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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

14 February 1974

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): Improving
the Image of Engineer Troops

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 reviews the functions and achievements of engineer troops and recommends improvements in their organization and status. The author contends that engineer troops should be redesignated a combat arm and have their own headquarters in large units and formations. There is also some discussion of the maintenance of emergency materiel reserves in peacetime, with the author supporting the augmentation of personnel performing this work. This article appeared in Issue No. 1 (89) 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.

William E. Nelson

Deputy Director for Operations

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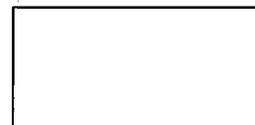
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Intelligence Information Special Report

COUNTRY USSR

DATE OF
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Early 1970

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SUBJECT

MILITARY THOUGHT (USSR): Problems of Engineer
Troops and Engineer Support in Operations

SOURCE Documentary
Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 1 (89) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Colonel A. Tulyavko. This article reviews the functions and achievements of engineer troops and recommends improvements in their organization and status. The author contends that engineer troops should be redesignated a combat arm and have their own headquarters in large units and formations. There is also some discussion of the maintenance of emergency materiel reserves in peacetime, with the author supporting the augmentation of personnel performing this work.

End of Summary

Comment:

There is no information in available reference materials which can be firmly associated with the author. 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.

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Problems of Engineer Troops and Engineer
Support in Operations

by

Colonel A. Tulyavko

The mobility of modern armies, a result of the full motorization of troops, has opened up new possibilities for increasing the effectiveness of the combat actions of units, large units, and operational formations. However, the full realization of these possibilities requires the solution of many important questions. Among these questions is that of the engineer support of ground forces operations. The purpose of this article is to examine the urgent problems in this sphere.

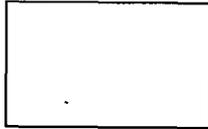
The growing role of engineer measures in achieving the aims of combat actions. Apparently, no one will deny the fact that no matter how high the military capabilities of the attacker, he cannot exploit them unless the prescribed rate of advance by troops can be assured; and this includes movement across roadless terrain, across water barriers and virtually impassable areas, through forested areas, and through conventional and nuclear obstacles and devastated areas. All of these problems can be successfully solved by correctly organizing and carrying out engineer measures.

In defense, engineer measures allow us to rapidly and reliably set up troop combat positions, control posts, personnel and equipment shelters; to increase the stability of defense; and to inflict heavy casualties on the enemy.

In modern combat and operations, engineer support also includes such extremely important matters as engineer reconnaissance, tactical and operational camouflage, water procurement and purification, the supply of troops with engineer materiel and equipment, the supply of power, technical support, and a number of other matters.

The large increase in the amount of combat, transportation, and special equipment in the hands of troops, the increased mobility and tempo of offensives, and the decrease in time available for the troops to fulfil combat and operational tasks, have led to a sharp increase in the scope

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and complexity of engineer measures during operations. Thus, in comparison to World War II, the requirements for routes during offensive operations by a combined-arms army have increased six or seven times; and the time allotted for a forced river crossing has been reduced two to three times, whereas there has been a tenfold increase in the number of items of equipment that a motorized rifle division has to have carried across.

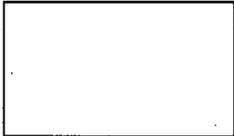
Under modern conditions, the problem of protecting troops against nuclear, chemical, and bacteriological weapons has become an extremely important and complex problem. Even without going into an extensive examination of this problem by including the questions of reconnaissance, warning, troop movements, and a number of other matters, we can confidently state that at present the principal means of protection per se are fortifications and the construction of various protective installations in the ground with the use of local and industrial materials and designs. The armies of a number of capitalist countries have also arrived at this conclusion. In particular, US military specialists believe that troops can be defended against nuclear and chemical weapons by constructing a system of shelters in concentration and deployment areas, in defense areas, and during combat actions.

