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Modelling in Military Science Research

by Major A. Dmitriyev

Scientific developments have brought about profound changes in military science research methods. Methods and equipments using mathematics and theoretical and technical cybernetics are coming into use more and more. Problems concerned with research methods are more and more frequently topics of discussion on the pages of our press. A number of Soviet, and translated, books and articles explaining mathematical methods of operations research and the use of computers in military affairs have been published.

So it is timely and fruitful to discuss the problem of mathematical methods of research in military affairs as this question has been posed on the pages of "Military Thought," for a good many years now. Of definite interest have been the articles exlaining methods of preparing operational and tactical problems for solution by EVM (computer), articles dealing with the use of cybernetics in military affairs, and others. [1] At the same time, it would be desirable to discuss certain other questions concerned with modelling in military science research.

Most Soviet and translated works on military cybernetics and operations research theory raise the question of modelling, in one way or another. This is, as a rule, done in passing in connection with consideration of the problem of military cybernetics, or when constructing and analyzing some special model of combat actions. Yet it is not usual to advance the analysis of the modelling itself as a method for obtaining knowledge. Yet it is obvious that, along with the development of special theoretical and technical problems of modelling, we are also in need of an overall, methodological analysis of modelling, a determination of the place, and the role, of modelling as a method which can be widely used in military affairs. Among the problems demanding a solution is that of defining more precisely the original concepts of models, and of modelling, the classification of models, the clarification of the objective prerequisites for modelling, and the nature of the knowledge obtained, a determination of the place of modelling among the other methods of obtaining knowledge.

We will, in this article, touch on some of the problems we have named, and which have, in our opinion, an important theoretical and practical significance for military science research.

The concepts "model" and "modelling" are used in different, often contradictory, meanings. In one case models are objects and processes used as substitutes for other objects and processes for practical purposes. In this sense we are speaking of the model as a sample of a part, of a template model, or a mockup model, etc. But models are most often spoken of in those cases when the cognition process is carried out, in one way or another, and when the model fulfills cognitive, gnosiological functions, rather than practical ones. In our view it is only in such cases that the concepts indicated have an independent meaning, and hence cannot be replaced by synonyms as "specimen," "template," "mockup."

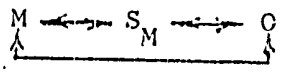
1. Voyennaya Mysl', No. 8, 1962; No. 8, 1963; No. 7, 1964.

By limiting consideration of the concepts of "model" and "modelling" to the cognition area we must bear in mind that even here their use is possible in broader and narrower meanings. Sometimes any process involving the finding, or the artificial construction, of a phenomenon which is similar to another can be considered to be modelling, while any phenomenon resembling another (including ideal examples, such as those occurring in the reflection process) can be taken as a model for the corresponding field of activity. In other cases models mean artifically constructed physical objects and processes, research on which is usually done under laboratory conditions rather than using natural (full-scale) objects.

It is obvious that in the first instance there is an expanded interpretation of the concept, as a result of which the specifics of modelling as a special case, as one of the cognition methods, vanish. In the second of the instances the specifics are called for in a much narrower sense. So not only artificial physical concepts can function as models, as can natural objects and mental structures of graphic presentations and systems of symbols.

More correct is the position of those authors who, without limiting either the field, or the possible means for modelling, emphasize the fact that just simple resemblance between two phenomena is not enough to qualify them as model and original, that not every imitation is modelling, that the similar phenomena, including specimens (ideas, theories) can be taken as models only so long as they themselves have become objects of investigation and serve as a means for obtaining knowledge of other phenomena. [2] The definition of model cannot rest solely on the concept of resemblance; it must, and this is mandatory, include an indication as to the function of the model, as to its place and role in the cognition process; that is, it rests on a correct understanding of the essence of the model relationship.

The model relationship is not arelationship between two elements - model and original. It has three elements:



connected by a closed circuit. The most important part here belongs to the system which is being modelled (S_M), to the human or the cybernetic device which is fulfilling the human function. The necessary criterion for the model relationship (other than the objective resemblance between model and original) is that the model carry out a definite function with respect to the system being modelled; the recording of information known about the object for cognition and the obtaining of some new information on it. Proceeding from this, we can characterize the model as object A, which has a resemblance to object B in definite relationships, and which serves as a means for some third object - the system being modelled (S_M) - to record and obtain information about object B.

2. A. A. Zinov'yev, I. I. Revzin. The logic model as a means of scientific research. "Questions of Philosophy," No. 1, 1960.

Yu. A. Zhdanov. Modelling in organic chemistry. "Questions of Philosophy," No. 6, 1963.

Accordingly, modelling can be considered as a process consisting of the following main stages:

establishment of the model relationship; that is, the whereabouts, or the artificial construction, of object A resembling the object under study, B, on the basis of the initial information on each of them;

investigation of the model (doing the model experiment), that is, obtaining some new information about object A (the model);

the transfer of the information obtained from object A to object B (from the model to the original) according to rules of logic.

What this means with reference to the military field is that no imitation of combat actions can be considered to be modelling. Combat actions are not models, either in their reflection in military theory, or as maps with situations plotted on them, or as games and exercises, if they are considered as abstract images, regardless of the functions they fulfil in the cognition process. It is only when they themselves are replacing actual combat actions, when they are inserted as intermediate cognitive objects making it possible to obtain new information on concrete combat processes that they can carry out the function of models, and then only in this regard.

The characteristics of the basic types of models used in military science investigations are connected with their classifications. It should be noted that there is, as yet, no generally accepted classification for models. This can be explained, in part, by the fact that modelling is used in the most varied fields of cognition and that models have their own specifications and their own bases for classification in each of those fields.

Military science, since it is at the junction between the social and the natural sciences, not only makes widespread use of the achievements and methods of these sciences, but even penetrates into their fields, investigating many of their phenomena from the military point of view. Consequently, military science makes use of virtually all known methods and types of modelling. We can distinguish among them the types of models using the general classification system suggested by V. A. Venikov. [3]

Since the main function of the model is to record available information and to obtain new information about the object of cognition, the main classifications can be suggested on the basis of, first, the content and the nature of the information being reproduced, and, second, on the form in which this information is presented. The first criterion is used for the general characteristic of the model, and to show specifics of model construction, for the investigation and the evaluation of results obtained. This is the basis on which model structures and functions

3. "Questions of Philosophy," No. 11, 1964, p. 79.

differ, as do mixed, structural-functional models. We speak of single-valued-determinance models in which random effects are disregarded, and of stochastic (probability) models which sort out the action of randomness and the non-linear nature of the connection between phenomena, depending on the nature of the processes under study and on the information we have on them.

Another basis for classification is the form in which the information is presented; that is, the substratum and the principle of operation of the model itself. On this basis, all models can be divided into two classes: real and imaginary. Real models, in turn, can be (a) natural (full-scale), used as models because they project some group of phenomena by typical representations, and (b) artificial models, specially created for the research, the resemblance of which to the phenomenon under study is imparted by the researcher in accordance with the available, initial data.

Past combat actions can be used as natural models of combat actions. It is usual to turn to a typical case when developing a theory for a definite type of combat action. The analysis of the action permits generalization with respect to the particular type of action as a whole, but such generalization is in need of refinement and augmentation by all the means of theory and practise.

Artificial models can be technical installations, or they can be systems of a complex nature (social systems, for example). Model games are included in this latter category and include troop exercises and maneuvers, command and staff exercises, games on maps, that is, those processes, the mandatory criteria of which are direct participation of organized groups of people and the reproduction of situations which are in conflict in the course of such processes. So far as technical models are concerned, they belong to a wide-ranging group of devices, from the simplest of mockups to the complex electrical and electronic systems.

Technical models can usually be subdivided into two basic types: "physical," and "mathematical." [4] These designations are quite conventional. On the one hand, in so far as we can talk technical models, these, and others, are only variations of physically acting devices, whereas, on the other hand, the "mathematical" models include not only the technical ones, but the imaginary ones as well, those represented on paper, for example, in the form of a system of equations, algorithms for processing information, and the like. Yet the designations given have quite firmly entered everyday use and can be retained with corresponding refinements.

In this case we should understand physical models to mean models created on the basis of geometric and physical similarity to the original (that is, material, structural, and functional). These include, for examples, ship models tested in model basins, and aircraft models tested in wind tunnels. We can include among the mathematical models those models which reproduce phenomena of a particular physical nature on the basis of a physical analogy, by a comparison of mathematical

4. A. N. Kolmogorov. Modelling. BSE (Large Soviet Encyclopedia), Vol. 28, p.r 29. 1954.

equations describing the model and the original, and, in the general case, on the basis of the correspondence (information) of the relationship between elements of model and original. The mathematical models reproduce phenomena by processing information concerning their status and the laws governing changes in them. Therefore, to the extent to which a phenomenon can be described by a single qualitative and quantitative characteristic, it can also be modelled on a computer. The physical analogies (the substitution arrangements), the analog computers (AVM) and the digital computers (TsVM) differ according to the methods used to present and process the information among the mathematical models. The digital devices are sometimes combined with the analog blocks to increase effectiveness.

To prevent any misunderstanding, imaginary mathematical models, as distinguished from technical ones, can be designated as "symbolic," "logic mathematical." In general, those structures created by the conception of presentations and judgement (descriptive-logic), or from the totality of symbols (logic-mathematics), but most frequently from elements of one type or another.

Models which are schematic, descriptive-logic descriptions of phenomena play an important part in military science research, for they make it possible to investigate the phenomena by using logic and mathematics. Other types of graphic models, particularly maps of combat situations, diagrams, and graphics, are also widely used. The schematic presentation of the processes involved in the armed struggle, as well as their presentation in graphic form, then makes it possible to arrive at their mathematical description, to construct the algorithm; that is, to create the logic-mathematics model for the processes under study, and which can be investigated "manually," or with the aid of computers.

The types of models named are shown in Figure 1.

The classification given is not complete in many respects. It does not detail the basic types of models and it does not indicate how to classify a model used in the training process, or in the interests of developing the solution and of automating the processes involved in controlling troops. However, the basic types of models which are related to the field of military science research can be included among those used in the field of training and controlling combat actions, but with consideration given to the change in the specific weight of some one particular type of model and the function it is to carry out.

The common, unifying, point is the accomplishment, in unique form, of the processes of cognition in each of the spheres named. The difference is in the purpose of the cognition, and the conditions under which it is taking place. In this connection, it can be shown that the nature of the gnosiological functions of the models can change according to the field in which the model is used. In the military science research field the model fulfils its function in the "classic" manner, behaving as a means of research, as a means of recording known information,

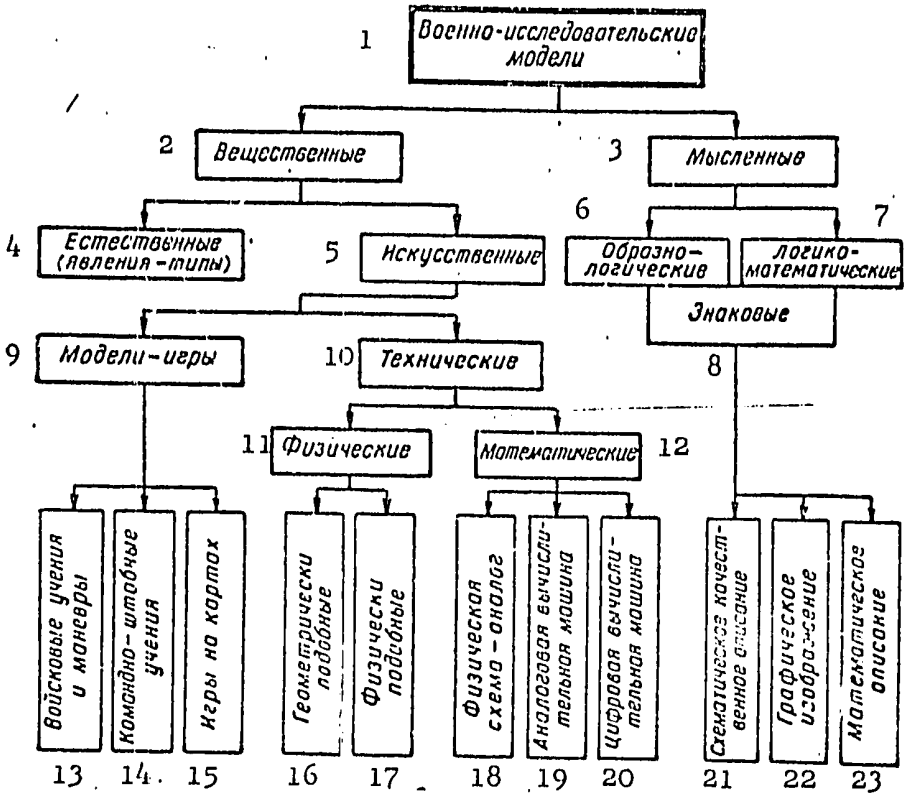


Figure 1. 1 - Military research models; 2 - Substantive; 3 - Imaginary; 4 - Natural (phenomena-types); 5 - Artificial; 6 - Descriptive-logic; 7 - Logic-mathematics; 8 - Symbolic; 9 - Models-games; 10 - Technical; 11 - Physical; 12 - Mathematical; 13 - Troop exercises and maneuvers; 14 - Command and staff exercises; 15 - Map games; 16 - Geometrically similar; 17 - Physically similar; 18 - Physical diagram - analog; 19 - Analog computer; 20 - Digital computer; 21 - Schematic qualitative description; 22 - Graphic representation; 23 - Mathematical description

and for the obtaining of new information concerning the object of cognition. Model functions are of a somewhat different character in the training field. Here it too serves the cognition process, but its main purpose is not the obtaining of primarily new data concerning a phenomenon, but the recording of the level of cognition arrived at, and the simplification of its transmission to the trainees. The model comes to the fore as a means of illustrating complex, not readily available phenomena, or as an imitator which simplifies the obtaining of necessary knowledge and skills in the control of various devices. Of course, in the field of controlling the combat actions of troops the functions of the model include regulating a continuous flow of information concerning the situation, presenting it in graphic form, and ensuring evaluation of the situation, and of the necessary calculations, right up to the development of solution alternatives.

If military research makes widespread use of all types of modelling, while training draws mainly on game models, trainers, demonstration models, the main role in the field of control of troops is played by the symbolic (graphic, logic-mathematics) models and particularly the mathematical model, accomplished with electronic computers in combination with devices for graphically describing the situation.

The use of models in military science research makes it possible to penetrate more deeply, and more thoroughly, into the essence of a phenomenon under study. For example, a conclusion as to the need to disperse troops, or for great maneuverability on their part, under the conditions prevailing when a nuclear weapon is

used, expresses the essential outlines of possible combat actions. But formulated in this general way the conclusion is of limited value only and improving on it is only possible when concrete investigations are made which involve the determination of the most expedient standards of dispersion, and the most effective methods to use to carry out the maneuvers. Solutions to these problems are possible by creating, and investigating, models of combat actions. The functions thus carried out by the models correspond to the basic types of assignments to be carried out.

The most usual thing the investigator must do is to solve problems concerned with optimization of the processes under study, including a determination of the very best characteristics of weapons and combat equipment, determination of the most effective methods of combat actions, the selection of those control functions which will make it possible to carry out the missions assigned in the best way possible. Another type of problem involves forecasting, a description of the possible course, and the results, of events, based on the selected plan of action. Putting it descriptively, the difference between these two types of tasks, and, accordingly, between the functions fulfilled by models, is that in the former case we are seeking the answer to the question, "What must be done to obtain the results?" while in the latter the question to be answered is, "What will the results be, if such-and-such is done, or if the conditions are such-and-such?" However, questions of another type also arise in the course of the research, questions such as, "What is that?" and "Why is it happening in that way, and not in some other?" for example. To respond to a question such as this means to explain the phenomenon, to point out its causes, to the laws governing its development. In principle, the use of models permits solving this problem as well, that is, to explain the phenomenon by putting it under the laws in accordance with which the model is functioning. True, explanation by model is always only one of the possible explanations, providing only a probable knowledge, but it nevertheless often advances the only possible first step toward the discovery of the essence of the process under study. Thus, recording known information and making the optimization on that basis, as well as the forecast and the explanation of the phenomena studied, is the most important gnosiological function of the model in the field of scientific research.

