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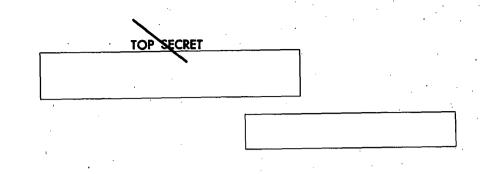
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Characteristics of Employing Naval Forces in a War Which Begins Without the Use of Nuclear Weapons by

Rear-Admiral A. Kruchenykh

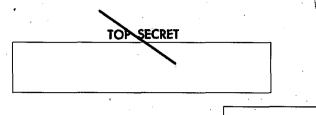
The experience of operational training in the NATO armed forces shows that our probable enemies, in a series of training exercises in recent years, have developed variants of beginning a war without employing nuclear weapons but with their subsequent use during combat operations; this corresponds to certain official views of the American military command regarding the possible conditions for unleashing war. The essence of these views is that the US and the other NATO countries must be prepared to conduct both nuclear and non-nuclear war and also be prepared for the escalation of a war beginning without the use of nuclear weapons into general nuclear war.

This obliges us, too, to be ready for whatever variant an aggressor may use to unleash a war and, in particular, to study the characteristic features of employing naval forces in case war begins without the use of nuclear weapons.

The question arises: what missions will be carried out by the navy if war begins without the use of nuclear weapons? Under such conditions, it will hardly be advisable for the enemy to use missile submarines against coastal objectives, because of the low effectiveness of missiles with conventional charges. At first glance, therefore, the impression may develop that combat with enemy missile submarines will not be a first priority mission of our navy. In the same vein, then, there is no need to deploy our own missile submarines to deliver strikes against enemy coastal objectives. As a result, presumably only one crucial mission remains for the navy--the destruction of carrier strike large units as groupings possessing great strike power and capable, even if conventional weapons are being used, of exerting substantial influence on the course of armed combat in a theater of military operations. In addition, of course, there would remain those missions which

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we relegate to <u>second place</u> in operations using nuclear weapons, namely-<u>support</u> for ground forces on the offensive, <u>disruption of enemy crossing</u> of seas and oceans, participation in coastal defense, and support of our sea crossings, especially on behalf of forces operating on coastal axes.

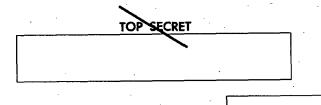
<u>However, such an assumption would be faulty</u>. Missile submarines and strike carriers have nuclear munitions aboard during peacetime. About two-thirds of the total number of American missile submarines are now already on constant sea patrol with nuclear missiles, and with the onset of war this proportion may grow to 80 percent. If six to eight US missile submarines are deployed on a given operational axis, they will be able to use 96 to 128 nuclear munitions at any moment. With this quantity of munitions, taking into account that two Polaris missiles are required for the destruction of an objective and that one-third of them will reach their target, 16 to 22 large military-economic objectives may be destroyed.

Therefore, even if military operations begin without the use of nuclear weapons, enemy missile submarines will constitute a permanent potential nuclear threat, and the mission of combatting them (and surface missile ships) will remain, as before, among the first priority missions. Thus, the main efforts of our navy under the given conditions must be concentrated on the destruction of not only carrier strike large units but also of enemy missile-carrying forces. The implementation of these two missions is facilitated by the fact that combat with carrier large units and missile submarines will be conducted by forces having the most varied armament and combat means.

As regards the mission of destroying important military-economic objectives on enemy territory, even if it is not carried out by naval forces before the two sides employ nuclear weapons, the forces of our navy must still be prepared at all times to implement it, and this will require their timely deployment to the designated areas of operations.

Thus, the actions of naval forces in an operation which begins without the use of nuclear weapons, just as in an operation which does employ nuclear weapons, must be

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directed first of all toward the rout and destruction of enemy carrier and missile-carrying forces.

The possibility of a war beginning without the use of nuclear weapons, and the possible threat of subsequent transition to their employment, bring to the fore two very essential requirements on the organization of the operations of naval forces: first--the attainment of operating efficiency by the forces using munitions with conventional charges which will further the fulfilment of the missions assigned to the navy; second--the necessity for maintaining all naval forces or part of them at a high degree of readiness to employ nuclear weapons.

