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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

23 August 1983

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): Some Aspects of an Operation to Destroy Enemy Missile Submarines

1. The enclosed Intelligence Information Special Report is part of a serie now in preparation based on the SECRET Soviet Ministry of Defense publication Military-Theoretical Collection of Articles of the Journal "Military Thought". This article briefly discusses the methods to be used by the Soviet navy to detect and destroy enemy SSBNs with either conventional or nuclear weapons at the outbreak of a war. A two-phase operation is described in which a massed search is instituted by Soviet naval forces consisting of nuclear attack submarines, diesel submarines, long-range ASW aircraft, surface ship hunter-killer groups, and shipborne ASW helicopters. In a nuclear war-fighting scenario, the Soviet navy would be supported by land-based ballistic missiles and long-range aviation from the strategic rocket and air forces, respectively. This article appeared in Issue No. 2 (6) for 1975.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have also been assigned the Codeword

John H. Stein
Deputy Director for Operations

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Intelligence Information Special Report

COUNTRY USSR

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DATE OF INFO. Mid-1975

DATE 23 August 1983

SUBJECT

MILITARY THOUGHT (USSR): Some Aspects of an Operation to Destroy Enemy Missile Submarines

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Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (6) for 1975 of the SECRET USSR Ministry of Defense publication Military-Theoretical Collection of Articles of the Journal "Military Thought". This article, by Rear Admiral V. Saakyan, briefly describes the methods to be employed by the Soviet navy in a two-phase operation to detect and destroy enemy (US, British, or French) SSBNs with the use of either conventional or nuclear weapons at the outbreak of a war. The first phase of the operation involves a massed search by diversified Soviet naval forces consisting of nuclear attack submarines, diesel submarines, long-range ASW aircraft, and surface ship hunter-killer groups having ASW helicopters -- with all elements operating jointly. Weapons to be used are torpedoes, mines, depth charges, and special (i.e., nuclear) warheads. The second phase of the operation is a strictly nuclear war-fighting scenario in which the Soviet navy targets land-based ballistic missiles from the strategic rocket forces and long-range aviation from the air forces against detected enemy SSBNs and, in some cases, distant straits and narrows.

End of Summary

[redacted] Comment:

According to available sources, author Saakyan is an Armenian born in either 1922 or 1928. For most of his naval career he has been a surface ASW specialist. From 1974 to 1976 he was the Chief of Staff of the Black Sea Fleet. In 1977 he was promoted to vice admiral.

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SOME ASPECTS OF AN OPERATION TO DESTROY ENEMY MISSILE SUBMARINES

Rear Admiral V. SAAKYAN

In the aggressive plans of the military leadership of the US and NATO, an important role is assigned to the naval forces, primarily to nuclear missile submarines /SSBNs/ which are included in the so-called sea-based strategic missile/nuclear system. In the US, Britain, and France such systems make up a significant portion of the strategic attack forces. They have been designated Polaris/Poseidon in the US and Britain, and MSBS (naval strategic ballistic missile) in France.

At present the American sea-based missile/nuclear system includes 41 SSBNs. As a result of the work begun in 1968 to develop the new Trident SSBN system, it is anticipated that the first submarine accommodating 24 Trident II ballistic missiles, /each/ with a firing range of 12,000 kilometers, will be launched in 1978. Each of these missiles will have a MIRVed warhead. The submarine's nuclear reactor is designed to operate for 20 years without refueling.

Britain has four SSBNs (built in cooperation with the US) which are armed with Polaris A-3 missiles. Since 1964, France has been building SSBNs, three of which are in commission and another two under construction. These submarines are armed with French-made missiles.

Judging by the relative proportion of SSBNs in the overall balance of strategic nuclear forces, their role in a nuclear war will be enormous: SSBNs account for 656 (38.6 percent) of the 1,704 US strategic missile launchers. That being the case, in terms of the number of nuclear warheads, the relative proportion of sea-based missiles is 62 percent. This is due to the fact that missiles installed in nuclear submarines have a number of significant advantages over land-based missiles, the most important of which are great survivability and the capability to reduce considerably a missile's flight time to the strike target. If work is completed according to the projected plans for further increasing the nuclear potential, the relative proportion of missile submarines in the overall complement of US strategic nuclear forces will increase significantly.

