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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

6 December 1976

MEMORANDUM FOR: The Director of Central Intelligence

FROM : William W. Wells
Deputy Director for Operations

SUBJECT : MILITARY THOUGHT (USSR): Increasing the Survivability of Control Posts

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 proposes reducing the number of groups at a command post and rear control post and bringing protective structures closer together within the groups to increase the survivability of control posts. It also focuses on the need to give engineer preparation to areas where control posts are located, and examines the suitability of employing various protective engineer structures under different situational conditions for this. The role of engineer reconnaissance of these areas, as well as the need for special engineer units to prepare the control posts are discussed. A diagram showing the basic layout for the dispersal of groups at a control post is included. This article appeared in Issue No. 1 (77) for 1966. [redacted]

[redacted]

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 [redacted]

[redacted]

William W. Wells

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Intelligence Information Special Report

COUNTRY USSR

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SUBJECT

MILITARY THOUGHT (USSR): Increasing the Survivability of Control Posts

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (77) for 1966 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought". The author of this article is General-Leytenant of Engineer Troops G. Samoylovich. This article proposes reducing the number of groups at a command post and rear control post and bringing protective structures closer together within the groups to increase the survivability of control posts. It also focuses on the need to give engineer preparation to areas where control posts are located, and examines the suitability of employing various protective engineer structures under different situational conditions for this. The role of engineer reconnaissance of these areas, as well as the need for special engineer units to prepare the control posts are discussed. A diagram showing the basic layout for the dispersal of groups at a control post is included. End of Summary

[redacted] Comment:

[redacted] Leytenant Grigoriy Fedorovich Samoylovich was identified as a candidate of military sciences and as a Hero of the Soviet Union in Red Star, January 1975. 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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Increasing the Survivability of Control Posts

by

General-Leytenant of Engineer Troops G. Samoylovich

The survivability of control posts consists in their ability to continuously control troops during combat actions under any conditions of the situation, especially during a period in which nuclear strikes are being delivered against them and biological and chemical weapons, as well as conventional means of destruction, are being employed.

The most important conditions for increasing the survivability of control posts are considered to be dispersed disposition of them on the terrain, taking its protective features into consideration, appropriate engineer preparation of the areas, and also short duration of the control posts' stay in one area and rapid relocation of them. It is advisable to relocate control posts to a new area, in our opinion, only after the main engineer preparation work has been performed and communications have been set up with the troops and within the control post.

It is generally recognized that, during the preparation and course of an operation, the control organs of a front and an army must be dispersed over a considerable area. Thus, for the control post of a front, this area must be no less than 100 to 150 square kilometers (some believe that it could also be 40 to 50 square kilometers) and, for the control post of an army, 20 to 30 square kilometers.

There is no doubt that dispersing control posts over large areas increases their survivability, but at the same time it creates inconveniences in operating them. In a number of exercises in recent years, the command post and rear control post of a front were divided into six to eight groups which were situated 1.5 to two kilometers apart, which greatly hampered all their activity. Much time was lost in going from group to group for personal contact and, inevitably, the discarded method of assembling a considerable number of personnel (usually in a large tent) to hear reports and proposals was resurrected. A lot of means were expended on setting up internal communications, readiness times were lengthened, and the stability of control was reduced.

Considering all that has been said, we propose reducing the number of groups at a command post and rear control post and bringing protective structures closer together within the groups. In our opinion, the command post of a front (regardless its T/O structure) could consist of the following four groups: command-operations (the command, operations directorate, intelligence directorate), fire means control (directorate of the chief of the rocket troops and artillery, directorate of air defense, operations group of the air army), combat support (directorate of the chief of the engineer troops, chemical department, topographic department, group from the political directorate, operations group of the rear), communications (communications center, directorate of the chief of the communications troops, department of warfare against enemy radioelectronic means, cipher department). Servicing and transportation subunits are organized as an independent group and are located at a short distance from the main groups. The rear control post of a front should be divided into four groups.

The distance between groups may be up to two kilometers, but the protective structures should be located at a minimal distance apart, locating some of them together. In this case, the command post and rear control post of a front will require about 30 square kilometers each. The basic layout for the dispersal of the groups at a control post is shown in the diagram.