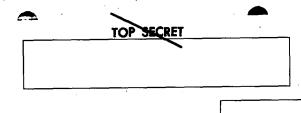
A high degree of readiness of naval forces to employ nuclear weapons is achieved by a whole complex of measures. Specifically, there can be two methods of maintaining this readiness: the first--in which all naval forces conduct combat operations without using nuclear weapons but with nuclear munitions kept at readiness at bases and airfields; the second--in which submarines and part of the surface ships are deployed at sea with nuclear munitions included in their unit of fire, while a specific number of aircraft with nuclear munitions on board are located at airfields.

Under the first method, the greater part of the naval forces may conduct combat operations with conventional weapons, but considerable time will be required for the transition to nuclear weapons. This will obviously be a rare occurrence, possibly in a situation of local war.

Under the second method, the number of naval forces detailed for operations with conventional weapons will be reduced in order to employ those forces with on-board nuclear munitions as duty forces. The combat capabilities of the remaining forces will diminish, however, since their unit of fire will include nuclear munitions which are not used during the period of combat operations with conventional weapons. In addition, it will be necessary to reserve some forces and conventional munitions as support for delivery vehicles in case of a transition to nuclear weapons, which may also to a certain degree diminish the combat capabilities of forces using conventional weapons. But the readiness of naval forces to deliver nuclear strikes under the second method will be greater than under the

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first. Thus, the method selected for maintaining readiness to employ nuclear weapons will depend on the situation before the beginning of military operations.

It must also be taken into account that under the second method, part of the forces, together with their unused nuclear munitions, may be lost during the period in which combat operations are conducted without the use of nuclear weapons. Some depots of nuclear weapons or missiletechnical bases will also be destroyed. All of this will weaken the nuclear power of our forces by the time the transition is made to nuclear weapons. Therefore, during the period of non-nuclear operations, naval formations (obyedineniye) <u>must have in readiness</u> a reserve of nuclear munitions and delivery vehicles to replenish losses,

Thus, measures to maintain naval forces at a high level of readiness to employ nuclear weapons will to a certain degree diminish the combat capabilities of forces using conventional munitions. In order to avoid this, it is necessary to choose operating methods for forces which correspond to the situation which has developed, to determine correctly the areas in which the enemy is probably located, and to concentrate against him the greatest number of the forces designated to operate with conventional weapons only. Finally, large units of other branches of the armed forces, of **iong-Range Aviation** in particular, must be called upon to participate in sea operations in order to make up deficiencies in naval forces.

When the belligerents go over to nuclear weapons, or when the moment of transition to nuclear war is determined by the Supreme High Command, it is very important to forestall the enemy in the delivery of nuclear strikes. As is known, this can lead to the disruption or weakening of the power of a nuclear attack from the sea. In order to forestall the enemy it is necessary, while non-nuclear combat operations are still in progress, to discover his preparations to employ nuclear weapons. One of the very essential reasons for his going over to nuclear weapons will be some sort of circumstances which are unfavorable for him, This will most probably be a crisis in which all possibilities for an offensive or for the restoration of a lost strategic or operational position in a continental theater of military operations are exhausted and further combat

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operations without the use of nuclear weapons will lead to complete defeat.

Under such conditions, even if actions were begun without the use of nuclear weapons, we may expect that the enemy, with the help of nuclear weapons, will try to effect a fundamental change in the situation and create a decisive superiority of forces in his own favor. Thus, if a crisis situation is created for the enemy we will be obliged to increase our vigilance for measures he may take to restore his position and to create conditions for seizing the initiative in both continental and sea theaters of operations. In such a situation, particular attention must be devoted to revealing enemy preparations for employing nuclear weapons.

There may be many signs of such preparation in the continental sector of a theater of military operations. These include, in particular, an increasing frequency in the detection of nuclear means by reconnaissance, the delivery of nuclear munitions to airfields, their issue to air units and loading by suspending from aircraft, the moving forward of operational-tactical missiles to probable launch positions, the deployment and testing of control systems for Pershing and Mace missiles, the intercept of a message concerning the use of nuclear weapons or of a report on readiness to use them, and numerous other things.

It is difficult to detect preparations for the delivery of a nuclear strike from the sea. The following may serve as indicators: the deployment at sea of those missile submarines and missile surface ships which were still at their bases in the preceding period; the proceeding out to sea of floating missile submarine bases; the delivery of nuclear munitions to aircraft carriers from transport ships of maintenance large units or from shore depots; a change in the operating schedule of Loran-C radionavigation stations; the widespread withdrawal of commercial vessels and port facilities (floating cranes, barges, floating docks) from ports, and others.

With the discovery of all these measures, or the most distinctive of them, we must bring our naval forces to a degree of readiness assuring the delivery of a powerful

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nuclear strike within a short time after receiving a message to this effect.