Note must also be made of the important part models play as the connecting link between theory and practise. We know K. Marx's principle that the process of scientific cognition is brought about by two mutually interconnected paths: by the movement from concrete facts to theoretical abstractions, and the ascension from the abstract to the concrete, all-round knowledge (K. Marx and F. Engels, Collected Works, Vol. 12, p. 727). We also know V. I. Lenin's formula: "From the living contemplation to the abstract thought, and from it to practise - such is the dialectical path to the knowledge of truth, to the knowledge of objective reality." (Complete Collected Works, Vol. 29, pp. 152-153)

The models have an important part in this movement from concrete activity to theory and to its subsequent verification in practise. And in the transition from action, from natural conditions, to their theoretical intelligibility, the model makes it possible to systematize the data, to abstract the non-essential, to record the material ties, and to develop the elements of the theory of the processes under study. Upon further ascension from the abstract to the concrete knowledge as a whole, and its subsequnt verification in practise, the construction of the model makes it possible to synthesize the elements of the theory in a complete system, to embody them in operating devices. So, it is possible to present the general in the form of a unit and, at the same time, to check, experimentally, the principle of the theory. Modelling comes to us as a process in which theoretical and practical activity come together in a continuous unity.

Consideration of the basic types of models, and their functions in the cognitions process, permits the conclusion that modelling is not only a basic cognitive method, but it is also a necessary point in the cognition process, a rung which simplifies the transition from practise to theory, and from theory to practise. All types of modelling take part in this process, mutually complementing each other. Cognition of the processes involved in armed struggle by means of models, and the interconnection between the basic types of modelling, can be seen in Figure 2.

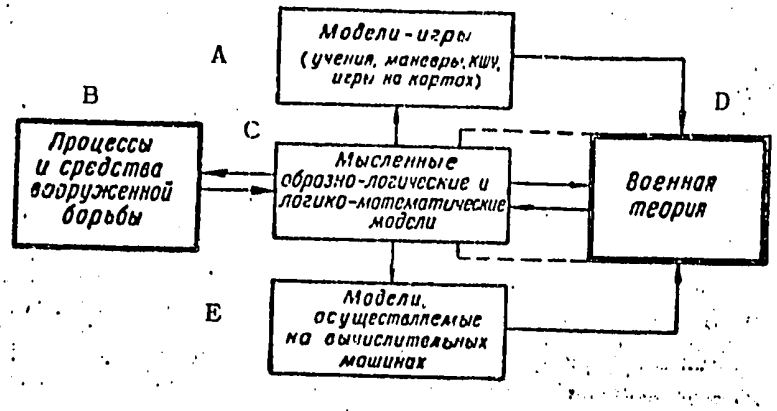


Figure 2. A - Models-games (exercises, maneuvers, command and staff exercises [KShU], map games); B - Processes and means of armed struggle; C - Imaginary dexcriptive-logic and logic-mathematics models; D - Military theory; E - Models accomplished with the use of computers.

The figure shows the basic sources of factual material generalizing military theory, and the ways in which the research process, and the verification of the practical generalizations made, can be conducted. From the initial data concerning the processes and the means of armed struggle, and from the level of attainment arrived at by military theory, research can proceed:

(1) by way of the construction of an imaginary descriptive-logic model, its subsequent conduct in a model game, to a new level of military theory;

(2) by way of the construction of a descriptive-logic, and then a logic-mathematics, model, investigated by means of logic and mathematics, to the direct generalization of obtained results in military theory;

(3) by way of the construction of a descriptive-logic and a logic-mathematics model, and its subsequent development with computers, to a new theoretical conclusion.

The combination approach is, naturally, possible when the imaginary model of the processes under study is consummated with an electronic computer (EVM) and in experimental exercises simultaneously, with each complementing and more precisely defining the other. But it must be emphasized that the basic sources of factual data are the processes involved in the real armed struggle, the tests of weapons, and combat techniques (the full-scale form of practise). Consequently, and in particular, the experience of the last war retains its importance during the contemporary qualitative shifts in military affairs. However, past experience inevitably develops shortcomings with the passage of time and definite areas of such experience become obsolete. This is one of the reasons why we are forced to resort to modelling combat actions, to use various types of substantive models (modelled form of practise), as additional sources of factual data.

Construction and investigation of the models (which itself requires certain initial data and theoretical conceptions) makes it possible to obtain needed empirical material, which is subjected to a further, logical, processing and to subsequent practical confirmation.

The above, practical criteria for the truth of the status of military theory must once again be designated as the processes of the real armed struggle, the full-scale tests of equipment. But even here models which provide not only sources of empirical data, but which are one of the forms for verifying the truth of the theoretical conclusions, have an important role, particularly under the conditions prevailing in peace time.

* * *

The most important, and the most critical, methodological problem of modelling is the determination of the validity of the results obtained by the modelling. The solution presumes response to the questions: (1) Why, and on what basis, is it possible to use models in cognition? (2) What is the nature of the knowledge transferred from the model to the original? (3) Are there any rules which increase the credibility of the conclusions obtained in the modelling process?

The difficulties in cognition arise from the fact that many of the phenomena, including armed struggle, often prove to be inadmissible for direct investigation. In other cases direct investigation proves to be disadvantageous for economic, or other, considerations. But there remains yet another important consideration. Modelling, and particularly imaginary schematization of phenomena, makes possible the use of mathematics in the investigations. The use of mathematics, in turn, makes possible the creation and the investigation of logic-mathematics models, simplifying penetrating to the core of the processes under study.

This explains the necessity for the use of models, but it does not answer the question of why it is possible to use the models, or of what the basis is for the results obtained in the course of investigating one phenomenon and then transferring those results to a completely different phenomenon. Is this correct?

The objective prerequisits of modelling, as we know, are a material unity of the world, the overall mutual connection of the phenomena, the unity of the most common laws concerning their development, all of which depends upon the fact that there are no absolutely different phenomena in the world. A more or less profound similarity exists between phenomena, and this makes possible the replacement of one phenomenon by another, within predetermined relationships. The most common example of the similarity is expressed in the similarity of the mathematical equations which describe various of the phenomena in nature. Noting this fact, V. I. Lenin wrote, "The unity of nature appears in 'the remarkable similarity' of the differential equations which are related to the various fields of phenomena." (Complete Collected Works, Vol. 18, p. 396). The circumstance noted serves as the methodologically departure point for cognition of complex phenomena using models or some physical nature.

But it must be borne in mind that similarity in certain properties and relationships of a phenomenon do not automatically lead to a similarity with other properties and relationships. The world has neither absolutely different, nor absolutely identical, phenomena, so we cannot rule out the fact that symbols detected in a model, and related to the original, are actually absent in it, or are greatly modified. What this means is that, in the general case, the knowledge based on the analogy between phenomena, obtained by means of inference from the analogy, only has a probability characteristic. The possibility of obtaining reliable conclusions by analogy exists in concrete cases, but such possibility is very much dependent upon the nature of the object of cognition, on the possibility of describing it mathematically, and on the level of development of the theoretical bases for the modelling. What can be said in this regard concerning armed struggle as an object of modelling?

Armed struggle is, by its nature, an extremely complete social phenomenon, the development of which is influenced by economic, political, ideological, psychic, physical (natural), and inherent military factors. In their totality, these form a combination, a complex model which determines the dependency of causes and consequences, one with the other. Hence, the processes of the armed struggle as a whole have a probability (stochastic) character. Further, armed struggle is a typically conflicting situation, in which opposing forces and intentions collide, while the actions of one side are not only determined by objective factors and own plans, but by the plans of the other side as well, camouflaging them and consciously striving to deceive the enemy.

It is quite apparent that no model can reproduce this type of phenomenon with adequate completeness and universality. The model will, of necessity, contain many simplifications. Although the situation existing in combat can be approached in troop exercises, there can be no argument that exercises and actual combat actions are not the same thing. A different type of simplification is even more inevitable in the case when combat actions are investigated using mathematics. This flows not only from the impossibility (particularly today) of accurately expressing certain factors, such as the moral spirit of troops, their degree of training, the abilities of the commanders, etc., for example, by means of mathematics. They are also inevitable as a result of the feasibility of the mathematical calculations.

Does all of this mean that modelling of combat actions, and the conclusions obtained from modelling, are of very slight cognitive value? By way of answering this question, we will put one. Is it possible, in general, to penetrate to the core of a phenomenon if the attempt is made to encompass the phenomenon in all of its multitude of properties and relationships all at once? Of course not! Cognition is a process in which movement is from the surface of a phenomenon to its core, from a core of one order to a core which is deeper within the phenomenon. And a necessary stage is the advancement of cognition from individual facets and outlines of a phenomenon in the course of abstraction to others, movement from the concrete to the abstract. Simplification of the phenomenon along the way is inevitable. Knowledge gained in this way is incomplete, one-sided, yet at the same time more profound, and this natural path to cognition of the essence of a phenomenon then makes it possible to arrive an an all-round knowledge of the phenomenon. Modelling is at the root of this process, exercising the function of the link between the abstract and the concrete in the cognition process.

The probability character of the knowledge transferred from the model to the original is ordinarily explained by the fact that conclusions based on analogy, just like inductive conclusions, have no evidential force, and are, logically, probability conclusions. This is actually so. But we must not overlook the fact that analogy, induction, and deduction are not isolated from each other, and that taken all together, they have their bases for the social practise of people. The transition from the model to the original, according to the form as a whole, is a conclusion by analogy when, from the community of certain properties and and relationshipsof two phenomena, conclusions are made concerning the community of certain other properties and relations for these same phenomena. Yet this conclusion can contain inductive aspects as well, aspects garnered from the data obtained during repeated experiments with the model. The conclusion can also contain deductive premises, general principles, and rules for the construction of the model and for the transfer of the knowledge obtained to the original, as developed in the similarity theory, for example. As a result, the knowledge gained from the model can be evaluated over a wide range from only slightly probable to entirely trustworthy.

What are the factors which increase the probability that the conclusions are trustworthy? The following of the most common conditions can be named: the probability of the reality of the conclusions will be greater the richer the initial information concerning the processes and the means of armed struggle embodied in the

model, that is, the greater the similarity between the model and the object being modelled. This circumstance correctly reflects the fact, developed in the theory of analogy, that the probability of conclusions based on analogy increases in accordance with the quantity, and the pertinency of the common characteristics of model and original.

Further, the probability of the reality of the conclusions will be greater the connection of the transitional characteristics with the common characteristics of model and original. During battle exercises, games, and research with symbolic, mathematical models, a multitude of various types of conclusions can be arrived at, but they will not all flow from the conditions accepted or from the initial theoretical circumstances. This does not mean that these conclusions can be proven to be false knowingly, but the probability that they will be valid is, of course, slight. On the other hand, if the transitional characteristic (the level of radioactive contamination of an area, for example) is taken as the consequence of the cause, from the general characteristics of model and original (from the accepted size of the ammunition and the nature of the explosion, for example), the conclusion will, practically speaking, have a trustworthy standing.

Of course, the probability of the reality of the conclusions will be greater the more generalized in character the conclusions are, and the less they are tied to the specific data for the model which distinguishes that conclusion from one stemming from actual combat actions. For example, if the conclusion is a detailed characteristic of the entire progress of possible combat actions, the probability that events will accurately coincide with that conclusion turn out to be uncommonly low. But if the conclusion is related to sharply drawn lines and is sufficiently general in character (to a determination of the effectiveness of a particular type of weapon, a particular type of fire and maneuver, a particular system of control, etc., for example), it will be close to the actual fact.

A completely reliable conclusion is possible in those cases when the phenomenon under study is sufficiently simple and can be described mathematically, when the transitional characteristic is linked with the cause-consequence tie and the common characteristics of model and original, and can be transferred to the original by recalculating using the similarity theory formula. This type of case is possible only in the investigation of the most elementary of the processes involved in the armed struggle. Accordingly, there is, on the one hand, the problem of a further development and generalization of the similarity theory and of the methods of mathematical description of complex processes, and, on the other, the conscious utilization in military science investigations of rules for improving the probability of the truth of conclusions from analogy.

* * *

In speaking of modelling as a method for conducting military science research, it is important to correctly pose the area and limits of its effectiveness of utilization, and to fix the tasks which can not only be successfully resolved by modelling, but also those requiring a different approach, other perceptional methods.

The success of [illegible] depends on the possibilities of a quantitative, mathematical approach to the processes under study, and this, in turn, demands known simplifications, limitations to the ties investigated, and relationships with only the most needed, material knowledge, from the point of view of the purpose involved. Without abstraction and the quantitative approach (as well as the qualitative) there is no modelling.

The problem involves the determination of just how equitable the permissible abstractions and simplifications are. If, during an evaluation of the tactical and technical characteristics of a weapon, it is equitable to make abstractions, in many cases, from factors effecting the methods of utilization of the weapon, such factors as the political aims of the war, the moral spirit of the troops, the personal qualities and the ability of individual calculations, crews, etc., then, in the course of investigating the most general laws of armed struggle and the principles of military science, it is necessary to consider the effects of economic, political, ideological, and many other, factors.

In determining the main areas and the limits of the effective use of modelling, it is expedient to distinguish several general levels on which the processes involved in the armed struggle can be considered, and at which it is permissible to make different distinctions in abstraction with respect to the factors influencing the processes.

The first level is that for processes which are organically included in the armed struggle, which form its "physical" appearance, but which, in nature, are not specifically military processes. Those examples we can note include the displacement in space and time of individual objects (bullets, shells, bombs, missiles), dynamic, chemical, and radiation activity of destructive means on targets, the operation of mechanisms, instruments, processes of transmitting, receiving, reprocessing, loss of information, and others. These processes flow in accordance with certain particular natural laws. When investigating them it is equitable to make abstractions from many factors, sometimes even including military ones (the nature of the enemy's counteractions, for example). Various of the mathematical methods are widely used in these abstractions. Modelling, physical as well as mathematical, rests on the the similarity theory which has developed and has a rich tradition; the effect is good.

The second level is that for processes which are specifically military ones; the actions of organized armed groups of people using weapons and equipment for military purposes. But at this level the subject of consideration is particular processes, those structural elements of which the armed struggle is composed. These include the various stages in the planning of combat actions and of their control, troop movements, grouping troops for combat actions, maneuvering forces and fire power on the battle field, the gradual increase and reduction of forces during combat actions, etc.

Specific laws of armed struggle act in this particular case. Many factors, objective, as well as subjective, in nature, play a material part in these laws. Yet even here known simplifications and abstractions of certain of the factors are permissible. For example, when defining the standards for dispersing troops, the

depth of combat missions, or determining the optimum ways in which forces and equipment can be distributed, the abstractions can be made on the basis of the effect the economic and moral-political factors, in their general form, etc., have on these processes.

The processes indicated are emerging more and more as an object for the application of mathematical methods which combine the concepts of operational research. The development of the corresponding mathematical apparatus and of the theory of modelling is making more effective the use of the modelling method in the area cited. The practical value of the results obtained in this way is greater than the value obtained from the more elementary processes, studied en masse and uniformly.

