counterpart force was also scheduled to grow, and in the process itself became more difficult to disarm. But its development would not unfold at the same pace, and future promise did not offset current deficits.

* This discussion employs IISS definitions, in which ICBM range is over 3,500 n.mi., IRBM range is 1,300-3,500 n.mi., MRBM range is 430-1,300 n.mi., and SRBM range is under 430 n.mi.

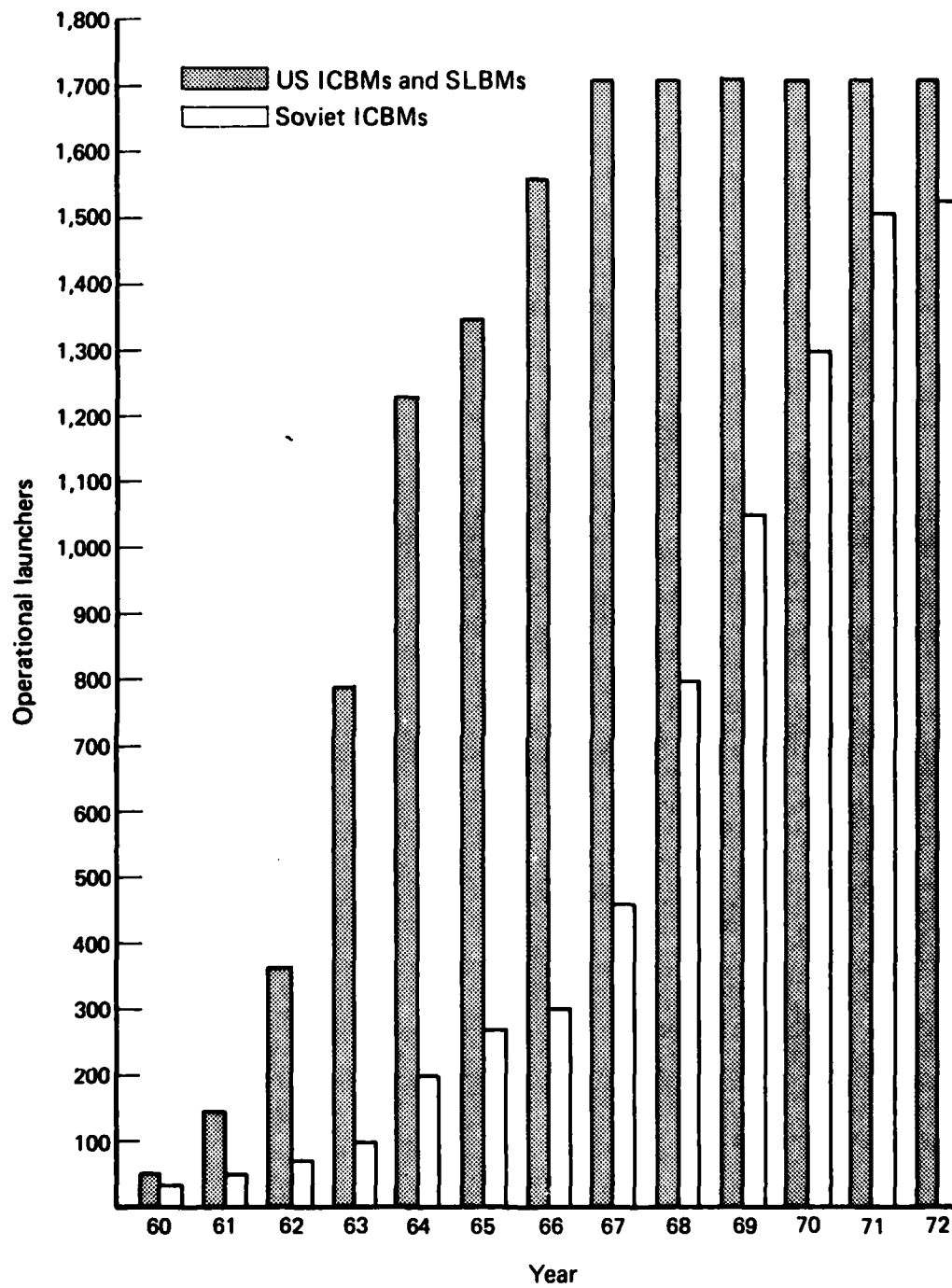


FIG. 1: THE OPPOSITION TO THE SOVIET ICBM FORCE

The Soviets faced two such deficits. One was the relative size of their force. The other was its vulnerability to preemption.

In January of 1962, the Soviets had less than 100 ICBMs*--none silo-deployed.⁹ In addition, they had roughly 100 sea-based SRBMs--all surface-launched, most deployed on diesel-powered submarines.¹⁰ Backing these up were approximately 200 intercontinental-range bombers.¹¹

Arrayed against this force were some 279 U.S. missiles: 62 ATLAS and 1 TITAN ICBM, 96 POLARIS SLBM, and 120 THOR and JUPITER IRBMs and MRBMs deployed in the U.K., Italy and Turkey. SAC then had 1526 B-47, B-52, and B-58 bombers.

By any reasonable standard, that U.S. missile force already posed a significant preemptive threat to the land-based component of the Soviet's strategic offensive force**. And in this respect, the Soviets' position was, predictably, going to degenerate before it improved.