To reliably shelter the personnel and combat weapons of a mechanized division it is necessary to put up 576 shelters made of corrugated steel components; this provides protection against a shock wave with a pressure of 5.6 kilograms per square centimeter and reduces radiation by 2000 times, i.e., for all practical purposes these components are reliable protective means.

An enormous amount of work will have to be carried out after the enemy employs nuclear weapons, resulting in massive obstacles and fires and the destruction of roads, bridges, and builtup areas. And this work has to be accomplished in contaminated terrain.

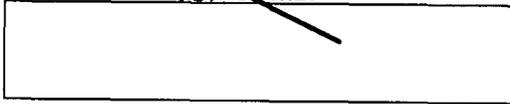
Along with this, new tasks have arisen--the support of rocket troop movements and the preparation of their sites, the negotiation of nuclear mine obstacles, the accomplishment of engineer measures pertaining to radio-electronic warfare, etc.

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We must emphasize that during the past war the task of supplying water by using troop means was accomplished sporadically and on an extremely small scale. When means of mass destruction are used, supplying troops with water will become a problem of paramount importance.

Several theoretical problems. The further improvement of engineer support in operations requires working out pressing theoretical problems, primarily those whose solution is dictated by life itself. Here are some of them.

As is known, since World War II, among the tasks performed by engineer troops, there are some which have begun to emerge and be more clearly and sharply defined and which do not have a subordinate or supporting role. Moreover, engineer units and subunits accomplish these tasks either independently or in coordination with other troops. Included among such tasks are the diversionary and reconnaissance actions of sappers; the actions of mobile detachments and obstacle groups, of sapper subunits in assault groups and detachments when seizing buildup areas and strongly fortified positions; the establishment and activation of controlled and contact mixed minefields and electrical obstacles; the actions of engineer subunits for the seizure and destruction of nuclear and conventional mine barriers of the enemy, etc.

The actions of engineer units and large units, when fulfilling the tasks enumerated above, are directly aimed at inflicting personnel and equipment losses on the enemy; therefore, these actions indisputably pertain to combat actions and not to the support of troop combat activities.

The correctness of this position is corroborated by the course of World War II itself. In all operations, Soviet troops used, on a large scale and with great effectiveness, engineer obstacles and other technical means to destroy the enemy.

According to incomplete data, during the 1941-1945 period of World War II, engineer troops inflicted great losses on the enemy by destroying: approximately 6000 tanks; more than 200 aircraft; approximately 5000 railroad trains with combat equipment and personnel; more than 25000 armored personnel carriers, prime movers, and trucks; more

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than 1500 varied and large depots with military stores; and more than 200,000 officers and men. In other words, engineer troops forces and means alone destroyed more than 15 divisions of German troops. This is equivalent to four to five full-fledged corps or one and a half armies out of the 18 armies that the German Wehrmacht had on the Soviet-German front.*

During the past war our engineer troops conducted operations brilliantly on many fronts to eliminate enemy mixed minefields by systematically clearing passages through them. These activities were usually carried out several weeks before our offensive operations began. These actions caused the enemy to become confused when our offensives were initiated and, as we negotiated the zones of obstacles, facilitated the task of breaching his defenses.

At present the capabilities of engineer troops to carry out such measures have increased considerably. The UR-67 ~~mine clearer~~, now in service with the engineer troops, together with the presently available mine-clearing tank attachments, provide a great potential for destroying enemy obstacles and for our troops to overcome them directly from the march.

From the aforementioned, we conclude that a considerable portion of the most important tasks of engineer troops should be designated, because of their purpose and nature of fulfilment, as "combat actions" and should be set apart from "engineer support" and categorized as a "group of engineer troop combat tasks."

The tasks should be divided in this manner not only because of theoretical considerations but, primarily, to assure the correct and comprehensive organization of their fulfilment.

* Engineer Support in Offensive Operations of Soviet Army Troops During World War II, 1941-1945, M., 1968, p. 5.

