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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

5 March 1974

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): Reduction of Launch Readiness Times for Tactical Missiles

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 by the First Deputy Commander of Rocket Troops and Artillery of the Soviet Ground Forces discusses the reduction of launch preparation time for tactical ballistic missiles, namely the SCUD. The context of his remarks is the transitional phase from conventional to nuclear warfare, with special consideration of selective use of nuclear weapons. He uses tables of readiness chronology to demonstrate that up to ten minutes can be saved by rationalization of the command and control phase of missile launch. This article appeared in Issue No. 2 (90) for 1970.

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.

[redacted]

William E. Nelson
Deputy Director for Operations

[redacted]

1 of 17 Pages

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Intelligence Information Special Report

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SUBJECT [redacted]

MILITARY THOUGHT (USSR): Improving the Control of Front Rocket Troops in the Transition from Non-Nuclear Actions to the Use of Nuclear Weapons

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (90) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is General-Leytenant L. Sapkov. This article by the First Deputy Commander of Rocket Troops and Artillery of the Soviet Ground Forces discusses the reduction of launch preparation time for tactical ballistic missiles, namely the SCUD. The context of his remarks is the transitional phase from conventional to nuclear warfare, with special consideration of selective use of nuclear weapons. He uses tables of readiness chronology to demonstrate that up to ten minutes can be saved by rationalization of the command and control phase of missile launch.

End of Summary

[redacted] Comment:

Gen-Leyt. Leonid Sergeyevich Sapkov was Chief of Staff of Rocket Troops and Artillery of the Ground Forces in 1969. Formerly, he was stationed in East Germany and the Leningrad Military District. He wrote "Combat Glory", an article describing the history and development of Soviet artillery, Red Star, 17 November 1968. Military Thought has been published by the USSR Ministry of Defense in three versions in the past -- TOP SECRET, SECRET, and RESTRICTED. There is no information as to whether or not the TOP SECRET version continues to be published. The SECRET version is published three times annually and is distributed down to the level of division commander.

1973 - 1st Deputy Commander, Rocket Troops and Arty of Ground Forces. (KZ, Jul 73)

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Improving the Control of Front Rocket Troops in the Transition from Non-Nuclear Actions to the Use of Nuclear Weapons

by

General-Leytenant of Artillery L. Sapkov

In modern conditions the first front offensive operation has to be planned on the basis of possibilities for conducting combat actions both with the use of nuclear weapons and without them. This means that the transition to nuclear operations may be effected at any stage of the operation, on different scales and in different variants.

If the offensive operation is begun using only conventional means of destruction, to maintain rocket large units and units in readiness to deliver nuclear strikes in the least amount of time with the maximum number of launchers, the chief and the staff of the rocket troops and artillery systematically clarify the tasks of these large units (units), and monitor the timely transition of rocket units from one degree of readiness to another (schedule of maintaining readiness) and their fulfilment of the relocation plan. In order not to expose their rocket groupings prematurely, rocket troops are controlled basically by landline means, as well as through liaison officers.

The front staff in this period organizes continuous reconnaissance of the enemy, directing special attention to aerial and other types of reconnaissance to detect enemy means of nuclear attack and indications of preparation to use nuclear weapons.

The most complex and responsible moment during conduct of such an operation undoubtedly is the transition from non-nuclear actions to nuclear, which may be of varying nature.

The problem is that the opposing military coalitions now have accumulated a large number of nuclear weapons, and their mutual use involves vast human and material losses. Especially, as it appears from foreign literature, the consequences of unlimited use of nuclear weapons more and more alarm some politicians, theoreticians and bourgeois ideologists of countries having small territorial dimensions, as well as high concentration of population and production forces. Specifically, our main enemy, the United States of America, recognizes this, and believes that under all conditions a retaliatory nuclear strike on its territory will be inevitable and will entail many millions of human victims and the loss of its main industrial-economic potential.

Therefore, it is no coincidence that our probable enemies are seeking with great persistence those methods and forms of waging war against the countries of the socialist commonwealth which would help them, on the one hand, to achieve their political goals and, on the other--to secure themselves against a retaliatory, massive nuclear strike.

As a result of these searches, various theories connected with the escalation of war have been born. For example, the delivery of so-called preemptive nuclear strikes has been provided for; the concept of this is to demonstrate the resolve to go to the use of nuclear weapons.