The only element of the Soviet's strategic offensive force that was immune to a U.S. missile strike was its SLBM component. That fact explains the structuring and labeling of figure 1, which--at least up to

* This is a conservative statement. The IISS figure was 75. Some studies suggest the actual figure was less than 10.

** Missiles were considered to pose a threat to an opponents' missiles and bombers. Bombers were not considered to pose such a threat.

the point (indefinable--except by the Soviets) where sufficient numbers of Soviet ICBMs begin to be protected adequately--depicts the U.S. ability to deny Soviet land-based strategic offensive forces a strike-back capability, and thus in a way characterizes the "pressure" placed upon them to insure that they maintained such a capability at sea.*

October 1962

If a reasonable degree of credence can be given the above outline of essential features in the objective situation of January 1962, the Soviets' attempt to emplace IRBM/MRBMs in Cuba not long thereafter can be taken as circumstantial evidence in support of two points important to this argument. One is that the Soviets perceived the objective situation with reasonable fidelity. The other is that their perception of that situation structured the action they took to "correct" it.

Significant strategic imbalance, predicted to intensify, called for a significant corrective. In the long run, the acquisition of larger, more capable missile forces could supply that corrective. The only short-run action they could take that would have the requisite

* Soviet capabilities held Western Europe hostage, of course. They were consequently not without leverage on the United States. What such leverage was worth in that situation is, however, arguable.

significance* was to employ some fraction of their existing missile forces differently--to make surrogate long-range missiles out of short-range missiles by deploying them nearer their targets. That is exactly what they attempted.¹²

As argued above, that they didn't succeed says nothing about their motives in making the attempt. That it was this they attempted, and not some other action, says much about their definition of the problem. That they attempted to carry it out clandestinely says much about their perception of the risks involved. That in the face of those risks they even attempted it says much about the importance they attached to solving that problem.

January 1963

There are good reasons to take stock of the objective situation once again, even though only a year had passed. First, the predicted degeneration in the Soviet position was setting in, and an appreciation of its concrete dimensions is important. Second, an additional, unpredicted degeneration in the Soviet position had also taken place, and must be outlined.

The Soviet ICBM force had increased in size during the year, although it still had not surpassed the 100 launcher mark. For the most

* As intimated above, in that situation, a threat to Western Europe did not provide sufficient leverage.

part, it was made up of SS-7s, deployed at soft or at best lightly-protected sites. Silo construction was, however, underway, as was the development of new generations of improved--more viable, more potent--missile systems.¹³

The U.S. ICBM force had grown by some 163 launchers during the same period and now totaled 224. The rate of increase is best captured, however, by expanding the period of examination somewhat. Table 1 below compares the force in 1963 with what it had been in 1961 and what it would be in 1965.

TABLE 1

U.S. ICBM FORCE

	<u>1961</u>	<u>1963</u>	<u>1965</u>
ATLAS	12	142	118
TITAN		62	115
MINUTEMAN		<u>20</u>	<u>698</u>
TOTAL	12	224	931

Over that same period, the Soviet ICBM force grew from under 10--probably zero--to somewhat over 200 launchers.

The threat to the unprotected portion of the Soviet ICBM force--still the vast majority of its launchers--was growing even larger, however. Table 2 below adds the SLBM launchers then being deployed.

TABLE 2

U.S. MISSILE FORCE*

	<u>1961</u>	<u>1963</u>	<u>1965</u>
ICBM	12	224	931
POLARIS	<u>48</u>	<u>144</u>	<u>464</u>
TOTAL	60	368	1395

Figure 1 summarizes all these comparisons and makes it abundantly clear that strategic imbalance was and would for a significant period remain the predominant feature of the situation.

Figure 2 depicts the evolution of the Soviet SLBM force¹⁴ and Figure 3 the principal components of the U.S. anti-submarine warfare (ASW) force.¹⁵ Together they represent the setting in which the second, unpredicted**, degeneration in the Soviet position unfolded. It also took the form of an imbalance, this time between the capabilities of Soviet submarines and the ASW capabilities of the United States (and its NATO allies).

This imbalance was revealed starkly in the course of the Cuban Missile Crisis. The Soviets sent a contingent of diesel-powered attack submarines to escort the merchant ships that became the focal point of

* Peripheral IRBM/MRBM systems were being withdrawn and are omitted.

** This is an unfounded assertion, introduced for rhetorical purposes. Actually, as will be argued, whether it was predicted was less important than the fact that its existence was openly demonstrated.

the crisis. U.S. ASW forces detected, localized, and "surfaced"* each of those submarines.¹⁶

This was not a great moment in history. It did, however, have momentous implications for the efficacy of then current and prospective Soviet strategic strike-back capabilities.

The Soviet SLBM force at that point consisted of SS-N-4 SRBMs, deployed in Z-V and G-I class diesel-powered submarines (roughly 30 platforms, mounting a total of some 80 launchers) and in H-I class nuclear-powered submarines (some 8-10 units mounting three launchers each). Given the short range of those missiles, in order to strike targets in the United States these submarines not only had to accomplish essentially what the submarines injected into the Cuban Crisis had attempted--cross the ocean and penetrate U.S. ASW defenses--they had to accomplish more. Since the SS-N-4 could not be launched while the submarine was under water, they had to surface to fire.

The likelihood of their being able to accomplish such a mission may or may not have been assessed as reasonable before the Missile Crisis. Afterward, it could not have been.

