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THE STRIKE CRUISER: A CONCEPTUAL DISCUSSION

by

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The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract of

THE STRIKE CRUISER:

A CONCEPTUAL DISCUSSION

A discussion of the concept of the Strike Cruiser from an historical and strategic viewpoint. The paper is an effort to place the contemporary challenges facing the Navy in historical perspective and to discuss the Strike Cruiser concept as a means to meet future challenges. A conceptual approach to the Strike Cruiser is utilized rather than a discussion of specific design parameters and weapons system capabilities. It concludes that the Strike Cruiser will be a formidable total weapons system and a desirable asset to pursue the goals of national policy in the future.

TABLE OF CONTENTS

THE STRIKE CRUISER:
A CONCEPTUAL DISCUSSION

CHAPTER I

INTRODUCTION

Purpose. The purpose of this paper is to discuss the concept of the Nuclear Strike Cruiser (CSGN). The approach taken is primarily one of an historical analysis of trends in naval power and fleet composition rather than a technical discussion of the potential effectiveness of the weapon system in a particular scenario. My initial intention was the latter, but as my reading and research progressed I became increasingly fascinated with the concept per se: what has led us to this concept and its validity. Much work has and is being done in the area of solving the tactical employment problems of the new systems to be included in the CSGN--HARPOON, AEGIS and the Surface-Launched Cruise Missile (SLCM). Although there is much work yet to be done in this difficult area, it is certainly beyond the scope of this paper.

We in the naval service often suffer from a common human failing--becoming over-engrossed with current specifics rather than pursuing the genesis of an issue. It is my intention to discuss the challenges, cause and effect, that the U.S. Navy has faced in building and maintaining a capable fleet from the post-World War I era through the present. I believe this serves a useful purpose in placing our present situation in the proper

perspective.. Following the historical discussion, I will introduce some basic strategic and tactical concepts that heavily influence the design of naval combatants and the composition of major navies.

Following a discussion of the future trends and challenges facing the U.S. Navy, the Strike Cruiser will be introduced. As previously stated, the discussion will not deal with specific weapons system parameters and capabilities, but rather the CSGN as a conceptual, integrated weapons system. While at this writing a final ship design has not yet been made available within general naval circles, the result should closely approximate that discussed in the press and other unclassified sources.

The paper will conclude with an opinion as to whether the Strike Cruiser is the most appropriate course of action to meet the challenges of the future.

CHAPTER II

HISTORY AND EVOLUTION

As It Was, It Is Now. To those engaged in any ongoing pursuit there is a tempting inclination to consider what has occurred prior to our arrival and what will occur after our departure as somehow less meaningful than that which we view through our contemporary keyhole. The humiliating fact often is that the principle factors contributing to the contemporary situation vary little, if any, from those of the past. A comparison of the U.S. Navy in the post-World War I era and the present vividly demonstrates this.

In the years that followed World War I, the U.S. Navy found itself increasingly hard put to support the national interest in the Orient and Western Pacific. Three principle issues contributed to this situation:

1. The airplane had created a new dimension in warfare--a dimension that required reappraisal of traditional concepts and functions.

2. Public disenchantment with things military and tight budget policies by successive Republican administrations were translated into lean years and limited spending for the fleet and its support structure. Therefore, maximum fighting potential had to be derived from every dollar spent.

3. The tasks with which the fleet was charged was believed by Navy planners to be beyond its capabilities. This unhappy

fact was the outgrowth of political bargaining at the international level. It could not, therefore, be opposed--it could only be endured.[1]

It was accepted that the days of fat military spending were over, that lean years lay ahead. Consequently, any outlays for new weapons systems would necessarily cut into funds earmarked for established elements of the fleet. The battleship, representing the largest such element, could not but suffer as a result--and the "battleship admirals" controlled the Navy.

