3662

DOI   Late 1962

Summary,

This article is a review of a book entitled The Principles of Organizing
Communications in the Battle and Operation. It is intended as a textbook for
military academy students. Studying it will enable commanders at all levels to
more purposefully and soundly assign tasks to communications troops and to more
fully exploit their forces and means for the purpose of esuring continuous troop
control under the complex conditions of a battle and an operation. Integrated
vs. autonomous communications systems, the organization of control posts and the
security of the control system are some of the subjects covered in this book.

3662

CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

2 August 1978

MEMORANDUM FOR: The Director of Central Intelligence

FROM   :   John N. McMahon
                   Deputy Director for Operations

SUBJECT   :   MILITARY THOUGHT (USSR): The Principles
                   of Organizing Communications in a
                   Battle and Operation

   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 is a review of a book
entitled The Principles of Organizing Communications in a Battle
and Operation, intended as a textbook for military academy
students. Integrated versus autonomous communications systems,
the organization of control posts, and the security of the
control system are some of the subjects covered. This article
appeared in Issue No. 5 (66) for 1962.

   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

John N. McMahon

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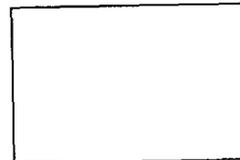>   Department of the Army
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> Deputy Director of Central Intelligence
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> Director of Strategic Research

Intelligence Information Special Report

COUNTRY USSR

DATE OF
INFO.   Late 1962

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2 August 1978

SUBJECT

MILITARY THOUGHT (USSR): The Principles of Organizing
Communications in a Battle and Operation

SOURCE Documentary

Summary:

The following report is a translation from Russian of an
article which appeared in Issue No. 5 (66) for 1962 of the SECRET
USSR Ministry of Defense publication Collection of Articles of
the Journal "Military Thought". The author of this article is
Colonel G. Grigoryants. This article is a review of a book
entitled The Principles of Organizing Communications in a Battle
and Operation. It is intended as a textbook for military academy
students, to enable commanders at all levels to better use
communications troops for the purpose of ensuring continuous
troop control under the complex conditions of a battle and an
operation. Integrated versus autonomous communications systems,
the organization of control posts and the security of the control
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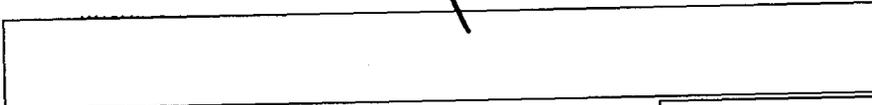
End of Summary

Comment:

After 1962 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.

The Principles of Organizing Communications in a Battle and Operation
by
Colonel G. GRIGORYANTS

The working out of the principles of organizing communications that conform to the nature and to the conditions of preparing and conducting a modern battle and operation is of great importance in resolving the major problems of troop control.

In this connection, the work The Principles of Organizing Communications in a Battle and Operation,* published at the end of last year by the Red Banner Military Communications Academy, draws attention to itself. The work was compiled by Colonels S.M. KARTASHOV and D.P. VORONTSOV under the general editorship of Candidate of Military Sciences and Assistant Professor Colonel L.S. GORDON and is intended to serve as a textbook for the academy's students.

It seems to us that the work cited will be extremely useful to the generals and officers who are directly involved in the organization and implementation of troop control. Studying it will enable commanders at all levels to more purposefully and soundly assign tasks to communications troops and to more fully exploit their forces and means for the purpose of ensuring continuous troop control under the complex conditions of a battle and operation.

Without going into an analysis of the entire contents of the work, we will only dwell on the principal topics, which, in our opinion, are of particular theoretical and practical interest.

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* S.M. KARTASHOV and D.P. VORONTSOV, The Principles of Organizing Communications in a Battle and Operation, published by the Military Communications Academy, 1961, 244 pages.
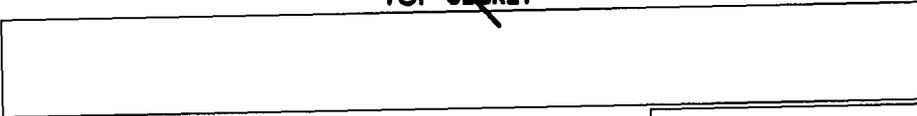
Because the organization of communications must be in conformity with the basic principles of troop control that have been adopted by our army, and with the requirements imposed upon troop control, and because it must also strictly conform to the structure of the control posts, the exposition of the work starts off precisely from these topics. And this is correct, since in the final analysis, the structure of the control posts within any operational and tactical level will determine the make-up of the communications system.