Another stage of escalation is selective nuclear strikes. An enemy may resort to selective use of operational-tactical nuclear weapons in the event of a real threat of seizure of his important lines by attacking troops, or before counterstrikes are delivered against his penetrating grouping.

Obviously, such actions on the part of the enemy may in certain conditions make it necessary for us to take corresponding retaliatory actions. Therefore, we will examine the problem of delivering selective nuclear strikes in greater detail. Deciding the question of this sort of use of nuclear weapons, by us is the prerogative of the Headquarters of the Supreme High Command, which will specify on what scale, with what means, at what time and in what sector (strategic axis) to deliver these selective strikes.

The task of the selective use of operational-tactical nuclear weapons is new for our forces, and for the present we can only express some preliminary judgments on the methods of accomplishing it. It seems to us that the possibility of such a use of the weapons must be provided for in preparing a front operation, and included in that part of the plan which concerns the conduct of offensive actions with conventional means of destruction. Here are determined the possible conditions for delivering strikes (time, lines and approximate forces and means).

The targets for selective strikes may be Pershing, Sergeant and Honest John launch batteries brought to an increased state of readiness for launching, and 203-mm howitzer batteries; the airfields of delivery aircraft; large command posts and the most important and powerful groupings of enemy troops, destruction of which immediately affects the development of combat actions (for example, operational reserves moving forward for a counterstrike). In selecting targets, obviously their position in relation to large population centers also will be taken into consideration in order to lessen the possibility of destroying peaceful inhabitants.

The delivery of selective strikes should be provided for in several variants and reflected in the plan for the combat employment of the front rocket troops and artillery.

Solving this problem, in our view, requires detailing one battalion from each operational-tactical missile brigad and a battery from tactical missile battalions which are assigned temporary deployment areas located apart from the main forces. Direct communications with the chief of the rocket troops and artillery of the front (army) are organized to control them. These rocket subunits are moved forward to temporary positions and brought to this or that state of readiness by decision of the commander of the troops of the front (army). The command (signal) to occupy a temporary deployment area and prepare the strike is given by the appropriate chief of rocket troops and artillery. Upon arrival at a temporary deployment area, rocket subunits are brought to readiness No. 2 and targeted against previously planned targets.

After obtaining clearance to conduct selective strikes, all front rocket troops are brought to increased readiness at the same time the strikes are prepared. Obviously it is desirable to transfer the launch batteries targetted against enemy nuclear attack means to readiness No. 1, and all the rest to readiness No. 2; batteries (battalions) changing their positions should immediately be deployed and also brought to readiness No. 2. At the same time, reconnaissance by all means (especially aviation) is intensified and better communications channels are allotted to the chief of rocket troops and artillery.

After delivering selective nuclear strikes, the rocket subunits are immediately resupplied with missiles and once again move out to their main deployment areas.

Transition to the massive use of nuclear weapons (the first nuclear strike) by front means may be effected both independently and in cooperation with the strategic rocket troops.

This situation will largely determine the nature of the employment of front rocket troops, as well as those difficulties which may arise if the first massive strike of the front nuclear means doesn't coincide with the strike of the strategic nuclear forces.

If, before the transition of the front to the massive use of nuclear weapons, the combatants exchange strikes of strategic means (or the enemy forestalls the delivery of a massive nuclear strike by operational-tactical means), then the front rocket troops will sustain heavy losses and their combat capabilities will be significantly reduced.

In that case, the front will make ready and conduct its first nuclear strike in a complex and obscure situation. In a limited time it will have to establish the location (conduct reconnaissance) of enemy targets which survived the strike of strategic means (or changed their location), determine the sequence of their destruction and also clarify or allocate new tasks to the rocket units (subunits) which have retained their combat effectiveness.

It has been accepted practice in operational training that the plan of the first massive front nuclear strike,

regardless of the time it is conducted (at the beginning of the operation or during its conduct), is developed while preparing the operation. This approach to solving the problem fully justifies itself, for the effectiveness of controlling front rocket troops in actual preparation and delivery of the first nuclear strike, will be determined to a large extent by previously envisioned (planned) measures (forces and means).

Therefore, in the plan for combat use of rocket troops and artillery (as concerns the first massive nuclear strike), along with allocating targets to be destroyed among the rocket large units (units), establishing the sequence of delivery of the strikes, cooperation with aviation, and other well-known provisions, it is necessary to provide (in coordination with the front staff) for the specific forces and means to conduct reconnaissance (final reconnaissance) of the targets, and also to establish the order of priority of relocating rocket large units (units) and measures for ensuring their constant readiness to strike.