On 25 January 1921, Senator William E. Borah rose in the Senate to offer a resolution that asked the House Naval Affairs Committee to furnish its opinion as to the practicality of suspending all naval construction for six months in order to determine "what constitutes a modern fighting Navy." The resolution went on to ask for a report ". . .relative to the probable value of surface ships in future naval warfare."[2]

The Emergence of Naval Aviation. In 1922 the strategic situation of the United States in the Pacific had eroded to the point where it could not be corrected by conventional measures. No remedy short of a revolutionary advance in weaponry and tactical concepts would suffice. Admiral William S. Sims, an innovative and advanced thinker, was the leading spokesman for a group who saw the aircraft carrier as the agent that would revolutionize warfare at sea.[3] However, vision was one thing; feasibility as dictated by the realities of the moment was something else.

As stated above, the "battleship admirals" controlled the Navy. They remained convinced that the gun was the "sine qua non" of the fleet; however, they also realized that its effectiveness could only be measured in terms of hitting power. Any arrangement that significantly increased the number of hits would certainly spell disaster for a fleet not so equipped. This was the essence of acceptance by the "gunners" of the principle of aerial spot, which had far-reaching implications. Victory was hinged on the hitting power of guns; and hitting power, in turn, was hinged on aerial spot. It then became imperative that no hostile aircraft be permitted to interfere with the spotting process. What was involved, then, was nothing less than command of the air--local air superiority.

Perhaps even more important than the acceptance of aerial spot was the impact of the Washington Naval Treaty of 1921. This treaty limited the total tonnage of battleships, and more significantly, forbade further fortification of the United States' island possessions of the Philippines, Guam and the Aleutians. While the treaty applied equally to the Japanese island possessions that sat astride our Western Pacific sea lines of communications, there was little hope that the Japanese would abide by the treaty.[4] The Navy soon viewed a form of fleet aviation centered around the carrier concept as a way around the Washington Treaty, and thereby a method of underwriting United States policy in the Far East.

The lengthy and evolutionary process of the rise of carrier-based aviation was thus begun, ultimately building to and through World War II. The achievements of carrier airpower during World War II are legend. In fact, so much so that the carrier aviation concept remains as the primary ingredient in any discussion of power projection or strike warfare today.

The Post-World War II Period. There have been great revolutions in naval weapons in the past, but that which has come in the years since 1945 dwarfs all others, in that it has affected the very functions of naval power as well as the means of carrying them out. I refer to nuclear weapons, nuclear propulsion and guided missiles.

In 1957, there was an upturn of construction in the fleet strike warfare mission area. The change in the construction pattern can be explained by the use made of the increased capabilities of the Forrestal-class carriers over their predecessors. The Forrestals were the first carriers to be equipped with heavy attack squadrons (A-3Ds) which were capable of taking on a role in the strategic exchange between the United States and the Soviet Union. The increased importance of the carrier force as a result of this new role indicates that they would become a target for Soviet efforts to prevent the launching of a nuclear strike. Thus the need for the fleet escort to provide a screen against air and surface attack while the FRAM and CVS conversions provided an ASW defense for the strike force against Soviet submarine attack. The increase in submarine construction may be

explained chiefly as an ASW measure. Both conventional and nuclear submarines were designed with emphasis on an extensive ASW capability.

That the role of the fleet strike forces, and thus of the entire construction program, was not entirely clear may be seen from the fact that the period also saw the construction of two SSGs and one SSGN. These submarines were equipped with the Regulus surface-to-surface missile, and intended for use against an enemy fleet. Yet, the Soviet fleet consisted primarily of submarines which were an unsuitable target for Regulus. The eventual understanding of this contributed to the phasing out of the missile.

The effect of the new large carriers was to solidify the Navy's self-image in terms of a modernized World War II fleet built around the carrier task force. Although this era saw the initiation of a limited war doctrine and the Chinese exportation of guerilla warfare tactics, the U.S. Navy kept its traditional force of ships.

1960 to the Present. During the early sixties the changes in mission capability acquisition rates may be explained in terms of a change in overall United States strategy, from a posture of reliance on nuclear weapons to an acceptance of the concept of limited warfare. The fleet strike capability procurement rate slowed since the probable tasks of carrier airpower were considerably lessened. At the same time, however, the

fleet would tend to be more likely split up into small units with the result that the need for fleet escorts was sustained or increased. The need for support capability was increased, reflecting that operations would likely be prolonged beyond a short nuclear war. There also was an increase in the need for an amphibious capability, indicating a belief in the intervention of ground forces in a limited war situation.

