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CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 20505

1 February 1978

MEMORANDUM FOR: The Director of Central Intelligence

FROM : John N. McMahon  
Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Organizing Combat  
Against Underwater Sabotage Forces and  
Means in Naval Theaters

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article describes briefly the effectiveness of World War II underwater sabotage forces and the continuing postwar development of these by the US, NATO, and Japan. It sets forth the principal features of current frogmen, midget submarines, towing devices, guided torpedoes, and underwater mines (conventional and nuclear), and emphasizes the acute need to develop a counter to these forces and means. It then outlines the organization of this counter, consisting of a distant and close-in (coastal) surveillance, warning, and combat system, but also pointing out the key weakness: the lack of an effective technical means of detecting underwater sabotage forces and means. This article appeared in Issue No. 2 (75) for 1965.

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 been assigned

John N. McMahon

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# Intelligence Information Special Report

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COUNTRY USSR

DATE OF INFO. Mid-1965

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DATE 1 February 1978

SUBJECT

MILITARY THOUGHT (USSR): Organizing Combat Against Underwater Sabotage Forces and Means in Naval Theaters

5 ICE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (75) for 1965 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Captain First Rank G. Ditskiy. This article describes briefly the effectiveness of World War II underwater sabotage forces and the continuing postwar development of these by the US, NATO, and Japan. It sets forth the principal features of current frogmen, midget submarines, towing devices, guided torpedoes, and underwater mines (conventional and nuclear), and emphasizes the acute need to develop a counter to these forces and means. It then outlines the organization of this counter, consisting of a distant and close-in (coastal) surveillance, warning, and combat system, but also pointing out the key weakness: the lack of an effective technical means of detecting underwater sabotage forces and means.

End of Summary

[REDACTED] Comment:

The SECRET version of Military Thought was published three times annually and was distributed down to the level of division commander. It reportedly ceased publication at the end of 1970.

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Organizing Combat Against Underwater Sabotage  
Forces and Means in Naval Theaters

by  
Captain First Rank G. DITSKIY

In the years of World War II, the navies of the capitalist states, especially Italy and Japan, devoted much attention to the development and use of so-called "assault means" to accomplish various sabotage tasks with the aim of paralyzing the activity of naval bases and ports, destroying or putting out of action major surface combat ships and vessels at the basing points and outlets of the bases, demolishing important coastal hydrotechnical structures and other installations, and also of supporting the debarkation of amphibious landing forces.

According to incomplete data, during the Second World War, underwater sabotage forces and means sank or seriously damaged 47 combat ships and vessels with a total displacement of around 420,000 tons, including five battleships and five cruisers. In 1944, in the Normandy landing operation of the Allies, 120 frogmen cleared mines and underwater obstacles from the passages for the landing craft; and during the debarkation of the landing force on Okinawa, frogmen disarmed up to 3,000 different obstacles set out by the Japanese for the antilanding defense of the island. Underwater sabotage forces achieved their greatest successes in the period 1941-1943, when there existed no proper organization for detecting and destroying these forces. Thus were accomplished the attacks, for example, on the bases of Alexandria (Egypt), Jackson (Australia), Pearl Harbor, Gibraltar, Altenfjord (Norway), and others.

From an analysis of the combat actions of underwater sabotage forces in the Second World War it is evident that even the rather well organized protection systems in 1944-1945 could not reliably withstand their attacks. In spite of the availability of antisabotage and antitorpedo nets and other protection measures, the underwater sabotage forces managed to break through into bases and ports and deliver very tangible surprise attacks.

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After the Second World War, the navies of the USA, Great Britain, Italy, West Germany, Japan and other countries continued all-around training of underwater sabotage forces, produced more powerful models of combat means, and also sought new ways and methods of underwater sabotage actions.

According to the views of the American and British military commands, which are reflected in the doctrines of the USA and other NATO countries, considered second in importance after nuclear weapons in a modern war is the conduct of sabotage actions, and even sabotage operations, differing in scale and axes, including those actions carried out in armed conflict at sea employing nuclear weapons and those in local wars using conventional means of destruction.

