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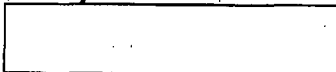
8 March 1974

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): A Hungarian View
of Warsaw Pact Troop Control

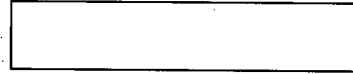
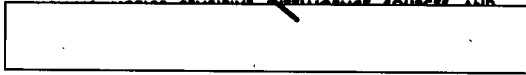
1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article by a Hungarian officer discusses the control of military units consisting of several Warsaw Pact nationalities. Most of the article concerns the establishment of reliable communications channels among the armies of the alliance. Several Warsaw Pact exercises are cited as bases for examples of command and control problems arising from the language and communications differences in the Warsaw Pact. This article appeared in Issue No. 3 (91) 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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Intelligence Information Special Report

COUNTRY USSR

DATE OF INFO. Late 1970

DATE 8 Mar 1974

SUBJECT

MILITARY THOUGHT (USSR): The Organization of Communications in a Combined Arms Army of Coalition Composition

SOURCE Documentary

Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 3 (91) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is Lieutenant-Colonel of the Hungarian People's Army M. Lindner. This article by a Hungarian officer discusses the control of military units consisting of several Warsaw Pact nationalities. Most of the article concerns the establishment of reliable communications channels among the armies of the alliance. Several Warsaw Pact exercises are cited as bases for examples of command and control problems arising from the language and communications differences in the Warsaw Pact.

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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The Organization of Communications in a Combined Arms
Army of Coalition Composition

by

Lieutenant Colonel of the Hungarian People's Army
M. Lindner

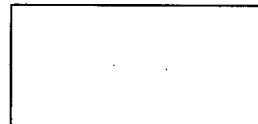
In recent years the military press of a number of countries has been devoting much space to analysis of the coalition character of warfare, in which the belligerents use large units and units of countries which belong to a given coalition. The coalition composition of troops obviously causes additional difficulties in the organization of control. This makes it necessary for military researchers to carefully study the problems of controlling coalition forces.

The Hungarian People's Army has acquired a certain amount of experience in this field which we would like to share with the readers of the journal Military Thought.

The final outcome of a modern operation depends on a whole series of factors, including what means of control are concentrated in the hands of the commanders and staffs and how the commander implements his will and organizes the activity of his subordinates while giving special attention to the large units of other nationalities.

In our view, the unique features of controlling allied forces stand out most sharply at a control level such as the combined-arms army. These features include, first of all, the heterogeneous makeup of an army which includes allied large units. The communications system is divided between controlling one's own large units on the one hand and the large units of other nationalities on the other. Second, the subordination of allied large units may be changed at any time throughout an operation, and consequently they must always be ready to tie into an army communications system. The experience of training exercises at the front level confirms the fact that resubordination of allied large units

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may occur during preparations for an offensive operation, as well as during the fulfilment of the immediate mission of an army or during the repulse of a powerful counterstrike. For example, in tactical exercise RASSVET (1969), the makeup of a combined-arms army was considerably altered in order to balance the opposing forces within a short period of time. In exercise SHUMAVA (1968), a combined-arms army was transferred to the command of another front during an initial offensive operation. In both cases the organization of control of the new grouping of forces required maximum efficiency on the part of the communications service.

Research and experimental exercises have indicated that controlling the entire activity of an army requires a communications system capable of assuring the following: stable control of the army for the entire duration of an operation and during a second offensive following directly with no operational pause; completion of the necessary regroupings of forces arising unexpectedly in connection with the fulfilment of unforeseen tasks; control of the forces of the Reserve of the High Command and the front operating in the army zone and carrying out their missions in support of formations; high load-carrying capacity of the communications system set up on the critical axes and, if necessary, the capability for the rapid expansion of the system where the flow of information is heavy; the correct proportion of line communications and wireless communications, which, in our opinion, represents one of the criteria of communications reliability; transfer of control functions, if necessary, from one control post to another, or to another control level; expedient grouping of forces and means of communications reserves and the capability to regroup them rapidly in such a way as to enable the chief of army communications to function effectively in increasing the load capacity of the communications systems.

In light of these problems, let us examine the basic components of the communications system of a combined-arms army which includes national large units of allied countries. It must be noted that the efforts of the past few years have resulted in considerable improvement in the troop control of formations made up of various nationalities. For example, we have successfully standardized communications equipment, documents of the radio telegraphy service (Table GDR-63, numbers of keys,

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etc.), special cipher means, certain control panels, etc. However, the task of integrating allied forces into an army communications system and of controlling them in operations still presents a serious problem.