The initiation of United States large scale involvement in Vietnam led to increased construction of support, fleet strike and coastal forces. This was a direct response to operational requirements of the war. It is interesting to note that while the naval gunfire support mission was a major Navy role in Vietnam (and contributed to an increase in AE construction) there was no significant increase in acquisition of this capability. This is vividly demonstrated by the fact that the cruisers completed during this period had no guns at all, but rather were purely defensive AAW missile platforms. This was probably due to the rather rigid adherence to the concept of airpower as the sole striking arm of the fleet. The sixties also experienced a further emphasis on SSN construction indicating an ever-increasing response to the Soviet submarine force.

The changes in naval policy brought about by the war in Vietnam are inconsistent. Increased acquisition in some mission areas were justified by the operational requirements of the war, others were seemingly ignored, and still others were increased despite the lessons of the war, i.e., surface combatants with

no offensive power. The development of ship types has usually been governed by a number of factors, of which the most conspicuous have been technological evolution and battle experience. But the application of these factors to a ship design has always been a matter of compromise and the exercise of informed, but fallible judgment.

CHAPTER III

STRATEGIES AND NAVIES

Justification of a Navy. The justification of any military service lies in its "strategic concept" or role in implementing national policy. In considering the role of a particular service, one must describe the means by which the service can contribute to the nation's required defense output. This contribution is effected in terms of missions and force structures which can make the required contribution to various levels of conflict. A navy should therefore be structured to perform certain types of missions. The missions will be determined as a result of national policy, national policy being a response to the strategic environment.

Fleet Structure and Composition. No country has given a totally coherent account of the strategic rationale for its naval program.[1] Any government, must, however, implement its policy insofar as it must make decisions regarding the composition of its fleet. Despite demands for balanced fleets, governments are forced to be selective in their choice of which specific types of warships they will build, since in terms of cost, naval combatants are the most expensive weapons system in existence. Moreover, the long life of warships means that a single year's construction program will not result in a complete reshaping of the fleet. Rather, a country possesses a group of ships which is structured in a particular fashion, according to

past decisions. This group of ships is becoming older, and therefore, must be progressively replaced. In facing this question of replacement, the decision makers have essentially two courses of action. They may build new warships of the same type as the ones being replaced, or they may analyze their requirements as to naval capabilities and build new warships which will enhance the capability of the Navy to carry out its current and projected missions.

Despite the large number of types and sub-types of naval combatants, only a limited number of generalized missions exist for warships to execute. Warships are multi-functional, and distinctions between them arise because of variations in the mix of mission capabilities demanded to meet policy requirements. Since the process of fleet renewal is essentially a continual process, the impact of a new definition of required naval mission capabilities will be implemented in terms of a change in the construction program. This change will be incremental, rather than radical, and will result in a change in the mix of fleet mission capabilities obtained.

The freezing of a concept under which a past war was fought into a pattern for future action is always dangerous, but never more so than in naval warfare. This may eventually lead to the wrong types of vessels, aircraft and weapons, which in turn take a long time to construct, use large quantities of national resources and cannot easily be modified to correct an erroneous decision. Therefore, the lack of appreciation of the probable

effect of new weapons can neutralize the required naval role in national policy.

CHAPTER IV

A LOOK FORWARD

The Bi-Polar Power Structure. The present bi-polar political orientation of the international arena with the Soviet Union and the Communist block at one power pole, the United States and its allies at the other, and neutralist-emerging nationalist states in between, is the probable power pattern for many years to come. Although the power and alignment of satellites, secondary powers and neutrals will vary from time to time, any alteration in this pattern can be expected to be as a result of the deterioration of the power position of either the United States or the Soviet Union relative to each other.

The power structure of the allied opposition to the Communist bloc is built around the unimpeded use of the world's oceans and its dependence upon maritime activities for its sustenance and growth. It follows that the stability of allied strength is dependent upon such use. Consequently, a deterioration of the maritime capabilities of the United States and its allies would cause a proportional reduction in their influence in the world power alignment.

A further complication arises as the impact of the Chinese Communist influence increases, and the major powers bargain for the loyalties of the emerging nations. One must assume that more client states will achieve military and naval forces capable of presenting a credible threat to units of opposing major powers.