* This does not necessarily imply the use of force. Diesel-powered submarines employ batteries as a power source when submerged. Their underwater endurance is consequently finite. "Surfacing" one involves tracking it while submerged until it exhausts its batteries and must come to the surface to start its diesel engines and recharge them.

CLASS	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
Z-V (2xSS-N-4)																											
G-I (3xSS-N-4)																											
G-II (3xSS-N-5)																											
H-I (3xSS-N-4)																											
H-II (3xSS-N-5)																											
Y (16xSS-N-6)																											
D-I (12xSS-N-8)																											
D-II (16xSS-N-8)																											
D-III (16xSS-N-18)																											

*Conversion

FIG. 2: SOVIET SSB/SSBN DELIVERIES

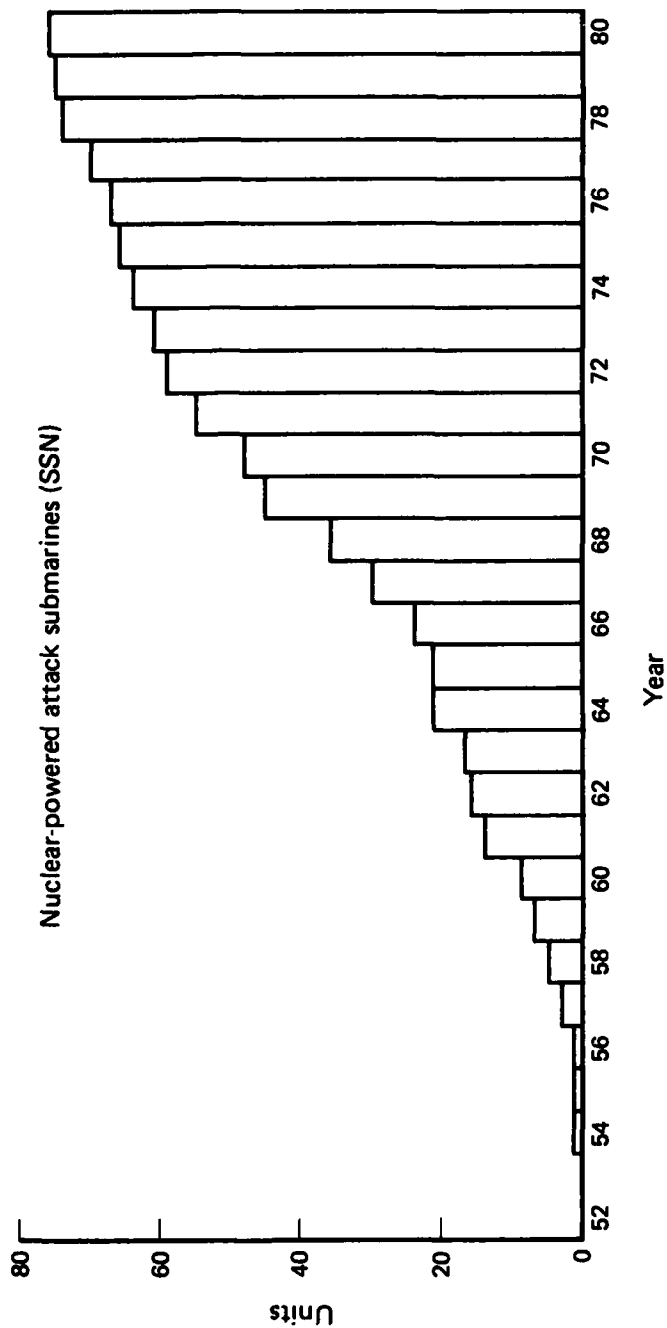
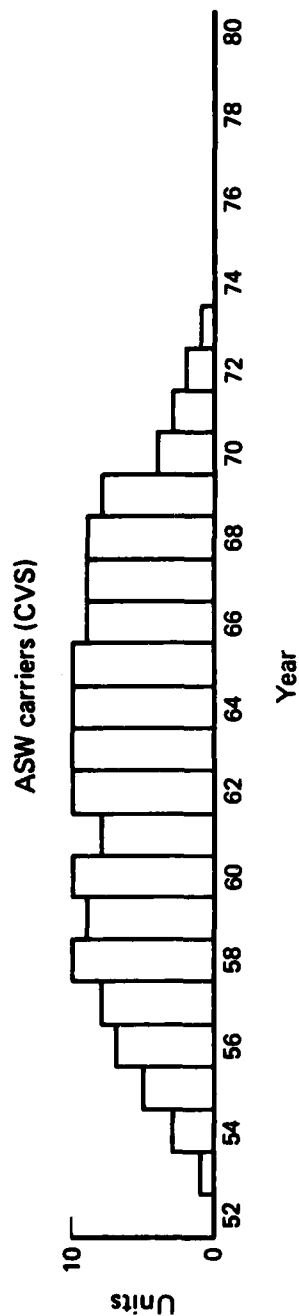


FIG. 3: THE OPPOSITION TO THE SOVIET SLBM FORCE

In essence, then, in January of 1963 the Soviet strategic deterrent consisted of a land-based intercontinental-range missile and bomber force that was vulnerable to preemptive strike by U.S. missile forces, and an SLBM force that could be prevented from striking the American continent by U.S. ASW forces. Objectively, and measured by any reasonable standard, the Soviets' military-political situation was less than satisfactory: they had a problem!