The magnitude of the damage caused by SSBNs, the vast areas of the world's oceans over which their sphere of operations extends, as well as the secrecy of their actions, their survivability, maneuverability, sufficiently high level of

combat readiness, and the precision of hitting targets inherent in SSBNs predetermine that a special naval operation will have to be conducted to combat them and that appropriate (and, moreover, very substantial) forces of the different branches of the armed forces will have to be allocated for participation in it. And, in terms of the conditions of employing the forces participating in the operation, the unique features of their actions, and the extent and nature of the measures to comprehensively support them, it is one of the most complex naval operations. Therefore, it is understandable that various publications, including the Military-Theoretical Collection of Articles from the Journal "Military Thought,"* are showing such theoretical and practical interest in it.

In order to more clearly illustrate the most characteristic features of conducting an operation to combat SSBNs, it is advisable to examine, albeit briefly, our capabilities to detect and destroy them. Thus, a number of identifying physical fields appear and are retained for a fairly long period around submarines when they depart from their bases, proceed to an operations area, and also maneuver and launch missiles. Included among them should be such fields as hydroacoustic, thermal, hydrodynamic, magnetic, radioactive, luminous, biological, and certain others. Moreover, the intensity of these fields depends not only on the operation of machinery in the submarine, its speed, depth of submergence, etc., but to a great extent also on the salinity and temperature of the water, the amount of plankton, the temperature gradient, the presence of underwater sound channels, and a number of other phenomena which have not yet been fully studied to a sufficient degree. Intercepting and recording physical fields make it possible to detect submarines, classify them, determine their position, course, speed, and all the other parameters required to work out the basic data for employing antisubmarine /ASW/ weapons.

Destroying a detected submarine is a less complex task than detecting it initially and maintaining contact with it up to the moment of attack. However, accomplishing this task also presents a number of specific requirements which pertain primarily to weapons. In particular, the weapons employed to destroy SSBNs (torpedoes, depth charges, mines, special warheads, and various explosive devices) must withstand the extremely severe pressures that occur at great depths. The increased speeds of nuclear submarines and their relative freedom to maneuver when evading attacks often lead to substantial errors in determining when to employ the means of destruction, which is responsible for having to make repeated and, moreover, combined use of various ASW weapons.

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*P. NAVOYTSEV, "Modern Naval Operations to Destroy Groupings of Enemy Naval Forces," Military-Theoretical Collection of Articles from the Journal "Military Thought," 1973, No. 2, pp. 100-03.

For the successful conduct of an operation to combat an enemy's SSBNs, it is most advantageous to direct our actions toward preventing the launch of his missiles and toward establishing conditions which make the launch of enemy missiles as difficult as possible and, at the same time, provide our forces and means with the opportunity to destroy those missiles in flight to the target. But regardless of how the tasks of the operation are to be accomplished, what is needed first of all is to conduct a well-timed, massed search for the SSBNs and maintain constant contact with them, which presupposes that diversified ASW forces -- surface ships, aircraft, and submarines -- be employed according to a unified concept and plan.

It follows from the foregoing that an operation to destroy enemy SSBNs can be described as the series of actions, coordinated and interrelated according to target and time, of the different branches of the armed forces under the guiding role of the naval forces, which are conducted in the areas where submarines are assumed to be located, in order to detect and destroy the maximum number of them. In terms of the conditions of employing the forces participating in the operation, the unique features of their actions, and the extent and nature of the measures to comprehensively support them, the operation to destroy SSBNs can be arbitrarily divided into two phases.

The first phase of the operation to combat SSBNs involves a massed search for them. During this time, static means of submarine detection are put in place and ASW minefields are laid. Since SSBNs practically have an unlimited range of operation and great maneuverability and can, in essence, remain for long periods of time in any area of the world's oceans, the principal role in searching for them is assigned to nuclear ASW submarines, whose capabilities are the same as those of the target of the search. Considerable search capabilities are possessed also by modern, long-range ASW aircraft, whose most valuable feature (in comparison with all other ASW forces) is their ability to rapidly interpret the underwater situation in the vast areas patrolled by a submerged enemy, to detect him, and to transfer the contact to other ASW forces.

Combat training experience indicates that searching for submarines requires a large detail of forces which can, in our opinion, be employed in the following manner.

First of all, it is necessary to endeavor to employ diversified ASW forces in close cooperation with each other in the search for enemy submarines. Moreover, the actions of these forces must be extended to the depth of the theater, covering if possible all the most likely SSBN patrol areas. In distributing the efforts of ASW forces throughout the areas of the theater, it is desirable to proceed on the assumption that most, or even all, enemy submarines have been deployed to their launch stations.