Soviet Trends. An analysis of the Soviet Navy during the past decade reveals a significant increase in warship capability, a similar increase in at-sea operations, and an increase in the use of naval forces to support political goals.[1] While the United States apparently considers war at sea highly unlikely, it is apparent that the Soviet Navy is actively preparing for such an eventuality.

That the Soviet Navy is preparing for war at sea would suggest that the Western sea sanctuary is considered by the Soviet Union to have been a major factor in the resolution of crises in past decades. The key to the Soviet's increased emphasis on the capability of surface combatants may be the Cuban Missile Crisis, wherein Soviet submarines proved themselves ill-suited to establish a presence and deter the U.S. blockade. The Soviet's current impressive naval capability is ideally suited to deter Western intervention in a third world country where a crisis has developed. The challenge of a fleet engaged in operations against land targets is a highly probable means of initiating war at sea. The extensive Soviet submarine capability is likewise ideally suited to interfere with Western maritime communications. While Soviet intentions are admittedly subject to debate and multiple interpretations, the demonstrated Soviet naval capability is much less so.

United States Trends. Unless the United States pursues an isolationist foreign policy to the point where it becomes reconciled to an invasion, it must always have the capability to

fight offensively. In the interest of national survival and for reasons of geography the fight must be taken to the oceans and beyond. Inherent in this strategy is control of the seas.

Establishment of control of the seas in the past has proven to be a large and intricate task--a task that becomes more difficult with technological advances. In the future, control of the seas must be regarded as an even more dynamic problem than in the past. Large and widespread operations will be required and the command and control functions will become increasingly important.

In a probable future war, the availability of escorts will be even more critical than in the past, and the current escort situation is unsatisfactory. Additionally, some system for the protection of trade lanes may be needed to supplement the convoy system and protect independently sailed shipping.

Democratic governments have seldom gone to war unless severely provoked or attacked. While such action is probably inherent in the democratic process, it nevertheless assures an enemy the advantage of the initiative at the start of a war. Thus, strategic planning in democratic governments such as the United States is handicapped from the start, and the resultant plans are usually of a generally defensive or reactive nature rather than directed towards specific offensive initiatives. Furthermore, force requirements to meet all possibilities of attack are necessarily large and are, in turn, magnified by continuing obsolesence. Requirements for a truly adequate

military establishment under these conditions are so large and require such a high level of sustained expenditure that democratic governments have shown great reluctance to support armed forces in concordance with their national interests. There will be a continuing need, as there was in the 1920s, to derive maximum fighting potential for every dollar spent.

CHAPTER V

THE STRIKE CRUISER

Background. Admiral James L. Holloway, III, Chief of Naval Operations, has defined the two principle functions of the Navy as sea control and power projection. In his most recent annual Posture Statement to Congress, Admiral Holloway has presented a most succinct and articulate statement of the integration of national strategy, Navy missions and functions, and the resulting requisite naval force structure.[1] This statement was the synthesis of a number of primary considerations:

1. When Admiral Holloway assumed his present position he was met by Congressional objections that the Navy was building too many defensive ships.[2]

2. The passage of Title VII of the Fiscal Year 1975 Defense Authorization Bill requires that all major warships of the strike forces be nuclear powered unless the President certifies to Congress that it is in the national interest to do otherwise.[3]

3. Congress has mandated that the Secretary of Defense submit a five-year new construction and conversion program for the Navy each fiscal year.[4]

4. On budgetary grounds, officials in the Pentagon and Congress have questioned whether the Navy will ever reach a 600-ship fleet if it insists upon allocating so much of its shipbuilding budget to expensive nuclear-powered ships.[5]

The Navy's long range shipbuilding plan has evolved into the pursuit of a balanced fleet of approximately 600 ships. The attainment of this objective is to be accomplished through a high-low mix of ships: a relatively small number of high value surface combatants with greatly increased offensive and defensive capabilities and a larger number of less sophisticated ships--primarily with an ASW mission to neutralize the Soviet submarine threat.