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The combat actions of engineer troops require more accurate and precise planning based on the plan of the combined-arms commander (formation commander); and this also applies to the organization of coordination with the other arms of troops participating in combat and operations.

It is quite clear that to consider this group of engineer troop tasks as support tasks does not permit coordination to be organized in an orderly and responsible manner and does not allow flexibility in amending it during combat actions.

This group of engineer troop combat tasks will increasingly occupy the attention of rear services personnel; and it will oblige them to bring up engineer munitions on a priority basis, since they are expended in significant quantities during an operation.

Thus, it is advisable to divide all engineer tasks into two groups: "engineer support tasks", which are performed by all arms of troops, including engineer troops; and "combat actions of engineer troops", which are carried out by engineer troops.

By placing the group of engineer tasks in the category of "combat actions of engineer troops", we in no way minimize the role and importance of engineer support of combat and operations.

The specific and comprehensive fulfilment of these tasks urgently requires the formulation of engineer troops combat regulations which would define the fundamentals of the combat employment of engineer troops, the procedures for controlling engineer subunits and units and for supporting their combat actions, and the nature of the actions of engineer subunits and units when they are performing their tasks in various types of combat.

In addition, it is very important, in our view, to formulate the allowances and units of fire for engineer munitions (explosives, engineer mines, standard charges, special mines) for various types of combat and for combined-arms and tank large units and formations. Regrettably, up to now there are no such units of fire for engineer troops. And this severely hampers estimates for

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the construction and overcoming of obstacles, as well as estimates for transport. The available allowances for engineer munitions in the tables of allowance of the wartime establishment only constitute the minimum permitted reserve on wheels of the troops, but allowances and units of fire as such have not been formulated.

When examining these problems, it becomes quite proper to raise these questions: what should be categorized as "engineer support of troop combat actions", and how should the role, place, and purpose of engineer troops in the ground forces be defined?

In our opinion, it is advisable to designate the following as some of the primary tasks of engineer support in combat and operations:

-- engineer support for the forced crossings of water obstacles, primarily in setting up and maintaining landing force, ferry, and bridge crossings; reconnoitering and preparing underwater crossings for tanks; and constructing permanent low-level floating bridges;

-- field preparation of the terrain in order to make the best use of troop combat weapons in the attack and in the defense and, also, to protect troops and control posts from the effects of enemy means of destruction;

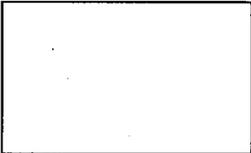
-- laying down routes for troops to permit them to move and advance in columns and in approach march formations, to deliver material-technical means, and to evacuate personnel and equipment put out of action on the battlefield;

-- minelaying and the clearing of mines from routes, builtup areas, and individual installations and localities;

-- establishing passages through enemy obstacles in front of his forward defense area and in the depth of his defenses or in front of individual installations;

-- engineer measures to eliminate the aftereffects of enemy nuclear strikes (extinguishing fires, breaching obstacles, constructing detours, and rescuing personnel and retrieving equipment);

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-- obtaining and purifying water and maintaining water supply points;

-- engineer measures for tactical and operational camouflage;

-- supplying troops with engineer weapons and equipment, and the organization of technical support.

We indicated that obtaining and purifying water was one of the primary tasks of engineer support. Supplying troops with water in a future war will indisputably prove to be an extremely important matter. But we believe that the rear services organs should be involved in this.

The matter of water supply in the army and in the front should be handled by the chief of engineer services of the army (front) rear services. The need for this is now obvious to all, but it has not yet been provided for by the T/O and E. In large units and units the deputy commander for rear services should be engaged in this, and the forces and means for water supply should be transferred to his authority.

Of the entire system of engineer support tasks, the engineer troops are charged with the most difficult ones, those requiring specially trained executors and the frequent use of complicated equipment.

