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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

2 March 1976

MEMORANDUM FOR: The Director of Central Intelligence
SUBJECT : MILITARY THOUGHT (USSR): The Employment
of Helicopters for Tactical Missiles
and Antitank Guided 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 presents criticism of certain points in a 1963 article concerning the use of helicopters to increase the mobility of tactical and antitank missiles. With regard to tactical missiles, the authors take issue with a proposal to transport missiles on the outside of the helicopters, and dispute the missile transport capabilities of the MI-1 and MI-4, and the launching capabilities of the MI-6. Helicopters may be used for normal transport and delivery operations or to carry stripped-down, self-propelled launchers close to firing positions. The authors concur with the proposal to arm MI-4 helicopters with antitank guided missiles, but caution against a large number of permanent modifications for this purpose. This article appeared in Issue No. 2 (72) for 1964.



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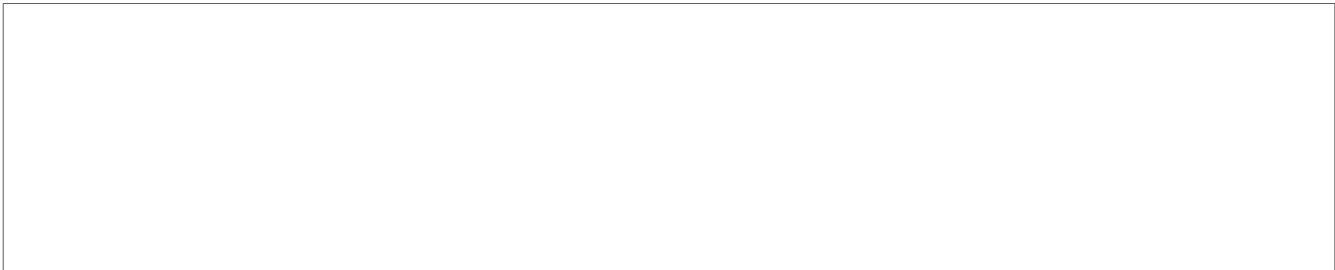
2. Because the source of this report is extremely sensitive, this document should be handled on a strict, need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned



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William E. Nelson
Deputy Director for Operations

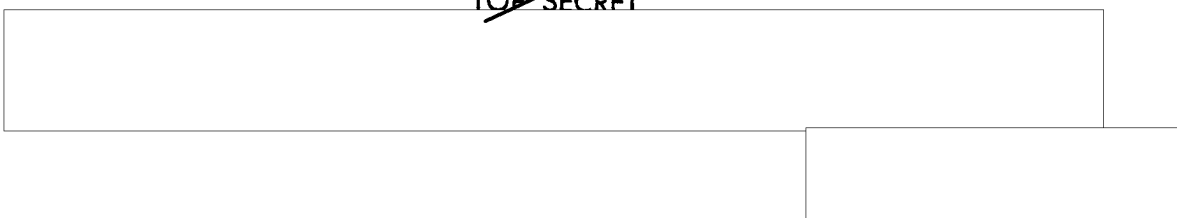
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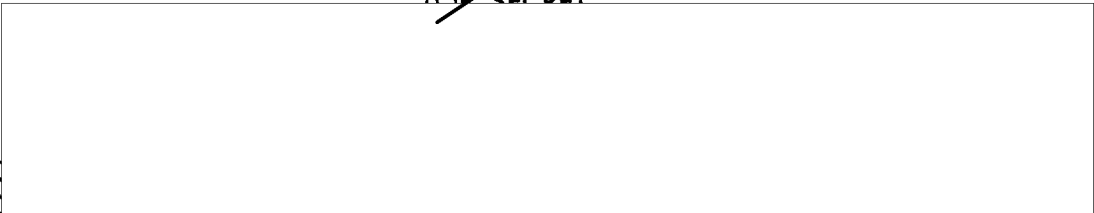
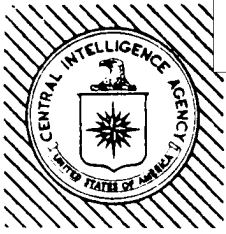
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Intelligence Information Special Report