It must be stated that the problem of control posts, even though it has been a subject of study over an extended period of time, has not yet been resolved in final form. That is why in almost every exercise a new organization for the control posts is examined, which naturally does not make it possible to work out a specific approach in organizing communications nor to most efficiently distribute forces and means among control posts, nor also to soundly resolve the questions of the T/O&E of communications units and subunits. These circumstances have been reflected in the publication being reviewed.

On the basis of the experience gained in exercises that had been held up to 1961, in which command posts, forward command posts, and rear control posts were organized in the fronts, armies, and large units, the authors set forth the questions of the organization of communications as they apply to this command post structure. However, at the moment the work came out, and based on the experience gained in a number of exercises, war games, and conferences that took place last year, the opinion had been formed that it was advisable to discontinue organizing forward command posts and to set up in their place alternate command posts which would be in constant readiness to take over troop control.

This new regulation was written in the draft of the Service Manual for Staffs issued in 1961. Therefore, after the work was printed, the authors were obliged to attach a page to it notifying the readers of the above-mentioned changes in the organization of control posts and substantiating the advisability of the changes. But this correction lagged behind the development of events because in the exercise BURYA (STORM) at the end of last year, the forward command post was resurrected
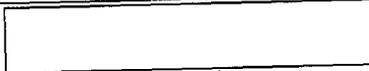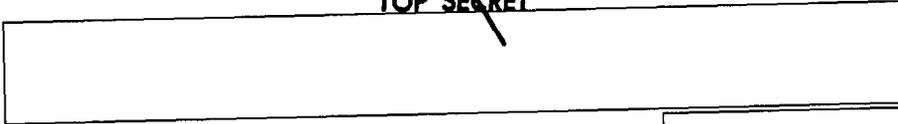
and an alternate command post was recommended only under conditions of defense.

Thus, it turned out that the work substantiated two views on the organization of control posts making it possible for the readers to assess the advantages and disadvantages of each of them and to form their own opinion on this score.

In our opinion, the organizing of forward command posts and the presence in them of the formation commanders with a small group made up of the principal command personnel of the field headquarters leads to the isolation and belittling of the role of the staffs. From the organs with the function of directly controlling the troops, they have been converted into the passive recorders of events although they are located in the main command posts, where the greater number of control means are concentrated.

On the other hand, the organizing of forward command posts, although making it possible to bring the command personnel somewhat closer to first-echelon troops, worsens the conditions for controlling the forces and means disposed in the depth, including missile large units and units. All of this does not speak favorably for the organizing of forward command posts.

Speaking about the requirements imposed on troop control, the authors dwell upon the continuity, firmness, and flexibility of control (pages 11-13). Without denying this, we suppose that taking into account the ever-growing capabilities of our probable enemies to reconnoiter and discover our control system and to intercept our conversations and transmissions, the requirements for the security of control have acquired extremely great importance.

The experience gained in many command-staff exercises attests to the fact that literally after one to two days, the majority of the control posts will have been discovered by the "enemy". The direction and time of their relocation also becomes known, making it possible for the enemy to arrive at a conclusion regarding the grouping of our troops and to disrupt their control. Naturally, to ignore this requirement under actual war conditions is fraught with grave consequences.
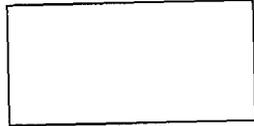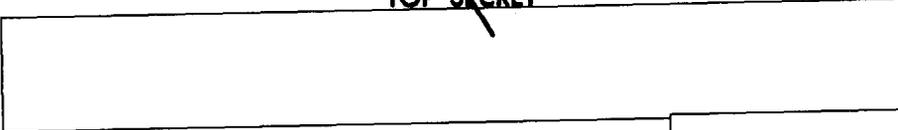
The ways to achieve secure troop control will depend on the degree of the security of the communications system. Therefore, it is no accident that the subsequent chapters of the work, which deal with the requirements upon communications, with the employment of communications means and of communications centers, and with radio camouflage, list the rules, verified by experience, for ensuring communications security. However, this key requirement should be imposed not only on communications, but also on troop control as a whole, and based on examples from the history of the past war and on the experience gained in exercises, one should show the importance of secure troop control, and then go on to set forth the measures ensuring communications security.