THE SOVIETS' PROBLEM

Thus far, the discussion has concentrated on description of the essential features of the objective situation--argued previously to be the common antecedent of both Soviet behavior and success in the attempt to explain that behavior. As the discussion now moves from description to explanation, its basis shifts from the facts of that situation to its logic.

As indicated, the Soviets had a problem! Their strategic offensive forces were comparatively small and of questionable effectiveness.

They were faced by a much larger--and still growing--U.S. strategic offensive force. In contrast to their own, this force was already capable of carrying out its destructive mission with assurance. Moreover, there was no short run prospect of their being able to develop an effective defense against U.S. missiles--perhaps not in the long run either. In many respects, the same held true for the development of a

capability to suppress the sea-based portion of the U.S. missile force. The requisite technology was not at hand. It would have to be developed, as would the means of bringing it to bear--platforms, sensors, weapons--and that would take time.

Their only viable alternative to an obviously inadequate defense was an apparently improved offense. If they were to develop and deploy a strategic offensive force of such size, based in such a manner, that it presumably could not be disarmed by a U.S. missile attack, it could serve as a deterrent counterweight to such an attack. They could then accomplish by military-political means what could not at the time be accomplished by strictly military means: protect the Soviet Union.

Here again, time was an important variable. Their existing land-based forces were vulnerable. Providing adequate protection (hardening) or defense (ABM) for fixed-base systems would take time, perhaps a long time. Developing alternate basing modes--land mobility, for instance--would also take time, perhaps even longer.

Their existing sea-based forces were also vulnerable. But the threat posed to these systems was far easier to deal with. Submarines, due to their mobility and invisibility, were in principle immune to strategic missile attack. The primary threat to the Soviets' SLBM force was posed by Western ASW forces--in particular, the hunter-killer carrier task groups the United States had developed and deployed for

that purpose in both the Atlantic and Pacific.* The Soviets could deal with ASW carriers in the same manner and with the same means they planned to employ against attack carriers: submarine- and air-launched cruise missile attacks. And surface combatant escorts could deal with any other Western general purpose ASW forces--land-based air or submarine--their SLBM forces might encounter on the way from their bases to the open ocean.

This is not to imply that the problem of providing direct defense to SLBM forces was easy. It was not! It was, nevertheless, orders of magnitude easier than providing ICBMs effective protection and defense against strategic missile attacks--and it could be done in the short run.

THE SOVIETS' SOLUTION TO THEIR PROBLEM

The ultimate origins of many of the steps the Soviets took to "rectify" the situation--to restore strategic balance--probably lie in the 1950s. To the extent that is the case it provides evidence only of Soviet perspicacity. It does not invalidate what has been said above about the objective situation or the problem it posed to the Soviet

* It was widely-understood in the early 1960s, and confirmed in then Secretary of Defense McNamara's initial posture statements, that strategic ASW was a priority U.S. defense task and that those hunter-killer groups played a significant role in that mission. In the second half of the 1960s, that mission, and the ASW carriers, began to disappear. By the mid-1970s, they were gone.

Union. In the same vein, many of the steps the Soviets took after 1962-63 probably would have been taken anyway--perhaps when they were, perhaps later. To the extent that is the case, neither the Kennedy Administration's initiatives nor the Cuban Missile Crisis that they precipitated is necessary to the explanation of those Soviet steps. But some of the things that occurred not long after 1962-63 probably had their origins in that period. And some of those things would be difficult to explain without the events of that period as antecedents.

Certainly, expansion and improvement of the Soviet ICBM force would have occurred in any event, and was under way before the Kennedy Administration took office. Whether it would have assumed its eventual dimensions, when it did, is the proper subject of a different investigation.

The expansion and improvement of the Soviet SLBM force, on the other hand, and the evolution of other components of the Soviet Navy, appear to have been affected significantly by the actions initiated by the Kennedy Administration. The remainder of this discussion is devoted to an attempt to explain how.

Their Approach

The Soviets set out to solve their problem in a variety of ways, employing a variety of means. It was a national problem. It called

for, and received, a combined arms solution--in which naval forces played a major role.

There were at least two reasons for this. A multiplicity of approaches increased the likelihood of achieving a solution that would be satisfactory and was sufficiently robust to remain so. Variety was hence desirable. Time pressure also made a multiplicity of approaches necessary: something had to be done quickly, but that which could be done quickly might not in the end prove sufficient.

The Soviets consequently undertook a number of simultaneous and sequential steps.¹⁷ Some involved land-based systems, others involved sea-based systems. Some could be implemented rapidly, others could be undertaken rapidly but would take a long time to complete, still others could not be initiated until later--after preliminary steps had been completed. Some are still in the process of implementation.

The expansion and improvement of their ICBM force is one of the steps they took, but it is not germane to the remainder of the discussion and will be ignored--except to point out that, as Figure 1 makes clear, it was one of those programs that would take a long time to complete.

Improvement in the SLBM Force

The multiple, incremental approach they adopted is most evident in the efforts the Soviets undertook to enhance the efficacy of their SLBM

force. Here, they initiated a sequence of three steps, each of which promised to make a larger contribution to the solution of their overall problem.