In keeping with these views it can be assumed that the following tasks will be accomplished with the aid of underwater sabotage forces and means: the destruction of surface combat ships and vessels at basing points and while they are cruising in coastal areas, the demolition of important shore installations of the navy and coastal military districts (submarine bases, especially for nuclear submarines, airfields, electric power stations, bridges, locks, missile launchers, nuclear weapons depots, command posts, communications centers, etc.); the conduct of reconnaissance on the approaches to bases and ports and also on shore; the guidance of cruise missiles that are employed from submarines and surface ships; minelaying and demolitions actions in bases, ports, and channels by setting out mines and charges of varying power; the support of landing operations; and other tasks. Subjected to the greatest danger, in our opinion, will be the dispersal basing points of our naval forces and especially the system of bases for submarines, their forming-up bases, and other hydrotechnical installations used by submarines, primarily nuclear submarines.

The main trend in the development of underwater sabotage forces, according to American views, consists in these forces being capable, during combat actions in naval theaters, of negotiating the modern antisubmarine and air defense systems on the approaches to the basing areas of our naval forces and the location areas of important shore installations of the coastal military districts and of delivering systematic attacks against them. To this end, at the present time, groups of varied

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strength of underwater sabotage forces participate in almost all exercises, especially in the landing operations and maneuvers of the naval forces of the NATO countries.

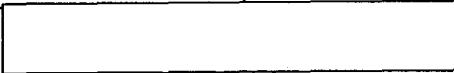
The probable enemy is setting up beforehand specific groupings of these forces on all axes and conducting intensive training with them in keeping with the conditions of the naval theaters. Thus, a special reconnaissance-and-sabotage battalion forms part of the US Marine Corps; and in the Pacific and Atlantic Fleets of the USA there are several special reconnaissance-and-sabotage teams of 100 men each (15 officers and 85 enlisted men). Organizationally these teams are subdivided into five platoons, each of them having at its disposal specially adapted launches, boats, and other means of movement in the action area. In addition to the training of organic subunits, officers of all branch arms of the US Navy in the rank of first lieutenant (senior lieutenant) have to undergo two-month courses of reconnaissance-and-sabotage training.

Forming a part of Italy's marine force is a 600-man sabotage-and-reconnaissance group; in France there are "commando" detachments of 700 men each; and in the Federal Republic of Germany there is a 200-man detachment of frogmen.

In the navies of the USA, Great Britain, France, and Japan, in the complement of submarine large units there are midget submarines, which are combined into groups of several submarines each. Such submarines, existing as prototypes, can, given the well-developed shipbuilding industry in these countries, be produced in large numbers in a short time, and they will pose a serious threat to our naval forces. They will most probably be used according to the instructions of a naval theater command to perform sabotage against important military and economic installations and to carry out reconnaissance actions.

Inasmuch as the basic principles of sabotage-and-reconnaissance actions are concealment and surprise, it may be assumed that, to carry them out on an extensive scale, the enemy will, for the purpose of distracting attention from the area of the actions of reconnaissance-and-sabotage groups and of creating a more complex and tense situation, strive to bring in various groupings of naval forces, including carrier-based and land-based aviation and submarines, or to conduct sabotage at the time when

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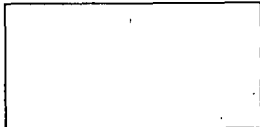
nuclear strikes are delivered on other targets.

The actions of underwater sabotage forces, in particular of frogmen, depend not only on the operational condition in the area where they are employed, but also on water and weather conditions (wave conditions, water temperature, etc.), which favor or hinder a man's remaining long under water in a special suit. It can be expected that they will be employed on a wider scale in areas with favorable conditions. However, it is not out of the question that frogmen will operate also in the North Sea theater, since intensive work is being conducted on the heating of diving suits and the improvement of breathing equipment. Midget submarines, owing to their tactical and technical capabilities, are able to operate under any water and weather conditions, i.e., they may show up, having been delivered in surface vessels, under their own power, or on helicopters, in all of our naval theaters, including closed (inland) seas, river mouths, gulfs, etc. Consequently, the distinctive features of the water and weather conditions of the naval theaters will not tangibly affect the actions of modern underwater sabotage forces.

Let us examine the tactical and technical factors and the combat capabilities of underwater sabotage forces and means and the trends in their development.

