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CENTRAL INTELLIGENCE AGENCY

WASHINGTON, D.C. 20503

10 January 1979

MEMORANDUM FOR: The Director of Central Intelligence

FROM : John H. Stein
Acting Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Engineer Support
of Coastal Antilanding Defense

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 the main ~~features of a US shore defense~~ at the tactical level. It covers the typical layout of a defending division, the preparation of its positions, and the obstacles normally set up on the beach and a few hundred yards out into the water. This article appeared in Issue No. 2 (78) for 1966.

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

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Intelligence Information Special Report

Page 3 of 17 Pages

COUNTRY USSR

DATE OF INFO. ~~1966~~ 1966

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DATE 10 January 1979

SUBJECT

MILITARY THOUGHT (USSR): Engineer Support of Coastal Antilanding Defense

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (78) for 1966 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Engineer Lieutenant Colonel G. Fedotov. This article describes the main features of a US shore defense at the tactical level. It covers the typical layout of a defending division, the preparation of its positions, and the obstacles normally set up on the beach and a few hundred yards out into the water.

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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Engineer Support of Coastal Antilanding Defense

by

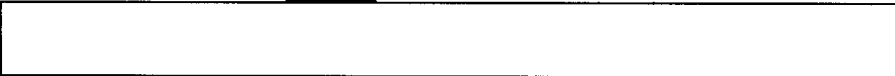
Engineer Lieutenant Colonel G. FEDOTOV

In the postwar period, an important aspect of the operational training of US naval forces and of the combined armed forces of the North Atlantic Alliance has been working out amphibious operations in which the American command and the command of the combined armed forces of NATO, in order to set up a realistic situation, allocate part of their various forces to act as the enemy. In this way the armed forces of the US, and to some extent those of the UK, have acquired a certain experience in setting up a modern coastal antilanding defense and conducting antilanding operations.

According to the American and British views, the main task of antilanding defense is to destroy the enemy landing force before its debarkation or, at the very latest, while it is attempting to land on the shore. In other words, the main forces for combating a landing force on the distant approaches must be the fleet and aviation, and the direct repulsing of the debarkation of a landing force should be the responsibility of the ground forces with active assistance from the fleet and aviation.

The forces and means allocated for the antilanding defense of a theater are not dispersed uniformly within it but are distributed according to the importance and landing accessibility of individual areas of the coast. These circumstances are also taken into account in carrying out engineer preparation of the coast against landings. It is considered in the US that coastal sectors which are accessible for landing and which are near important strategic points and areas of the country, as well as those coastal areas in which bases, large ports, and major industrial and political centers are situated, must have a previously prepared antilanding defense system and a sufficient number of forces and means.

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It is planned to use limited forces for defending the remaining coastal areas which are accessible for landing; and in those sectors where the debarkation of a landing is not very probable, patrolling is organized or guarding by means of guardposts. According to regulations, coastal defense in the US, when there is a threat of nuclear attack, is organized on the whole like defense over a wide front. It is considered, for example, that an army group in a coastal antilanding defense may have a front 300 to 350 kilometers wide; a field army, 100 to 120 kilometers; and an army corps, 40 to 80 kilometers.

A mechanized (infantry) division is given a zone about 25 kilometers wide in which to organize defense. The overall depth of defense of a division reaches 32 kilometers.

The forward edge of defense is selected in the majority of instances directly along the water's edge. However, if the shore is shallow-sloping (if there is a beach), the forward edge may be pulled back slightly into the depth to a distance of 0.5 to 1.0 kilometer from the water's edge. In the zone from the water's edge to the forward edge of the forward defense area, combat security positions are prepared. At these positions and in the gaps between strong points and centers of resistance, observation posts are put out.