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COUNTRY USSR



DATE OF INFO. Mid-1964

DATE 2 March 1976

SUBJECT

MILITARY THOUGHT (USSR): The Employment of Helicopters for Tactical Missiles and Antitank Guided Missiles

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 2 (72) for 1964 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The authors of this article are General-Major of Engineer-Technical Service V. Alekseyev and Engineer Colonel A. Latukhin. This article presents criticism of certain points in a 1963 article concerning the use of helicopters to increase the mobility of tactical and antitank missiles. With regard to tactical missiles, the authors take issue with a proposal to transport missiles on the outside of the helicopters, and dispute the missile transport capabilities of the MI-1 and MI-4, and the launching capabilities of the MI-6. Helicopters may be used for normal transport and delivery operations or to carry stripped-down, self-propelled launchers close to firing positions. The authors concur with the proposal to arm MI-4 helicopters with antitank guided missiles, but caution against a large number of permanent modifications for this purpose.

End of Summary

Comment:

Engineer Colonel A. Latukhin has been identified as the author of various articles concerning artillery.

The article to which it refers was [redacted] entitled "The Use of Helicopters to Increase the Mobility of Tactical Rockets and Antitank Guided Missiles". 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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Employment of Helicopters for Tactical Missiles and
Antitank Guided Missiles

by

General-Mayor of Engineer-Technical Service V. Alekseyev
Engineer Colonel A. Latukhin

In the article of Colonel General of Artillery M. Parsegov and Engineer Colonel K. Belyayevskiy, "Employment of Helicopters to Increase the Mobility of Tactical Missiles and Antitank Guided Missiles",* are put forth, in our opinion, certain debatable propositions that contradict the specific nature of helicopter employment. Individual recommendations of the article may create a distorted impression of the combat capabilities of missile systems transportable on helicopters and to some extent compromise the very idea of developing helicopter missile systems.

The transportation of combat equipment on helicopters is a complex technical task. One must not oversimplify it as the authors of the article cited do by, for instance, considering the most advisable variant to be that according to which missiles should be accommodated on the outside of helicopters and not inside of cargo compartments. Such a suggestion is incorrect. The experience of numerous tests in air transportation of missiles has convincingly shown that the only sensible and advisable place to accommodate missiles on the MI-6 helicopter is in its cargo compartment. Let us note that its authorized equipment permits loading, tie-down, and unloading of missiles to be done without any modification of the helicopter. This method is advantageous not only economically but also tactically, since any MI-6 helicopter can be used for the transportation of missiles, not just a helicopter specially adapted only for a given type of missile. With external accommodation of missiles, the aerodynamic properties of the helicopter as a flying vehicle deteriorate sharply and piloting it is complicated drastically. Transportation of missiles in the cargo compartment will provide additional advantages, for instance, concealment of the purpose of the cargo being carried, protection of the missiles from atmospheric effects, assurance of a plus temperature for the missiles on the flight, etc.

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*Collection of Articles of the Journal "Military Thought", No. 2 (69), 1963.

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What are the specifics of air transportation in compartments? In the first place, the weight and size of the items of missile armament must ensure the possibility of loading and accommodating them in the cargo compartments of helicopters; accommodation of items in helicopters is done with the provision of necessary and strictly defined clearances between the walls (ceiling) of the cargo compartment and the items being carried; the unit load on the floor of the cargo compartments of helicopters also has definite limits, inasmuch as the floor of the compartments is not of uniform strength but has strong areas on which the technical equipment being carried must be set. In the second place, the items of missile armament must have special mountings for dependable fastening inside the cargo compartments of the helicopters. The strength of these mountings must guarantee taking the strain which the items being carried will experience during take-off, flights in turbulent air, and landings. From these requirements it is evident how much the conditions of air transportation of equipment differ from the conditions of ground methods of shipping.