Since all arms of naval forces will participate in an operation during the initial period of a war, let us examine a possible plan for their use which will provide for the effective application of conventional weapons and a high degree of readiness for delivering sufficiently powerful nuclear strikes within a short time.

Variants of employing submarines. High operational effectiveness of submarine groupings with conventional weapons will be attained if they are deployed in the necessary numbers on the probable operational axes of enemy naval forces. However, there may be several such axes for fast-moving enemy forces, and we will not always succeed in deploying the required number of submarines on each one of them. In our view, therefore, it is advisable to employ two methods in using nuclear submarines. The first is to deploy submarines along a wide front, which will make it possible to intercept carrier large units on the greatest number of their axes of movement, using a limited number of submarines--two or three. The second is to deploy a large grouping of nuclear submarines (6 to 8) in some one area in order that this grouping may succeed, making use of reconnaissance data, in intercepting a carrier large unit on only a limited number of its probable axes of movement. As regards diesel submarines, they may be deployed in the 55; west hep octing necessary numbers (8 to 16 submarines) on one of the most probable axes of enemy movement, since it is difficult to count on their timely redeployment on the various axes of movement of fast-moving enemy forces.

The readiness of submarines to employ nuclear weapons will depend on whether they have nuclear munitions in their unit of fire and how many, and also on the transmittal time of the message ordering the transition to nuclear weapons, the time for occupying launch positions, and the time for pre-launch preparation (for missile submarines).

Regardless of how a war starts--nuclear or nonnuclear--submarines will carry out, depending on their armament (missiles or torpedoes with conventional or nuclear charges) and to some extent on how they are powered, a wide range of such missions as reconnaissance, search and

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<u>destruction of missile submarines</u>, destruction of carrier strike large units and of <u>convovs</u> on communications lines, destruction of important coastal objectives, and others.

As a rule, torpedo nuclear submarines or diesel submarines with appropriate equipment are used for reconnaissance, individually or as part of reconnaissance or reconnaissance-strike missions. In cases in which submarines are assigned only reconnaissance missions, and when there is a limited number of nuclear munitions allotted for the operation, it will obviously not be necessary to equip them with nuclear torpedoes. For purposes of self-defense, it is advisable to equip them with torpedoes with conventional charges. In those cases in which submarines, especially those with nuclear power plants, will be operating on the reconnaissance-strike variant, it makes good sense to include nuclear torpedoes in their unit of fire as well as conventional torpedoes, regardless of what variant the beginning of military operations is expected to take. This will make it possible, upon receipt of the message ordering the transition to nuclear weapons, to implement the transition immediately against any discovered targets with quite appreciable results.

For search and destroy missions against enemy missile submarines, antisubmarine submarines equipped with special search equipment and with appropriate torpedoes or rocket torpedoes are used.

In order to fire all of its combat load (in case nuclear war breaks out suddenly), a US missile submarine requires no more than 15 to 20 minutes. After firing all or part of their missiles, submarines will obviously change areas. It is difficult to count on an antisubmarine submarine being able to attack a missile submarine several times in the same area. However, if an antisubmarine submarine is moved out of one area into another, it will be able, as in the first area, to attack one more enemy submarine. If, in each attack, one or two torpedoes with nuclear charges are used, it will be advisable to include two to four such torpedoes in the unit of fire of antisubmarine submarines which are to be deployed.

In determining the proportion of nuclear and conventional munitions to be included in the unit of fire of

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submarines which are to operate against carrier strike large units and convoys, we must proceed from the necessity to destroy, with nuclear munitions, not one target from the carrier strike large unit or, particularly, from the convoys, but many targets; and we must also take into account that the operations of submarines in the non-nuclear variant must be sufficiently effective as well. It appears to us that <u>torpedo submarines deployed</u> under the <u>reconnaissance-strike</u> and <u>strike variants against carrier</u> strike large units and convoys may include in their unit of fire up to 30 percent torpedoes with nuclear charges. This will provide for two salvos with conventional charges and one with nuclear charges.

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There will not be a large number of missiles with nuclear charges in the unit of fire of submarines which carry cruise missiles of the "submarine-ship" type and which are to operate against carrier strike large units or convove. Calculations show, however, that in delivering a strike against a carrier large unit with an undamaged air defense system, the salvo must include at least eight missiles. A deficiency of missiles in the salvo of one Bubmarine is compensated for by having submarines operate in Thus, depending on the number of submarines which aroups. carry cruise missiles and which are to be deployed on a given axis, half or all of the missiles on each submarine may have nuclear charges. Under certain conditions, e.g., if submarines have a limited number of missiles in their unit of fire and it is impossible to provide for group submarine operations, it is advisable for all of the cruise missiles to have <u>nuclear charges</u> and for them to be employed only when the transition is made to the nuclear variant of conducting armed conflict.