The forward defense zone of a division has a depth of six to eight kilometers. Its mainstay is the combat positions, which include company strong points (sometimes centers of resistance), battalion defense areas, positions for fire means, and obstacles. The disposition area of reserves is that part of the division defense zone which adjoins the forward area from behind. A variant of the disposition of the battle formation of an American division during coastal defense is given in the diagram.



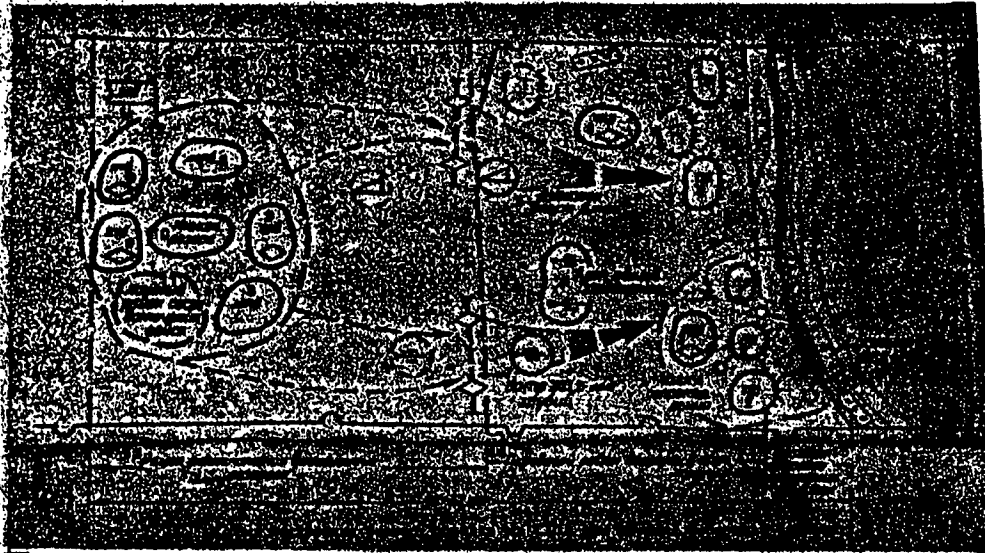
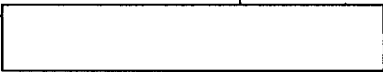


Diagram of the disposition of the battle formation of a US mechanized division in a coastal defense (variant)

- | | |
|-----------------------------------|------------------------------------------|
| 1 System of antilanding obstacles | 9 Tank battalion |
| 2 Infantry company | 10 Engineer reserve |
| 3 Tank company | 11 Decoy troop concentration area |
| 4 Center of resistance | 12 Mechanized division (HQ) |
| 5 Honest John battalion | 13 Disposition area of division reserves |
| 6 General support artillery | 14 Forward defense area 6 - 8 km |
| 7 203.2mm howitzer battery | 15 Combat security position 0.5 - 1.0 km |
| 8 Mechanized infantry battalion | |





The backbone of an antilanding defense in the zone of an infantry division is the reserves. They are allocated to deliver counterthrusts in order to rout the main landing forces. Special attention is given to moving the units up rapidly to the lines of deployment for counterattacks. Reserve subunits are to be used not only for conducting counterattacks but also for occupying areas in the forward area if the troops defending these areas are subjected to the effects of nuclear weapons.

In organizing and conducting defensive battle, the American command attaches priority importance to engineer preparation of the terrain. It is carried out in order to hamper the debarkation of a landing force on the shore, to increase the effectiveness of fire by all types of weapons, to protect their own troops against nuclear strikes and against fire from conventional means of destruction, to facilitate maneuvering of forces and means, and to impede an enemy attack on the shore.

Depending on the situation, antilanding actions by the US and British armed forces may be conducted under conditions of a previously prepared coastal antilanding defense or when the troops go over to the defense in haste.

In the first instance, the defense is characterized by substantial engineer preparation of the coast, while in the second, engineer preparation of the coast will be organized within a restricted time limit, mainly by erecting emplacements, simple shelters of the field type, and mixed minefields.