The third level can be called the highest. It consists of reviewing the armed struggle as a complete phenomenon, as the resistance of the two sides as it develops under the influences of the entire totality of factors. The purpose of cognition in this case is to bring out the concrete, all-round knowledge of the phenomena, and of the substance of the armed struggle, cognition of its basic behavior patterns, the development of the principle positions of military theory, the all-round evaluation and forecast of the progress and results of military actions.

But the complete phenomenon which is the armed struggle is much too complex for it tobe described by some reviewed totality of controls (even in the event all factors which can have any influence have been determined quantitatively). So far as the probability-statistical methods are concerned, these too have their limitations because of a lack of repetition of a combination of circumstances which have a bearing on the progress of actual actions. Cognition of the armed struggle as a complete phenomenon requires, first of all, a direct application of the experience of the armed struggle itself, the use of an all-round approach, consideration of the totality of acting factors, and the use of all cognitive examples and methods, among which modelling (and mathematical modelling in particular) can only be assigned an auxiliary role.

The development and improvement of modelling as a method, as well as an ever-widening application in military theory and practise, is an objective necessity, and the regular consequence of scientific and technical progress. The development of traditional methods of modelling in military affairs (models - games), and their conversion into an authentically scientific instrument for research, has set afoot the ever-expanding use of the achievements of mathematics, logic, and cybernetics, in military science research. The difficulties involved in a mathematical description of the processes of the armed struggle in all of its complexity suggests a stage in which simplified, partial, mathematical models of military actions can be built and investigated. Along with the solution to this problem, a further development of the methodological problems of modelling, and of a general theory for it, with the specifics of military affairs taken into consideration, will accomodate an even more widespread application in the field of military science research, of military training and indoctrination, and in the creation of automated systems for controlling the combat actions of troops.

ECONOMIC CRITERION IN RESEARCH ON THE EFFECTIVNESS OF ARMAMENT

by Colonel B. Kalorin

At the present-day stage in the development of armament and military technology, the economic, and primarily the cost, evaluation of the types of weapons under study takes on tremendous importance, inasmuch as, in direct proportion to the improvement of the weapon's tactical-technical specifications, there is an increase in the expenditures to plan, create, and operate it. The steady rise in cost of means of armament is explained by the fact that they are extremely labor-consuming in production and are manufactured from expensive materials, and the controlling of them in combat requires the use of complex instruments based on electronics and automation. For example, the creation of the German fighter, the ME-109, in the 1940's required a total of 40,000 hours of engineer labor. The designing of the American aircraft of the same class, the F-104, required the expenditure of 4 million hours, that is, 100 times more. The increase in expenditures for armament in recent years is also the result of the use of nuclear weapons as the striking means, and rockets of various systems to deliver them. The increase in the cost of weapons systems is, to no lesser extent, determined by the large expenditures to design and test them.

Thus, we observe a definite natural law: the constant perfection of means of armed combat is the result of tremendous economic costs. The increase in the cost of means of combat has become a constantly operating factor. And, consequently, the tasks of military administrators, researchers, and creators of weapons lie now in the achievement of high combat qualities for the weapons, with the least material and monetary expenditures.

Let us consider the importance of the economic criterion when studying the effectiveness of armament, and the principles of the use of that criterion when designing and equipping the troops with new types of armed combat.

* * *

By effectiveness of weapons one usually understands the degree of the weapons' adaptability to the execution of the task which has been set. It is characterized by the combat effectiveness which is achieved by the sum of the tactical-technical parameters that make up the weapon, and by the level of expenditure of forces and means providing for the execution of the task set. These different qualitative aspects of a weapon -- its combat effectiveness and the level of expenditures -- are closely interrelated and interdependent.

When elaborating systems of weapons there arises an important problem: the choice of those tactical-technical parameters which will make it possible to achieve the assigned combat effectiveness with the minimal levels of expenditures of forces and means, that is, the achievement of the optimal effectiveness of the weapon.

In this regard there arises the necessity of evaluating the quality of the weapon on the basis of corresponding criteria. The quantitative index of combat effectivness -- the final result achieved by the weapon when it is used in combat -- is the mean value (or the mathematical expectation) of the damage inflicted on the enemy. Thus, for an interceptor fighter fighting a single target, the index of combat effectiveness will be the probability of destroying that target (with a definite number of rockets, in an established number of attacks, under conditions of interference and without interference). For a fighter air unit having the task of striking the largest number of enemy bombers making a raid against an objective being defended, the index of effectiveness will be the mathematical expectation of the number of targets shot down (under fixed conditions).

But the criterion of economicality is the minimum expenditures of forces and means to achieve the assigned combat effectiveness.

In the recent past, when a weapon was comparatively cheap and the appropriations for defense were not so onerous to the country, a researcher strove to achieve the maximum combat effectiveness without even thinking about the price at which it would be achieved. Now, when the complication of a weapon has resulted in its high cost, the search for ways to reduce the cost of the weapons systems being developed has become a mandatory and indispensable element in research. In essence, in our times a weapons system cannot be accepted as armament if its effectiveness is not also economically optimal.

Let us consider the ways and means of achieving this task.

Armament and military technology are constantly developing and improving. The use of more effective means of armament and new methods of combat provides for combat supremacy over the enemy. Therefore, when designing original and improving existing means of combat, it is very important to achieve their qualitative change by means of design transformations.

With the appearance of new means of combat, old types of weapons, as a rule, are not immediately discarded. They are ordinarily modernized or, without any substantial qualitative changes, remain for a certain period of time as part of standard equipment. For example, alongside of jet aviation, aircraft with piston engines remained as standard equipment for a long time. In a modern air combat, supersonic and less-than-supersonic aircraft. In addition to ballistic rockets, piloted and unpiloted flying apparatuses constructed according to the aerodynamic principle are in use. Nuclear weapons combine with ordinary means of armed combat.

However, in a number of instances, if the newly introduced weapon is extremely effective, the morally and technically obsolete means of combat can be quickly withdrawn from use as standard troop equipment.

Thus, we observe an important natural law: supremacy in armed combat is achieved not only by new types of weapons, but also by the existing types of weapons, used in those areas where their opportunities are used with the maximum effectiveness. Consequently, the arsenal of modern means of combat in any branch of the armed forces can contain various types of weapons used independently or in various combinations for the solution of one and the same task. For example, the enemy's strategic bombers can be combatted by surface-to-air rockets, and interceptor fighters of various systems. The enemy's naval objectives can be hit by surface vessels or submarines, various types of aircraft, etc.

The researcher's task lies in evaluating and choosing the most desirable types of weapon, in determining the relative weight of each of them in the achievement of the assigned combat effectivness, and in setting forth ways of developing and improving them further. And the achievement of the necessary level of combat supremacy over the enemy at each stage in the development of means of armed combat is possible only provided there is constant change in the arsenal of means and the introduction into combat of new and improved types of weapons. Therefore, in addition to the evaluation of the combat opportunities of the weapon used in troop units, it is necessary to determine the tasks and requirements for new, long-range types of weapons, and to propose complexes of means of armament which are most desirable for the particular conditions, and areas of their combat application.

The selection of the most effective system of armament is made by the method of comparative evaluation of various types of weapons existing and projected. This evaluation is made on the basis of the corresponding criteria, with the aid of which it is possible to ascertain substantial qualititative properties of the competing types of weapons and to determine the most highly perfected ones of them for introduction into the troop units. During this process the number of criteria, depending upon the increase of the arsenal of the means being compared and the spheres of their combat application, will grow. If, for example, two types of weapons are being compared, then, with identical combat effectiveness for both, the advantages of each of them can be ascertained on the basis of some one specific criterion. In the event that more than two types of weapons are drawn on for the solution of the task, the evaluation of one of them, or their combination, requires the manipulation of a larger number of criteria, since several types of armament can possess identical qualities and opportunities. Therefore, in order to ascertain the qualities, specific for each type of weapon, which provide for the achievement of the assigned effectiveness, it is necessary to use a still larger number of criteria.

Research shows that, under definite, fixed operational-tactical conditions, when choosing the necessary system of weapon with the comparative evaluation of various types of that weapon, it is possible to limit oneself to two or three criteria permitting the obtaining of quantitative results (so-called qualitative criteria). They include, primarily, the criteria of combat effectiveness and economicality.

When comparing weapons systems for purposes of selecting the optimal one, it is necessary to reduce them to a uniform basis of comparison, that is, to put versions of the weapons systems under identical disciplining conditions. Such a condition might be the assigned combat effectiveness, or economicality, or some other criterion which, at the given stage of research, serves as the initial basis of comparison. As compared with the base criterion, the other criteria will plan an auxiliary role and will be introduced into the evaluation in the event that it has proved difficult, by means of the basic criterion, to choose the optimal armament system.

For example, in the system of antiair defense of some region, the index taken as the disciplining condition was the assigned combat effectiveness with a probability of 0.9, that is, computed in terms of destroying no less than 90% of the enemy's raiding targets in the particular air sector. Consequently, the combat means included in the armament system must provide for the achievement of those combat results. This task can be executed by complexes of air interception and surface-to-air rockets, or both, taken together in various combinations. If the combat opportunities of each of the means being studied for the solution of one and the same task are determined only according to their required combat effectiveness, then it will be difficult to ascertain the advantages of one type of weapon as compared with another. Therefore, it is

necessary to include in the evaluation the criterion of economicality. By using that criterion it is possible to ascertain the qualities inherent in that type of weapon which are not possessed by its competitor. Obviously, the preference will be given to that means (or complex of means) by which the task given can be executed with the least expenditures.

In addition to the criteria revealing the combat opportunities and economicality of the means being compared, another index determining the desirability of adopting particular means of combat as standard equipment might be the time period required for introducing the armament system into combat. This index takes on exceptionally great importance under conditions of an armed combat which has already begun. "When a country is in a state of war, the basic unit of measurement is time. If some threat has been revealed, its repulse requires the introduction of a weapon in the shortest time possible. The price in dollars becomes nonessential; the price measured in units of time takes on the principal importance. In peacetime, on the contrary, the price of a program in dollars is the decisive factor for choosing between competing weapons systems."[1] We cannot agree with the statement of the American researcher who feels that in wartime the "price in dollars becomes nonessential." In our opinion, the correct principle is that, even when a country is in a state of war, both the time for introduction of the means into operation and the cost of the means are essential, inasmuch as the country's economic resources are not unlimited, but the preference should be given to those types of weapons which can be put into operation in the shorter periods of time.

As is known, modern warfare involves more than tremendous material expenditures. To carry on modern warfare it is necessary to have large human resources. Therefore, when making a comparative evaluation of means of armament, great importance attaches to the criterion of the numerical size of the personnel. All other qualities being equal, the advantage will be on the side of that weapons system whose operation requires the smaller number of personnel.

The decision concerning the choice of the desirable weapons system will be made not only on the basis of the criteria whose results can be expressed quantitatively, but also on the basis of logical criteria ("common-sense criteria"), that is, intuitibe considerations, which cannot yet be expressed quantitatively. These logical criteria, which evolve from the experience in utilizing analogous weapons systems, or weapons systems which are close in tactical-technical specifications, and from the intuition of persons making decisions in the process of research, in a number of instances play a very important role when selecting the most effective armament system. For example, they can be used to reveal such weapons qualities as universality, maneuverability, mobility, minimal combat-readiness periods, opportunity of use from concealment, and a number of other specific weapons properties which are extremely characteristic when the weapon is being selected, if, for the specific given conditions it is precisely these qualities which play an important role in the achievement of combat success.

1. A. S. Lock. Upravleniye Snaryadami (Fire Control). Translated from the English, State Publishing House for Technical Theoretical Literature, 1957, p 999.

It should be noted that when selecting the effective weapons system another important criterion is the criterion of the viability of its elements, that is, the degree of resistance to enemy action. When selecting a particular weapons system, the scales may tip in favor of that system which is distinguished by greater reliability in combat and which is capable of being put back in combat-ready condition in a short time.

When choosing a means of armament, in addition to the physical wear and tear, it is also important to evaluate the degree of moral wear and tear [obsolescence]. The headlong development of means of combat leads to a situation in which technically serviceable weapons become morally obsolete in a short time, lose their combat qualities, and cannot compete with more up-to-date means used by the enemy. Moreover, certain types of weapons wear out morally not only in theprocess of operation in troop units, but even while they are in the stage of development and testing.

The American authors G. Steel and P. Kircher state, "The elaboration of the B-17 continued as long as its useful existence. Subsequent bombers made the shift to more prolonged elaboration and a shorter life. At the present time we have bombers whose elaboration takes more than 10 years and which become obsolete before they even have a chance to get into the air." 2.

From what has been stated, it is not difficult to make the conclusion that the decision concerning the choice of the desired weapons system must be made on the basis of a consideration of all the factors characterizing the qualitative aspects of particular types of weapons.

* * *

The economic criterion when evaluating armament has the following advantage over other criteria: it makes it possible to use a uniform measuring stick when comparing various values which cannot be compared by using other methods. For example, when designing flying apparatuses, an evaluation is made of their parameters for a number of indices: aerodynamic, weight, power, technological, and other. Each of them reveals some one side of the article being developed. For example, the aerodynamic indices characterize the apparatus's flight properties; the power indices, the power expenditures and the required parameters of the power units; and the technological indices, the opportunity of manufacturing the apparatus with the existing level of production. In and of themselves, it is impossible to compare these indices. But the economic criterion gives a generalized result expressing the amount of socially necessary labor for the creation of a flying apparatus in the form of its cost.

2. Krasnaya Zvezda, 7 July 1964.

The universality of the economic criterion is determined not only by the fact that it can be used to select the most inexpensive types of weapons. / It also makes it possible to ascertain the most desirable organization of troops and their material-technical support, the correct ratio of various fighting arms in the composition of the grouping or organizational unit.

It is also necessary to note other aspects of the operation of the economic criterion. When analyzing the state of the existing means of armament and the tactical-technical parameters (according to the draft plan) for projected types of weapons, the researcher, with the aid of the economic criterion, introduces refinements into the demands made upon the new means of armament and makes conclusions concerning the suitability of the scheme for the weapon being planned, as a whole.

There are frequent instances when, on the basis of the results of research, and primarily on the basis of economic considerations, the elaboration of weapons systems which are still in the stage of planning is completely discontinued or major changes are introduced into the design of those systems.

The gauge of the economicality of the means of armament is their cost. The determination of cost, that is, the obtaining of a real picture of the expenditures for the creation of an armament system, and, consequently, the obtaining of an objective picture of its economicality as compared with other systems competing with it, represents an important problem. That problem can be stated simply as using the comparative evaluation to encompass those elements of expenditures which, with a certain degree of approximation, characterize the cost of the armament systems being planned.

The creation and adoption as standard equipment of a new or modernized weapon includes various expenditures. They include: expenditures for the designing and the preparation of production, one-time expenditures for the manufacture of the necessary number of weapons, and current operating expenses to maintain it and to operate it in troop units. However, the economic analysis will be incomplete if no consideration is made of expenditures involved in the utilization of the weapon as part of an organizational unit and in definite groupings. For example, an airplane, a surface-to-air guided rocket, tank, and other combat means are used as part of a subdivision [podrazdeleniye], unit, formation, and large formation [ob"yedineniye]. For use of these means in combat, there is organized a system of command points, communication, control, and service. Consequently, the real cost can be ascertained in the event that the means being compared are evaluated with a consideration of the expenditures for the grouping created for the solution of a definite task (under fixed conditions taken as the basis of the research).

In works devoted to economic research in the field of armaments, there is as yet no uniform opinion concerning the volume and content of the economic criterion in comparative evaluation.