The central condition for the principles of organizing communications is the matter of the communications system, a system which provides the capability of controlling troops continuously and securely both while preparing for and also particularly while conducting highly mobile combat actions.

Based on the experience of the Great Patriotic War and of postwar exercises and war games, as well as on the materials of a number of military science conferences, the work gives a comparative analysis of the different alternative configurations of a front and army communications system (pages 27-31), making obvious the advantages and disadvantages of each one of them.

At the operational level of control, communications constitute the specific system of the communications centers of control posts, auxiliary communications centers, check-and-test posts, and also the communications links of radio-and-wire and radio-relay communications, that takes in the entire zone of action of the front (army). Such a system must provide for the requirements in communications channels of all of the formations and large units of the branches of the armed forces and of the branch arms that are participating in the operation and also for the requirements of control of the rear services, and consequently, it must be an integrated system.

This matter, as is known, has been under discussion for a long time. There were tendencies to have one's own autonomous systems of communications in order to provide control over one or another branch arm. Rocket troop and artillery staffs in

particular fought for this, putting forth as their basic argument
the thesis: "We are responsible for controlling the troops
subordinate to us, therefore, give us the forces and means and we
will organize our own communications system."

However, life demonstrated the unsoundness of such a point
of view, in the sense that only the presence of an integrated and
widely ramified communications system corresponds in greatest
degree to the principle of centralized troop control at the level
of a formation, contributes to the maintenance of close
cooperation among all of the forces and means participating in an
operation, and ensures the capability of maintaining unbroken
communications while troops are regrouping and during the
frequent relocations of control posts. In addition, this
achieves a more rational utilization of communications forces and
means, facilitates the shifting of these forces and means when
the situation is changing drastically, and also facilitates the
restoration of communications on one or another axis.

At the same time, it should be kept in mind that the
development of communications equipment is proceeding by way of
producing multichannel means and of automating the operation of
the equipment and of communications centers as a whole, and that
these new characteristics of the equipment can be actualized best
of all precisely under such a centralized, integrated
communications system. However, as was correctly noted in the
work (pages 114-115), with the existing unwieldy means of
communications, especially the channeling and switching
equipment, which requires time-consuming manual labor, the
mobility of communications centers has been found to be low,
which fetters the mobility of the communications system as a
whole. But this deficiency is of a temporary nature and as
communications equipment is developed, it will be gradually
reduced to zero.

As concerns the communications system at the tactical level
of control, it is organized according to the principle of
ensuring direct (immediate) communications between the control
posts. This is derived from the requirements for troop control
at the given level and is basically provided for by the
capabilities of the technical means of control that are in use
there. However, even in this system, when it is necessary to
provide communications over a distance that exceeds the operating
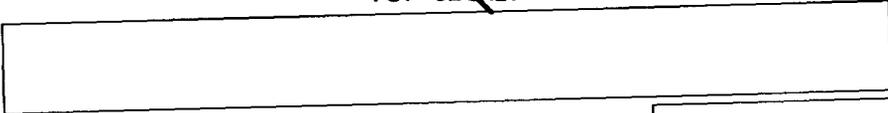
range of the radio and radio-relay means (when troops are operating on a broad front, on dissociated axes, when making marches), it is necessary to organize relay points, and sometimes small mobile auxiliary communications centers.

In analyzing the requirements imposed on communications under modern conditions, the authors put emphasis on ensuring their rapidity of operation (pages 43-46), which is fully justified, in that the time factor now plays a decisive role in directing troop combat actions and will greatly determine the success of a battle and an operation. In modern conditions it will be necessary, not in a matter of hours, but in minutes or even seconds, to provide for the transmission of orders, instructions, and reports, especially if these are concerned with the control of the maneuver and fire of rocket troops, with air defense means, or with reconnaissance. Moreover, the volume of all types of information has increased considerably because the control of modern combat means and forces has become exceedingly complex and requires the knowledge and estimation of a far greater amount of data than was the case in the past war.