Since World War II, the Navy's primary offensive punch has been delivered by carrier-based tactical aircraft. Surface combatants, including large nuclear cruisers, have been primarily equipped to function in the escort role. With declining carrier force levels, the reappearance of a strong naval adversary, the same overall global commitments, and no forecast decrease in potential crisis areas, the Navy needs a balanced and effective force of surface combatants. In recognition of these requirements, the Navy has identified the need for a class of major, multi-purpose, nuclear-powered surface combatants. The Strike Cruiser has been conceptualized to fulfill this need and is the first step in attaining the high-end portion of the mix.

Ship Characteristics--As Conceptualized. The Strike Cruiser is to be a large ship intended to regain the offensive at sea. With its balanced capability it is intended to increase the United States naval capacity to destroy enemy ships and land targets in the face of an intensive enemy multi-threat environment. The CSGN is considered to be a greatly improved successor

to the "California" and "Virginia" class CLGNs and is conceptualized to have the following characteristics:[6]

Displacement: Approximately 14,000 tons, fully loaded.

Length: Approximately 600 feet overall.

Beam: Approximately 85 feet.

Missiles and Launchers: Two, twin combination SM-2/ASROC/HARPOON launchers firing standard medium range surface-to-air missiles, HARPOON surface-to-surface missiles, and ASW rockets (ASROC). Approximately six tubes for surface launched cruise missiles (SLCM). The SLCM specifics are in doubt but have generally been described in the press as a conventional warhead, subsonic missile with a range of 300-2500 miles.[7]

Guns: Two 20mm Vulcan/Phalanx CIWS and possibly an 8" or 5" light weight gun.

ASW Weapons: ASROC and two triple MK 32 torpedo tubes.

Aircraft: Two advanced LAMPS helicopters or VTOL aircraft.

Main Engines: Two geared turbines, two shafts.

Reactors: Two pressurized, water-cooled reactors.

Speed: 30+ knots.

Electronics: Probable SQS-53A Sonar and the AEGIS integrated air defense system. The significant features of the AEGIS system are remarkably short reaction times and a capability for simultaneous multiple engagements.[8]

Design: Standard displacement hull with overall size being driven primarily by the requirements of the nuclear propulsion plants and the AEGIS system. The weapons systems will probably be designed on a modular basis, allowing common cannister loading and relatively easy replacement and retrofitting of future systems.

Postulated Employment. While little information is available on the planned future employment of the Strike Cruiser, if one looks closely at the conceptual weapon and sensor suite, several alternatives become readily apparent. Although none of these roles are particularly unique to the Strike Cruiser, the magnitude of the breadth and depth of the capability in a single hull is.

The Strike Cruiser will be capable of operating: independently; as the major unit of a cruiser task force; in support of other task forces; and, even with merchant convoys. With the capability to operate "in harm's way" independently, the Strike Cruiser will be a valuable tool of national policy. Such a highly capable ship would be most appropriate for peacetime presence missions. The capability to employ an effective naval policy when dealing with third world countries is becoming increasingly desirable in order to deter opportunism prior to the emergence of an actual crisis. Once a crisis occurs, the presence of a Strike Cruiser may be preferable to a carrier task force; either to signal a less provocative intervention or to actually attack land targets with reduced risk--both in terms of value of units and without the political consequences of lost pilots.

As the major unit of a cruiser task force, the Strike Cruiser could perform the above missions and more. By adding additional surface combatants, direct support nuclear submarines and

possibly a V/STOL support ship, the task force could do a credible job of effecting local air, surface and subsurface superiority. With the reduced number of aircraft carriers to accomplish this task, the cruiser task force becomes an attractive alternative.

One or more Strike Cruisers operating with a carrier task force would augment and complement the offensive and defensive capabilities of the force. The advantages to be realized by such an employment include: increased difficulty for the enemy to effect a saturation attack; relieving the carrier of force defensive responsibilities; adding to the offensive punch of the force and contributing to the survivability of the force in a threat intensive environment.

The Strike Cruiser would assume a more defensive role when operating with amphibious or logistic task forces. The role would be one of providing anti-air and anti-surface missile defense. The Strike Cruiser would also have the capability, once in the amphibious operating area, of striking land targets and providing tactical air defense for the amphibious task force. In the convoy escort role the Strike Cruiser would again assume a defensive posture and become a deterrent to adventurism by enemy units.