Certain researchers feel that when choosing systems of armament it is necessary to compare only the cost of the striking means, their carriers, maintainence and operation. Others assume that it is necessary to consider the expenditures for the designing and the preparation of production, and, in addition, the cost of the combat losses. In the latter instance the cost of the weapon is artificially increased, since the expenditures for one and the same means are considered twice: during production and during the computation of their losses.

The real cost of a weapon in the scale of the armed forces can be ascertained when taking into consideration the entire, combined social labor expended to create, maintain, and employ it. Therefore, in higher military and state planning agencies where economic computations are made not only with the aim of comparing the effectiveness of armament systems, but also of determining the required resources to create them and to introduce them into troop units, the new weapon must be evaluated in complete volume, that is, with a consideration of the expenditures for designing, experimental construction, and the setting up of production. But within the confines of a single branch of the armed forces and under conditions when the cost of some single weapon is determined with the aim of ascertaining its economicality as compared with other models, it is, in our opinion, possible to limit oneself to an analysis and evaluation of the most essential expenditures, which make it possible to ascertain the advantages of one weapons system as compared with another system competing with it.

For this purpose it is possible to limit oneself to a comparison of the cost of weapons systems according to the following elements:

-- for one-time capital expenditures (Z_{kap}) [zatraty, kapital'nyye] for the creation of a weapons system for a definite grouping, namely: the cost of all fire means, means of support and service (command point system, system of communications, reserves, airfields, and material-technical support);

-- for expenditures to maintain and operate the weapons system during the established period (Z_{eksp}) [zatraty, eksploatatsionnyye].

It is also necessary to consider the fact that the expenditures to maintain and operate a weapon in troop units achieve a large percentage. They include the cost of training and maintenance of the personnel, and the technical servicing and repair of the armament, technology, and engineer structures. In terms of a single combat flight (single firing), the expenditures for operation in the overall cost of a flying apparatus can amount to 15, 35, or even 70%.

When comparing the expenditures according to the elements listed above, we cannot, however, obtain a complete idea of the economic effectiveness of particular weapons systems. Therefore it is necessary to take into consideration, in addition, the time(T), the time periods for the technical or moral wear and tear of the elements in the armament system (and the minimal time periods are taken into consideration).

The importance of considering this factor can be indicated in the following example. Let us assume that the weapons system being designed is intended to last 10 years. The assigned combat effectiveness of the grouping can be achieved either by means "A", or by means "B." The one-time expenditures, and the cost of operation and maintenance constitute: for means "A", 12 and 3 million rubles, and for means "B", 8 and 2 million rubles, respectively. If one limits himself to a comparison of the two expenditure elements listed, that means "B" would seem to be more economical. Let us assume that the viable time period for means "A" is 10 years, and for means "B", just 5 years. Then, in order to ensure the combat readiness of the grouping manned with means "B", it will be necessary, within the established 10-year period of that grouping's functioning, to expend an additional 8 million rubles to renew the weapons system (or somewhat less, if certain assemblies and units can be used more than 5 years). Consequently, the more economic means (taking into consideration its viability) is means "A".

Thus, the computation formula for the comparative evaluation of the cost of competing weapons systems for a definite grouping (Ω_{gr}) [omega, gruppirovka] has the following appearance:

$$\Omega_{gr} = \frac{Z_{kap} + Z_{eksp}}{T} \text{ rubles/year.}$$

What, then, is the method for determining the cost of the armament? The research and choice of the most economical projected weapons system are linked not only with the evaluation of existing types of weapons, but most often with the determination of the cost of new or modernized types. Moreover, the evaluation is usually carried out at the stage of draft designing, that is, during the period when there are only tactical-technical assignments and limited data concerning the configuration of the future article, and its real technical and tactical parameters. In order to evaluate with an admissible degree of approximation the armament means which are still in the planning stage, it is necessary to have a corresponding apparatus by means of which it would be possible to forecast their cost. In this regard, a very important factor is the elaboration and employment of methods of preliminary determination of the means of armament.

At the present time, methods have been alaborated which permit the determination (with a admissible degree of approximation) the series

cost of certain types of armament which are still in the elaboration stage. The basis taken for the methods is the base index (or the base indices) which is specific for the given means, which index (or indices) determine the basic parameters of the weapon being designed, its design elements and equipment, and which, taken together, make up the cost of weapon types being designed.

For example, the base index for the method of preliminary evaluation of the cost of flying apparatuses might be the relative cost of a unit of weight (kilogram) of their design and equipment (glider, engine unit, fuel system, armament and control system).

This base index can also be used to determine the cost of engines designed to operate many times (liquid-jet, turboprop, etc.). For more precise computations, consideration is made of the engine's tractive specifications.

The fact that, for flying apparatuses, the cost of a unit of weight is taken as the base index is not accidental. Research and analysis of the combat and technical specifications of flying apparatuses indicate that the determining factor in their aerodynamic and tactical properties is the balance of the weight values for the various systems of the apparatus. In particular, the assigned maximum speed of the flying apparatus makes it necessary to install an engine of a definite weight; the weight of the fuel system is a function of the range and duration of flight, etc.

Therefore, if the model being designed for a flying apparatus is similar to a prototype which is already standard equipment, then, by having data concerning the cost of a unit of weight of the assimilated design as a whole, or for its individual elements, it is possible with a certain degree of approximation to forecast the cost of a projected flying apparatus on the basis of the relative cost of a unit of its flying weight as a whole, or weight of its elements in particular.

Taking into consideration the fact that, on flying apparatuses designed for use in combat, the equipment includes extremely complex, and, consequently, more expensive control devices, navigational apparatus, and an armament system, it is possible to assume that the cost of a unit of weight of these apparatuses will also be considerably higher than in apparatuses designed for use in transportation.

In order to evaluate the cost of the projected computer devices, radar, and electronic systems, it is necessary to employ another base index. These systems are constructed on different principles, and for that reason it is not necessary to forecast the expenditures for those systems according to the relative cost of a unit of their weight.

Research is under way to establish, for example, the dependence that the cost of computer devices has upon the number of operations and the size of the storage. In equal measure, attempts are being made to find the natural laws characterizing the cost of electronic systems on the basis of the number of electronic elements, the antenna area, and the space scanned per unit of time.

At the present time, a uniform, consolidated index is being worked out for the determination of the cost of various types of weapons and systems. This general-purpose index in the comparative evaluation of means of armament in the United States is the amount of labor required to manufacture the projected means of armament, as measured in man-hours.[3] If the amount of labor required for the new model of weapon is known, then, on the basis of this index, it is possible to obtain an approximate determination of its cost in series production.

It should be emphasized that, on the basis of the number of man-hours, it is possible to find out only the extent of wages for the production workers. But, in addition, there are also other important items of expenditure, in particular the cost of the finished, purchased articles, materials, and semifinished goods, and shop and general-plant expenses. Therefore it is recommended, on the basis of statistics, to establish the ratio that these expenses have to the workers' wages for the prototype article, and thus to forecast the complete cost of the weapon being designed.

When forecasting the cost of the armament being designed, on the basis of consolidated indices, it is necessary without fail to take into consideration the extent of production expected for it. For purposes of computation it is possible to assume that with each doubling of the extent of output of armament, the cost of that armament will drop by one and the same percentage. According to American data, with the doubling of the quantity of articles being manufactured (with their design principles remaining constant), the cost drops[4] as much as 20%. If, for example, the five-hundredth article cost $5000, then the manufacture of its thousandth model requires the expenditure of only $4000, and the two-thousandth, $3200.

When forecasting the expenditures for the production of a projected weapon, it is necessary to take into consideration the curve characterizing the reduction in its cost as a result of the change in the extent of production and its required quantity for the assuring of the execution of the task which has been assigned.

3. A. S. Lock Upravleniye snaryadami (Fire Control), page 556.

4. Ye. A. BONNI, M. D. TSURKOV, K. U. BESSER. Aerodinamika. Teoriya reaktivnykh dvigateley. Konstruktsii i praktika proektirovaniya (Aerodynamics. The Theory of Jet Engines. Construction and Design Practices). Voyenizdat, 1959, page 691.

In research practice it is also possible, when ascertaining the most economical armament systems, to use other methods of consolidated computation of the cost of the weapon being designed, for example, on the basis of relative coefficients. The essence of this method lies in the fact that the extent of the relative expenditures for the production of a single (base) design element (for a flying apparatus, a glider, or an engine unit) is taken as the unit, and the amounts of the relative expend tures for the other design elements are expressed in terms of relative coefficients as compared with the base element.

The use of a particular computation method will depend upon the type of means being evaluated, and the existence of the corresponding statistical data and mathematical apparatus.

The elaboration of the method of preliminary determination of the cost of armament means is a vital task for scientific research and design organizations. The existence of such methods to a considerable degree facilitates the planning and correct distribution of appropriations for defense. They are also an important instrument in the hands of the military customer when establishing contract prices with the enterprises that will produce the armament. The use of precise and substantiated methods for the preliminary determination of the cost of projected means of armament will yield a considerable economic effect. The elaboration of methods for the preliminary determination of the cost of types of weapons which are being designed is linked with the use and analysis of statistical data concerning the expenditures for the designing and production of series models of the weapon which are able to serve as the basis for the forecasting of the cost of the armament systems which are being newly developed. A most important task of the organizations engaged in the technical-economic analysis of armament systems is the collection, accumulation, and processing of this statistical data, the constant correction of the existing and the ascertaining of new indices for the technical-economic effectiveness of means of armed combat.

Within the confines of this article it would be difficult to throw light in detail upon such an important problem as the consideration of the economic criterion when evaluating the effectiveness of armament. We have been able only to indicate the vital necessity of consideration of expenditures when developing projected models of weapons, and the forms and methods of selecting the optimal armament systems on the basis of the assigned combat effectiveness.

A most important task is the expansion of the sphere of application of the economic criterion when evaluating the effectiveness of means of combat, but the principal thing is the practical realization of the recommendations and conclusions obtained as a result of employing this criterion.

Comment by Col Gen N. Tsyganov

The course of the discussion on the types and forms of military operations has seen the expression of extremely contradictory opinions on questions which have a direct relationship to the AA defense of the country.

Is the AA defense a component part of strategic defense, or is it an independent type of military operation, and what forms does the AA defense by the soyedineniye and the ob"edineniye of the PVO acquire when such defense is introduced? These are some of the important questions of military theory involved in the discussion.

It is likely that no one has forgotten the doubts concerning the strategic defense, in the form and facing the tasks it did, and the manner in which it was carried out during World War II - to wear down, to weaken the enemy along some strategic direction of attack and to create the conditions for the subsequent, decisive, advance - and one which has lost its importance.

With both sides in possession of strategic nuclear missiles which permit troops to be routed, and the military-economic potential of the enemy to be undermined, in a short period of time, and this throughout the enemy's territory, this type of strategic defense is condemned to complete failure, and will inevitably result in the loss of the strategic initiative and to destruction, particularly if it is carried out on an all-armed forces scale.

Under conditions in which only conventional weapons are used, the use of the strategic defense in this all-inclusive way will usually end in utter defeat as well, as historical experience has shown.

We know, for example, that the military defeat suffered by France in 1940 at the hands of Hitler's Germany was not only the result of the criminal policy of the then leaders of the country, but was also the result of a passive defensive strategy on the part of the supreme command.

The strategic defense of the Soviet Armed Forces in the Great Patriotic War was of a different type. In the first period of the war it was necessary to fall back on this defense despite the basic spirit of our military doctrine, the consequence of the gross miscalulations of the supreme leadership. It was not premeditated, but was, rather, a necessary occurrence, the purpose of which was to exhaust the enemy and to create conditions for a decisive advance.

This goal was achieved at a cost of heavy losses in men, materiel, and territory. The defense carried out its mission, thanks to the advantages of the socialist system and the mass heroism of our people, despite the exceptionally difficult conditions for carrying on the armed struggle along the Soviet-German front established in the first months of the war. However, the Fascist German army was routed only as a result of the strategic offensive on the part of the Soviet Armed Forces.

1. Comments on the article by Major General I. Zav'yalov titled "Types and Forms of Military Operations." Voyennaya Mysl', No. 1, 1965.

During the course of the strategic defense, and then during the strategic offensive, the PVO troops to an almost equal degree defended against the strikes mounted by the enemy's air attacks in force, carrying out, in the process, operational, as well as strategic, missions.

As we know, the Hitlerite command, in its plans for carrying on the war against the USSR, envisaged the destruction of the two largest administrative, political, and industrial centers in the country, Moscow and Leningrad, by massive air strikes. The Fascist German aviation had to destroy industrial targets and institutions, wipe out a considerable part of the population, to undermine the moral spirit of the defenders and inhabitants, and, at the same time, to facilitate the taking of these cities by the ground forces. Hitler's Air Force could not carry out this mission. Mass operations by Fascist German aviation was opposed by organized AA defense which was, in purpose, unconditionally strategic in character.

What has changed now? The assault forces have received missiles with nuclear charges and the same targets will be in front of them particularly on the first strike. And if the factor of a possible surprise attack is taken into consideration, as well as the presence on the other side of moving missile installations (missile carrying submarines, and others) which could not even be hit, then it becomes evident that the country must have, modernize, and, with the appearance of new tasks and objectives, develop its AA defense; that is, build airfields, launch bases for air defense missile troops, bases for complexes of anti-missile and anti-cosmic defense, concealed command points, create a system of missile, sputnik, and aerodynamic apparatus observation, and carry out other measures which require serious capital investments.

And we must take into consideration yet another phenomenon as well. When an effective early warning system is available the attack warning time will be sufficient to carry out a successful answering nuclear strike. In this case the strikes of nuclear forces are not included in the forces and the means for the air-cosmic strike.

Consequently, under the conditions prevailing in a nuclear missile war, the AA defense actually is in the nature of a strategic defense; it lawfully has its targets and assignments, including strategic ones, its organization, and it carries out one of the leading roles of the country's armed forces. Moreover, it has taken on a new content, having become primarily a defense against carriers of strategic nuclear weapons. It is now the main defense of the state and of its armed forces against any means of nuclear attack: ballistic missiles; winged missiles; aircraft, and artificial satellites for military purposes. In this sense AA defense has become air-cosmic defense. It is called upon (and must be ready) to parry a blow from the enemy's main forces in the air and in the cosmos, and not just a blow delivered by the enemy's air-cosmic attack force alone, as General I. Zav'yalov has written. Therefore, we do not agree that the PVO troops are not defensive at all, and that, supposedly, retaining the word "defense" in their designation is, as Colonel V.

Laripnov has pointed out "the result of our conservatism." Actually he himself talks about the active troops and their active counteraction to the nuclear missile strikes of the enemy. [1] However, it is impossible to acknowledge as correct, overall, his suggested definition of the substance of PVO troop actions, any more than it is to accept the earlier opinion of General V. Petrenko which puts these same troops in the role of using the most active and decisive methods of destroying the carriers of the nuclear weapons. [2]

It is completely evident that such diffuse formulations of the aims, role, an place of PVO in the system of armed struggle cannot satisfy anyone. They do not r flect the scales and the aims of "active counteraction," they conceal tactics and the operational skill and, in some degree, they even disparage the role of one typ of armed force which adds to the accomplishment of the strategic functions.

The troops of the air-cosmic defense are, by their very nature, designed to repel and rout the enemy's attacking forces. They conduct air-cosmic defense, air engagements and battles. But there can be no question that in order to reach the goals assigned it, air-cosmic defense must be active in nature and must combin strikes at the enemy using interceptor missile troops right in areas adjacent to targets with the use of widespread maneuvering on the part of rocket-carrying fighter aviation and using it to strike through the enemy's air space at long approach ranges. Just such aviation is part of the country's PVO forces, and it can impart an active character to air-cosmic defense.