The first of these steps involved their existing SLBM forces and had two parts, both aimed at enhancing the viability of those forces. One of the things they did was to begin to modify the inherently more capable units of the force--the long-range, diesel-powered G and nuclear-powered H classes--to carry a longer-ranged missile that could be launched from underwater: the SS-N-5 MRBM. Figure 2 depicts this conversion process. It began in 1963. Nuclear-powered launch platforms had greater inherent promise, so the H class were the first to be converted. While that was going on, the roughly 30 units of the SS-N-4 equipped G and Z-V classes bore an especially heavy responsibility. They--along with those H-I class units that had not yet begun the conversion process, or H-II class units that had completed it--were the only elements in the entire Soviet strategic offensive force that could not be subjected to strategic missile attack. As outlined above, they were, however, vulnerable to Western ASW forces. This is where the second thing the Soviets did to enhance the viability of their existing SLBM forces falls into place: they "created"* general purpose forces that could be used to provide direct combat support to those SLBM submarines--i.e. suppress Western ASW defenses they might encounter

* The use of this verb will become clear below.

en route from their bases to their open ocean launch points. More must be said about this action, and will be below, but there was continuity in what the Soviets were doing and it is important that it be maintained in the discussion. Suffice it for the moment to note an apparent coincidence. The first element of this new force was "created" in 1963-64; and SLBM submarines--in all probability SS-N-5 equipped H-II class units--began patrol operations in the Atlantic in 1964.¹⁸

The second of the three naval steps the Soviets took toward the solution of their overall problem was the introduction of a new generation of much more capable SSBN/SLBM systems. Given the lead times required to develop new systems, the development programs that produced these systems probably originated in the late 50s. It is not unreasonable to assume, however, that the priority attached to their completion was heightened significantly in 1962-63. These new systems came packaged together: an improved launch platform (the Yankee class SSBN) and an improved missile (the SS-N-6 IRBM). Subsequently, the missile component of that package was upgraded twice. The first upgrade was the ICBM-ranged SS-N-8, the second was the MIRV-equipped SS-N-18 ICBM. Each time, the configuration of the launch platform was altered to accommodate the new missile, resulting in the D-I and II (carrying the SS-N-8) and D-III classes (carrying the SS-N-18). These submarine programs are depicted in Figure 2.

Those new systems promised to be more efficient (each of these new submarines carried 12-16 missiles, their predecessors carried only 2-3

each). They also promised to be more effective. If nowhere else, their improved effectiveness is manifest in the increased stand-off ranges of their missiles. Table 3 lists these ranges (with the SS-N-4 and SS-N-5 included for purposes of comparison).¹⁹

TABLE 3

SOVIET SLBM RANGES

SS-N-4	350 N.MI.
SS-N-5	600 N.MI.
SS-N-6	1300 N.MI.
SS-N-8	4300 N.MI.
SS-N-18	4500 N.MI.

There is more to be said about the importance of increased SLBM range, but--again--it must be delayed for a last brief moment in order to preserve continuity.

The last of the three naval steps they took toward the solution of their overall problem was the development of yet another, third generation SSBN/SLBM system: the Typhoon. This is being introduced now, and while its characteristics may not be well known, it clearly represents a radical departure.

If only because it does represent a radical departure, it is reasonable to assume that it has been a long time in gestation--probably the better part of the period under review here. It is also reasonable

to assume that, in contrast to the first two steps outlined above, which in one way or another represented interim measures, the development and deployment of the Typhoon represents the Soviet's optimum naval solution--20 years later--to the problems they faced beginning in the early 1960s.

Large Antisubmarine Ships (BPKs)

It was noted above that in 1963-64, the Soviets "created" a general purpose force that could provide direct combat support to SLBM submarines. That is a conclusion, not an observation.

Two observations underlie that conclusion. First, the situation called for such a move: the Soviet SLBM force had just been shown to be vulnerable to Western ASW capabilities.* Second, and in the end far more telling, what the Soviets actually did in 1963-64 was to create--by the stroke of a pen--a new ship type that could help defend their SLBM submarines against Western ASW forces: the large anti-submarine ship (BPK). Figure 4 traces the evolution of this gambit.²⁰

One of the most striking features of the early population of this type, the Kashin and Kresta I classes in particular, was their gross

* The F-class diesel powered-torpedo attack submarine, which was involved in the Cuban crisis, and the G-class diesel-powered ballistic missile submarine, which was for the next few years to be the main system the Soviets could rely on as a sea-based deterrent, represented the same level of technology. They could even have been the same basic submarine, differently equipped.

unsuitability for ASW. They lacked the appropriate sensors and weapons. The Kashin's main strength lay in anti-air warfare (AAW), those of the Kresta I in anti-surface warfare (ASUW) and AAW. Moreover, it appears that the Kashin was reclassified after the lead unit had already entered service as a destroyer.

In any event, while the BPKs of subsequent classes possessed improved ASW sensors and weapons, and hence could with greater legitimacy be called antisubmarine ships, the kind of ASW any of the ships in this category could conduct effectively remained sharply limited. They were adequately equipped for barrier and screening tasks,* and to prosecute contacts. They were ill-equipped for search tasks.**²²

ASW barriers and screens would contribute significantly to the viability--in Soviet terms "combat stability"--of their SLBM force. Units that could screen Soviet from opposing submarines, and at the

* In which opposing submarines would approach them.

** In which they would have to approach opposing submarines--which, if nuclear-powered, and intent on evading contact, could simply run away (faster than they could follow).