With such dispersal and the appropriate protection, a 100-kiloton nuclear strike will not destroy two groups simultaneously, and, if one of them is put out of operation, troop control will not be lost. And conveniences are created for work within the groups, contact between them is ensured, and the expenditure of communications means and the time needed to orient the antennas is reduced.

Skilful use of protective topographic features helps to a great extent to increase the survivability of control posts. Research has shown that level terrain with vegetation cover increases protection against the casualty-producing elements of a nuclear burst by 40 percent, while broken terrain with vegetation increases it by 65 percent. Therefore, preference should be given to average broken terrain covered with tracts of forests of young trees. Protected basements in inhabited areas and low stone structures, as well as various underground mines can be used for this same purpose.

In recent years much attention has been devoted to the mobility of control posts in the expectation of increasing their survivability through

maneuver. In connection with this, staff buses and tents for the personnel to work and rest in have found widespread employment among the troops. Even now, further improvement of the bus-tent variant of locating control posts goes on, while less and less attention is being devoted to the use of engineer protective structures, which in the final analysis leads to a reduction in the survivability of the control posts.

Practically, unsheltered buses and tents can be put out of operation at a radius of two to three kilometers from the ground zero of the burst of a 50-kiloton nuclear warhead. True, cut-and-cover shelters for the buses increase their protection somewhat (at a radius of 1,000 meters), but this is also inadequate. Nor are the problems of protection and survivability solved by using armored personnel carriers or helicopters for control posts at the front-army level, since these vehicles are used rarely and on a limited scale.

The obvious vulnerability of a control post located in buses, even those sheltered in cut-and-cover shelters, has forced us to search for other solutions in order to protect them. One of these was the proposal to set up special steel encased shelters that provide protection at a radius of 300 to 500 meters. But these shelters have not found widespread employment due to the limited work area in them.

It is our conviction that, in order to increase the degree of survivability of control posts, it is most advisable to give engineer preparation to the areas in which they are located. True, during a front operation, there will be extremely little time for this, not more than a day, and in such a short time it is hardly possible to provide equally strong protection for all the elements of a control post.

In operations against a strong and aggressive enemy, very high rates of advance will not always be achieved, which will make it possible to find additional time to give engineer preparation to the area in which the control posts are to be located. Obviously, in the most typical case, the command post of a front will not be relocated more than once in two days, and the command post of an army and the forward command post of a front, once a day. This does not rule out the conduct of defensive actions during which staffs will have to stay in prepared areas somewhat longer. Considering that the enemy will strive to destroy the control posts as being the most important targets, no commander will risk subjecting his staff to a strike, and he will take energetic steps towards developing work to erect protective structures.

Under these conditions, protection should be organized first of all for the command-operations group, the fire means control group, and the communications center, i.e., for those groups which directly control the operation. Subsequently, places to locate the rest of the groups of the field headquarters of the front are prepared.

In the troops, a certain amount of experience has already been accumulated in the use of protective engineer structures. Proving quite effective were structures of the USB type.* When protection can be depended on, they provide both a very considerable useable area (a set of one structure provides 35 square meters, which allows accommodating 15 to 17 working positions or 25 to 35 rest positions; and a set of two or three structures provides 70 to 100 square meters) and working conveniences for the control groups located together. The shortcoming is the great weight of the set (68.6 tons, or 1.9 tons per square meter of area): to transport it requires 12 MAZ-200 trucks, or 13 ZIL-157 trucks with trailers. These structures, obviously, will find employment when areas have been prepared in advance.

In a mobile situation, though, it is advisable to use structures of the SBK type.** The weight of such a set is 34 tons (the weight per square meter of area comes to two tons), and six MAZ-200 trucks are required to transport it. Inasmuch as the weight of the individual components of the structures does not exceed 1.5 tons, they can be transported by helicopters. In this case, 20 trips by an MI-4 are required to transport an SBK set, and for a USB set -- 40 trips by an MI-4 or 12 trips by an MI-6 are needed. However, the SBK structures are inferior to structures of the USB type in protective features and dimensions of useable area. (One SBK set provides 16.8 square meters, which accommodates eight to ten working positions or 20 to 25 rest positions.)

Experience has shown that the components of these structures can be successfully manufactured under field conditions by concrete construction subunits -- each making two sets per day -- given the modern methods of working concrete (pouring into form vibrators and using table vibrators, steam-curing chambers, etc.). They can also be manufactured in advance by industrial enterprises in the tactical rear. The prior establishment of reserves of the sets of structures needed for two or three positions of the command post will allow the sets to be moved during an operation.