For air transportation of missiles, special airfield depot dollies are necessary. Missiles can be placed on them fully assembled and without warheads, and be stored and transported in arsenals, bases, and depots. The weight of the airfield depot dollies by comparison with the missiles carried on them is extremely small (five to six times less). Accordingly, as experience shows, air transportation of missiles with the use of dollies fully satisfies all special requirements, which cannot be said of the method recommended by the authors of accommodating missiles on cradles both inside the cargo compartment of the helicopter and outside of it.

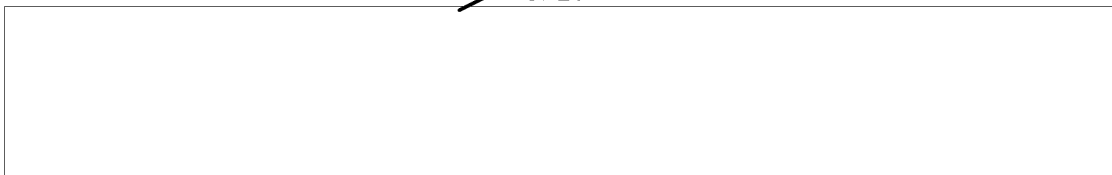
In the article there is given a somewhat exaggerated appraisal of the transport capabilities of certain types of helicopters, for instance, the MI-1 helicopter, which allegedly can suffice for the delivery of rockets. As we know, the MI-1 has no transport function and is therefore unsuitable for the delivery of rockets. The transport capabilities of the MI-4 are extremely modest: its carrying capacity and cargo compartment dimensions are utterly inadequate for carrying tactical missiles. The MI-4 helicopter can be employed only for delivering rockets, artillery ammunition, and other small cargoes.

The authors assert that the helicopters in the tactical missile subunits can be used for transportation of missiles, launchers, transport vehicles, and cranes. One can speak thus if not oriented towards the helicopters we have. Analysis of the size and weight characteristics of launchers, transport vehicles, and cranes of tactical missile systems shows

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that these items still cannot be airlifted even on the largest MI-6 helicopter.

Also causing objection are the methods suggested by the authors of using the helicopter as a launcher for launching missiles from the ground.

The idea of developing a helicopter launcher is at first glance tempting. However, on thorough research of this question, it turns out that such a path for tactical missile systems is impractical and absolutely will not work, neither with direct assembly of the ordnance on the helicopter nor with the accommodation of only the monitoring-launching electrical equipment on it.

For the effective launch of a tactical missile against an intended target, a launcher accommodated in a helicopter must ensure the precise, accurate performance of a number of operations, such as, for instance, levelling elevation and azimuth guidance to the target, determination of the ballistic wind, and conduct of prelaunch checkout and missile launch. Even the MI-6 helicopter, the most suitable for these purposes in respect to its transporting capabilities, will be technically unable to ensure even half of the indicated operations. Besides that, the effect of the exhaust gas stream in a missile launch is so great that the helicopter from which the missile launch is conducted will probably be put out of operation.

Nor can one fail to take into consideration the give-away signs of the helicopter. After all, to prepare a missile for the launch will require a certain time, during which the MI-6 helicopter will be noticed and destroyed by the enemy.

And one more circumstance. The MI-6 helicopter is an expensive flying vehicle. It must not be designated for the fulfilment of only one function; it has to be employed for other purposes, too.

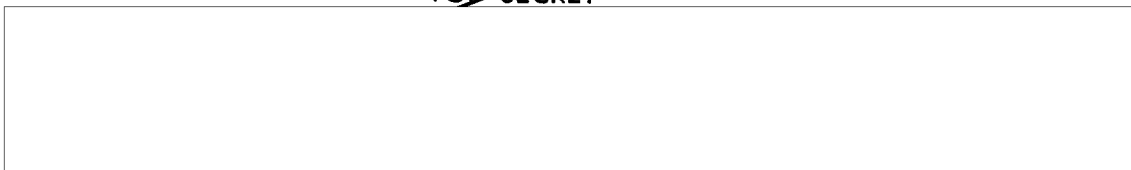
Also doubtful is the assertion that it is possible, on an MI-6 helicopter, to install one to three launchers with missiles. We figure that the authors are not taking into consideration the sizes of the missiles and their launchers. On the MI-6 helicopter only one (stripped-down at that) launcher with a missile can be accommodated.