If there is enough time, antilanding preparation of the probable debarkation area of an enemy landing force is carried out by the Americans and British in advance and with great care.

In the forward defense area of a division are prepared main and alternate (blocking) positions, strong points, siting areas for nuclear means, artillery firing positions, sites for placing control posts, and a system of obstacles.

At strong points and centers of resistance are prepared one- and two-man foxholes, sections of trenches and communication passages, and emplacements for fire means. Personnel shelters are constructed in the form of recesses, slit trenches, covered trench sections, and dugouts.





Strong points and defense centers are placed at a considerable distance from one another and are prepared to conduct all-round defense. In the gaps between them, dummy strong points are set up.

In the area of division reserves are prepared concentration areas, positions, march routes for moving up and deploying for counterattacks, alternate and dummy strong points, and positions for division and corps fire means; and a system of all types of obstacles is set up. The nature of the engineer preparation of the area of division reserves is the same as for the forward defense area.

In areas for concentration of reserves, provisions are made to construct shelters for personnel and combat equipment and to prepare foxholes and emplacements for antitank and antiaircraft means.

When positions are prepared hastily, the basic types of structures are considered to be foxholes, emplacements for different fire means, and the simplest shelters for personnel and materiel.

Under conditions of a stable defense or advance erection of defense works, in addition to completely prepared emplacements there may be prepared covered fire structures, dugouts, field shelters, structures for observation, shelters for combat, special, and transport vehicles, and also sections of communication passages, trenches, and obstacles difficult to negotiate.

The most stable ^{defense} against the effects of a nuclear burst are considered to be shelters of the dugout and underground type. They may find application in the advance preparation of an antilanding defense.

Tank battalions prepare defense areas or fire positions for themselves. In either case, it is planned to erect main and alternate emplacements for tanks and shelters for tank crews. Tank emplacements are to be used for conducting fire and protecting tanks against fire from antitank means.



At artillery firing positions there are prepared open emplacements (sometimes platforms) with dugout-type shelters for the gun crews, defense works at the control posts, very simple shelters for prime movers and transport means, and access roads. It is recommended that every battalion have main and alternate positions.

The US Army command considers that when nuclear weapons are being used, it is necessary, in order to protect guns and mortars, to excavate deeper emplacements with a raised breastwork and to prepare covered ammunition shelters and slit trenches or dugouts for the gun crews. It is recommended that tarpaulins protecting the crew from the thermal radiation of a nuclear burst be spread above the guns in the emplacement.

Engineer preparation of the siting area of an Honest John free rocket battalion includes preparation of fire positions for batteries, battalion fire control posts, technical positions, and a location area for the headquarters and service battery. In addition to the main siting area, alternate and waiting areas are prepared. The area is carefully camouflaged against enemy ground and air observation. The battalion's launch sites are prepared six to ten kilometers from the forward edge. In order to carry out earthmoving and some roadbuilding tasks, the battalion has organic bulldozers, entrenching equipment, and a compressor unit.

As crew shelters and missile launching points, and also for protection of personnel at the command post of the battalion commander, it is sometimes planned to construct open and covered slit trenches and -- if the time and materials are available -- dugouts and light shelters.

On the whole, the nature of the engineer preparation of the zones and positions in a defense depends on the conditions under which the troops go over to the defense and on the time available for carrying out engineer work. When positions are prepared hastily (in two to three days), the works erected are for the most part one- and two-man foxholes and emplacements for fire means, with very simple shelters for gun crews and tank crews. As the defense stabilizes, or if there has been advance preparation of the defense positions and zones (for five to six days), all previously erected works at strong points are improved. Separate emplacements and dugouts are joined by

trenches and communication passages. For personnel, covered sections of trenches and dugouts may be prepared. For artillery and tanks, alternate emplacements are prepared, which are joined with the main positions by communication passages. When the defense is further improved (12 to 15 days), it is planned to erect dugouts for all personnel as well as shelters for combat and transport vehicles.