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* Instructions on the Erection of Sectional Reinforced Concrete Structures from SBU, SBK, and USB Sets. Military Publishing House, 1964, pp. 48-77.
** Ibid., pp. 22-47.

Experimental work also confirms that 14 to 18 USB or 28 to 36 SBK structures are necessary for a front command post; and if both types are used simultaneously, then nine or ten USB and 14 or 15 SBK structures are required. For the command post of an army, one or two USB and eight or nine SBK structures are required; for the rear control post of a front -- not over half the number of structures used for the command post of the front; and for the forward command post -- two groups of two or three structures each, and one or two structures for the communications center.

The USB and SBK structures are set up in two variants and provide protection as follows: the heavy variant in a zone of five kg/cm^2 overpressure (at a radius of 500 meters from the ground zero of the burst of a 100-kiloton nuclear warhead); and the light variant in a zone of three kg/cm^2 overpressure. The entrances are reliably closed off with DZM protective door units.

Complete protection of personnel against the combined casualty-producing elements of a nuclear burst and against bacterial and chemical means is achieved by constructing an earth cover and installing forced ventilation in combination with chemical and bacterial filters, and also by protecting the ducts. In order to do this, the engineer units designated to prepare control posts must have FVKPU-M2 field filter-ventilator sets or FVA-100 filter-ventilator sets with three FP-50U absorbent filters, according to the number of structures. If it is necessary to protect the structure against destruction by conventional means (aerial bombs, large caliber artillery shells), so-called "mattresses" -- hard interlayers of reinforced concrete slabs -- are placed above them.

The engineer preparation of an area in which the control post of a front is to be located begins with reconnaissance and engineer reconnaissance, which find out the camouflage and protective features of the terrain and its road and hydrogeological conditions. The reconnaissance group is headed by an officer from the operations directorate. It includes billeting officers from all directorates, and two or three helicopters and three or four motor vehicles are allocated to it. By the time the group arrives at the appointed area, engineer subunits must already be there. They immediately set about the removal of objects presenting an explosion hazard and the engineer reconnaissance of sites for erection of structures, for roads, for water sources, and for construction materials. The engineer reconnaissance subunits can also be transported by helicopter.

Reconnaissance, engineer reconnaissance, and the laying out have to be completed in a short time, before the arrival of the engineer unit assigned to prepare the area, so that this unit can begin work at once. This is because it is faced with digging 20 to 30 pits for structures and 100 to 120 shelters for buses, which involves a very considerable volume of excavation work (about 12 thousand cubic meters), and with assembling complex engineer structures.

In organizing the work, it is necessary to take into consideration that to erect a sectional reinforced concrete structure of the USB and SBK types with a crew of ten to 15 men, two or three earthmovers, and two truck-mounted cranes will require, as indicated in the Instructions on the Erection of Sectional Reinforced Concrete Structures, 16 to 20 hours. Consequently, all the structures must be erected simultaneously in order for the command post area to be prepared in a day. This is possible only if a sufficient number of crews and machines is allocated from the engineer unit that has arrived to prepare the area, and if the work is organized in two shifts.

The shelters for buses can be dug in three or four sequences, since a crew at squad strength with one earthmover prepares each sequence in four to five hours. To increase their protective features, the earth faces of the pits should be reinforced with sheets of roll materials, which will require additional forces and means.

At the same time as protective structures are being erected and shelters prepared, it is necessary to prepare access routes and places for general use and set up water supply points, for which special forces and means are also needed.

The access routes in an area where a control post is located must ensure quick setting up, dismantling and departure. For this it is necessary to have in the area at least two main routes with hard surfaces and to prepare, if required, additional routes and accesses. It is advisable to lay them out in circles, with one-way traffic, no closer than 25 to 30 meters from the shelters and structures. The routes laid must not disturb the camouflage.

The decision on camouflage is made during reconnaissance and strictly carried out during the preparation and operation of the post. Sets of structures must be delivered to the site where they are to be set up secretly, principally by night, and set up immediately. It is advisable to allocate a special subunit with camouflage means to perform camouflage

work.