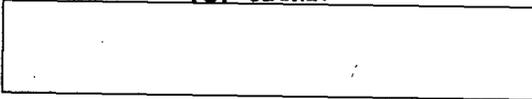
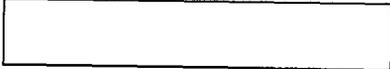
In the Field Service Regulations of the Armed Forces of the USSR and in the Manual for the Conduct of Operations, six arms of troops of the ground forces are indicated: motorized rifle, tank, airborne, rocket, artillery, and air defense troops. ~~We think it very proper to include a seventh among the arms of troops - engineer troops, and to phrase their purpose thus:~~ "Engineer troops possess powerful mixed mine means, they are capable of inflicting personnel and equipment casualties on the enemy in coordination with other arms of troops; and they are also capable of creating conditions which decrease our own troop losses from enemy nuclear obstacles and other engineer obstacles. In addition, by fulfilling the most complex tasks of engineer support, they cooperate with all arms of troops in the fulfilment of their combat tasks."

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Urgent T/O and E problems. The absence of the objective possibility of increasing the number of engineer large units and units has led to the necessity of equipping all arms of troops with increased amounts of engineer equipment and facilities. This tendency exists and continues to develop. Also, lighter engineer equipment is being produced to fully exploit the horsepower of tracked and wheeled vehicle motors. Unfortunately, the increase in the amount and quality of engineer equipment in the hands of troops has not been followed by a change in the system and organization of technical service which matches the increasing scope of the tasks.

One of the problems consists of finding a practical solution to the problem of evacuating and repairing damaged engineer equipment under field conditions in extremely short periods of time. Our commanders and staffs should now be acquiring experience and working out the organization and procedures for accomplishing evacuation and repair measures in various types of combat and operations; and they should be training cadres of specialists and improving repair methods. But, at present, engineer troops have been deprived of such a capability, because none of the divisions, armies, or military districts have engineer repair-evacuation subunits.

Combat and operational training practice has shown that in peacetime it is advisable that a division have an engineer vehicle repair platoon within the complement of the repair battalion, that a corps and army have an engineer repair-evacuation company at reduced strength, and that a military district have an engineer repair battalion (company) at reduced strength.

When examining the T/O and E problems of engineer troops we cannot but emphasize that the technical service is very inadequately represented in the control organization. Before 1958, the headquarters of military districts had the post of "assistant to the chief of engineer troops for engineer equipment". Later the post was abolished and up to now it has not been reestablished.

In addition, the military districts in the interior, where much of the engineer equipment (several thousand units) is kept, do not even have engineer equipment

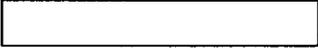
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departments. This situation also exists at other supply levels--in large units, where all this work has been levied on the engineer service, represented by a single person or, at best, by two officers who have a number of other equally important duties in addition to supply and technical duties.

Under such conditions, the problems of engineer supply and of vehicle operations and repair are not being fully resolved. The study and collation of operating features are not being carried out. Problems of engineer supply and technical support are worked out superficially in troop and operational exercises, thereby depriving engineer troops of the opportunity to accumulate experience in the comprehensive planning of engineer support for operations and of experience in leading troops.

Thus, practice has convincingly shown that at present the need has arisen to positively resolve the problems of engineer supply and technical service of engineer troops by establishing in military districts and armies the post of assistant to the chief of engineer troops, and by creating departments of engineer supply, operation, and repair, attached to the chiefs of engineer troops in those military districts where these departments do not yet exist.

As regards divisions (motorized rifle, tank), which have more than 250 units of engineer vehicles and engineer attachments for tanks and tractors, and a considerable amount of engineer equipment and material, they need a minimum of two assistants to the chief of engineer service: one for the operation of engineer equipment, and the other for supply.