Missile submarines which are to destroy important military and industrial objectives on the enemy coast should be deployed to waiting areas, carrying only missiles of nuclear charge. It is also advisable that part of the torpedoes aboard these submarines have nuclear charges, so that after they have fulfilled their primary mission they can be retargeted for strikes against enemy ship groupings.

Thus, in order to conduct combat operations success-/ fully if war begins without the employment of nuclear weapons but with the possibility of a transition to their

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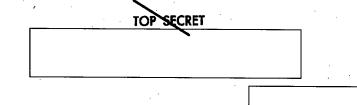


use, it is necessary when deploying our submarines, to proportion their nuclear and conventional munitions in such a way as to provide them with the power needed to be effective against the enemy under both variants of conducting military operations. Losses of nuclear munitions suffered along with the destruction of their delivery vehicles, during combat actions in which nuclear weapons are not employed, can be partially replaced by deploying a second operational echelon of submarines with nuclear munitions, if these submarines were already in transit across the sea or at concentration points.

With the transition to nuclear weapons, a certain portion of the submarines will participate in the first nuclear strike delivered by all branches of the armed forces. One of the basic requirements in organizing such a strike is that it be delivered within the shortest time after receipt of the message; and this is assured by the rapid transmittal of the message and a high degree of readiness of the naval forces. A reduction in the total time for bringing submarines to readiness to deliver the initial nuclear strike can be achieved by diminishing the time intervals between communications contacts with submarines deployed at sea, by establishing a sliding schedule for communications contacts, by guiding the submarines to carrier strike large units in good time, and by having the submarines maintain contact with carrier strike large units which have been identified. These purposes are served by a systematic search for enemy missile submarines in the areas established as their launch positions; by the timely concentration in their launch positions of our missile submarines which are to strike coastal objectives, and the execution of pre-launch preparations while they are proceeding to their fire positions.

Possible variants of employing naval aviation. In our opinion, there are three variants of employing naval missile-carrying aviation in the conditions under review. First, with the onset of military operations, it uses all its forces to deliver strikes with conventional means of destruction. However, a high degree of readiness for going over to the use of nuclear weapons is provided for by the continuous maintenance at airfields of fully prepared missiles with nuclear charges.

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Second, during the period of non-nuclear operations, part of the delivery aircraft which carry missiles with nuclear charges will remain at their fields in readiness to carry out combat missions. It is practical to allot one squadron from each naval missile-carrying regiment or one full-strength naval missile-carrying regiment.

Third, about one-third of the naval missile-carrying aircraft with missiles with nuclear charges will take off with that portion of aircraft which are to make strikes with conventional missiles, will fly to a prescribed point, and, if they have not received the special message to employ their nuclear weapons, will return to their airfield.

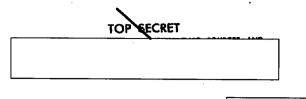
Each of the foregoing variants has its strong and weak sides. In the first variant, the combat capabilities of naval missile-carrying aircraft are fully exploited in operations using only conventional weapons, but this is counterbalanced by the fact that the time spent in preparing to use nuclear weapons is greater than in the other variants. The second variant permits a reduction of the time for preparing the initial nuclear strike, but reduces the combat capabilities of missile-carrying aircraft in operations in which nuclear weapons are not used, nor does it exclude losses of aircraft with their missiles at airfields as a result of enemy strikes. Using naval missile-carrying aircraft in accord with the third variant will bring a maximum reduction in the time for preparing a nuclear strike, particularly if the message to strike reaches the aircraft in flight toward the strike objectives. In the last variant, the combat capabilities of naval missile-carrying aircraft when nuclear weapons are not used are similar to their capabilities under the second variant.

In order to maintain the readiness of antisubmarine aircraft for the transition to the use of nuclear munitions during the period in which combat operations are nonnuclear, nuclear munitions may be aboard aircraft at the same time with conventional munitions, since only one or two are used against a target.