The enemy's underwater sabotage forces are based on frogmen. They are usually chosen from among skindivers and undergo training in sabotage actions under water and on dry land. Special suits allow them to remain at a depth of 10 to 15 meters for two to eight hours. The time they remain under water, i.e., their autonomy of action, depends primarily on the conditions of the breathing equipment, the perfection and strength of the suits, and also the degree to which they are heated. With a low water temperature (+2 to +5 degrees), this time period amounts to two hours, and without heating of the suits, to not more than 30 minutes.

For communications among themselves to a distance of 90 meters and also with the ship (vessel) that set them down, frogmen use an underwater acoustic communications device adopted by the US Navy in 1964. This device weighs about two kilograms. The availability of such a method of underwater communications allows one to assume that frogmen may act also in groups.



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The frogmen's individual means of movement in the assigned area are of great importance for the success of their actions. At the present time, for such means they use towing devices and guided torpedoes, which are delivered along with the frogmen to the action areas of the underwater sabotage forces in various types of submarines, including midget ones, surface combat ships, motorboats, merchant ships, self-propelled landing boats, and also in aircraft and helicopters.

For a towing device, the French "Pegas" type device can serve as the standard model. It is a hollow cylinder of light alloys weighing 40 to 50 kilograms, two to 2.5 meters long, and 0.2 meter in diameter, on which the frogman positions himself. A propeller (the motor is powered by a 24-volt battery) enables it to move at a speed of two to five knots (three to nine kilometers per hour) for a distance of 10 to 15 kilometers. Recently, in a number of NATO countries, especially in the US, experimental work has been conducted on the production of improved models of underwater towing devices. They are researching the possibilities of getting electric power by means of various chemical reactions, which will make it possible to increase the independent movement of the devices and improve their other tactical and technical components.

Another type of movement means for frogmen is the guided torpedo, an underwater self-propelled guidable device in several versions that resembles an ordinary ship torpedo in dimensions and a miniature submarine in external appearance. In the postwar period, the American-produced "Nautilus", "Minisub M-3", and "Minisub M-4" guided torpedoes came into widespread use. The "Nautilus" has a cylindrical body of plastic 5.5 meters long, 0.8 meter in diameter, with a cabin 1.4 meters high, the motor is powered by a 24-volt battery, the total weight of the device is 240 kilograms, inside it two men can be positioned. On the surface it can move at a speed of up to six knots (11 kilometers per hour), submerged it has a speed of up to four knots (seven kilometers per hour), its cruising range is 10 to 18 miles (18 to 30 kilometers). In 1962, a modification of this device appeared, the "T-14", differing basically from the previous one only by the availability of an attachment for towing cargo containers and by the absence of the high cabin. The "Minisub-4" guided torpedo is made of plastic, is 4.3 meters long, one meter wide, moves at a speed of five to six knots (nine

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to 11 kilometers per hour), and dives to a depth of 10 to 15 meters. Two frogmen can position themselves on top of the torpedo under a transparent hermetically sealed canopy.

At the present time, the trend noted is that of perfecting the means for frogmen to move about in the areas of their actions and of standardizing their transportation to these areas. Preference is being given to submarines, which offer greater concealment than other naval forces and are capable of releasing frogmen and their means of movement, except the "Nautilus", through the torpedo tubes.

Midget submarines, with an underwater displacement of less than 100 tons, are considered an extremely important type of underwater sabotage force and are a necessary supplement to the actions of multipurpose submarines. This type of ship was being intensively developed as far back as in the years of the Second World War, when up to a thousand of them were built. The basic types at the present time are the American "X-1" submarine and the British "X" submarine, both built in 1955. The "X-1" has an underwater displacement of 25 tons, a length of 14.6 meters, and width of 2.1 meters, and is able to submerge to a depth of 50 meters. Its underwater speed of movement is up to 12 knots (22 kilometers per hour), and on the surface, it is 15 knots (27 kilometers per hour). Its basic weapons are two shallow water mines of 300 kilograms each and it has a crew of five men. Two or three frogmen can be landed through its air-lock chamber. "X" type submarines have a displacement of 30 to 34 tons, a length of 16.5 meters, a width of 1.7 meters, and a movement speed on the surface and submerged of six to seven knots (11 to 13 kilometers per hour). The basic weapons are two torpedoes. Submarines of both types can cruise a distance of up to 500 miles (900 kilometers) on the surface and of up to 45 miles (80 kilometers) submerged.