In order that there be no interruptions in supplying control posts with drinking water, reserves of it from the water supply point should be established, usually in anticipation of a two-day period of isolation, i.e., 50 to 100 liters for each structure (based on a consumption norm of three to five liters per man per day for drinking and preparing food) and minimal reserves of water for daily necessities. Water from open water sources can be used for technical needs.

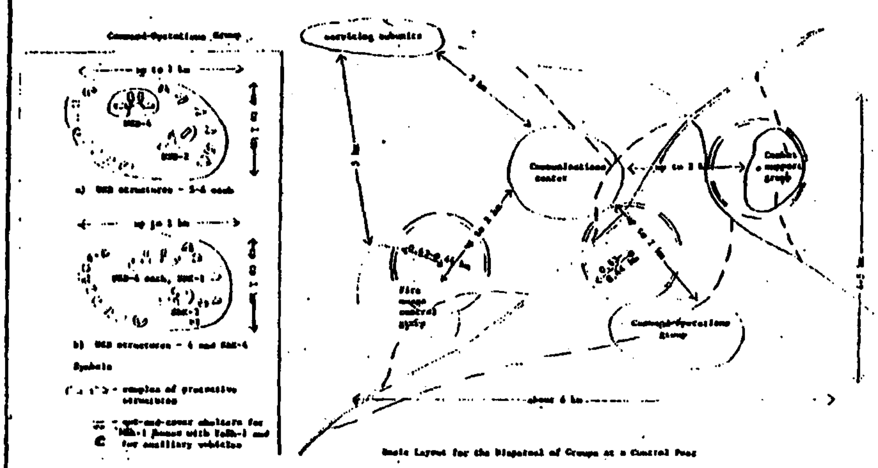
Everything that has been said above confirms the fact that preparing an area in which the control posts of a front are to be located is a very labor-consuming business that requires definite specialization of the subunits allocated to prepare them. When preparing an area in which to locate the command post or rear control post of a front, in the course of a day a total of six or seven platoons of engineer troops will be required to erect the structures; six to eight platoons to dig and prepare shelters; three or four platoons to prepare routes and camouflage. Altogether, to prepare an area for a command post, 15 to 20 platoons, or up to two special battalions of engineer troops, are necessary. In connection with this, a need has arisen for special engineer units to prepare control posts. Such units have been set up among the troops on an experimental basis, but their T/O structure is far from perfect and their capabilities are limited.

In our opinion, a front must include two special battalions to prepare control posts and, besides that, a separate company to prepare forward command posts; and an army must include one such battalion instead of the present company. The battalions can be of one type, thus counting on preparing the area for a control post in 18 to 20 hours if previously built sets of sectional structures are available. In the battalion it is advisable to have three companies to assemble structures, an engineer technical company, and support subunits. The company to assemble the structures should include two platoons of earthmovers -- each having four MDK-2 excavators, four other excavators, and three bulldozers -- and two platoons to assemble structures -- each with four K-61 truck-mounted cranes and ten trucks with trailers. In ten hours such a company is able to dig pits with a total volume of about 6,000 cubic meters, and assemble 10 to 12 structures. The engineer technical company, with platoons of the corresponding specializations, is designated for road, camouflage, and electrical engineering work and water supply. Besides that, the battalion must include an engineer reconnaissance platoon with the means for hydrogeological reconnaissance (vibro-drills, field soil laboratory) and a platoon for reconnoitering objects presenting an explosion hazard, as well

as an administrative platoon, a communications squad, and other support subunits.

A battalion with such a composition can give engineer preparation to an area in which the command post or rear control post of a front are to be located in 18 to 20 hours, which will undoubtedly help to increase the survivability of control posts.

The views expressed in this article have been practically tested more than once in exercises, and therefore, we trust that they may be useful in solving this important problem.



Basic Layout for the Dispersal of Groups at a Control Post

Calculations for ensuring protection of a control post against weapons of mass destruction:

1. A low aerial burst of a 100-kiloton nuclear warhead creates 5 kg/cm^2 overpressure at a 460-meter radius; and a ground burst creates this at a 630-meter radius.
2. UKB and SBK structures provide protection in a zone with an overpressure less than 5 kg/cm^2.
3. A distance of 1000 to 1300 meters between groups of structures ensures that two groups will not be destroyed simultaneously by one warhead, regardless of the site of the ground zero.

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