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In the discussion of this problem, opinions have been divided: some consider that the control of large units of troops of another nationality included in the makeup of an army must be implemented exclusively through the means of that army, while others feel that it should be handled by the reciprocal allocation of operations groups. The experience of training exercises has fully confirmed the correctness of the latter variant: troop control of another nationality succeeds best when there is a reciprocal allocation of operations groups with communications means. The transmission speed and operating range of the communications means attached to operations groups, the flow capacity of communications channels, and a proper correlation between open and secure channels provide for uninterrupted flow of information between a front and an army.

If one or two large units of another nationality are included in a combined-arms army, it is advisable to carry out control by allocating communications means from the army. If more than two foreign large units are assigned to an army and the army does not have adequate facilities, the organization and support of communications becomes a much more difficult problem; in attempting to resolve this problem, we encounter a series of adverse factors.

What are these factors? Language difficulties, which become a serious problem mainly in the operation of radio stations serving as a continuous telephone system (for example, the aerial reconnaissance network of a front, the radio warning network of an army, etc.); differences arising from the structure of communications systems; the nature of their operation, and the characteristics of individual communications means, especially multiplexing equipment; problems of the organizational support of individual communications units and large units; the variation in Morse code symbols, which causes serious complications in the transmittal of coded messages; and difficulties arising from differences in the communications services and in their training of communications personnel.

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In examining the components of the communications system of a combined-arms army from the standpoint of the flow of information, the following remarks can be made.

Line communications. ^{wire} When forces are in the departure position for an offensive, or during the concentration of forces, army line communications play the main role. This goes without saying, since even a small amount of electromagnetic radiation will reveal the location of forces. The breadth and depth of the operational disposition of army forces make it impossible to cover distances with field wire; line communications are therefore set up on the basis of a permanent network of cables and overhead lines. This network, by connecting the required number of auxiliary communications centers, assures optimum operating conditions. Multiplexing equipment is used to create multiplex channels on certain individual axes, which makes the entire communications system more complex. In addition, the communication centers of allied large units still do not have this equipment.

In organizing line communications, it is unquestionably necessary to ensure that attenuation in the lines hooked up to auxiliary communications centers be kept within limits to prevent the disruption of communications between posts and to maintain multichannel through-traffic. It is therefore necessary to determine, during the planning stage, those electrical characteristics which are required in a given electrical network. According to practical experience, it is basically this factor which determines the degree of operating efficiency of auxiliary communications centers.

Since large units of allied forces participate in the operation of line communications, all telephone operators of the main and auxiliary communications centers must know the basic Russian expressions needed for their work; and the maintenance specialists must know the expressions pertaining to cross-connecting, measuring, elimination of malfunctions, and transmittal of communications. When line telephone communications are to be provided, it is necessary to set up telegraph lines between the army and its divisions and brigades. These lines would then become the basis of communications during the preparation for an offensive or during defensive operations. The necessity to provide letter-printing channels during the preparatory period also

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arises from the fact that this is the period during which most of the basic instructions are issued and transmitted.

Radio communications. Radio communications represent the principal means of controlling an army during an offensive operation. They are carried out over shortwave and ultra shortwave bands throughout the entire depth of the operation. It is our view that those shortwave radio telegraph lines which have been organized on the operational axes must be considered as the main communications means. It is advisable for an army to organize one radio network for communications with its own large units, and one or two radio networks for communications with the large units of other nationalities. It is extremely important that all radio telegraph lines be provided with a transmitter-receiver having a directional antenna.

Experiments conducted with Soviet personnel after exercise ELEKTRON-69 show that only a short time is required to transfer a distant station from the radio network to the letter-printing line. Nevertheless, we must strive to organize direct communications on axes between a combined-arms army and the divisions of another nationality. The reason for this is that troops and large units of other nationalities have their own cipher equipment of an analogous type, and enciphered information is transmitted by perforated tape. This information can be transmitted most effectively only by letter-printing lines using transmitters with perforated tape. According to practical experience, information enciphered and recorded on perforated tape contains fewer interfering signals when sent by transmitter than when transmitted by manual letter-printing equipment.

Since the primary objective is the rapid transmittal of the perforated tape containing the enciphered information, it seems that the creation and maintenance of radio letter-printing lines is the only correct method of transmitting information of a decisive nature during an offensive operation. The master stations of the radio letter-printing lines must always be located with the commander.