The question of the form ob"edineniye, soyedineniye, and chast' will take when introduced into the air-cosmic defense is an important one. And it is far from having just theoretical significance. The concepts as to the forms of conducting the air-cosmic defense are the bases which provide the unity of understanding its aims and assignments and the organization to carry them out in each link.

We have long been accustomed to such fixed concepts as "battle - a clash of sides within the limits of the range of podrazdeleniye and chast' weapons in order to resolve tactical missions;" " engagement - aggregate of battles, combined by unity of thought and purpose;" "operation - aggregate of battles and engagements conducted in accordance with a single plan to achieve an operational goal." Strategic operations, or operations by groups of forces, are the totality of a number of simultaneous, or sequential, operations of an ordinary scale which pursue strategic or large-scale, operational goals. One cannot, therefore, be completely understanding when some authors use the category of "form" of action of forces only when referring to an operation, sometimes calling it the "basic form." Why not then, reject the battle as a "form" completely, or isn't it considered to be a "basic form?

The battle and the operation, in our view, reflect scales of military action, the scope, aims, and tell us what the force compositions participating in them are. Operations are inherent in operational ob"yedineniye. And there are operational ob"yedineniye in the PVO forces too. In this sense we are completely at odds with the views of comrades V. Sokolovskiy and M. Cherednichenko, as those views have been expressed on the pages of Voyennaya Mysl'.

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1. Voyennaya Mysl', No. 6 1965, p. 34.
2. Ibid., p. 27.

It is also apparent that it is not the type of military action which determines the character of the war, but the other way around. The types of military action themselves reflect the nature of the armed struggle, that is, the totality of existing characteristics and internal processes of the struggle. They, accordingly, make up the basic content of the armed struggle and must, in totality, reflect all the many facets of such content.

The type of military action is determined by the nature of the task, with the particular situation resolved by all the armed forces, or a particular type of armed force.

From the foregoing it is obvious that in a nuclear missile war[1] the following types of military action will occur:

a nuclear strike by strategic nuclear means;

defense of the country against enemy strikes (primarily against nuclear strikes) by the PVO troops. This type of defense could, for brevity's sake, be called the country's antinuclear defense;

the offensive;

defense.

These are all the types of military action and they encompass completely all the many facets contained in nuclear missile war.

What then are the bases for considering strikes by strategic nuclear means as an independent type of military action? The concept of nuclear strikes must be taken into consideration in order to answer the question.

It should be noted, first of all, that a strike, as such, has long been known of in the conduct of battles and operations. The strike has been launched by the infantry, the assault strike, by aviation, the bombing strike, and by artillery, the fire strike, etc. The strike is a characteristic of all types and branches of troops. However, the question of separating the strike into an independent form of military action did not arise prior to the appearance of the atomic weapon. It was always a means of carrying out individual missions concerned with an operation, or a battle.

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1. TRANSLATOR'S NOTE: Raketno-yadernaya voyna - war in which the decisive means for achieving the victory in a battle, an operation, and in the armed struggle as a whole, is the nuclear missile as a weapon in unrestricted use by all branches of the armed forces, but particularly the strategic nuclear weapon. Even in the nuclear missile war, however, the final victory will be attained by the combined forces of all branches of the armed forces, using conventional means of armed struggle as well. (Slovar' Osnovnykh Voyennykh Terminov [Dictionary of Basic Military Terms] Military Publishing House of the Ministry of Defense of the USSR, Moscow, 1965, p. 196).

As applicable to the combat activities of PVO ob"yedineniye, the "operations concept has been more broadly applied, and this is logical, because enemy air operations would be counteracted by antiair operations. The concept of "combat operations by PVO forces" is something else again. This concept does not reflect the substance and the scale of such operations, for even an air engagement between a few aircraftcan be called combat operations and the operations of ob"yedineniye forces can be too, since they reflect, perhaps, a number of flights and strikes by heavy forces in an air-cosmic attack.

Will the operations of air-cosmic defense forces break up into antiair and antimissile operations? Obviously not, since the actions of the forces and equipment of the anti-aircraft and anti-missile defenses along each air-cosmic direction will be united into a single concept to achieve the common goal - the destruction of the enemy's air-cosmic attack along a particular direction of attack in the air and in the cosmos. The foreign press, particularly recently, is more and more often mentioning the unity of planning for the use of missiles and aviation, that is, they are talking about air-cosmic operations.

In conclusion, we would like to mention the struggle with electronic media. General I. Zav'yalov correctly notes the significance of this struggle or, as he calls it, "the struggle in the ether." There is very solid ground for asserting that the outcome of many operations, given present day conditions, will be determined by the relationship between the possibility of neutralizing electronic installations and keeping them operable in the face of enemy action.

The use of jamming in the Anglo-American landing in Normandy in 1944 can serve as an example. The success of this operation was very much determined by the effectiveness of the use of jamming to neutralize German electronic equipment. And this was in a period when the armies of the states had but a part of the weapons (and small ones, at that), the use of which was connected with entering the ether. It is another matter now, when all weapons, including some of the individual ones, cannot function without entering the ether or without receiving radiations. ...

However, the "struggle in the ether" or more aptly the "radio war" did not in the past, and will not, in the future, be of independent significance. So there is no thought of separating it into an independent type of combat operation. The struggle with the enemy's electronic media (as it should be called) is a component part of the combat operations of all types of armed forces.

Comment by Maj Gen N. Vasendin

General Zav'yalov's article includes "the actions of the armed forces as a whole which...determine the character of the war, the methods of using the troops, and the strategic concepts of the state," (p. 15), in forms of military action.

It is doubtful, however, that forms of military action can be considered as applicable to just armed forces as a whole. At the same time, the author himself was unable to find a single such action which would be common for all armed forces.

Nuclear strikes can be individual, group, and massive, depending on the amount of equipment used. The individual and the group strikes will usually be carried out in the interests of individual operations and will usually be subordinate in nature. Strikes of this type cannot, naturally, be considered as an independent type of military action. As before, they are a means of carrying out individual missions as a part of an operation (battle), regardless of how decisive they may be.

A nuclear strike by strategic weapons will be delivered in order to destroy the military and economic potential of the enemy, to disrupt state and military control, to disorganize the activities of some particular country as a whole; in other words, to achieve the strategic aim of the war. A strike of this type will be global in nature and will be carried out in the shortest possible time span, calling upon the maximum number of nuclear forces. Moreover, it is relatively independent, in the method used to accomplish it, as well as in the forces and weapons assigned. All of this compels us to consider the nuclear strike by strategic weapons as an independent type of military action.

With this approach to answering the question everything falls into place, doing away with the need to restrict the nuclear strike by strategic weapons into offense or defense, where, in our opinion, it has no place.

What, therefore, will be the connection between the strategic offensive and the nuclear strike by strategic weapons in this case?

We share the point of view of those authors who emphasize the fact that the strategic nuclear strike is the main offensive, but in this case we understand the offensive to be at the all armed struggle scale, and that it would be more correct to say that the nuclear strike by strategic weapons is the base, the basis for carrying on the war as a whole. Herein is its nature and purpose.

Nor is there any room for the use of the PVO forces in one of the universally recognized types of military action (offense and defense). This is completely understandable and natural, for the PVO forces, just like the strategic missile forces,[1] are intended for carrying out specific missions which have developed with the appearance and development of the nuclear arm. The truth of the statement that the country's defense against nuclear strikes by the enemy does not resemble the defense of individual borders, regions, or even directions, but is the main type of defense, is obvious to all. The defense is carried out against the enemy's strategic strikes, relatively independently, and is, as a whole, strategic. It is true, of course, that this does not mean that any action by PVO forces will always be strategic in nature. The use of individual ob"yedineniye and soyedineniye can also be operational, depending on the conditions prevailing in the situation.

Thus, the country's defense against enemy strikes, and above all against nuclear strikes, has its own relative independence, methods, and ways in which it is conducted. On the whole, it is a strategic operation and it is therefore expedient, and necessary, to single it out as an independent type of operation.

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1. TRANSLATOR's NOTE: Raketnyye voyska strategicheskogo naznacheniya - the main type of USSR Armed Forces, intended for the accomplishment of the most important strategic missions in a nuclear war. Strategic missiles are part of the air forces in the USA and in England. (Ibid., p. 197).

The military press contains arguments concerning the place, and the role, of defense in general, and of strategic defense in particular, in modern war. Some authors declare that attempts to use defense on a strategic scale would inevitably lead the armed forces, and, accordingly, even the country, to defeat. It is, therefore, inapplicable, they say. Isn't it too bad that the lessons of the Great Patriotic War are so quickly forgotten. We had similar points of view before the war, and we paid cruelly for them too.

But here there arises, involuntarily the question: will the war now be other than a nuclear missile one? Absolutely. But even in a nuclear missile war the opposing sides cannot attack a defense which is being carried on along individual directions. Offense and defense will be a community of actions, which is one of the features of modern operations. Though these operations will be modified, take place when there is no continuous front, and have an offensive-defensive character, one thing will still remain; in a modern war our army should actively attack and, in event of need, defend stubbornly, skilfully combining these operations The result is the need to study and develop offense and defense, in the proportions determined by doctrine.

Types of operations take various forms. Form is the organization, or the external expression, of the content. It is less fluid, more stable, than the content. Form must always correspond with content. Yet form and content are different categories of the same phenomenon. Yet one can sometimes find, in the military press, such things as nuclear missile strikes, or simply combat actions by some type of armed force, in the category of form. Present in this interpretation is the confusion, or the identification, of form with content, of form with types of operations, of confusion of form with the most universally used of military terms, combat action, conducted by the individual soldier, the squad, the platoon, and, finally, by the army, the front, and the armed forces as a whole. All of this serves to confuse terminology, and narrows consideration of the combat activities of the particular type of armed force.

We share the opinion of General Zav'yalov that existing forms of combat actions, operations and battles, fully respond to the new contents of modern war and there is no real requirement to invent new ones. However, in our opinion, new types of operations, such as the operations of nuclear forces and PVO forces, for example, will crop up in the existing forms with the development of the nuclear arm and the appearance of new types of armed forces, requiring thorough researching.

Comment by Lt Gen Avn G. Lobov

If attack and defense are understood to mean simply the sum of strikes (in one case, in the course of active operations, of movement against the enemy, and in another in the form of a responsive act), and thus failing to clearly distinguish their basic aims, it will, obviously, be difficult to even explain the essence of both types of operations.

We believe that the main determinant in the attack is the most decisive operation possible, having for its purpose the total destruction of the enemy's armed forces, and particularly the destruction of his nuclear weapons; that is, the achievement of results such that he would no longer be capable of offering further resistance within the limits of missions being carried out, or which would be needed for general capitulation. In the past this aim was possible of achievement only with the successive forward movement of land forces (of the navy) to close with the enemy and to destroy his firepower. In the modern attack, when the mission of destruction can be accomplished by nuclear strikes, made at any depth, practically speaking, forward movement becomes a secondary item. It is not even necessary in certain cases. This situation can arise, for example, when the enemy, as a result of the massive nuclear strikes inflicted upon him, such strikes being the main part of the attack, capitulates and peace-loving forces accede to political power in his country, or when the degree of his defeat is such that the attacking troops will have to carry out functions other than military which are outside the limits of the war.

Modern defense cannot under any circumstances be considered simply as an operation designed to repulse an attack. Its purpose will be much broader. Defending troops will be required not only to accord "surrender" to the enemy, but, primarily to disrupt his attack, to inflict upon him the heaviest losses while taking as few losses as possible, and to create conditions for going over to the decisive attack. Nuclear strikes will be the basis of the defense.

If these positions are used for the approach to the definition of the concepts of "attack" and "defense" it is obvious there are no bases for considering strikes by strategic nuclear missile forces (or, in a somewhat different formulation, [1] strategic nuclear forces) as a special type of military action. "This," as Marshal of the Soviet Union V. D. Sokolovskiy and General M. I. Cherednichenko [2] have written, "is the most offensive type of strategic action of all the types ever used in wars." That is, according to the logic of the definition, it is the attack, even though carried out by methods and weapons not the conventional ones of past wars.

A number of the comments on General Zav'yalov's article include retreat, pursuit, the meeting engagement, counterattack, the struggle for air supremacy, and others, among independent, individual, types of combat operations. We believe it impossible to do so for the simple reason that these actions are derivatives of attack and defense.

The known difficulties, considering the purely psychological influence of the "classic" forms of attack and defensewhich have been accepted in their time for land forces, are the classifications of combat operations for the navy and the air force. The very nature of the air force, its armaments, methods of operation, and the nature of the missions it carries out, would, it would appear, have little in common with the concepts of "attack" and "defense." However, if one approaches the consideration of the air force operations from the position of the purpose for which used, these operations can then be either offensive, or defensive, and can include elements of

1. Voyennaya Mysl', No. 6, 1965, p. 29
2. Op. cit.

one, or the other, one of which will prevail. Historical experience makes this easy to confirm. From the beginning of the Great Patriotic War up to January 1943, our air forces dropped 186,459 tons of bombs on enemy targets (and we should note that this is over twice the tonnage dropped on Fascist German targets by USA and Great Britian). Yet hardly anyone would maintain that the Soviet Air Force as a whole had attacked on a strategic scale during this period. The tasks of destroying the enemy and of gaining strategic superiority in the air was beyond our strength at that time. Yet, participating in the strategic defense, the Soviet Air Force carried out offensive operations in a whole series of operations. The Air Force inflicted tremendous losses in aviation and in land troops on the enemy preparing himself for widespread offensive actions. At the same time, during this period, as well as subsequently, the signs of attack or defense by land forces, such as movements ahead, or the retention of positions used as bases, or even retirement, were, to a considerable degree, characterized as classic for the Air Force, although all flights were made over enemy territory and territory occupied by him.

General Zav'yalov's position that defensive actions by the Air Force are understood to mean the repelling of enemy strikes, and that offensive actions are understood to mean the destruction of various of his groupings,[1] is admissible, generally speaking, if the air enemy is not the only target of aviation action. In other words, if the Air Force, having adequate men and equipment, acts with decisive aims, directed at the routing of the main grouping and the destruction of the most important of the enemy's targets, these are offensive actions and, conversely, Air Force actions directed at disrupting the enemy's offensive by weakening his offensive formation must be classed as defensive actions. Yet the missions being carried out in both cases are similar since they involve the destruction of the most important of the enemy's targets on land and at sea, with primary emphasis on the means for nuclear attack, the destruction of his main troop groupings, and his aviation; covering own troops (fleet) and targets in the rear against air attack; destruction of sea and air landings by the enemy; the conduct of air reconnaissance in the interests of all branches of the armed forces; participating in parachute landings, transporting troops by air, and carrying carrying combat equipment and other types of material.

Thus, in determining which of the actions by aviation equate to offense, and which to defense, everything depends on the purpose for which the Air Force is used, as well as on the forces assigned to carry out some particular mission. We cannot fail to mention that, so far as long-range aviation, for example, is concerned, the most characteristic type of operation will be the offensive, conducted in the form of air operations on an independent basis, or in cooperation with other branches of the armed forces and front aviation. The character of actions by front aviation will, forthe most poart, be determined by the type of operation mounted by the land troops.

In conclusion, we would like to say that a strategic nuclear strike (strikes) carried out independently by the strategic missile forces, or by the combined forces of several branches of the armed forces, will find superficial expression, in our opinion, in the form of a strategic operation. The explanation is that the combat

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1. Voyennaya Mysl', No. 1, 1965, p. 22.

activities of several ob"yedineniye (soyedineniye) which launch missiles must be combined into a common project. The launch itself, and the missile's flight, take place in a definite order, and although the main thing is the nuclear strike at the most important target, so too does the operation and the supporting actions in connection with it.