It is not possible to accomplish this task completely with the available means of control. It can be successfully accomplished only with the introduction into the work of the staffs of integrated automated control systems made up of an automated communications system which ensures the rapid, error-free, and secure transmission of information. But at the given stage of development of control means, organizational measures and certain technical measures can and should be carried out which will contribute to the improvement of high-speed communications. The work recommends adopting certain means and methods of organizing communications, such as, for example, radio communications along links (page 77) and setting up duplex communications channels and backup communications channels (pages 73 and 81). The devices which automatically secure conversations and transmissions will find wide usage and make it possible to eliminate the enciphering and encoding of documents (conversations), permitting a considerable savings in time. The information flow can also be speeded up by reducing the time spent in transmitting information within the communications centers and in the control posts.

In this connection, worthy of attention is the experience of a number of military districts which in exercises employed automated telephone and internal loudspeaker communications as well as subscriber telegraphy. Positioning terminal telegraph equipment directly at the working sites of staff officers, and especially of the axis officers, enables them to eliminate the time they spend in going to the equipment rooms of the communications centers and in returning, as well as in waiting for the initiation of the calls. But needless to say, this requires from staff officers a sound knowledge of the equipment and a mastery of the techniques of handling it.

It seems to us that it would also be very useful, based on the experience of a number of exercises, to show in the work what the employment of signal coding devices offers in the way of speeding up the flow of commands for the control of the fire of rocket troops and of air defense means, where great high-speed operation is demanded from communications.

The employment of these devices, in conjunction with electronic computers having the function of automating the calculation of the data for missile launchings, will produce, as shown in actual practice, a repeated savings in time.

In examining the subject of the utilization of the various communications means and of the organization of communications with these means (pages 62-108), the authors acquaint the reader initially with the general characteristics and classifications of the communications means and then with the most efficient and experience-tested methods of employing them in a modern battle and operation. Also, major attention is devoted to radio means and the methods of organizing radio communications, the latter being the foundation that ensures continuous troop control. Simultaneously with this, the work emphasizes that only by the integrated utilization of the different communications means, and taking into account the capabilities of each one of them, can one ensure continuous troop control.

Incidentally, let us note that frequently the principle of the integrated employment of communications means is dealt with narrowly and boils down merely to the simultaneous utilization of several or all types of communications on the key links. But in this work this principle is treated more fully; it calls for the

employment of those types of communications which in greatest degree satisfy the conditions of the situation; for the providing of communications on a given link by one means and on another link by another means; for the employment of the very same terminal equipment for the operation of different means of communications; and finally, for the employment of the channels established by the different means of communications (page 33).

The methods of organizing communications mentioned in the work being reviewed are evaluated from the point of view of their operational-tactical expedience, and also opinions are stated concerning the transmission capability of the communications links and nets, their resistance to jamming, security of operation, capability of providing communications via the level of command and while moving, and also concerning the economical expenditure of means.

Knowledge of this information enables one to correctly assess the different means and methods of organizing communications and to correctly employ those of them which most fully satisfy the specific conditions of the situation and the tasks of control.

The work even examines the question, which is of a research nature, of the employment of television means for the purposes of observing the battlefield and for video communications between formation commanders, commanders, and staffs (page 74).

The introduction of video communications into the work of control organs will give rise to conditions which are very close to the conditions of personal contacts, because it will enable one, first of all, to illustrate conversations by showing maps, charts, document texts, etc., and secondly, to see the person one is speaking with and even the group of persons with whom one is conversing.

The authors have set forth in detail the subject of communications centers, which are, as is known, the basic element of a communications system (pages 109-135).

In defining a communications center (page 109), it was pointed out that it constitutes an organizational-technical amalgamation of communications means that are set up at a
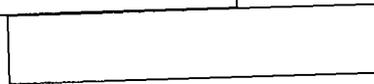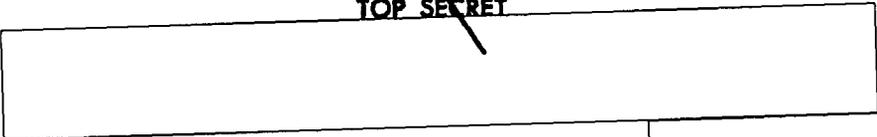
specific point for the purpose of providing for the
communications of a formation (large unit, unit, subunit).