At this point in time, the concept of the SLCM appears to be the most tenuous. The final decisions as to the quantity, targeting, guidance and range of the SLCM will have a profound

impact upon the capabilities of the Strike Cruiser. Although the issue of strategic cruise missiles is embroiled in SALT negotiations, no restrictions are expected on tactical cruise missiles. The question yet to be resolved, however, centers on the distinction between strategic and tactical cruise missiles. It appears that the SALT negotiations may limit the range of tactical cruise missiles to approximately 300 miles.[9] Without at least a tactical cruise missile capability, it would appear that the Strike Cruiser would hardly warrant the "strike" portion of its title, but rather would revert to the familiar defensive escort role albeit with a greatly increased capability.

CHAPTER VI

CONCLUSIONS

Caveat. Prior to discussing conclusions that might be drawn from the foregoing, the conceptual approach taken in respect to the Strike Cruiser must be emphasized. At this writing final design parameters of the CSGN were simply not available. Addressing the future effectiveness and utility of a concept without the benefit of specific capabilities is, admittedly, at best, an imprecise science. Nevertheless, the validity of the concept and the future trend it may portend must be openly discussed at the earliest possible time if sound decisions are to be made--decisions which may affect the size, composition and capability of the U.S. Navy for many years into the future.

Discussion. The similarities between the external and internal problems facing the Navy in the post-World War I era and the present are most significant. The external problems centered on a very ambitious commitment of limited naval forces in support of national policy. This was compounded by severe budgetary limitations and the increasing naval capability of a potential enemy. The internal problems were characterized by "community parochialism" and a traditionalist approach to naval warfare, both of which tend to thwart innovative thinking and commonality of purpose. In the 1920s these problems were largely overcome through a major eruption in international

relations, a corresponding rapid change in national strategy, and technological advances in naval warfare. When these problems would have been overcome had not the attendant changes occurred when they did is academic. It can be assumed, however, that the evolution of carrier-based airpower would have been considerably slowed had the domestic and international situations remained stable.

The situation the U.S. Navy finds itself in today is not far removed from that of the 1920s. The parallels are obvious. While many of the problems are uncontrollable by those of us in the naval service, some solutions are within our control. It is imperative that we benefit from the lessons of the past and project our awareness and knowledge into the future.

The great advantage of naval forces in support of national policy has been and continues to be their flexibility. Whether a naval force or ship is merely deployed or actually used in combat, it is employed to affect the will of the opposition. The will of the opposition may be affected either through actual combat, or through the threat of combat action. If a threat is to be effective, it must be viewed as visible and credible by the opposition. The Strike Cruiser is the embodiment of a visible and credible threat.

The question, however, is not whether the Strike Cruiser will be useful. That is almost never the question to be settled in determining whether or not to build a particular naval unit.

The question is whether the same amount of money could not be better spent on other naval units to achieve the same or alternate objectives. The allocation of resources for military purposes is something that always involves difficult choices between competitive demands. The sums involved are always limited in view of the many needs pressing for fulfillment. Painful elimination of legitimate alternatives is the order of the day.

In such a situation there cannot be only one correct answer. The final decision must be based on careful analysis and subjective judgment. While the Strike Cruiser is obviously not the only solution to the future challenges that must be met by the U.S. Navy, it does possess the endurance, flexibility and multi-mission capability required in a major unit of the strike forces--capabilities which are rivaled only by an aircraft carrier. Whether operating independently, leading a cruiser task group, augmenting a carrier strike force or supporting other forces, the Strike Cruiser will be a formidable total weapons system that will enable the United States to regain the initiative at sea and create serious problems for potential enemies across the full spectrum of naval planning.

Although the subtleties of national policy and strategy may change with the wind, the desire of the United States to maintain a forward defense will, in all probability, continue. The foundation of such a posture is the capability to rapidly

apply flexible, offensive naval power where and when it is needed. The Strike Cruiser will provide the Navy with a quantum increase in this capability. The Navy and the Nation would be wise to allocate the resources required to press on with the acquisition of such a tool of national policy.

NOTES

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