In connection with the increase in the volume of engineer work, extensive use of mechanical equipment is planned. For this purpose, the tables of equipment call for nine bulldozers in the combat engineer battalion of an armored division and for one tank bulldozer attachment in each tank company. An armored division using two-thirds of its organic bulldozers (about one-third of them are called on for road work) is able, in ten hours, to excavate up to 200 emplacements for tanks and guns or up to 150 shelters for combat vehicles. Actually, the available organic mechanical equipment makes it possible to shelter all of the combat equipment of an armored division in two to three days.

In order to reduce the time needed for erecting fortification works, it is planned to make wide use of standardized structures prepared in the rear by the centralized assembly-line method. In addition, components of corrugated steel are to be used. However, the manuals take into account that the troops cannot obtain the required amount of prepared structures in the first stage of going over to the defense. It is accordingly suggested to use any available building materials.

The main engineer work for preparation of the zones and positions is carried out directly by the troops which are to occupy them. They set up positions for fire means, shelters for personnel and combat equipment, and their own disposition areas. Engineer units and subunits are responsible for carrying out the most complicated tasks requiring special personnel training and the use of engineer equipment.

A key element in a coastal defense system is obstacles against the debarkation of amphibious landing forces, to be constructed both on land and in the offshore areas.

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Antilandings obstacles are designed to:

- hold back the landing and amphibious means through the effect of artillery and machinegun fire;
- inflict damage on the landing and amphibious means and casualties on the personnel aboard them;
- force the landing units (subunits) to move along previously determined axes.

The field manual of the US Army (FM 31-10) provides for the use of shore obstacles to oblige the enemy to offload his landing vessels several hundred meters from the high water line during low tide. This obliges the debarking landing force to negotiate the obstacles and a considerable stretch to the shore, which is covered by strong fire from the shore defense. At high tide, the part of the offshore zone which includes the obstacles is covered by the water and becomes invisible to the enemy landing units. Once a landing vessel has collided with an obstacle, the landing force must be offloaded into the water. The damaged vessel becomes an immovable target vulnerable to direct fire from the shore. The effectiveness of underwater obstacles is increased by attaching mines whose detonation wrecks the bottoms of the landing vessels and also hampers obstacle removal by teams of demolition divers.

The obstacle system includes:

- a zone of obstacles against amphibious landing means, set up in the water at depths of up to three or four meters;
- a zone of obstacles against the amphibious means (amphibious tanks, armored personnel carriers, motor vehicles) and infantry of the landing forces, set up on the shore and in the water (at depths of 1.2 to 1.5 meters).

In addition, naval mines may be used at depths of one meter or more against amphibious landing means.

Obstacles against the debarkation of amphibious landings are classified as field fortifications or mixed minefields. The former include various forms of dragons' teeth, hedgehogs, ramps, fences, barricades, knife rests, and barriers; the latter include mines against amphibious landing means, antitank mines, and antipersonnel mines. Field fortifications are as a rule

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reinforced with mixed minefields.

Depending on the time required for setting up obstacles against the debarkation of naval landing forces, they are classified as those erected in advance [deliberate obstacles] and those erected in haste [hasty obstacles].

When obstacle zones are prepared in advance, field fortifications are usually employed: knife rests, steel hedgehogs, and ramps. When obstacles are prepared hastily against the debarkation of landing forces, mixed minefields are used, as well as obstacles made from materials at hand and prefabricated components. Among the obstacles to be used in hasty preparation of antilanding defenses are stone embankments, wooden post obstacles, spiders, triangular cribs, and stone walls reinforced with mines and barbed wire.

In setting up a system of antilanding obstacles, special attention is devoted to exploiting obstructions. The placement of antilanding obstacles is coordinated with the fire system of machineguns, artillery, and other combat means.