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In order to prevent the buildup of enemy efforts from forward bases and hinder the redeployment of SSBNs from areas where they routinely stay to patrol areas and missile launch stations, it is advisable to concentrate (deploy) part of the ASW forces at the ASW barriers in straits and narrow passages.

For convenience it is advisable that the areas selected to search for a submerged enemy be divided into corresponding smaller areas for sweeping by a particular arm of ASW forces in a manner proportionate to its search capabilities. Ignoring this recommendation can lead to erratic observation of the areas and to reduced effectiveness in combat against enemy SSBNs.

It is best to position surface ships in the area located between the areas being searched by ASW submarines and ASW aircraft. Such positioning compels SSBNs to evade the surface ships and thereby to inevitably move out at higher speeds to the positions of forces conducting a covert search. Moreover, we should also endeavor to employ active means of detection (under-the-keel, dipping, and towed sonar arrays) as well as passive means (direct-listening sonar sets, radiosonobuoys, wake-detection gear). Calculations show that using search means in this manner markedly increases the probability of detecting a submerged enemy.

Cooperation during the search must be organized primarily in support of those forces which are capable of carrying out prolonged tracking of SSBNs.

An analysis of modern ASW forces and means and the conditions of their employment indicates that shipborne hunter-killer groups cooperating with long-range ASW aircraft and ship-based ASW helicopters have the greatest search capabilities. Therefore, when search operations are being planned, it is particularly necessary to make provision for a detail of aviation to participate in prolonged tracking of SSBNs.

It is most advantageous for shipborne hunter-killer groups to conduct a search from different directions, setting up a sort of "vise" from which it is difficult for any target to escape.

When search operations are being conducted, special attention should be given to ensuring their secrecy and surprise through the use of feint maneuvers, deception, and all types of camouflage. In this case, the deployment of ASW submarines to their assigned search areas should be carried out, as a rule, only in a submerged condition, with strict observance of complete radiotechnical silence as well. As regards surface ships, they are to rapidly occupy the search areas and it is advisable that this be accompanied by maneuvering at full speed along fake headings.

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For the successful conduct of search operations under modern conditions, it is exceptionally important to organize radioelectronic warfare, which provides for the reliable neutralization of shore-based enemy control systems and the destruction or incapacitation of communications centers, radio navigation systems, underwater sonar arrays, beacons, and all other means supporting SSBNs. Moreover, the possibilities of this warfare and its organization depend primarily on the condition our enemies are in before the commencement of the operation to destroy SSBNs. In addition, the effectiveness of this operation is largely determined by the possibilities of concentrating in it the efforts of both naval and non-naval means.

In particular, these forces must first of all prevent the enemy from using airborne and shipboard radioelectronic means to search for and track our ASW submarines. Therefore, the surface ship groupings which ensure the stability of our ASW forces must have sufficiently powerful radioelectronic warfare means.

This requirement can be realized to a certain extent by using diesel submarines to operate in unified search formations with nuclear submarines. The essence of such joint actions lies in the fact that in the assigned area the nuclear submarines maneuver at the slowest possible speed in a zigzag pattern, while the diesel submarines located on the flanks conduct the search on straight courses. In this case, in order to provide them with the largest field of observation (search zone width), the bearing of the formation must be equal to the assumed (most probable) evasion heading of an enemy SSBN. Moreover, organized in this manner, the diesel submarines will occupy favorable positions for attacking multipurpose enemy submarines.

In our opinion, another method of increasing the combat stability of nuclear ASW submarines is to organize the search for a submerged enemy jointly with surface ships in a single search formation within the range of underwater sound communications. In this case, the nuclear submarines must be positioned at the head of the search formation at acute course angles relative to the ships of the hunter-killer group. If underwater sound communications exist between the ships and submarines, reliable control of all the forces can be carried out from the command post of the hunter-killer group.

When submarines and surface ships are engaged in a joint search, the reliability and rapidity of classifying the contacts which are recorded by the search equipment of the submarines through comparison with the contacts recorded by the search equipment of the surface ships also increase sharply. During the joint search it is very important also that there be continuous communications between the surface ships and the submarines, without the latter's coming to the surface. At the same time, it should be borne in mind that without cover

against air attacks the surface ships are practically doomed, which means that the submarines will not fulfill their mission.

In examining the maintenance of the combat stability of forces during search operations, we should pay attention to the special features of ensuring the stability of surface ships in the face of enemy air attacks when it is impossible to organize their air cover by fighters. Research indicates that in such a situation it is advisable that the ships be rearranged into circular air defense formations while the search continues. In this case, the search capabilities of the ships are reduced slightly but their combat stability is increased several times. In addition, it is useful to form hunter-killer groups by including ships of different classes in them, since in this case the weak points of some ships will be compensated by the strong points of others.