However, in our opinion, such a definition pertains mainly
to the communications centers of formations; but in regard to
the tactical level, where control posts constitute a set of
command-staff vehicles equipped with communications means, here
there is, in essence, no communications center, in its former
sense. The communications means have organically become a part
of all of the elements of the mobile control posts and constitute
with them a single whole.

Therefore, we cannot accept the statement of the authors
that a regiment's communications center has in its complement a
radio group (page 119). There is no such group in a regiment or
a division. It exists in the front or army communications
centers and combines the principal radio means with a given
control post, these means often being taken outside the confines
of the control post and remotely controlled. By these means the
control posts are not exposed and, what is especially important,
the centralized employment of radio means is achieved.

Considering these circumstances, it is evident that the
previously formulated definition of a communications center
should be reexamined and that in dividing it up into its
elements, the approach should not be mechanical, but should take
into consideration the function of one or another communications
center.

The work presents useful information on the relocation of
communications centers during an operation and on ensuring their
survivability (pages 130-135). In doing so, it emphasizes that
under conditions of a missile/nuclear war, the principle of
echeloning the relocation of the communications centers of a
front and an army have acquired even greater importance, because
by doing this, one ensures that communications means are
dispersed and consequently increases the stability of troop
control.

It is known that radio camouflage and the protection of
radio and radio-relay communications against enemy reconnaissance
and jamming have great importance in the matter of ensuring
continuous and secure troop control. Basing themselves on the
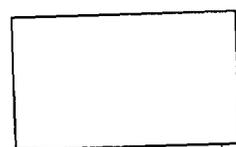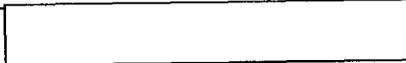
experience of the Great Patriotic War and postwar exercises, the authors have discussed this very urgent matter in adequate detail (pages 160-188).

The subject of radio jamming has been set forth in detail. However, it must be stated that on the whole, the problem of protecting one's own radio means against jamming is still in the nature of a research matter. Moreover, it is still not completely clear what may be the greater evil -- the enemy's deliberate jamming or the mutual interference produced by one's own radiotechnical means, the saturation of the combat actions area with these means having increased immeasurably. One must presume that it was precisely this circumstance which prompted the authors to devote so much space in the work to the problems of working out radio operating data and of calculating the requirements for and the allocation of radio frequencies, because when these problems are resolved incorrectly, radio communications on a number of links may prove to be paralyzed.

The experience of a number of command-staff exercises where radio communications worked very unstably on the key links because of mutual interference serves to confirm this situation.

It is evident that this problem disturbs our probable enemies also. Therefore, for example, it is no accident that the US has established a special scientific research center equipped with electronic computer equipment whose function consists in studying the various kinds of radio communications interference and in seeking organizational and technical methods of decreasing its adverse effects.

At the end of the book the authors even set forth the basic rules for organizing the supply of troops with communications equipment and items (pages 189-202) and also the basic data for the organization and operation of the military post office (pages 203-218). By this means, they have in actuality worked out all of the questions which constitute the basis for the organization and providing of communications.

The work concludes with a brief presentation of the work of a chief of communications in a modern battle and operation and the distinctive features of his activities under the conditions of the initial period of a war. One wishes these problems had

been set forth in more detail, because under these conditions the organization of communications and the providing for their continuous operation are a very complex affair; therefore, while it is still peacetime, these problems must be thoroughly studied and insofar as possible checked by exercise experience.

In organizing communications in the initial period of a war, local means of communications must play an important part, concerning which the authors only make casual mention (page 234), and with regard to which organizational and technical measures should be carried out and which of the local means of communications are most expediently utilized -- there is no mention whatsoever.

Despite the deficiencies noted, the work that has been reviewed without a doubt will become a reference book for staffs, communications troops, educational institutions, and also scientific research establishments. The creative employment in actual practice of the rules set forth in it will enable one to skilfully organize communications and efficiently utilize the diversified communications equipment for the purpose of ensuring continuous troop control under the conditions of a modern battle and operation.