During the operation, the plan for conducting the first nuclear strike is constantly clarified in connection with the progress of the advancing troops and the change in location of previously planned (or newly appearing) targets, as well as relocation and possible losses of rocket large units (units).

On the basis of continuous analysis of intelligence information, the front staff, jointly with the staffs of the rocket troops and artillery and the air army, prepares the data needed by the commander of the troops of the front to make a decision for a massive nuclear strike. In doing so, the time and sequence of delivering the strikes and the number and yield of the nuclear warheads allocated to the armies are clarified, nuclear strikes on targets which have lost their significance (which have not been subjected to strikes) are cancelled, and the rocket units are retargetted to destroy newly detected targets. It should be emphasized that minimum time should be spent on this work at the front level, and this is possible only when precise delineation of functions is established and close cooperation is worked out among the staffs mentioned.

Under the conditions of a rapidly changing situation, when the front staff is unable to make a timely determination of the most lucrative targets for all rocket large units and units assigned to the first nuclear strike, it is desirable to grant the army commanders (division commanders) the right to assign targets of destruction to subordinate rocket large units (units), and report the decisions taken (with an indication of the nature of the targets selected) to the front (army) staff.

The chief of the front (army) rocket troops and artillery participates directly in the work of the commander in clarifying the decision for the first nuclear strike, gives the commands and issues instructions to the subordinate chiefs and commanders of rocket large units, and also monitors the readiness of the rocket troops to strike.

The necessity of modifying the plan for the first massive nuclear strike of the front during non-nuclear actions will constantly arise. However, should these clarifications be passed to the rocket large units and units continuously, with each change of the situation and of the targets of destruction, as proposed by General-Mayor A. Romashkin and other authors of the article "Increasing the Effectiveness of the First Nuclear Strike of the Front, Carried Out During an Offensive Operation"?* Apparently not, for this gives rise to intensive operation of the communications means and makes it easier for the enemy to detect our rocket grouping. We think that only changes in tasks to destroy enemy rocket and artillery means of nuclear attack (in connection with the detection of new targets while old ones have not yet been subjected to strikes) are subject to immediate transmission to the troops. As concerns the other targets, it is apparently desirable to pass them to the rocket large units and units only in periods of culmination of an operation, when the transition to the use of nuclear weapons is more probable. It is precisely at such moments that maximum efficiency in the control of rocket troops must be ensured.

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* Collection of Articles of the Journal "Military Thought", 1970, No. 1 (89)

In the actual preparation and conduct of the first massive nuclear strike of the front, the control of rocket troops is centralized. This is manifested in the fact that the decision for the first massive nuclear strike is made, and the command for its delivery is given, by the commander of front troops (with higher echelon permission).

In the transition to nuclear operations the main task of control is not to delay committing our nuclear means to action, and to use them with maximum effect against the most important targets and groupings of the enemy. Particularly intolerable is delay in delivering strikes against enemy means of nuclear attack. Here the time factor has decisive importance. At the same time, the experience of exercises shows that too much time is spent on making a decision by the formation commander of the troops and setting the tasks for rocket large units and units. To reduce it, a number of measures should be carried out in parallel. However, this will become possible only in the event that the chief of rocket troops and artillery receives intelligence data on the most important targets directly from reconnaissance means (at the same time as the front intelligence directorate does), and, in addition, that he is granted the right to preliminarily assign tasks for preparing nuclear strikes and to bring all or some of the rocket troops to readiness No. 1 while the commander of the troops is still in the process of working out the decision. Experience shows that to bring all rocket troops (including those in movement) to readiness No. 1 (from the moment the command is given) requires no less than an hour.

The staff of rocket troops and artillery, analyzing the intelligence data received, determines the most important targets against which strikes should be prepared immediately, and on the instruction of the chief of rocket troops and artillery prepares the necessary commands (orders) to rocket units and sends them to the executors. This is immediately reported to the commander of the troops and to the front staff.

After carrying out the first nuclear strike, the control of front rocket troops is decentralized; however, even under these conditions it must ensure the delivery of massive and salvo missile/nuclear strikes on the most important groupings of enemy troops. The main task of the

rocket troops remains the destruction of enemy means of nuclear attack, primarily rocket and artillery units (subunits) capable of delivering nuclear strikes in a short time.