Much attention is also being devoted in Japan to the development and perfection of midget submarines. Submarines displacing 35 to 85 tons are able to cruise a distance of from 200 to 2,600 miles (360 to 4,700 kilometers), to develop a submerged speed of four to six knots (seven to 11 kilometers per hour), and of up to 20 knots (36 kilometers per hour) on the surface. The basic weapons are torpedoes.

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In 1963 the United Arab Republic built its first midget submarine, the "S-1" (length up to 15 meters, diving depth 30 to 40 meters, crew five to six men), for actions in coastal areas. It has an attachment for landing sabotage-and-submarine men. All this is in keeping with the general trend in the construction of ships of this type.

The tendency in the development of midget submarines consists in reducing their dimensions and improving their tactical capabilities by improving the engines and strengthening the hull. In 1960, the USA built a relatively small size submarine, the "Tyke" type: length four meters, width 1.85 meters, and a displacement of five tons. It has treads for moving about a short time on dry land. The power source is a storage battery. The USA is working on designs for midget submarines with nuclear power plants.

For combat means, enemy underwater sabotage forces use mines, torpedoes, and demolition charges of different strengths and sizes. Thus, the Italian Navy in 1964 took into service the "Aups-Brind" small-size sabotage mine having a plastic body. According to the conclusion of NATO specialists, this mine is the best model that has been worked out following the common requirements established in NATO for underwater sabotage. In the future, the use of low-yield nuclear charges is also possible, since as far back as in 1955 the USA had tested a similar charge of one to three kilotons specially intended for underwater sabotage.

Thus, the improvement and development of the enemy's underwater sabotage forces and means is being carried out in various directions with the trend being to strengthen their combat capabilities and, consequently, to increase the probability and danger of their attack and the extent of the damage they can cause.

The equipping of modern underwater sabotage forces with combat means that are comparatively more powerful than those of the World War II period, including nuclear charges in torpedoes, mines, and land mines, and also the improvement of the tactical and technical properties of the means of delivering them to a target and of the operating methods of these forces, have drastically increased the capabilities of carrying out underwater

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sabotage. It is enough for one midget submarine or enemy frogman on a guidable device to get through to a ship basing point, port, or naval base and employ a nuclear charge, and not only will ships and vessels be destroyed but the base will also be disabled for a long time. Also contributing to this is the fact that, with the dispersed basing of naval forces, there are likely to be serious difficulties in creating a safe close-in defense of the basing points against the attacks of enemy sabotage forces.

It is our conviction that there has developed an acute necessity of working out in detail an efficient system of organizing combat against enemy underwater sabotage forces and means.

We should begin with a definition of the concept "underwater sabotage forces and means," since we often meet with different interpretations of it in our unclassified and classified periodical literature and even in guidance documents, and also with an incorrect classification of these forces and means.

In our opinion, underwater sabotage forces are those forces capable of employing while submerged the combat means (torpedoes, mines, explosive charges, including nuclear ones) adapted for them and powerful enough to destroy a target, and also capable of conducting reconnaissance. Falling into the category of underwater sabotage forces are frogmen, who move about with the aid of underwater and surface towing devices, and midget submarines.

The general system of organizing combat against enemy underwater sabotage forces and means in a naval theater must, in our opinion, be based on a determination and evaluation of the sea or water areas from where most probably underwater sabotage forces and means will be able to operate, and it must also take into consideration the capabilities of our navy to maintain the proper operational conditions in the theater as a whole or in separate areas, including those in most danger from underwater attacks. Undoubtedly, combat against the submarines and surface forces groupings of the enemy navy at sea, carried out on the scale of armed conflict in the theater, will reduce the danger of an attack by underwater sabotage forces; however, it will not completely eliminate it.

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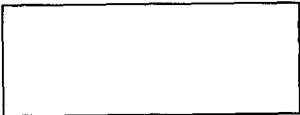


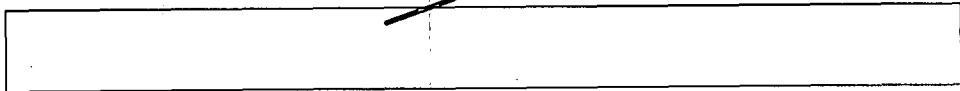
Some officers, generals, and admirals express the opinion that, under the conditions of modern armed conflict at sea, in spite of the presence of the enemy's highly developed underwater sabotage forces and means, with the dispersed basing of our own navy's forces there is no sense in specially organizing combat against underwater sabotage forces and means. The reasoning for this is that we will hardly be able to allocate a large number of the navy's mobile forces and fixed means, and protection with the aid of numerically small groupings may prove ineffective.