The time required to prepare aircraft to employ nuclear weapons depends on the transmittal time of the message, which is not very difficult to reduce, and also on the time needed to prepare materiel (suspending the missiles on

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aircraft, fueling, etc.). The preparation time for materiel will in turn depend on many conditions, particularly on the technical equipment of the bases, and on the time when the message is received (while in flight to the targets, while returning, or while on the ground at the airfields); the latter plays an important role. The preparation of materiel can be completed in a minimum of a few minutes or a maximum of one day.

Possible variants of employing surface ships. In both non-nuclear and nuclear periods of combat operations, surface ships will in most cases be used, depending on their class and type of armament, as strike or search-strike groups, as landing detachments for the transport, protection, and support of landing forces, and as convoys for the protection of transports with cargo. In other words, surface ships are employed, as a rule, in groups of varying makeup, which poses certain requirements on the methods for using them when there is a threat that the enemy will employ nuclear weapons.

The most important overall requirement regarding methods of using them is to conduct combat actions (carry out combat missions) even in the non-nuclear period of a war while maintaining an anti-nuclear disposition and an anti-nuclear combat makeup. In our view, this proposition does not need to be proved.

In addition, the employment of various classes of surface ships has its own characteristics under the conditions being studied. Thus, <u>surface missile vessels are</u> designated mostly for the destruction of enemy surface vessels, and only as an exception will they strike coastal objectives, for example, antilanding defense objectives. The viability of modern enemy surface ships like the antiaircraft guided missile cruiser, destroyer, or transport, is such that it will require, respectively, three or four or one or two missiles with conventional charges to sink each of them. Consequently, if the unit of fire of missile ships makes it possible to carry out several salvos, it is advisable that, during the period of non-nuclear combat operations, part of the missiles aboard these ships have nuclear charges. It is particularly important to have a certain number of missiles with nuclear charges aboard those ships which will be on combat service at sea before

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war begins. The presence of nuclear missiles aboard these ships will enable them, in case of transition to nuclear weapons, to carry out important missions, up to the actual destruction of detected strike carriers, surface delivery vehicles of Polaris missiles, etc., in addition to operating with sufficient effectiveness without the use of nuclear weapons.

For missile boats engaging in coastal actions and carrying a limited unit of fire, it does not make sense to carry nuclear missiles on board (if such missiles are included in the armament) during the period of non-nuclear combat operations, since this will reduce their capabilities in operating with missiles with conventional charges. With the transition to the employment of nuclear weapons, it is advisable to return to base and take aboard the number of missiles with nuclear charges necessary for the successful employment of these weapons, independently or in combination with conventional missiles.

In general, it is not advisable to employ ship missiles with conventional charges to neutralize antisubmarine defense targets because of the low effectiveness of these missiles; therefore, it makes sense to take nuclear missiles for these targets only with the transition to the employment of nuclear weapons. As regards antisubmarine surface ships, taking into account that they use their weapons against individual targets and that their encounter with enemy submarines will occur infrequently, it will be necessary to have nuclear munitions in their unit of fire at all times during the period in which nuclear weapons are not employed.

In our view, no special problems will arise in employing naval coastal missile forces when war begins without the use of nuclear weapons but with the subsequent transition to their use, since the necessary units of fire with nuclear charges can be prepared in advance, stored in depots of expendable munitions, and transported as coastal missile units are relocated to new areas of deployment.

In closing the following conclusions can be made.

The use of naval forces with	out the employment of
nuclear weapons appreciably (reduce	es their combat
capabilities, especially in carry	ing out such missions as

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the destruction of carrier strike large units, and it is extremely complicated for the navy to destroy important coastal objectives without nuclear weapons. If there is a transition to operations using nuclear weapons, the navy can carry out the majority of its missions independently.

Operations of naval forces must be planned according to two variants: the first--in which nuclear weapons are used immediately at the beginning of war; the second--in which nuclear strikes are delivered after an operation is already in progress, having begun with the use of only conventional means of destruction. This planning must provide for high effectiveness in the operations of naval forces with conventional weapons and for maintaining their readiness for the immediate use of nuclear weapons.

The transition from operations with conventional weapons to the employment of nuclear weapons not only increases the combat capabilities of naval forces but also expands their range of missions, <u>making it possible to</u> include among them such a mission as the destruction of important military-economic objectives on enemy territory.

High effectiveness in the operations of submarines with conventional weapons, and their maintenance at the necessary readiness to employ nuclear weapons, can be attained through an appropriate proportion of conventional and nuclear munitions in the unit of fire of submarines deployed at sea to operate against enemy ships.

The use of naval forces under conditions in which military operations begin without the use of nuclear weapons but with subsequent transition to their use--this is a new question, requiring further research.

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