In solving this problem, the timeliness of strike delivery has special importance. This requires careful consideration of the duration of the stay of an enemy rocket (artillery) subunit in a given position, and of the time required for preparation and delivery of a strike by our chosen means of destruction.

We will examine how this factor affects the reliability of fulfilment of a given task.

It is known that to destroy a certain objective (target) with a missile/nuclear strike requires taking a whole series of measures: reconnaissance of the target and transmitting intelligence information to the intelligence organ, and processing it and reporting the results to the front (army) commander and to the staff of rocket troops and artillery; the making of the decision by the commander to deliver the nuclear strike and assigning the task to the chief of rocket troops and artillery; the transmitting of commands to rocket large units and units (subunits); determining the launchers for delivering the strike; and the technical preparation and launch of the rocket.

Since technical preparation of rockets by the troops is well mastered and room for reducing the time of carrying it out is practically exhausted, the basic factor determining the timeliness of fulfilling a task to destroy enemy means of nuclear attack is the time spent controlling the rocket troops during delivery of the strikes. It is precisely in improving the control of rocket large units and units that a way should be sought to reduce the time spent preparing and delivering a strike and, consequently, also increasing the reliability of fulfilling the task.

The experience of exercises conducted in recent years in various military districts permits determining average data on the time spent preparing and conducting a single nuclear strike (Table 1).

It may be seen from the table that command time (defined as the time required for reconnaissance of the target, reports, making the decision, and working out and transmitting commands) is 19-20 minutes, and the time required for technical preparation and the flight to the target is 7-29 minutes for the 8K14 rocket and 9-45 minutes for the TR-1 rocket (depending on the state of readiness from which the launch is carried out). Total time spent preparing and conducting a single strike from readiness No. 2a is: 35-37 minutes in delivering a strike with an 8K14 rocket and 46-48 minutes with a TR-1 rocket.

To answer the question of to what extent these time periods ensure the capability for successful combat with enemy means of nuclear attack, we will compare them with the time characteristics of some of the rocket systems of the US Army (Table 2).

Judging from the data in the table, enemy rocket batteries may be located the longest time in positions of concealment where, as a rule, they are well camouflaged and their radio and radiotechnical means of control are under conditions of silence. Under these conditions, detecting them with modern reconnaissance means (and consequently destroying them) is improbable.

In the remaining cases, the reliability of destroying nuclear attack means depends on the stage of launch preparation at which they are reconnoitered.

In principle, according to their technical capabilities, our missile systems ensure accomplishing the task of combat with enemy means of nuclear attack under all situational conditions. However, the very organization of this combat, and specifically the control of rocket troops, is far from perfect. This is why the reliability of destroying enemy rocket means must be increased by reducing the command time and providing the opportunity of beginning technical preparation of our rockets as early as possible.

Analyzing the data presented in the table, it is possible to draw the following conclusions.

Reducing command time requires that intelligence information right from an aircraft reaches the intelligence

department of the combined-arms staff, the staff of the air army, and the staff of the rocket troops and artillery, at the same time. This may be effected either from the command post of the air army (by selector) immediately upon receipt of the intelligence information from the aircraft, or from the aircraft on the receiver of the rocket troops and artillery staff (with subsequent immediate confirmation via selector from the air army command post). In reporting on the means of nuclear attack, a specially established authentication signal must be transmitted before the report. This measure will permit reducing command time by 2 minutes.

The chief of the front (army) rocket troops and artillery, having received the intelligence data with the authentication signal which confirms that the target is a means of nuclear attack, immediately gives the "Action!" command to the duty rocket battalion to prepare the strike (This command may be given 6-7 minutes after reconnaissance of the target is begun.).

As he decodes the intelligence data, the chief of rocket troops and artillery makes an appraisal of the target and gives the command for its destruction, and then reports this to the front (army) commander for approval. If the command is approved, he monitors the launch preparation; otherwise he rescinds the command.

This procedure, in our view, does not at all diminish the responsibility and right of the commander to use nuclear weapons, for he retains the final decision to deliver or not to deliver the strike. With this, command time is reduced by another 7-8 minutes, and technical preparation of the rocket is carried out parallel to working out the decision for the strike.

In order to spend less time on obtaining a task (reporting his proposals), the chief of rocket troops and artillery must be located at the command post in immediate proximity to the front (army) commander.

The proposed procedure for controlling rocket troops preparing strikes against enemy means of nuclear attack reduces command time by half (by up to 9-10 minutes): with this, the total time for preparation and delivery of a strike from readiness No. 2a is: 25-27 minutes for the 8K14

rocket and 35-38 minutes for the TR-1 rocket. And this, in turn, significantly increases the reliability of destroying enemy means of nuclear attack before they carry out a launch.