We have not yet touched upon the subject of ultra-shortwave radio communications. Yet this is an extremely

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important means of transmitting information during nuclear bursts detonated in the upper layers of the atmosphere.

At the same time, army ultra-shortwave communications supported by relay stations deployed in the depth will remain one of the effective means of conducting short exchanges between commanders, which is of special importance at the tactical level of control.

The ultra shortwave radiotelephone which was recently introduced at army command posts is of considerable help in the initial phase of the deployment of control posts, because it can select incoming calls and because of its exchange system, and because it can rapidly hook into conference-call communications. Until intercommunications are set up, the radiotelephone is one of the main means of control, operating in combination with the army telephone communications center. Then later, when the deployment of the control post intercommunications system is completed, the use of radiotelephones (except for the duty station of the telephone center) will be discontinued. The use of radiotelephones also makes it possible to control individual key communications systems by remote control.

Judging by experience, we do not always allocate ultra-shortwave frequencies carefully. As a result, interference often impedes the station performance. We must eliminate so-called "arbitrary" frequencies. Troops of other nationalities must use frequencies allocated to them by the higher command level. The basic requirements are that the frequencies used by the large units of other nationalities during resubordination be assigned by the chief of army communications, i.e., they must use only those frequencies for which they have authorization.

Radio-relay communications. The organization of radio-relay communications at tactical control levels has its own unique features. In carrying out this task, the following variants must be kept in mind. In one case radio-relay communications may be set up using army means and large units of allied forces, while in another case only the forces and means of allied large units may be used. Judging by our experience, the continuous operation of radio-relay stations of different nationalities and the exchange of information are sufficiently reliable. The

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basic requisites here are: a single system of station numbers and knowledge of the special terminology involved in setting up letter-printing channels in radio-relay communications.

Our radio-relay communications subunits must be trained in transmitting and receiving from tactical radio-relay stations over the assigned channels of the radio-relay stations of operational designation, or in transmitting communications from radio-relay channels of tactical designation to radio-relay channels of operational designation. The necessity for this became especially obvious in exercise RASSVET.

Much more attention will have to be given to careful distribution of the frequencies of radio-relay stations of tactical designation in order to prevent duplication of frequencies within the area covered by the stations. This has become especially important now that there are radio-relay stations at the division-regiment level of communications.

In accord with the plans to provide new communications means at the army-division level in the near future, ~~multichannel radio-relay~~ equipment operating in a higher frequency spectrum will be used, as a result of which the number of radio-relay letter-printing channels at the army-division level may be considerably increased.

Communications using mobile means (courier service, messenger service). This form of communications is the easiest to include in the communications system of large units of various nationalities. The locations of the courier and messenger services at the control posts must be chosen in such a way that they are near helicopter landing pads and not far from the signal message office.

After the deployment of a control post, the first thing to do is to inform the subordinate and higher headquarters of the coordinates of the helicopter landing pad. Experience indicates that belated reporting of these coordinates produces serious complications in the work of commanders and staffs.

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It is necessary to find ways for the rapid deployment of night landing pads. This is all the more important because in exercises conducted abroad we observed how helicopters of allied forces carried out transport missions even at night when necessary.

An expedient solution appears to be the dispersal of army helicopter parking areas among all army control posts (forward command posts, command posts, rear area command posts, and possibly emergency command posts or alternate command posts), which will increase their effectiveness and at the same time reduce the probability of losses. At the army rear area control post it is advisable to set up a separate system of courier service connecting the army rear area control post with the rear area services and forces. The reasons for this are, first, the large number of rear area forces and the separate control system of the deputy commander of the army for the rear area; and second, the comparatively large volume of documentation covering the movement of material resources in units and logistical services.

Couriers must be provided with identification in Russian and in the language of the allied forces, with an unclassified order signed by the army chief of staff, and with a courier's stamp to be carried in their pocket, giving them the right to receive pouches. Courier vehicles must be equipped with audible and visual signals in order to have priority of movement throughout the entire area of a combined-arms army.

In addition to transmitting regular dispatches (orders, instructions, plans), the courier service must be prepared to transmit perforated tapes. This means that if the carrying capacity of a given channel falls below the critical level on a given axis, the courier delivers perforated tape to the addressee, where it is deciphered by the cipher unit.

Signal message office. As is known, all basic instructions concerning the activities of large units are transmitted through the cipher service by perforated tape. Therefore, it is advisable to furnish signal message offices with letter-printing equipment and perforators.