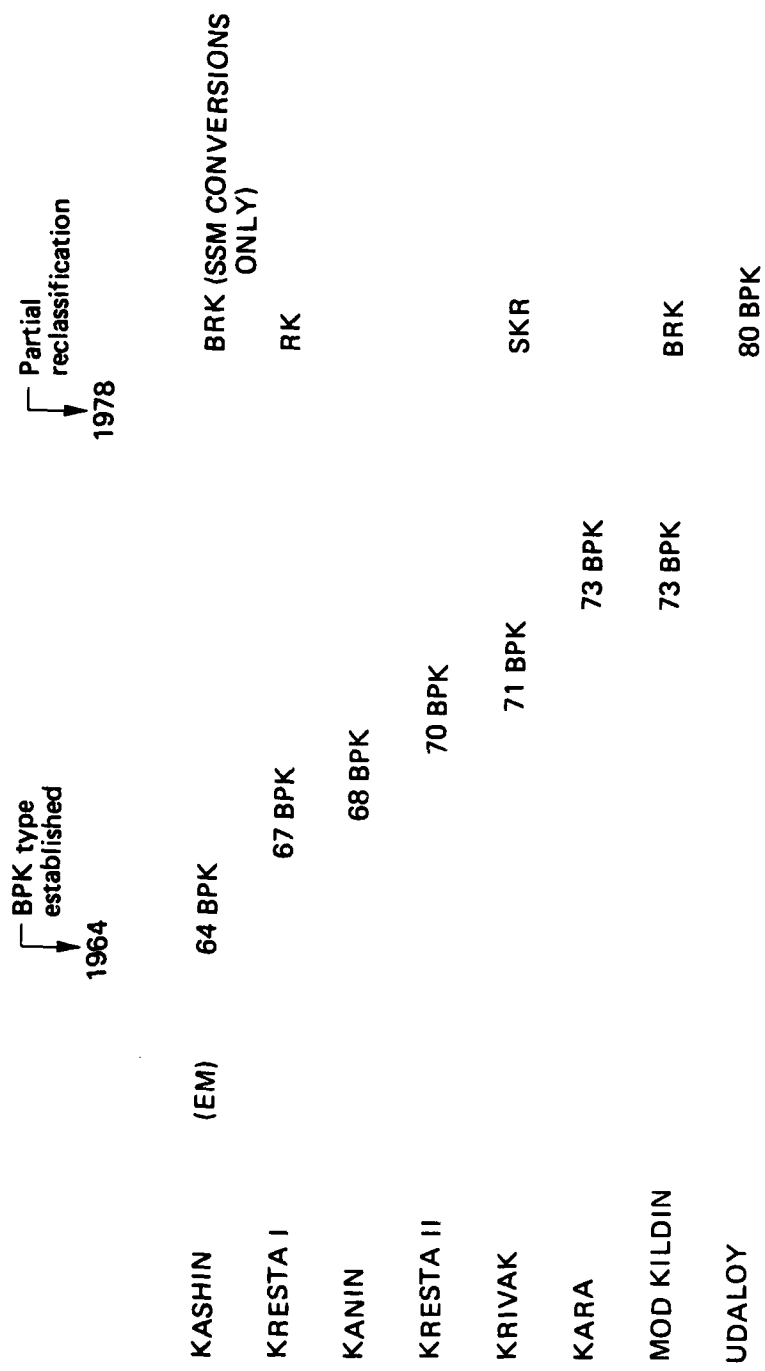


FIG. 4: LARGE ANTISUBMARINE SHIPS (BPK)

same time provide for their own AAW and ASUW defenses, would be especially valuable in such a combat support role. That is precisely what the BPKs could do.

It has been widely concluded--reasoning from other premises* --that the BPKs were intended to do something entirely different: carry out damage limiting search and destroy tasks against Western SLBM forces.²³ That is precisely what the BPKs could not do.

Increasing Missile Range

Figure 3 depicts the evolution of the principal U.S. ASW "threat" to the Soviet SLBM force in the 1960s and 70s. Throughout the period of the development of the Yankee class--the early and mid 1960s--its principal potential opponent was the force that had put its predecessors' efficacy in question: the hunter-killer carrier task group. By the time the Yankee began operational patrols in 1969,²⁴ however, ASW carriers had begun to be phased out of the U.S. inventory. They were being replaced by SSNs (and vastly-improved land-based ASW aircraft, supported by remote sensing systems).²⁵

The SS-N-6 IRBM carried by the Yankee had twice the range of the SS-N-5 MRBM carried by its predecessors. That increase in range not

* The threat posed to the Soviet Union by Western SLBM forces and the inherent desirability of suppressing it at its source.

only permitted the Yankee to launch at a greater stand off distance from its targets, it vastly increased the area within which it could maneuver to avoid detection and prosecution. Since those hunter-killer groups could be expected to operate primarily in the approaches to the American continent, the SS-N-6 made it possible for the Yankee to evade them. The SS-N-6 did not, however, have the range required to enable the Yankee to avoid the SSNs. The latter represented the cutting edge of the U.S. defense in depth of NATO's trans-Atlantic sea lines of communication against the Soviet submarine force, and they could be expected to operate far forward.²⁶

The only way the Soviets could insure that their SLBM forces could avoid encountering western SSNs was to give their missiles sufficient stand-off range to permit them to be launched from, or at least near, Soviet home waters. BPKs and other general purpose forces could then be interposed to provide them direct combat support--guarantee their combat stability. Development and deployment of the SS-N-8 ICBM made this feasible.