The strike, as a form of combat action for missile troops, is fully in accord with the laws governing the battle and operations conducted by combined forces of different branches of the armed forces, or arms. So far as aviation is concerned, and with the exception of fighter aviation, the main form of action always has been, and remains, massed and concentrated strikes, as well as echeloned actions, consisting of a series of strikes, carried out one after the other.

Comment by Col. I. Grudinin

Is strategic defense in use, or not, given present day conditions? This is the question posed in General Zav'yalov's article.

The book Voyennaya Strategiya (Military Strategy) contains the thought that only the strategic offensive now has the right to exist and that "in so far as strategic defense, defensive strategy, are concerned, they must be decisively rejected as extremely dangerous for the country." [1] As can readily be noted, an equality sign is placed between strategic defense and defensive strategy. And this serves as the first reason for the denial of the significance of strategic defense under present conditions. Actually, the concepts indicated are qualitatively different in content. Defensive strategy signifies rejection of active offensive operations. Its basis is mistaken. Consequently, there is not a single statement to support defensive strategy in our Soviet literature. Strategic defense does not reject strategic offense as a fundamental, and main, form of armed struggle. The strategic defensive has, in the past, been conducted as part of the strategic offensive, or in its interests. Its final aim was to create conditions, to ready men and equipment, for the decisive offensive.

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A second reason for the rejecting/strategic defense is the incorrect conclusion made as a result of the analysis of changes in the quality of armaments. As a matter of fact, the presence of two fundamental types of armed struggle - offense and defense - has given rise not to quality of armaments, but to the content of the armed struggle and to the nature of the basis contradiction of war.

In war the opposing sides strive to attain the goals which express the basic interests of definite classes. The principle means for achieving these goals is the armed struggle between two warring sides, each of which strives for the victory by maximum destruction of men and materials belonging to the enemy, while taking the least losses of his own. One of the most important objective laws of armed struggle finds its expression in this way.

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1. Edited by Marshal of the Soviet Union Sokolovskiy, V. D. Military Publishing House, 1963. p. 371.

The fundamental different, directly contradictory, methods of armed struggle - offense and defense - is conditioned by the action of the law of maximum destruction of enemy men and materials, while taking least losses on one's own side, and is in the nature of the armed struggle itself. In so far as new armaments are concerned, they have a decisive effect on the appearance of qualitatively new meth new ways, of carrying on the offense, as well as the defense.

A third reason for the rejecting of strategic defense is insufficient conside ation of the capacity of modern armaments for the organization of a new defense, qualitatively speaking.

The strategic defense will, at this time, be made first of all in the course of the strategic offensive, conducted by the strategic missile forces. Delivering crushing blows against the enemy's missile, and other, troops, destroying his industrial and administrative centers, the strategic missile forces are called upon to carry out two missions simultaneously; one is the strategic offensive, that is the decisive rout of the enemy, while the other is the strategic defense, in the course of which the strategic missile forces, by their strikes will, to a very larg degree, undermine the enemy's capability to deliver strikes against our missile, and other, forces, our political, economic, and administrative centers.

It is impossible to overlook the fact that the means for the strategic offensi mounted by the probable enemy are quite numerous, and are increasing steadily. The are dispersed, some of them located underground, in special, covered positions, or under water, covered by anti-missile and antiair defenses, as well as by a whole system for the dissemination of false information. Consequently, the strategic offensive by the missile forces, the land forces, the air force, and the navy, cannot eliminate entirely the threat of enemy nuclear missile and air strikes. From this flos the objective need for anticosmic, antimissile, and antiair defenses.

Present day PVO forces as a whole represent a force which is specially designe to carry on the strategic defense. Rejection of the need for the strategic defense casts doubt on the strategic significance of present day PVO forces, something whic is fraught with the most serious of consequences.

Even a slight weakening of the antimissile and antiair defenses can result in lack of capability to carry out the strategic offensive, for there would be nothing, or nobody, to carry it out. It is, therefore, impossible to underestimate the value of civil defense, which, given present day conditions as a whole, has, beyond doubt, taken on a strategic significance.

A fourth reason for the rejecting of strategic defense is its non-dialectical view with respect to the interconnection and interaction of the strategic offensive and strategic defense.

Offense and defense are a dialectical unity of opposites which are mutually exclusive and simultaneously are mutually dependent upon each other. They are not only connected, one to the other, but are also mutually interwoven, one with the other, and they cannot exist apart.

When armed forces are attacking they are, at the same time, and to some degree, defending as well. During the years of the last war the Soviet Armed Forces, attacking on certain fronts, were defending on others and were conducting a continuous antiair defense of the country and of the troops which were protecting the flanks of the offensive groupings and warding off counter blows. When armed forces are defending they are, at the same time, and to some degree, attacking as well. During the initial period of the war, in the course of the defensive battles against the German Fascist forces, the Soviet Armed Forces went over to the counteroffensive along various sectors of a vast front, striking deep in the rear of the enemy, including strikes against Berlin, and gathering strength for a decisive, general offensive. If the troops on the offensive were to forget about defense they would be routed immediately by the enemy. And exactly the same thing would happen to defending troops if they remain passive, if they fail to conduct offensive operations; they would be defeated.

If the means the armed forces have at their disposal are not favorable, war, especially between mighty coalitions of states, will always remain a struggle between counterdefending forces. And what this means is that, in this case there must be not only offense, but defense, as well, not only the delivery of blows, but the repelling of blows as well.

There is always a contradiction between offense and defense. However, the contradiction does not remain immutable. It passes through various stages of development. The boundary between offense and defense is more or less clearly defined, depending on the relationship between the means for the attack and for the protection needed.

With the equipping of the armed forces with nuclear missiles came a bound, the combat capabilities of troops to carry on the offense and defense closed, and the capability for simultaneously carrying out offensive and defensive missions, on strategic and operational-tactical scales was created.

This has to be recognized, even by those comrades who dispute the need for the strategic defense. They write, "Now both sides will attack first with their main means for waging the struggle, with nuclear weapons, and they will, at the same time, defend primarily with antiair and antimissile defense means." [1]

Actually, armed forces, if taken as a single whole, are, at the present time, designed for the simultaneous conduct of strategic offensive and strategic defense.

A new world war, if unleashed by the imperialists, will include all the continents on earth. The armed struggle will be conducted in many theatres of military actions, along several strategic directions. Given these conditions, there can be a need for individual directions along which strategic defensive operations will be conducted by some of the forces and equipments of all types of armed forces and branches, and all of this will be in addition to strategic offensive operations.

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1. Voyennaya Mysl', No. 6, 1965, p. 28.

All of this is indicative of the fact that Lenin's position concerning the nec to master all forms of struggle, and not just some one of them, retains its full force of meaning, even today. Yet, the principle form of combat operation has been and is, a decisive offensive. Only a strategic offensive, waged by the combined forces of missile and land forces, the Air Force, and the Navy, can lead to complete victory in a modern war.

Comment by Col V. Bogomolov

The book titled Voyennaya Strategiya (Military Strategy) rejects any possibility of a strategic defense in a nuclear war. Acknowledgement of such a defense can be considered to be an acknowledgement of a defensive strategy. 1

In General Zav'yalov's article the possibility of conducting a strategic defense is permissible only with respect to PVO, PRO, and PKO forces. So far as the land forces, the Air Force, and the Navy are concerned, the author says, "defense...obviously, does not extend beyond the framework of the operational scale and will be conducted primarily by offensive methods." 2

At the same time there is a unified opinion as to the possibilities of the strategic offensive.

So the impression is that there is no such thing as a strategic defense, but that there is a strategic offensive. Is this putting of the question right, or not?

It seems to us that, guided by the dialectical law concerning the unity and the struggle of opposites, we cannot speak of a strategic offensive while, at the same time, rejecting the strategic defense. They are two sides of the same identical phenomenon, armed struggle, and they are inseparably linked. Lack of one of them excludes the other, and, accordingly, the phenomenon as a whole. Without a strategic defense there can be no strategic offensive, and, consequently, no armed struggle.

However, the only time there is no strategic offensive, and the strategic operation accompanying it, is when the corresponding strategic offensive grouping was not formed because the enemy had no strategic defense. But even if the latter were present what has been said is all the more so when it is advancing over the enemy's territory. For example, the operations of Soviet Armed Forces on Bulgarina territory at the beginning of September 1944, did not take the form of an operation in the strict sense of that word, despite the fact that our country was in a state of war with Bulgaria. Because of the friendly relationship of the Bulgarian people with us the Red Army was greeted as an army of liberation and it advanced without encountering any resistance. The Bulgarian operation was converted into a liberation campaign for Soviet forces. 3 The operations of the Soviet Armed Forces in the freeing of the Western Ukraine and Western Belorussia in 1939, were also liberation campaigns. 4

1. Voyennaya Strategiya (Military Strategy), p. 371
2. Voyennaya Mysl', No. 1, 1965, p. 22.
3. History of the Great Patriotic War of the Soviet Union, 1941-1945. Vol. 4. Military Publishing House, 1962. pp. 303-304.
4. Ibid., Vol I. Military Publishing House, 1963. pp. 249-250.

Nor can there be any talk of a strategic offensive when evaluating the armed actions of the plunderers who have grabbed up the land and the wealth of the essentially unarmed peoples.

When we say that our armed forces, in a nuclear war, will carry on a strategic offensive we are, at the same time, suggesting that it will be opposed by a strategic defense. But what, then, are the bases for rejecting the possibility of a strategic defense on our part if the opinion exists that the enemy also has a capability for conducting a strategic offensive and will strive to do so? What, then, is the antipode to his strategic offensive?

Further, since the three branches of the armed forces - land, air, navy - are, within the operational scale frameworks (front - fleet - army), peculiar not only to offensive, but to defensive, operations, strategic leadership is required for their coordination in the various theatres, and not operational strength.

Obviously, recognizing the possibility that both sides can conduct a strategic offensive, there is nothing remaining except to also recognize the possibility that both can conduct a strategic defense as well. In summary, the situation is established wherein both sides can carry on a strategic offensive and a strategic defense simultaneously, using forces and equipments for all branches of the armed forces, according to their capabilities, in either of the cases.

We think that the theoretical basis for the possibility of carrying on a strategic defense in this fashion will not provide the occasion for confirming the fact that it will supposedly give us a strategy defensively, and, at the same time, eliminate it from the sphere of the armed struggle. The offensive doctrine does not reject the scientific recognition of such defense. Military science, in studying it as a method of operation, should develop an answer to the question of how to conduct a strategic defense should the situation warrant.

In this case the question of what types of armed forces are destined for the offense, and which for defense, no longer arises as dialectically ungrounded. All types of armed forces must be ready for the simultaneous conduct of offensive, as well as defensive, missions in the interests of attaining the victory.

In conclusion, it is appropriate to raise the question of the existing terminology. Unfortunately, many of our military terms have come to us from the military language of the period when conventional weapons were used, and have "carried over" with [illegible] their sense, to some degree. We still do not have assembled in one publicat[illegible] the new, defined, meansings of the terms which have been retained for nuclea[illegible]se. Consequently, each user of a particular term in its new sense often uses it in accordance with his own subjective views. Yet the exact significance of a concrete phenomenon of armed struggle in modern war demands an accurate, generally accepted, definition of its meaning. The scientific levels attained in the development of military affairs, reflecting the essence of the revolutionary transformations which have occurred in the theory and practise of conducting modern war, should be strengthened in the military terms, both the established ones, as well as the new ones. A unified terminology must be developed, therefore. One should not be afraid to introduce new terms in those cases where the old ones have lost their meaning, and their use does not aid in the development of unified thinking among military cadres.

The Moral-Political Factor in Modern War

by Colonel S. Il'in

Soviet military-theoretical thought, in considering the sources and the significa of the moral-political factor in war, proceeds from the clear-cut Marxist-Leninist pos itions which have been confirmed by the practise of past wars and the scientific prog- nosis for the future. V. I. Lenin, in his development of the ideas of Marx and of Eng on war, thoroughly revealed the essence and the nature of the moral spirit of a people and of an army, its effect on the progress and the outcome of the war, and pointed out the increase in the role of the moral factor in the wars of the epoch of imperialism, while indicating the ways in which the moral spirit of an army belonging to a proletar state could be strengthened.

The content of the moral factor includes the inwardness of need, incentive, the norms of conduct which determine the actions of people at the front and in the rear, the degree of strain on the spiritual forces of a people and of an army in the struggle with an enemy. The moral factor is a purely social phenomenon. This is the moral-political factor in its essentials, for its bases are the social and economic relation- ships, the character of the social and state structure, the political purposes of the war. The broader, and more completely, the basic interests of the people are reflected by the social structure, the closer the nature and the aims of the war are to the desir and aspirations of the masses, the higher will be the moral tone of the people and fier will be the fight waged by the military masses, their resolution and selflessness in th struggle for victory. V. I. Lenin emphasized the fact that "it is impossible to take t masses into a predatory war...and count on their enthusiasm." (Complete Collected Work Vol. 34, p. 197). On the other hand, he pointed out that "a people, among whom the wor and peasants who knew, felt, and saw that they were defending their own Soviet power, the power of the workers, were in the majority, could never be conquered...." (Ibid., Vol. 38, p. 315).

The Leninist principles which reveal the essence, the sources, and the role of the moral spirit of a people and of an army in attaining victory in war, provide the key to an understanding of all the problems of the moral factor, of the relationship of the moral forces of belligerents. In modern war, the threat of which issues from the imper- ialists, the problem of the moral-political factor is extremely complicated and requires special, and profound, consideration. The main thing causing the complexity and the novelty is connected with the change in the force relationships in the world arena in favor of socialism and democracy, in the sharp weakening in the position of imperialism, in the nature and peculiarities of war, but above all, is connected qualitatively with other means of armed struggle.

Of no small importance as well is the fact that the new, terrible, weapon has not yet been used as a basic means of war. Moreover, its specificity is such that in the course of exercises, of maneuvers of a force, its influence cannot be everywhere verif- ied, practically speaking. All of this brings into sharp focus the question of scientific prevision, of an all-round theoretical basis, for the many questions concern- ed with the conduct of nuclear war. This equates fully, of course, to the problem of the moral-political factor as well, to its influence on the course and result of the war We will concern ourselves with some of the more important of its aspects in this article

More and more attention has been given to consideration of the various aspects of the moral factor in the imperialist countries in recent years. The bourgeois military theoreticians usually will look for the sources of moral forces in the biological, in the racial properties of peoples, rather than in the conditions of the material life of the society, in the social relationships. This does not mean, of course, that they leave out in their entirety the social conditions which strengthen the moral spirit of an army. The contradictions in the bourgeois society are becoming more and more intensified, the ideological struggle between the two systems, the peculiarities of modern war are forcing them to, in some degree, reckon with the influence of the social and political conditions on the moral spirits of their troops. Yet the bourgeois military ideologists are a long way away from a scientific explanation of these principles. Their primary emphasis is on the arousing of the fear of the "communist menace."

Soviet military and theoretical thought flows from the fact that a future war will require the greatest concentration of forces by the people and the army. Modern war will be distinguished by the extreme decisiveness of its aims, and it will its dynamic nature will be of a high order, such that decisive results could be obtained even in the initial phase. These special features of modern war bring with them a sharp increase in the requirements imposed on the moral spirit of a people and of an army.

The ideological struggle between belligerents acquires stresses which had not been seen earlier when there is a decisive armed collision between two opposing social systems.

The ideological struggle in the international arena even now, in peaceful conditions has taken on great acuteness as one of the sharpest forms of the class struggle between two systems. But in the event of war, that war will answer the decisive question - the existence, or the non-existence, of one or another of the systems. There is no doubt that nuclear war will see the complete collapse of imperialism, and its inhuman, reactionary ideology, which is doomed to death by history itself. At the same time, all of this foreordains a complex and unusually acute struggle in the ideological field, a struggle for the mind of the people.