One cannot, to our way of thinking, agree with this opinion. As the underwater sabotage forces and means of the enemy develop, the further improvement of both our combat and technical means and of our methods of combat against them will take place. The new conditions of basing naval ship groupings in dispersed points for the purposes of protecting them from weapons of mass destruction must force us above all to think specifically of just how we are to organize the activity of the available forces and means of our naval bases and of the large units and units of general fleet subordination for the most effective and dependable protection against underwater sabotage.

In researching this question, we have arrived at the conviction that, in the interests of organizing combat against the enemy's underwater sabotage forces and means in a naval theater, in addition to the existing "distant" and "close-in" zones of antisubmarine defense in the naval theater, it is necessary to set apart from the "close-in" zone still another, the "coastal" zone. It will take in a narrow strip of dry land, the water area of gulfs, all bays, harbors, and river mouths. Its boundary should be established at sea at a distance of 25 to 30 miles (45 to 56 kilometers) from the shoreline.

In such a "coastal" zone it will be easier to study and take into consideration the peculiarities of the hydrological conditions and the relief of the terrain, and simpler to assign forces and means and precisely work out the organization of combat (including control and all-round support) against every type of underwater danger on the approaches to bases, ports, and distant dispersed basing points for naval forces as well as other important installations.





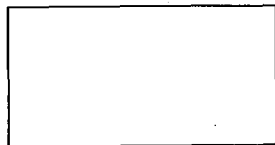
Within the limits of the "coastal" zone it is advisable to establish separate areas or sectors for combat against underwater sabotage forces and means, especially on the more probable and convenient axes for the penetration of underwater sabotage forces and means, where there are important military or economic installations.

In the "coastal" zone, groupings of forces and means of the navy and of other branches of the armed forces will be operating. These groupings may consist of fixed means and of mobile means. The fixed means of the navy should include equipment to conduct continual surveillance over all areas or sectors, give warnings and maintain communications, including shore sonar stations, detection indicators, mobile and fixed sonobuoys, and signalling nets. In addition, the service for the close-in surveillance of the shore, water surface, and airspace will be operating. Really mobile naval forces must be established for the purpose of pursuing and destroying underwater sabotage forces that are detected. The makeup of the mobile forces should, in our opinion, include all of the base's shallow-water but fast-moving motorboats, small antisubmarine ships, minehunting boats, harbor minesweepers, helicopters, and other water and air craft.

The control of these forces and means in separate areas and sectors, in our opinion, must be entrusted to the commanders of the naval bases or the large units of the offshore defense force.

As for the strip of sea (ocean) to the depth of the five- to seven-meter depth contour, in separate sectors or areas outside the waters where the naval forces are located, the responsibility for combat against underwater sabotage forces and means in them must, in our opinion, be entrusted to the troops of coastal military districts, and, in some cases, to border guard troops.

A grouping of forces and means made up of ground forces and other branches of the armed forces will augment the surveillance system and, upon the announcement of increased readiness, allocate the most mobile on-duty subunits, including tanks, armored personnel carriers, etc. In the most probable landing places for sabotage forces, it will be necessary for engineer subunits, jointly with the navy, to set out mixed minefields.





As a whole, the system of surveillance and warning must operate dependably under any conditions of visibility, weather, season of year, and time of day. All the work to coordinate the actions of the naval forces and means and the forces and means of the other branches of the armed forces must, in our opinion, be carried out jointly with the commanders of the large units and units of the other branches of the armed forces and the border guard troops. The main consideration in this work is timeliness.

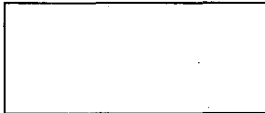
Control of the grouping of ground forces allocated for combating underwater sabotage forces and means will be carried out by the senior commander in the given area or the commander of the local garrison.