In this regard, there is a second apparent coincidence that should be noted. SS-N-8 equipped D-I class units began operational patrols in 1974; and it was not until then, 1974, that the Soviets claimed an "assured destruction" capability against the United States.²⁷

CONCLUSION

When viewed in proper perspective, many of the actions taken by the Soviets in the two decades under review here not only follow one another, they follow from the situation. In so doing, they reveal significant information about Soviet intentions and how those intentions tend to be implemented. They also reveal the extent to which many Soviet actions are taken in anticipation of, if not response to, U.S. actions.

There is interaction and it can be identified--if one looks in the right place, at the right time, with the right instruments.

NOTES

1. Then Secretary of Defense McNamara has recently provided a thought-provoking assessment of the origins, extent, and consequences of that imbalance. See: Robert Scheer, "Interview With McNamara: Fear of a U.S. First Strike Seen as Cause of Arms Race", Los Angeles Times, 8 April 1982.
2. A vast literature, employing powerful techniques in the analysis of such surrogate data, has evolved. For a recent illustration concluding as have many such studies that strategic weapon systems are acquired as a result of internal pressures rather than external factors, see: Jacek Kugler and A.F.K. Organski, with Daniel J. Fox, "Deterrence and the Arms Race: The Impotence of Power," International Security 4-4 (Spring 1980), pp. 105-131.
3. Two points are worth noting here. First, the article just cited assumes that one country's reaction to the actions of another will be evident in expenditures within a maximum of five years--an interval its authors consider "generous". Second, informed observers of U.S. and Soviet practice tend to treat a five year response time as a minimum. One Soviet study, for example, addressing the question of changing expenditures on weapon systems over time, indicates that: R&D expenditures, which tend to account for roughly a quarter of total system costs and to be incurred in the initial six years after an acquisition decision is taken, are concentrated (80%) in years 3-5; production expenditures, which tend to account for roughly a fifth of total system costs and are not incurred until the fourth year after an acquisition decision is taken, are concentrated (75%) in years 6-7; operational expenditures, which tend to account for more than half of total system costs, are not incurred at all until the fifth year of a program, reach their peak in its eighth year, and continue through its fourteenth (see: Engineer MGen P. Sigov and Engineer Lt. Col. V. Lysov, "Economics and Operations," Tekhnika i. Vooruzheniye [Equipment and Armaments], no. 9, 1973, pp 30-32).
4. See, for example, the extended discussion of this subject that appeared in the U.S. Naval Institute Proceedings (hereafter USNIP) in 1978-1981. The four principal contributions to this discussion were: Cdr. Richard T. Ackley, USN (RET), "The Wartime Role of Soviet SSBNs," USNIP 104-6 (June 1978), pp 34-42; LCdr. Carl H. Clawson, Jr., USN (RET), "The Wartime Role of Soviet SSBNs--Round Two," USNIP 106-3 (March 1980) pp 64-71; Berend D. Bruins, "The Wartime Role of Soviet SSBNs--Round Three," USNIP 106-7 (July 1980) pp 102-104; and Andrew W. Hull, "Action-Reaction," USNIP 107-2 (February 1981), pp 40-45.

5. The discussion just cited focused primarily on the Yankee class SSBN--which looked like, but was not being employed like, the U.S. Polaris/Poseidon FBM system. A number of the analysts participating or represented in the discussion, faced with the apparent Soviet unwillingness (or inability) to employ the Yankee in the same manner as the Polaris/Poseidon, concluded from that fact that the Yankee had not been acquired to perform the same strategic deterrent function as Polaris/Poseidon, and cast about for other functions it could perform. Some attributed an intra-theater rather than an inter-continental mission to the Yankee; some saw its mission as war-fighting (primarily for damage-limitation purposes) rather than deterrence.
6. In the discussion cited above, one analyst concluded--tongue in cheek one might think after reflecting on the statement's implications, but actually in apparent seriousness, since evidence is adduced to support the contention--"the Soviets do not inevitably mimic U.S. strategic weapons developments."
7. An excellent summary of the Kennedy Administration's programs is to be found in: Desmond Ball, Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration, Berkeley: University of California Press, 1980. See also: LCDR Robert J. Massey, USN, "The First Hundred Days of the New Frontier," USNIP 87-8 (August 1961), pp., 27-39.
8. The information presented in Figure 1 was assembled from three sources. Data on Soviet ICBMs was extracted from successive issues of The Military Balance, published annually by the International Institute of Strategic Studies (hereafter IISS). Data on U.S. ICBMs was extracted from: Norman Polmar, (ed.) Strategic Air Command: People, Aircraft, and Missiles, Annapolis, MD: Nautical and Aviation Publishing Company of America, Inc, 1979. Data on U.S. SLBMs (extrapolated from the dates of SSBN commissionings) was extracted from successive issues of Jane's Fighting Ships. The three resulting data series are not strictly comparable temporally (IISS totals tend to be as of mid-year; Polmar's totals are as of the end of the calendar year, the information compiled from Jane's is exact).
9. Ball, op. cit. pp. 53-58, presents a good succinct history of early Soviet ICBM programs. For more detailed descriptions, see: Edgar M. Bottome, The Missile Gap: A Study in the Formulation of Military and Political Policy, Rutherford: Fairleigh Dickinson University Press, 1971; Albert Wohlstetter, Legends of the Strategic Arms Race, Washington, D.C.: U.S. Strategic Institute, USSI Report 75-1, 1975; and John Prados, The Soviet Estimate: U.S. Intelligence Analysis and Russian Military Strength, New York: The Dial Press, 1982. The Wohlstetter, Ball and Prados accounts are based on declassified U.S. intelligence estimates.