As is known, the numerical strength of engineer troops in peacetime is very modest. For the most part, these are cadre units. Despite this, they have a number of important tasks to fulfil. Thus, in order to prepare the theater of military operations, and for other purposes, they build roads and bridges, construct water crossings, disarm and destroy explosive objects, carry out demolition, protect bridges and other hydrotechnical structures from ice floes and floods, construct control posts, help troops and military construction workers build various installations, etc. If one adds to this the important tasks of engineer troops regarding combat and mobilization preparations, the

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construction of their cantonments and providing them with utilities, and many other tasks, then it becomes perfectly clear that they do not have much time left to service the equipment of the "emergency reserve".

From this we can conclude that the realities of life have long since placed on the agenda a task whose solution cannot be avoided. The essence of this task is as follows. If it is impossible to have several military district army engineer units at constant readiness in order to entrust them with all of the tasks pertaining to the activities and combat training of the troops, then it will be necessary to create special subunits to service the equipment of the "emergency reserve" and the reserves of material-technical means.

We must add to what has already been stated that every military district has a number of units and establishments which store considerable reserves of engineer equipment but which do not have the personnel to service, test run, or mothball them. Among such units are depots, bases, military sanatoriums and rest homes, hospitals, road and medical depots, etc. Consolidating these establishments with other units as a garrison, plus several other measures, have turned out to be unacceptable. The yearly callup of reserve soldiers to service the equipment of the "emergency reserve" has allowed this task to be fulfilled only partially.

To fully accomplish this task the chief of engineer troops of the military district must have subordinate to him a subunit equipped with mobile repair and mothballing means to ensure the test running, servicing, mothballing, and re-mothballing of engineer equipment. In accordance with an appropriate plan (schedule), these subunits could service units which do not have the personnel to do this. These subunits could also be charged with checking the technical condition of engineer vehicles transferred from one unit to another; and with the field repair of equipment when courses of instruction are held for attached personnel and during large field exercises when the repair means of large units and units are inadequate.

All of these tasks could be fulfilled by engineer repair battalions (companies) which, as we have already indicated, it would be advisable for military districts to

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have. If this is not possible in the next few years, we can organize repair-mothballing subunits and attach them to the district engineer military depots (bases).

The need to efficiently plan the combat actions of engineer troops and to control them during operations, and also the requirement for the efficient organization and uninterrupted conduct of engineer reconnaissance, have very acutely raised the subject of reconstituting engineer troop headquarters at the operational levels (army, military district - front).

~~Engineer troop headquarters~~ existed throughout World War II and for 15 years afterwards; and they proved to be the most acceptable vehicle for controlling engineer troops. The abolition of these headquarters at the beginning of 1961 adversely affected the work of the staff service of engineer troops, particularly the organization of engineer reconnaissance, information, coordination with other troops, communications, and the supervision of engineer units as they fulfilled their tasks.

The absence of engineer headquarters adversely affects the daily activities of the troops, particularly now, when the accomplishment of engineer tasks has become considerably complicated under nuclear war conditions and the scope of these tasks has increased. The necessity has arisen of supporting troops conducting offensives at higher rates of speed and moving over considerably greater distances than before, of protecting troops with engineer means against nuclear weapons, and of fulfilling a number of other tasks.

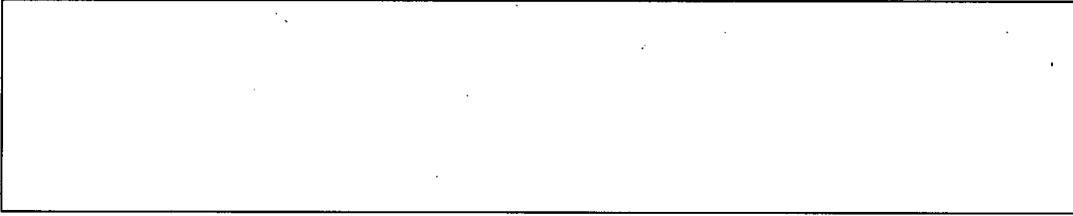
During this time, engineer headquarters could have played a positive role in the solution of many operational-engineer problems; could have accumulated positive experience in the control of engineer troops; and could have organized engineer support under the new conditions which will govern the use of this support in a future war.

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