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The signal message office is the central point for the transmittal of information at all control posts. To organize a signal message office requires an enormous amount of attention from both the combined-arms command and the communications service. The still prevalent view that dispatchers can be personnel incapable of working successfully in other special communication services must be overcome. What is needed here is a detailed knowledge of the higher communications system, the army communications system, ways of transmitting information using various communications means, bypass lines, and parallel lines. The chief of the signal message office must be able to manipulate communications channels in case of need.

The working area of the signal message office must be located between the operations staff and the communications center, near the cipher unit. The chief of the signal message office must be assured freedom of choice among the most expedient forms and methods of transmitting information. For this, close cooperation must be established between the army communications duty officer and the chief of the signal message office. In order to make the exchange of information more reliable, the most important data can be sent in duplicate over several different communications means.

The vehicles of the signal message office must be equipped with a device which records the condition of all types of communications at any given time, thus enabling personnel of the signal message office to be informed at all times concerning the available capabilities. It would be useful for the staffs if the processing of outgoing telegrams held up by officers could be accelerated. It is also necessary to mechanize the labor-consuming operation of processing message forms. It is desirable to provide the vehicles of signal message offices with equipment to cut telegrams from the pad of telegraph forms and, at the same time, print a serial number on them and stamp the time (day, hour, minute) as confirmation of receipt of the telegram.

Training experience (especially since the appearance of new cipher equipment) indicates that we must not postpone the creation of a signal message office service, the planning of its working space and its procedures; and it

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must be provided with transportation and auxiliary facilities.

Assuring an uninterrupted flow of information is not the only problem of communications. Terse, precise wording of information and the avoidance of duplication of effort, can considerably reduce the time needed for its circulation. The guiding principle must be the following: basic instructions concerning an entire mission as a whole will be enciphered by cipher equipment, while those which are shorter and less important will be processed according to the table of secure troop control.

Procedure for supplying communications equipment. The procedure for supplying communications equipment, the basic and auxiliary materiel, POL supplies, and expendable items is regulated by appropriate instructions. During the resubordination of large units and units of different nationalities, special attention must be given to technical support. Large units arriving to join an army must have the necessary repair, POL, and expendable supplies to operate their communications means, and part of these supplies must be kept in the army depots.

In closing, let us draw some conclusions concerning the control of large units and units of various nationalities included in formations.

Troop control of the allied forces included in an army is based on operations groups (liaison officers) as well as on national forces and means of communication. A special role is assigned to radio communications systems operating as a telephone system (front aerial reconnaissance networks, army warning system networks, etc.). Acting independently of these measures, all control organs at all levels must be prepared to provide communication with troops of another nationality and to operate their communications means for prolonged periods of time.

In order to improve the effectiveness of coordination, the main communications centers must be equipped with the line multiplexing equipment now in use in the Soviet Army.

The letter-printing channels established within the army communications system, particularly at the

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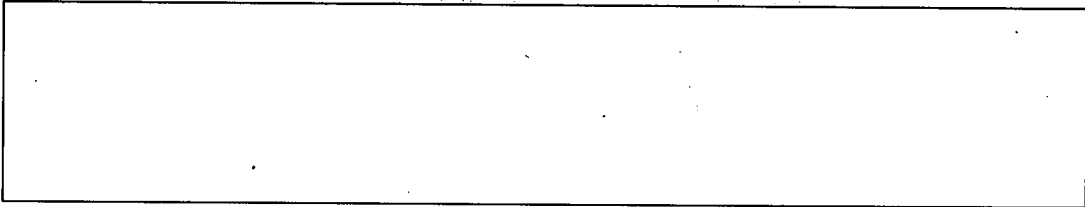
army-division level and the division-regiment level, are of exceptional importance from the standpoint of the cipher means in use in the army. The successful application of cipher equipment requires the wide introduction of automatic transmittal of information.

The principles of shortwave radio communications must be examined in relation to existing problems and available radio sets, and it is extremely important to create reliable radio letter-printing lines at the army-division and brigade levels.

The time required to circulate information can be considerably reduced by the creation of a signal message office service at command posts, by the development of its operating equipment, by the suitable regrouping of the internal sections of information flow, by the use of letter-printing channels, and by the installation of automatic means.

We hope that this short article will pave the way for the following: the resolution of the communications problems which arise in controlling troops of various nationalities; the creation of the new operating equipment necessary to transmit telegrams to command posts; and an increase in the speed of information flow.

The experience of the recently held exercise ELEKTRON-70 shows that year by year Soviet and Hungarian communications troops are getting closer to their goal--the maintenance of the allied communications system by national forces.



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