The imperialists will promote subversive propaganda in combination with the use of nuclear weapons on unprecedented scales at the beginning of the war. The United States of America has created a widely ramified apparatus for so called "special operations" with a variety of technical weapons for conducting the operations; a governmental committee on questions of psychological warfare has been established within the framework of the leadership of a number of organizations, including the Defense Department and the Central Intelligence Agency. What is envisaged is a complete system of ideological diversions aimed at undermining the moral strength of the people and army of our country and of the other countries of socialism. It must be assumed that in a period of a war the frantic, anti-communist propaganda will take on even broader proportions, slandering the Soviet system, the Communist Party and its leadership; that all sorts of provocations, intimidation by nuclear power, the consequences of its utilization, etc., will be set in motion.

The Soviet people, its army, possessing a high moral-political stability, will, even while the war is going on, constantly build up its moral strengths, its ideologi political training. Every ideological means of indoctrination will be directed so as strengthen the moral superiority of our people, to unmask the ideological venture of enemy.

The ability to obtain ideological influence over the enemy by our side will be i comparably greater in scope during the war than was the case in the last war. The ma aspect of this work is the disclosure of the plunder-like nature of the imperialists' war and the interpretation of the just nature of the war on the part of the USSR and t brotherly countries of socialist collaboration, of the inevitability of the defeat of imperialistic armies in this war.

One of the new conditions effecting the content and the method of operation to strengthen the moral-political factor in modern war is the situation whereby the Sovie state has come out in a united, brotherly, union with the other socialist countries. wars, together with the wars of these countries, will not only be fought for the Mothe land itself, but for the entire socialist collaboration. And this means that the ideo logical base of the moral factor will be even further expanded. One of its foundation will be the superiority of the world system of socialism over capitalism, the correctne of the policy of the socialist states, a policy which is the most progressive, and whi corresponds to the interests of the national masses.

It is completely evident that the imperialists are attempting to do everything th can to disrupt the unity of action of the socialist countries during a war, the faith i military collaboration of the brotherly peoples and of their armies, and at the same time to weaken the moral condition of our people of their soldiers. It is for this reason that the widespread and purposive work in indoctrination of personnel in the spirit of proletarian internationalism, in the understanding of the growing internat- ional tasks, takes on even greater significance.

The fact that the means used to wage the war will be nuclear missiles will intro- duce definite corrections into the relationship of the two sides of the moral factor - the moral spirit of the people, and the moral spirit of the army.

The moral spirit of the army, as we know, possesses those specific features which are determined for it by predestination - to carry the armed struggle with the enemy . In past wars the front itself was that sphere in which people in battle were face to fa with the enemy and won the victory, spilling their blood, where above all else, their moral strength was tested. This situation did not, in general, change, even during the second World War when armed action in the rear areas became quite widespread.

The moral spirit of the people always showed itself in their stability, in their will to victory, in the mood of the replacements entering the ranks of the battling troops; it made itself known in the production of guns, materiel, ammunition, and food for the front.

In the circumstance of a nuclear war the two sides of the moral-political factor - the moral spirit of the army and the moral spirit of the people - are even closer to ea other, their mutual penetration is even greater than before. The use of the new means for the struggle results in the fact that the rear area, throughout its depth, will tur out to be included in the war and the front will not be the only arena for the struggle Work in the rear areas will require tremendous courage, stability, and selflessness on the part of every worker at his post. The moral spirit of the populace will have to be limitlessly high in order to withstand the test, given the conditions which will pertai for mass destruction and sacrifices, without losing the self-control and the faith in the victory over the enemy, and, suffering the incredible hardships sometimes connected with the risk of losing their lives, continue to work in the mills, the plants, and in transportation, and to restore, in the quickest possible time, destroyed objectives without weakening the production of guns, munitions, and all the other things needed at the front.

It is quite evident that victory in a war such as this will very much depend upon which population will display the greater strength and courage, which population will resist the feeling of doom and of despair, which population will retain the strength of spirit and the will to struggle with the enemy, which population will be certain of the victory.

In preparing for the war against the USSR and against the other countries of socialist collaboration the imperialists are taking steps to strengthen their rear, the moral determination of the population in the event of nuclear missile strikes against their rear. The society, eroded by the sharpest of class contradictions, where a small group of monopolists rule millions of people, does not possess the necessary social and political prerequisites for high moral determination, however, when viewed objectively. Give the circumstance of nuclear war, there will be panic, despair, inevitably, and the explo ions of resentment on the part of broad masses of the people against the ruling bourgeis will, in the final analysis, hasten the liquidation of the capitalistic system.

Nuclear war is a double-edged and extreme means of struggle. It complicates the situation and, in our country, places the Soviet people in a difficult position. Despit all this, our people, united and monolithic from the socialist-political standpoint, led by the Leninist Communist Party, wholeheartedly support its policy and is devoted to it These people are quite well aware of the just nature of the war and will undoubtedly hav an immeasureably greater "reserve strength" of moral principles than will the population of the imperialistic countries. This will also reflect positively on the utilization of the economic capabilities of the country in the interests of carrying on the war and on the mutual moral-political effect and unity of rear and front in the struggle with the enemy before complete victory.

With the moral-political factor part and parcel of both sides, with all the complications imposed on the activities of toilers in the rear areas, the specific features of the moral spirit of the army under the conditions which will pertain in a modern war, cannot quite vanish, so long as the purpose of the war will be arrived at in violent battles in which the main effort will be directed towards deal the antagonist shattering blows, to destroy the enemy with all available means, wihout giving him any respite. V. I. Lenin wrote that in any war "victory is, in the final analysis, dependent upon the condition of the spirit of those masses which spill their blood on the field of battle." (Complete Collected Works, Vol. 41, p. 121). This is one of the fundamental

laws determining the progress and the issue of an armed struggle, one which has by no means lost its significance, even today. It will be the determination, the courage, the heroism, and the skill of those who man the missile installations, who fly the missile carrying aircraft, who command the atomic submarines, who gain success right on the field of battle, it will be on these people that the progress and issue of a modern war will, first of all, depend.

In modern war the fighting men will have to work with the most modern of equipments they will have often have to control these equipments with the aid of computers and of other complicated technical installations and in many cases they will not be able to see the results of their actions, for they will be a long way away from the boundaries of a front. Hence, the reason for profound comprehension of the problem of the relationship between man and equipment in war can be advanced with new force.

For quite a long time after the appearance of the nuclear weapon there were many military theoreticians in the West who averred that henceforth the role of man in war had changed sharply in favor of the new, mighty, weapon and that, therefore, concern for the moral strengths of an army could be relegated to the background. In 1961 one of the West German military theoreticians, Colonel Doctor Krumpelt (sic), in an article titled "Thoughts on Total Nuclear War," wrote: The forces which determined the issue of the classic war differ sharply from those which participate in thermonuclear war. In the former the talent of the military commander, the command capabilties of commanders subordinate to him, the battle qualities of the troops, particularly their enthusiasm, their courage, their valor, etc., all played a big part. These spiritual qualities play no part at all in war in which nuclear weapons are used. Here the basis is an inanimate material. War using nuclear weapons is not creative, but rather a profession." 1

There is no doubt that Doctor Krumpelt holds the sames views in similarly evaluating the role of man and of an army's moral strengths in a modern war. But there is every reason to say that their views do not determine the prevailing point of view in the West on this question. Although the military leaders and the ideologists in the imperialist countries speak unfavorably of the growing part played by man, of his moral spirit in war, from their class positions, they must never the less acknowledge this obvious circumstance.

The many works on modern war, and methods for conducting modern war, are devoting more and more attention to consideration of ways and means for bolstering the moral spirit during a nuclear war. "Computers," according to the American journal Military Review, "can control various processes according to previously established programs, but it is impossible to invent a device which it would be possible to install in the soul of a soldier on the field of battle. And it is excatly this man that the weapon makes clumsy, despite his many years of training and instruction." 2 The authors of the article thus tend to consider man as nothing more than a biological creature.

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1. Wehrwissenschaftliche Rundschau, August 1961.

2. Military Review, April, 1964.

There are evidences of statements by leading statesmen and military leaders of the USA concerning the increasing part played by man. The President of the USA, Johnson, in a speech to the to the Shore Defense Tank School (sic) on 9 June 1964, said, "Regardless of how impressive and intricate our weapons systems may be, they are no better than the people who serve them. The complexity of modern weapons requires highly qualified personnel to serve them. The complexity of the modern world requires personnel to have a broad mental outlook."

This step towards meeting the truth is mandatory. It would be every so much simpler and more comfortable for the military ideologists and the politicians in the West to deal with the workers. But reality is the stronger of their desires.

Soviet military science proceeds from the position that modern means of struggle not only increase the part played by man in war, but also strengthen his interconnection with materiel. Unfortunately, opinions concerning the role of man and materiel in modern war in our propagandistic work sometimes reduce to basing them on the answer to the question of which is the more important for attaining the victory - new equipment for the struggle, or man? It appears that a detailed organization of the question does little towards providing an answer to it. Willingly, or unwillingly, it suggests that the role of man and material be considered as in opposition to each other, rather than with respect to their interconnection.

V. I. Lenin, generalizing the laws concerning the progress and issue of modern wars, pointed out the tremendous, ever-growing part played by military materiel, and without which it would be impossible to fight, but, at the same time he emphasized the definite dependency of victory in war on the moral strengths of the army. He thus considered these two factors within the framework of an indissoluble dielectical unity. Materiel by itself, however mighty and modern it may be, without man is a dead weight; it cannot carry on military operations any more than it can triumph. On the other hand, when we talk of the decisive role of man in modern war we must keep in mind the fact that the man is equipped to perfection with the most modern materiel for wielding power.

There is a general law which conditions the dependency of man on the development of materiel - the more complex and powerful the materiel, the greater the requirements imposed upon the intellectual capabilities of the man. Technical progress creates conditions which free man of the burdensome and little productive tasks of physical labor, but at the same time this progress increases demands for a more complex, spiritual form of activity on his part, for wise and moral qualities.

This circumstance, determining the connection between man and materiel in the development of modern production, has the most direct relationship as well with the conditions for the Armed Forces, very likely with only the difference that the specifics of the problems of preparing for and conducting military operations must be taken into consideration, for these operations, in addition to the moral strengths of the troops, include the significance of the physical forces involved, the physical toughness of the trooops, which is of tremendous significance, since this physical toughness contains within itself that strength which lends itself to overcoming any of the grave tests of war.

Today wars for the Soviet Army and Navy are a business with a very complex materiel structure. The fundamentals of higher mathematics, of nuclear physics, of electronics, etc., are necessary in order to control missiles, atomic submarines, missile carrying aircraft, and other of the modern weapons.

All of this, in a very different way, raises questions concerned with training personnel to carry on modern war. The entire process of instruction and indoctrination has to develop the intellect of the soldier, to raise his conscientious attitude towards mastering materiel and to the effective utilization of the material in military operatio

But it must never be forgotten that the more complicated the materiel, the more the outcome of the battle, of the operation, will depend on the degree to which personnel have mastered the materiel. This can be conditioned, to a lesser degree, by three circumstances:

first, the newer the equipment, the more difficult it is to control in battle; exceptional precision in actions is required, a very much greater number of factors have to be taken into consideration in a more rigid time frame, imposing new, additional, requirements on command and military engineering cadres, and their mental, moral, and physical loads increase;

second, as the equipment and the ordnance become more complicated the consequences of technical unpreparedness on the part of the troops can be altogether different; it is one thing if a submachine gun in a wave of attacking soldiers does not fire, but it something altogether different when, because of unfamiliarity with the equipment on the part of some one serviceman in the crew servicing a launcher the missile was not launched accurately, and on time;

and, third, the increase in the dependence of the progress of combat actions on the technical training of each man is connected with the collective nature of modern ordnance; launching a military missile calls for coordinated actions, limited to seconds; a high degree of responsibility is required to carry out such complex tasks, and accuracy is required of each serviceman in carrying out his obligations.

What this means is that, given the conditions which exist today, questions of molding a high moral spirit in the troops are even more impossible to isolate from those concerned with military and technical training. Now the very real problem, more than ever before, has become one of indoctrinating the troops with a love for combat equipment, with a desire and the ability to exercise complete control over that equipment under the most adverse of battle conditions.

The rising requirement imposed on the moral spirit of the army is also the result of the basic changes in subjects which have come about under the effects of the scientific and technical revolution, as well as in the methods used to carry on military actions; they will be distinguished by exceptional violence, dynamism, maneuverability, and lack of continuous fronts. New, unprecedented in their complexity, battle problems will have to be solved right on the field of battle, as will the utilization of the result of nuclear strikes by the enemy, the negotiating of the zones of radioactive contamination in a locality, etc.

To carry out assignments such as these there must be a high degree of competency on the part of the men, great moral stamina, the ability to overcome any trials, creative accomplishment of duty assignments. This refers, in particular, to the command and political cadres, the leaders and the organizers of battle, of operations. From them, as never before, there is required a profound knowledge of military affairs, creative thinking, and inflexible force of will.

It is particularly important that officers and generals base their combat actions on solid knowledge of the objective laws of military science, that they have a clear understanding of the laws governing modern armed conflict. Our commanders must have those military, general scientific, and philosophical knowledges which will permit them, however complex the situation, to have a maximum grasp of the situation, and which will permit them to take in and anticipate the many sides of a complex combat situation and take the most correct decision in a short period of time. Computers, and other technical devices, are at the disposal of the commander and his staff, to help them. This all requires of the commander an unusually flexibility of mind, firmness of will, genuine creativeness in leadership in battle, and in operations.

Of course, the many factors of the influence nuclear missiles have on the troops must still be based only on the experience of individual studies. Therefore, at the forefront is the ability of the commander to penetrate into the heart of the most complex, unexpected, unforeseen phenomena, the capacity to find the correct decision leading to the destruction of the enemy with minimum losses of own forces.

Thus, the new military equipment and the new methods of conducting wars and military actions will follow a definite pattern in leading to an increase in the importance of the spiritual forces in all soldiers, and this, in combination with highly soldierly mastery, ensures the victory over the enemy.

One of the most important questions concerned with the increasing importance of the moral spirit of the troops in modern war is a new approach to, and new criteria for, the evaluation of the role and the status of troop discipline. Military discipline has always been one of the most obvious expressions of the moral spirit of troops, and is one of the most important conditions for achieving the victory. Today, given the new means for waging the struggle, the level of military discipline will have an incomparably greater bearing than ever before on the outcome of military actions. This can be explained by the fact that the very complicated equipment in, and of itself, demands particular precision and coordination in the actions taken by the troops, it demands their composure, and now, more than ever before, the time factor is altogether different.

The new approach to military discipline and the increase in the part it plays stems from the fact that, as never before, the responsibility of every man with respect to combat readiness, to the course and result of the battle, of the operation, has been enhanced, and is directly dependent on the degree to which he is disciplined and faultlessly carries out his military obligation.