Provision should also be made for the extensive use of mines by diesel submarines. Calculations show that under certain conditions minefields can be established by such means over extensive areas, thereby restricting the freedom to maneuver of enemy SSBNs and frequently depriving them of the chance to redeploy from some areas to others.

Thus, even on the basis of a by no means complete examination of the special operational features of ASW forces, it is apparent that success in searching for enemy SSBNs is based on skillfully organized actions, whose purpose is not merely to detect those submarines but to bring about conditions that make it possible to destroy them at the very beginning of a war before they can use their weapons. This task can be successfully accomplished in the second phase of the operation to destroy SSBNs, and only on condition that the additional efforts of the /strategic/ rocket forces and long-range aviation be concentrated /in it/.

The second phase of the operation to destroy SSBNs consists in destroying them by collective efforts in conjunction with the rocket forces and long-range aviation. Moreover, the leading role in this phase of the operation is retained by the naval forces, which have the capability to more effectively influence the situation occurring during armed combat at sea than any other forces.

It has already been pointed out above that it is not a difficult task for naval forces to destroy a detected submarine with which constant contact is being maintained.

A study of the capabilities of ballistic missiles reveals that in a number of instances they can be used in a nuclear war against those SSBNs whose maneuver areas are well known. In addition, the use of such missiles is warranted also in situations where prior to the beginning of combat actions ASW

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forces had contact with enemy SSBNs but have since lost it, and therefore it is possible to determine the areas in which these submarines are located with sufficient accuracy for ballistic missiles /to be used/. Moreover, the number of missiles required in this case depends on how long contact with a previously detected enemy submarine was lost.

It is advisable in a number of instances to combine the employment of ballistic missiles directly against SSBNs at sea with a strike by them against submarines located at bases and also against shore-based control posts or navigation support stations. Possibly in some instances it will be permissible to use ballistic missiles also to destroy major enemy targets located far from our forces -- e.g., support ships, airfields, industrial installations and depots which support SSBNs, training centers for submariners, etc. It is not ruled out that ballistic missiles will have to be used when naval forces that have detected an enemy SSBN are unable to deliver an effective strike against it in the shortest time possible. For instance, such circumstances may arise if the enemy is detected by naval forces at distances significantly exceeding the ranges at which their weapons can be employed, by ships not having the necessary means to destroy submarines, and also by fixed underwater means of watching the situation.

The use of ballistic missiles may be warranted in a number of cases when it is known with sufficient accuracy at what time SSBNs pass through distant straits or narrows. Moreover, in all cases without exception shore-based ballistic missiles can be used directly against enemy SSBNs only in accordance with the target designations of the naval forces. In this case, organizing the withdrawal of our own forces from under the missile strike takes on important significance.

A study of the capabilities of long-range aviation reveals that, unlike ballistic missiles, it can be used under certain conditions in the first and second phases of the operation. In addition to actions against SSBNs in the seas and oceans, it is capable of successfully delivering strikes also to certain targets against which land-based ballistic missiles are effectively used. At the same time, the best conditions for long-range aviation are attained when it cooperates with naval ASW aviation. That being the case, the most advantageous form of organizing cooperation is to allocate the targets of action within the framework of the combat against SSBNs in accordance with the actual capabilities of all the forces participating in the operation.

As regards the operational disposition of forces, it must promote the destruction of a submerged enemy regardless of how the war begins -- with nuclear weapons or with the use of conventional weapons alone. But since it is impossible to determine in advance how a war will begin, the forces

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participating in the operation must always be prepared to use either /type of/ weapon. Therefore, the makeup of munitions on ships, submarines, and aircraft must constantly satisfy this most important modern requirement.

It is entirely clear that the employment of a large number of forces operating, moreover, in vast areas of the seas and oceans is impossible without purposeful and flexible control of them. Meanwhile, the lack of perfection in mutual identification among the diversified ASW forces located in contiguous or identical areas causes a series of extremely serious difficulties which can be overcome essentially only through the strict centralization of control over them.

We note in conclusion that it was not the purpose of this article to cover all aspects of an entirely new naval operation such as that to combat nuclear submarines. This would not be possible. The author has endeavored to reveal only some of its unique features and to express his opinion about certain of the most important matters in the hope that a discussion of them by a wide circle of readers from our fleets and troops will aid in working out a unity of views concerning combat against enemy SSBNs.

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