Overall leadership of the forces and means for combat against underwater sabotage must, in our opinion, be exercised by the fleet commander and his staff centrally at the scale of the naval theater. This is due to the fact that the fleet will be accomplishing the assigned task in parallel with the conduct of combat against submarines, inasmuch as these are the basic means of transporting the enemy's underwater sabotage forces and means. Centralized control will make it possible to intensify efforts in good time for greater effectiveness, if this is required, by using forces and means of the naval bases, certain ship large units of general fleet subordination, and the fleet aviation in any coastal area of the naval theater.

Taking all this into consideration, the tasks of combating enemy underwater sabotage forces and means in a theater, in our opinion, will be accomplished, as a rule, in the course of the everyday combat activity of the fleet forces.

The lack of special technical means of detection adversely affects the organization of a dependable system of protection for naval force bases against the possible penetration of underwater sabotage forces. This circumstance compels many of the responsible officers of naval large units and units to proceed, as of old, on the basis of the visual surveillance data of naval patrol forces and shore observation posts.

An experimental exercise conducted on this theme in the Black Sea Fleet showed that ship, shore, and aircraft technical means operating in the "echo direction finding" mode do not



detect such underwater targets as frogmen and midget submarines. The latter produce very insignificant noise and magnetic and electrical fields. Furthermore, the broken nature of the shoreline and the presence of capes and shoals form extensive dead zones when surveillance is being done by onshore fixed technical means, and the littering of coastal areas with the remains of sunken vessels and various metal objects creates a wide variety of false targets.

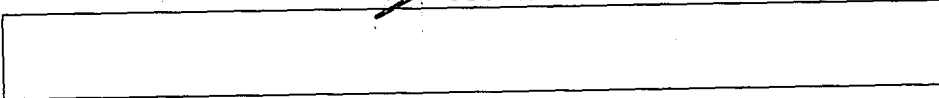
Thus, there is an urgent need to concern ourselves in earnest beforehand under peacetime conditions with the development and introduction of the necessary modern technical means of detecting an underwater danger and, at the same time, to also work out the organization of the use of naval forces and means and the organization of the control organs.

In our opinion, it is possible to perfect technical detection means of two types, fixed and mobile. Among the former type can be classed base sonar systems with remote stations on the sea bottom, electromagnetic loops in individual sectors, diversified signalling nets (simplified) with light, sound, and radiotechnical signalling to cover the water layer in certain sectors, underwater observation equipment, etc. These means must ensure surveillance at any time and in any weather.

Among the mobile means are the various highly sensitive sonar devices on ships and vessels, and also the system of visual surveillance from ships and vessels in cooperation with the system of surveillance existing in the units and subunits of other branches of the armed forces located in coastal areas.

Among the means of destroying enemy underwater sabotage forces and means should be classed the variously modified depth charges that are dropped from fast-moving boats and shore missile launchers, special charges, bottom mines with remote-control fuzes, and other demolition devices in conjunction with mixed minefields on land and the employment of conventional types of ground force weapons.

As for the methods of using naval forces and means to combat underwater sabotage forces and means in the "coastal" zone of a naval theater, it appears to us that there can be several of them. For instance, the beforehand deployment of hunter-killer



groups on the most probable axes and in certain search areas. It is also possible to concentrate, at the forward basing points of a fleet, hunter-killer groups, including helicopters, in increased readiness for action, and, on some axes and sectors, <sup>35m.21</sup> shore fire means of the fleet (artillery and missile launchers). The groupings of forces for actions on land must deploy on a signal from the command posts of the fleet or naval base in keeping with previously worked out variants for the given area.

Creating such a system of combat with underwater sabotage forces and means is necessary right now, in peacetime. We are, of course, far from overestimating the combat capabilities of the underwater sabotage forces and means of the probable enemy in a future war at sea; but more terrible, in our opinion, is the danger which is sometimes nourished by not noticing or by underestimating.

For the purposes of working out the methods of using our forces and means in combating on the operational and tactical plane the enemy's underwater sabotage forces, it is necessary to involve more extensively the officer personnel of scientific research institutes and higher military educational institutions and also to conduct more experimental and special exercises in fleets jointly with units and subunits of the other branches of the armed forces located in coastal military districts. This will enable us right at the present time to seek out the most efficient and economical methods and techniques of combating these covert forces of the enemy and not be caught by surprise in the initial period of a war.