Obstacles are set up first on the most probable axes of debarkation of an amphibious landing force. Particular attention is given to camouflage and concealed placement of obstacles. Dummy obstacles are widely used.

Fortification obstacles placed in the water usually consist of one to six rows, with a distance of eight to ten meters between rows and 1.5 to nine meters between individual obstacles in a row. The depth and density of the obstacles must provide for maximum stability of coastal defense, and they must, in combination with other combat means, prevent amphibious landing means from reaching the water line to debark on the beach.

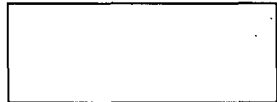
On the most probable axes of a landing force debarkation, the density of obstacles in the water is usually 0.8 to 0.9 kilometer of obstacles per kilometer of defense frontage, with the obstacles set up in several rows (as many as six rows); and in sectors where the debarkation may be secondary in nature, 0.2 kilometer of obstacles per kilometer of frontage, with the obstacles set up in one or two rows. The average density of

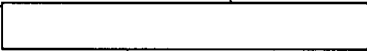


obstacles to be set up in the water in the coastal defense zone to be occupied by an infantry division is 0.2 to 0.5 kilometer of obstacles per kilometer of frontage.

Obstacles are placed underwater at a level of 30 to 60 centimeters below the surface (in tidal seas this depth is counted from the water level at high tide). If the water level fluctuates more than three to four meters, the obstacle system may be on dry ground at low tide. Shore obstacles are placed on the beach above the high tide line.

The specifications of fortification obstacles which foreign armies use against debarkation of amphibious landing forces are set forth in the table.





Type of obstacles	Main dimensions	Weight	Placement depth	Stability in rough water
Horned scullies	Height 1,85 to 2,45 meters. Concrete block with volume of 3 meters and height 1,25 meters. Base 1,5 meters by 1,5 meters. Rails protrude from block 0,6 to 1,2 meters.	About 8 tons	Up to 3,0 meters	7 to 8 balls
Steel hedgehogs	Height 1,25 meters	0,15 tons	Up to 1,5 meters	4 to 5 balls
Metal fences ("S" elements)	Height 3 meters Width 3 meters	0,8	Up to 3,8 meters	4 to 5 balls
Wooden triangles	Height up to 1,5 d = 0,30 meters	0,18 tons	Up to 2 meters	Up to 4 balls
Metal ramps	-----	--	0,8 to 1,8 meters	----
Wooden post obstacles	Height 1,5 to 2,5 meters. d = 0,30 meters	0,1 to 0,2 tons	2,0 to 3,0 meters	Up to 6 balls
Wooden cribs	Height 2,0 to 2,5 meters. Base 1,2 by 3 meters	2 to 3 tons	2,5 to 3,0 meters	4 to 5 balls
Pyramid obstacles	Height 2 meters	0,8 to 1,0 tons	2,0 to 2,5 meters	4 to 5 balls
Stone walls	Height 1,2 meters. Width 0,9 to 1,2 meters	2 tons per linear meter	1,5 to 1,8 meters	Up to 5 balls

Note. All types of obstacles are designed against amphibious landing means.





When time is limited for preparing a coastal defense, existing natural obstacles and previously placed obstacles are supplemented with mixed minefields in the form of anti-amphibious minefields. They are placed in the water and on shore, forming two zones ("belts") of minefields. Underwater minefields may have as many as six rows of mines.

The intervals between mines in a minefield set up in the water depend on the type of mines and the depth at which they are placed. The mines are far enough apart to preclude the possibility of their being set off by the detonation of an adjacent mine.

Minefields placed below the high water line are situated so that at low tide they will be at a distance from the shore where the average depth is 1.8 meters. Antitank mines are used for this purpose, seven to nine meters apart in a row.