In order to ensure the transporting of launchers on helicopters, the authors suggest, to lower their weight, developing launchers without the self-propelling part, i.e., having only the launcher -- the ordnance part, accommodated on a mount with jacks. We cannot agree with this. Relieving



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the launchers being transported on helicopters of the element of self-propulsion -- more accurately, self-movement -- would permit lowering their weight to some degree, but it would have a most adverse effect on the maneuverability of the launchers in firing positions and especially during loading and unloading from helicopters.

It appears to us that helicopters must accomplish only two tasks on behalf of the tactical missiles -- to be carriers of stripped-down (structurally not connected with the helicopter) launchers with missiles for immediate fulfillment of combat tasks and to carry out the function of a transportation means for missile delivery in a front. Let us specify at once that the second task is accomplished without special difficulties and poses no new problems.

Accomplishment of the first task is technically more complicated but fully realistic. The MI-6 helicopter must here play the role of carrier of the stripped-down launcher on which is situated a missile, fully equipped with a mated warhead, in a maximum degree of readiness. On the stripped-down self-propelled launcher must be all necessary equipment for the pre-launch checkouts and the missile launch. Self-propulsion of the launcher, according to our conviction, gives a certain freedom in the choice of landing areas and will allow the launcher, after unloading from the helicopter, to move independently to a new firing position where the helicopter will not always be able to make a landing. A stripped-down launcher easily comes within the strict size limits and weight limitations.

All the tasks to prepare the missile for launching and the launch itself must be done outside the helicopter, at the firing position. The task of the helicopter is to deliver the launcher with a missile to the intended area, quickly unload it, and after this fly to a waiting area or return to the departure area. All the tasks to carry out the missile launch at the firing position are performed independently by the combat crew of the launcher. To these pertain such operations as fixing their position by topographic survey, weather determination, guidance to the target, and a number of others. The equipment for fulfilling these tasks is installed and mounted right on the launcher. In the complete equipment set of the launcher it is also necessary to include a radio set to ensure dependable radio communications at great distances.

Such are the basic remarks on the questions of employing helicopters in the interests of increasing the mobility of tactical missile systems. Now a few remarks about arming helicopters with antitank guided missiles.

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The authors think that for firing antitank guided missiles from the air (and from the ground), MI-4, YAK-24, and MI-6 helicopters can be used; they consider most suitable for this the MI-4 helicopter, and, for guiding the flight of missiles launched from the ground, the MI-1 helicopter.

If one can agree to some extent with the proposal of arming the MI-4 with antitank guided missiles (although it would be more correct to be oriented towards the new V-2 and V-8 helicopters), the use of the MI-1 and YAK-24 helicopters cannot fail to provoke resolute objections.

The article insistently adheres to the idea of the need for structural modifications and additional equipping of helicopters, which would permit, in the opinion of the authors, more fully satisfying the requirements for comprehensive employment of helicopters with tactical missiles and antitank guided missiles. We consider it impractical to create dozens of the most diverse modifications of one and the same type of helicopter. In the design of helicopters the main thing, the multipurpose function of the flying vehicle, must always be preserved. Therefore, all launch rails for antitank guided missiles, gear, and corresponding electrical equipment must be installed on the helicopter in the troop repair organs or under field conditions. Provision must be made that, in case of necessity, the installed equipment can be removed quickly. All such helicopters will find wide employment for accomplishing a large number of tasks in service with the troops.

It seems to us that helicopters armed with antitank guided missiles will be most effective as an antitank reserve to destroy enemy tanks that have broken through. In order to increase their survivability against enemy antiaircraft fire, the firing range of antitank guided missiles from the air should be substantially increased. On helicopters it is advisable to install antitank guided missiles which would allow them to hit targets dependably from a distance of four to five kilometers and more. In the process, it will be required to introduce into the set of necessary equipment for firing antitank guided missiles a sight and rangefinder so that one firing from a helicopter can determine the distance to the target and the nature of the target.

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