The stability and efficiency of the control of rocket troops as a whole may be increased by improving the existing organization of communications. For the chief and staff of the rocket troops and artillery to communicate with rocket large units (staffs) and duty rocket units (subunits), it is desirable, in principle, to have direct (autonomous) channels which lead directly to their command-staff vehicles.

In the period of immediate preparation and conduct of nuclear strikes, the chief and the staff of the rocket troops and artillery must, in addition, have preference in using the channels of the unified communications system of the front (army). For this, a special authentication signal is established, by which the chiefs of the communications centers are obligated to immediately allocate better communications channels for the transmission of commands to the rocket troops. Communications with the rocket troops must be secure, including down to the launch battery.

Maintaining high efficiency in controlling rocket troops in the system of operational and combat training requires systematically conducting training in the control of rocket strikes, with the participation of the staffs of the front (army) rocket troops and artillery, of rocket brigades and battalions, and also of the commanders of the launch batteries. To work out the activities of the duty subunits at certain stages of training it is desirable to involve rocket battalions at full strength.

The communications units and subunits assigned to the rocket troop and artillery staffs should be brought into all exercises with rocket troops and training in the control of rocket strikes.

The reconnaissance aircraft crews must be well trained in actual reconnaissance in the area of nuclear attack means and rapid transmission of their coordinates to ground command posts.

[redacted]

[redacted]

The most streamlined distribution of functional responsibilities in the staffs of the rocket troops and artillery and the use of formalized combat and operational documents and means of minor mechanization, are of no little importance in reducing the time for the control of the rocket troops.

These are some ways of improving the control of rocket troops, enabling their timely commitment to action during the transition from non-nuclear actions to the use of nuclear weapons.

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Table 1

Measures	Time spent in minutes	
Reconnaissance of target and determination of coordinates (without approach flight to target)*	2.5-3	
Transmission of intelligence information to intelligence organ	2	
Processing intelligence information and reporting results to front (army) command and rocket troops and artillery staff	4	
Making decision on delivery of nuclear strike by front (army) commander and assignment of task to chief of rocket troops and artillery	5-6	
Preparation of command by chief and staff of rocket troops and artillery and transmission to rocket battalion staff	5	
Determination of initial launchers for launch**	---	
Technical preparation of rocket for launch:		
from readiness No. 3	8K14: 25	TR-1: 39
from readiness No. 2a	8K14: 13	TR-1: 22
from readiness No. 1	8K14: 4	TR-1: 4
Missile flight to target	8K14: 3-4	TR-1: 5-6
Total for strike preparation and delivery from readiness No. 2a	35-37	46-48

23-27 min

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*Reconnaissance of target is conducted from aircraft (reconnaissance drone), having reconnaissance equipment with high-resolution capability and modern communications equipment with high transmission reliability.

**Determination of the launchers for the launch is done in parallel with the technical preparation of the missile.

Table 2

Launch Preparation Time (Period Spent in Area) of Pershing and Sergeant Rocket Systems and Possibility of Destroying Them with Our Means

Designation of missile system	Targets for destruction and their status	Distance from forward edge, km	Launch preparation time (period spent in area), minutes	Possibilities of destruction by our rockets			
				By distance		By time, from what readiness	
				TR-1	SK14	TR-1	SK14
Pershing (Pershing-1a)	Battery spotted at launch position at beginning of deployment from march	80-160	30* 10	Task accomplished	Task accomplished	From readiness No. 1 From readiness No. 1	From readiness No. 1 From readiness No. 1
	Battery arrived in launch position area on helicopters	80-160	60	Ditto	Ditto	From readiness No. 3	From readiness No. 3
	Battery in position of concealment	80-160	180 and more	"	"	Ditto	Ditto
	Battery on march inside deployment area	80-160	45-60	"	"	"	"
Sergeant	Battery at launch position, spotted at beginning of deployment	30-60	45-60	Not assigned	"	Not assigned	"
	Battery at launch position, spotted when missile on launcher, crew at launcher	30-60	8-25		"		From readiness No. 1
	Battery in position of concealment	30-60	180 and more		"		From readiness No. 3
	Battery on march inside deployment area	30-60	60		"		From readiness No. 3

*Numerator - for Pershing missile, denominator - for Pershing-1a.