Minefields placed above the high water line include anti-personnel and antitank mines, sometimes reinforced with chemical or napalm mines. On the most important axes, nuclear mines with a TNT equivalent of one to three kilotons are placed in the gaps between strong points and defense centers.]

A shore zone of minefields is set up according to plans and norms accepted under ordinary field conditions. The standard plan for construction of a minefield has three zones, with at least 18 paces between zones and two to six paces between rows of mines within the zones and between mines in the rows. In order to reveal activity by reconnaissance groups and obstacle-clearing groups inside the obstacle system, illuminating and signaling means are employed (rockets, mines).

To mine terrain in the enemy rear, and when their own troops are withdrawing, the American and British armies also use demolition means dropped from aircraft. In Korea, for example, M33 fragmentation bombs were used for this purpose.

With the appearance of new combat means, according to the views of the US Army command, the role of obstacles and demolitions will increase significantly. This is because, as the width and depth of the operational disposition of troops increase, obstacles make it possible to economize on forces and



means and facilitate the establishment of a strong defense within a shorter time. In this connection, the ways and methods of setting up obstacles and producing demolitions are being improved, and intensified work is being conducted to improve the existing forms of demolition means and to create new ones.

In carrying out coastal defense, US and British troops may use demolitions on a large scale. These may range from the creation of a zone of total devastation ("scorched earth") down to measures to temporarily prevent the enemy from exploiting a given area or facility. The main targets of destruction are considered to be bridges, airfields, roads, ports, obstacles, control and communications posts, pipelines, waterworks, etc.

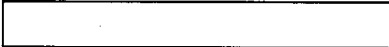
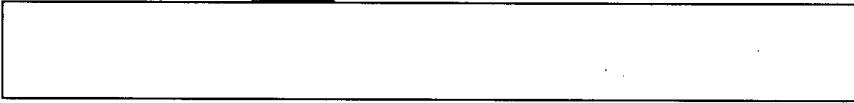
For demolitions they plan to use bomber aircraft (which was widely practiced in Korea), incendiary means, artillery fire, streams of water (floods), mechanical methods, and different demolition charges of explosives placed on targets by hand. This last method is considered the most effective and economical. Such charges (land mines) can be detonated immediately or with a delay of up to several hours or days and from a great distance by means of special radio equipment.

In order to impede restoration work, it is planned to mine demolished facilities with antipersonnel, signal, and chemical mines (land mines) and sometimes also with delayed-action explosive charges (bombs). For large demolitions, the use of even nuclear charges is not excluded.

In setting up antilanding defense, the US Army attaches great importance to questions of organizing the supplying of water.

A study of manuals and analysis of materials from troop training exercises enable us to conclude that our probable enemy will employ diverse forms and methods of conducting combat actions, attempting to avoid setting a pattern. Consequently the methods of engineer preparation for coastal antilanding defense will vary depending on the situation.

In coastal antilanding defense, the American command devotes special attention to preparing security positions with antipersonnel and antitank obstacles and also with obstacles



against amphibious landing means.

In seas with insignificant fluctuations of the water level, antilanding obstacles will represent a serious hindrance to landing ships and landing craft on the approaches to the debarkation points. Negotiating a mixed obstacle system requires the organization of timely reconnaissance and the corresponding preparation of units and subunits of all branch arms and special troops, since the engineer troops are not in a position to ensure the necessary rates of development of the attack.

During battle, the enemy plans to carry out large-scale demolitions and to enlarge mixed minefields. In order to frustrate these measures it will be of great importance for our troops to break through rapidly and advance into the depth of the enemy defense. Simultaneously, the engineer units supporting the troop advance must discover these obstacles, reconnoiter ways around them, prepare detours, and when necessary eliminate the aftereffects of demolitions carried out by the enemy.

Since the US Army command plans wide use of counterattacks, it is necessary to train in advance strong mobile obstacle detachments capable of covering the flanks of the attacking troops with mixed minefields within a short time and thus contributing to the repulse of these counterattacks.