10. Michael McGwire has published a number of extraordinarily detailed descriptions of Soviet shipbuilding programs. The following three of his articles chronicle submarine construction from the 1950s through the mid-1970s: "The Structure of the Soviet Navy," in: McGwire (ed.), Soviet Naval Developments: Capability and Context, New York: Praeger, 1973, pp. 151-162; "Current Soviet Warship Construction and Naval Weapons Development," in: McGwire, Booth and McDonnell (eds.), Soviet Naval Policy: Objectives and Constraints, New York: Praeger, 1975, pp. 424-451; and "Soviet Naval Programs," in: McGwire and McDonnell (eds.), Soviet Naval Influence: Domestic and Foreign Dimensions, New York: Praeger, 1977, pp. 337-363.
11. For a useful history of the Soviet air and air defense forces, see: Robert P. Berman; Soviet Air Power in Transition, Washington, The Brookings Institute, Studies in Defense Policy No. 18, 1978
12. There is, of course, a vast literature on the Cuban Missile Crisis. One of the earliest studies of the subject remains, however, one of the best: Arnold L. Horelick, The Cuban Missile Crisis: An Analysis of Soviet Calculations and Behavior, "World Politics" 16-3 (April 1964), pp. 363-389. Probably the best of the later studies of the crisis is: Alexander L. George, "The Cuban Missile Crisis, 1962" in: George, Hall and Simons (eds.), The Limits of Coercive Diplomacy, Boston: Little, Brown and Co., 1971, pp. 86-143.
13. See note 9 above.
14. The information presented in figure 2 was extracted from: Juergen Rohwer, "Eine neue Runde im Wettlauf der seebasierten strategischen Waffen systeme: Trident und Typhoon (A New Round in the Sea-based Strategic Weapon System Race: Trident and Typhoon), Marine Rundschau [Stuttgart], 79-1 (January 1982) pp. 2-11.
15. The information presented in Figure 3 was compiled from successive editions of Jane's Fighting Ships.
16. George, op.cit., pp. 112-114; Prados, op.cit., pp. 144, 145.
17. Michael McGwire has discussed in some detail the Soviets' incremental approach to the application of new technology --analogous to what is being suggested here. See his "Soviet Naval Procurement," in: The Soviet Union in Europe and the Near East: Her Capabilities and Intentions, London: Royal United Service Institution, 1970, pp. 74-87 (especially pp. 77 and 82-85).

18. Consistency, even among official sources, is rare where initial operational deployment dates are concerned. 1964 is accepted widely in the literature. It is employed here partially because of that acceptance, and partially because the implied one year lag between establishment of initial operational capability (IOC) of platform and missile and the lead units' initial operational deployment makes intuitive sense (it should take time to complete tests, remove instrumentation, install operational equipment, train in its use, etc.). Initial operational deployment dates for the Yankee and Delta are given without qualification below on the same basis: general acceptance in the literature and an estimated one year lag between IOC and actual operation. Those dates are in agreement with some official sources, and in disagreement with others--most of which (incorrectly) equate establishment of system IOC with first real use. The IOC dates employed here for the SS-N-5-6 and -8 were extracted from the FY 1976 "Posture Statement" of the Chairman of the Joint Chiefs of Staff (relevant portions of which form Appendix A in: Norman Polmar, Strategic Weapons: An Introduction, New York: Crane, Russak and Co., Inc., 1975.)
19. The information presented in Table 3 was extracted from the 1980-81 and 1981-82 editions of The Military Balance.
20. The information presented in Figure 4 was (with one exception) extracted from: Arthur D. Baker III, "Soviet Ship Types." USNIP 106-11 (November 1980, pp. 111-117. The exception concerns the MOD KILDIN conversion program, which is described in: CAPT John E. Moore RN (RET), The Soviet Navy Today, London: MacDonald and Jane's, 1975, p. 112.
21. Baker, op.cit., p. 114
22. For a detailed description and evaluation of the capabilities of Soviet combatants, see: Ulrich Schultz-Torge, Die sowjetische Kriegsmarine, (The Soviet Navy) Bonn: Wehr R. Wissen, 1976, 2 vols. See also the many analyses of Soviet naval capabilities contributed to Marine Rundschau (Stuttgart) by Siegfried Breyer.
23. Michael McGwire has been a major proponent of this interpretation.
24. See note 18. IOC for the Yankee/SS-N-6 combination was 1968.
25. For a useful analysis of Soviet view's on these capabilities, see: Robert W. Herrick et. al., Soviet Perceptions of U.S. Antisubmarine Warfare Capabilities, Arlington, VA, Ketron Inc., KFR 293-80, September 1980, 3 vols.
26. For a more extensive discussion of the inherent problems the Soviets face in this regard, see: Robert G. Weinland, Northern

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27. See note 18. IOC for the Delta/SS-N-8 combination was 1973. The MAD claim was enunciated by General Secretary Brezhnev. See FBIS, Daily Report: Soviet Union, III-141 (22 July 1974).

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