As we know, as the war goes on what takes place is a check on, a testing of, not only the strengths of the moral and political principles of the nation and of the army, but of the psychological qualities of the people, particularly those who are fighting directly along the front. The Marxist-Leninist approach makes it mandatory, along with the ideological side which is closely linked to it, to give the greatest attention to the psychological side of the moral spirit of the fighting military masses. Social ideas, the socialist-political essence of particular events, are expressed, are interpreted in the individual consciousness of each man,

with all of his psychic properties taken into consideration. This is all the more so in the case of the development and consciousness of the troops of all of the war's complex and specific processes. "Danger is an element of war," said V. I. Lenin. "In war there is not a single minute when you are not surrounded by dangers." (Complete Collected Works, Vol. 44, p. 210)

With the appearance of nuclear missiles has come not only a sharp increase in the requirements imposed on the moral spirit of the troops, but imposed on them as well is an increase in the specific weight of the psychological training of soldiers and officers. Therefore, the question of the psychological training of personnel is posed with particular acuteness, and what is proposed is the implementation of a system of specific measures to be taken in the course of combat and political training, the indoctrination of the soldiers in such psychic, volitional qualities as are needed for successful actions in modern battle - initiative, perseverance, self-control, decisiveness.

What makes for complexity is the fact that the soldier cannot possibly be completely trained in peace time to the effects of the explosion and the effects of the casualty factors of the nuclear weapon. Hence, what is needed in particular is an updating of the simulated effects, more widespread utilization of visual aids in training, of films, television, etc., all of which can, to some degree, create the corresponding psychological situation.

While recognizing the increasing role of psychological training, it is impossible, however, to agree with the attempts to absolutize it sometimes observed, to consider it to be beyond the links with the moral and political side. Psychological training can be correctly understood only when it is closely linked with moral and political training, which is the basic development of high spiritual qualities in soldiers. The solution to the problem of strengthening the moral spirit of the troops must include all facets of that problem, and must have an active influence on all of its components. The moral and psychological qualities of Soviet man are based on communistic outlook, selfless devotion to the Socialist Motherland, and on the high sense of military duty.

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As has been noted, the capitalistic society, rent by antagnostic countradictions, has had its day and cannot, in the final analysis, create those firm bases needed for a high moral spirit in the nation and in the army. But this most certainly does not mean that with the outbreak of nuclear war there will occur an automatic breakdown in the moral and political principles, or the demoralization of their armies. This approach is pernicious, and can do serious damage to the work. Our Party is waging a decisive struggle against conceit, against a belief in an easy victory, is obliged to make a sober evaluation of the situation in any area. It is impossible to belittle the tremendous amount of work being done by the ruling circles in the West in connection with the ideological and psychological processing of the population, and of the personnel in their armed forces. When we say the capitalistic society is incapable of creating the solid foundations for the moral spirit of the nation and of the army, what we have in mind are the objective conditions and circumstances which make for unreliability and instability in their moral spirit.

The socialist system, its economic and political base, the most advanced ideology, that of Marxism-Leninism, all enter into the foundation for the high moral spirit of the Soviet people. During the years of the Civil War and of the Great Patriotic War our nation and army showed wonderfully genuine mass heroism, unprecedented selflessness and staunchness. Tremendous changes have taken place in the country of the Soviets since that time, changes which have even further expanded and deepened the sources of the high moral spirit of the army and of the nation as a whole. Our country has entered the period of developing communist construction. The Soviet state has been converted into a public state. Therefore, the bonds of friendship between the working class, the peasants, and the intelligentsia have become even closer, the peoples of the USSR are even more solidly behind the Leninist Communist Party, and our society has become monolithic. The Soviet Army, as the army of a public state, has even more firmly strengthened its ideological and political principles.

These, as well as other factors, have a positive effect on the moral spirit of the army, as well as on the entire nation, which is spontaneous, not haphazard. They create favorable possibilities for the maintenance of the moral forces of the belligerent masses at a high level, and should be manifested in the unparalleled staunchness, initiative, and courage of the people at the front, and in the rear, embodied in the high degree of readiness of our command, political, and engineering cadres, in the complete possession of equipment, of the flawless discipline of all Soviet soldiers.

The all-round activity of the Communist Party is in the forefront in the conversion of favorable possibilities into actuality. The correct policy of the Party, reflecting the interests of the nation, its wise leadership, is the most important condition for the formation of a high moral spirit in the nation and in the army, and its unmatched superiority over the moral forces of the peoples and armies of the imperialistic countries.

The Communist Party has proven in deed its capacity to fulfil this role in the most rigorous battles with the imperialist aggressors. With the main reasons for our victory in the years of the Civil War in mind, V. I. Lenin emphasized the fact that we won because "the Party was on watch, because the Party was strictly disciplined, and because the Party authority was a combination of all the departments and institutions, and, according to the slogan given by the Central Committee, was tens, hundreds, thousands, and, finally, millions, moving like one man...only in this way had the miracle come about, only in this way could it have come about." (Complete Collected Works, Vol. 40, p. 240).

Today our Party has become the party of all the Soviet people, its authority and influence among the masses has grown beyond measure, and this has even further increased the role it plays in molding the high moral spirit of the army and of the nation.

Guided by the Marxist-Leninist position concerning the tremendous, every increasing influence of the moral factor in the protection of the socialist Motherland, the Communist Party is indoctrinating the Soviet people in the spirit of a high awareness of the flaming Soviet patriotism, is developing their moral and political qualities in all ways possible, is carrying on a vast, and varied, work in military and patriotic indoctrination of the population, is increasing the readiness of our people to selflessly protect the Motherland and its state interests.

A powerful weapon for improving the moral spirit of the army is well set up party and political work. It is generally known that a high moral spirit in the army can be created in all systems of party and political work in peace time, in addition to just wartime, and only for the period of the war. This is all the more pertinent in modern war, in the course of which it is impossible to count on the possibility of a long-term buildup of army and naval forces, on the modernization of personnel training, as has been the case in past wars. The center of the effort to train troops has shifted sharply in peace time. It is under peacetime conditions that the firm basis for the victory is put down, and this is wholly related to such areas of troop training as ideological and political indoctrination and military indoctrination of personnel.

What has been said does not in any way imply that the problem of indoctrinatio and party and political work as the war itself is going on is itself lessened or is in any way degraded. The more complex, the more strained, the situtation, the more active, the more decisive should be the expansion in military operations.

In evaluating the importance of the work involved in molding a high moral spirit in the troops, as conducted in peace time, it is impossible to overlook that circumstance which now, and in a very much different way, must be faced by the question of combat readiness of the armed forces. The possibility of a surprise nuclear attack on our country, and on the other socialist states, by the imperialists comples our Armed Forces to be in a constant state of high combat readiness. This readiness, so far as the strategic missile forces, the PVO forces, the atomic-powered submarines, missile-carrying aviation, are concerned must be measured in minutes, and even in seconds, rather than in days and hours.

All ideological and political and psychological training is designed to create that spiritual state in our forces which will cause them, first, to do their duty with an understanding of its high importance and responsibility, overcoming in the process any previously non-existent difficulties, and, second, in accordance with the degree of vigilance, of the strain of will and strength, have the skills needed in the combat situation.

Not can it be overlooked that the situation is such that when training men to fight a modern war there is the known requirement that troops be taught what they must know about war, and this requirement is no different that it has been in the past. War requires of man an ever so much greater concentration of spiritual and physical forces. Man must learn to master complex equipment in sharply curtailed time limits. There are almost four times as many instruments in the cockpit of the modern fighter plane than there were in the fighter used in the Great Patriotic War, and the speed ofthe modern plane has increased several times as well. Training pilots in aircraft such as these requires of them great moral composure, fortitude, and unusual accuracy in their actions, all of which imposes a great burden on their psychics. Or take the training of submariners, particularly those for service in atomic-powered submarines. Little need be said on how they must have the most modern equipment, for today independent cruises, lasting for many days, and covering long distances, are made by the submarines. Such operations are possible only when

personnel have high degrees of moral and political and psychological training. Much has changed as well in the "oldest" branch of the armed forces, the land troops, not to mention the widespread use of nuclear weapons. Nothing is more indicative of this than the sharp increase in the tempos of advance, or the appearance of completely new trends in troop training, such as underwater driving of tanks, etc.

What follows from all of this is that political-indoctrination, Party-political work is called upon not simple to raise the moral spirit of the troops, to influence their psychics, but rather to indoctrinate and direct their spiritual forces in the accomplishment of missions in training for skilful and selfless combat. The main thing is that our troops always see prospects of success, believe in the strength of their weapons, in the possiblity of successful operation of modern means of anti-atomic protection, and be ready to gain the victory over the enemy, regardless of the cost. The process of military training and indoctrination must be directed toward molding in the troops loyalty to the principles of the moral code of the builder of Communism, of the military oath, of fortitude, courage, heroism, and the ability to make self-sacrifices in the name of the socialist Motherland.

Propaganda dealing with the military traditions of mass heroism exhibited by Communists, by all the Soviet people, in the struggle with the enemies of the Motherland, is of great importance in indoctrinating the troops with high moral-political and military qualities. The living example of selfless fulfillment of military duty has tremendous inspirational and mobilization importance.

Basically, all the work of molding into the Soviet people a strong moral spirit in combination with able mastery of equipment involves indoctrinating them in the spirit of the high idea content, the devotion to the ideals, of Communism, of the socialist Motherland. At the heart of this work is the molding into the Soviet people, into all of all troops, the scientific outlook, the mastery of the theory of Marxism-Leninism. This will increase their political consciousness, help them make the correct approach to the analysis and evaluation of the events of the war, to see clearly the path leading to the victory, and to strengthen their faith in the strength of the Communist cause, in our victory in war.

The complete explanation of the might and the invincibility of the Soviet system, the superiority of the socialist system over the capitalist system, the indoctrination in the spirit of the proletarian internationalism, the military collaboration with the armies of the brotherly socialist countries, all these are of tremendous importance in increasing the political consciousness of each soldier. Important too is the complete disclosure of the struggle of the KPSS, of the other, brotherly, parties, for further strengthening of the system of socialism against the revisionary right and left.

All this work is called for in order to strengthen in our people and in our troops their faith in the triumph of the cause of Communism, in our victory in the war should it be unleashed by the imperialists.

Our Party places great importance on the unmasking of the bourgeois ideology, on indoctrinating our troops with a burning hatred of imperialist aggression.

The imperialists will not relax their efforts to strengthen their influence over the spiritual peace of our people, to undermine their ideological and moral principles. They are drafting a far reaching plan to spread their pernicious ideology among the men in the army and in the fleet. And their purpose is clear; to envenom the consciousness of our troops with the poison of anti-Communism, to weaken their will, their resolution and steadfastness in carrying out their military duty to the Motherland. The interests of the cause demand that the struggle with the bourgeois ideology be carried on without a letup, actively and effectively.

The systematic, and conclusive, unmasking of the aggressive policy of the imperialists, particularly that of the United States of America, their perfidious plans in their relations with the Soviet Union and with the other countries of socialist collaboration, must be considered to be closely connected with the solution to this problem. Work of this type will help the men to have a profound understanding of the need and the importance of their strength in protecting the Motherland. This is one of the stimulating ideological motives in maintaining them in a high degree of watchfulness, in a constant state of battle readiness.

The solution to this complex problem of inculcating a high moral spirit in th men is possible only in the course of systematic, singleminded, all-encompassing, effective work on the part of commanders, political organs, Party and Komsomol organizations in ideological and military indoctrination of the personnel in our Armed Forces.

Commanders, superiors, have an unusually large part to play in the work of molding the high moral spirit of the army. Since they are responsible for the overall life of the chast', the soyedineniye, they take their place with the political organs and the Party organizations in the constant concern for the high political and moral state of the personnel, in training them for selfless and skilful action in modern war. It goes without saying that the success of this work will be very much dependent on the personal example of the commander, on his moral and volitional qualities, on his ideological and theoretical training, and o his ability to mobilize all his spiritual strengths and those of the men subordina to him in the name of protecting the Motherland and its state interests.

The Fundamentals of Planning Combat Operations

by Colonel N. Mal'ginov

Issue No. 3 of this journal this year published an article on this subject by Colonel I. Pombrik. The article is needed, no doubt, but it contains what are, in our view, a number of debatable, and even simply contradictory, and unfounded, positions which have impelled us to express some thoughts on this question.

Let us begin with the concept of "planning." By the planning of combat operations Comrade Pombrik recommends we accept the creative and organizational activity of command and staffs, aimed at the agreed use of men and equipment taking part in the battle and in the operation, on the development of the very best way in which to carry out assigned tasks when given all the support necessary. We believe that this definition does not cover completely the contents of planning, and can be acknowledged as correct only in so far as it pertains to that section which discusses the development of the ways in which to carry out the mission assigned. In the remainder of the statement the author's further approach to the concept of the organization and the preparation for combat operations fails, at the same time, to express the specifics of planning as a completely defined part of the process involved in directing troops, and this, in turn is one of the component parts of the organization and preparation of combat operations as a whole. The fact of the matter is that the organization of combat operations is none other than the creative and organizational activity of command and staffs, and not just of some one functionary or organ. This is an activity for a collective of generals and officers taking part in leading troops, directed towards agreement in the use of men and equipment, and taking part in the battle and the operation.

To say, as the author did, that this is planning is to identify it with the organization of the battle and the operation, and this, of course, is not true. It seems to us that the planning of combat operations accomplished by command and staffs only includes a particular stage of the entire organization of combat operations and involves the development of a system of measures which envisage the order, the sequence, the methods, and the times for carrying out combat tasks in a battle and operation. Herein is included the specifics of planning, and it is a definite control process, to wit, a developmental process, and not the realization of a system of conformable measures. In other words, this is the study and the analysis of the combat situation, the thinking through of the situation, and the selection of the corresponding ways, and methods, whereby the purpose of the battle and the operation can be achieved, all on the basis of an overall evaluation of the situation. This process matures in the minds of the commanders and the staff officers, and is developed by the collective intelligence into the corresponding plan of action (and not as a document, of course).

With this as a point of departure we can contend that the planning will begi with the receipt of the combat assignment and will include an analysis and an est. imate of the situation, the development of an idea for the action, the detailed development of the order in which the idea accepted is carried out, and, finally, formulation of the plan of action which has been arrived at, in the form of graphi written, and other documents.

Hence, it is understood that such actions on the part of command and staffs as the taking of the task to the executor, the monitoring of readiness of the troops for action, and providing them with practical assistance, checking on the progress, and the correctness, of the planning in the subordinate echelons of command would be incorrectly included in the planning framework, as was done by the author (p. 22). This activity on the part of command and staffs is is entirely different in nature, and although this activity also relates to the organization of combat operations, it is directed not at planning them, but on taking to the troops the substance of that system of measures concerned with carrying out th combat tasks which was developed during the planning and on preparing the troops to accomplish these measures.

So far as the opinion of the article's author with respect to the place of the solution in the planning of the operation and the battle (pp. 21-22) is concerned, it would appear that the planning can even begin before the solution is arrived at and can be continued while this solution is in the process of being arrived at, despite the fact that none of this contains the process for arriving at the solution. The author equates only those calculations needed to arrive at the solution to planning. Yet, the author states that planning also includes a determination of nuclear missile tasks, the most desirable troop groupings, and their tasks, the relationships between men and equipment, the measures for organizing interaction, overall support for combat operations, and troop control. The fact is that all of this too makes up the content of the solution to the battle and the operation.

Further, and without equating the adoption of the solution to the planning process, the author still includes formulation of the soltuion in the planning. Moreover, he asserts (p. 27) that the basic questions of planning are reflected in the operation's plan, which, in form, is a chart of the solution arrived at by the operation commander, together with its legend. Here there is a clear contradiction. On the one hand the author does not include the solution arrived at in the planning process, and on the other the process of arriving at the solution is, in his view, a component, and basic, part of planning.

We feel that since by planning there is understood to mean the development by command and staffs of methods for the troops to use in carrying out assigned tasks, reaching a decision on the part of command (the commander) is quite equally one of the component parts of planning, and that, actually, it is its basic component. Actually, the solution is, in essence, the plan of combat operations in the most general form, without details, worked out by the commander and his staff. It is exactly the solution which, as further work is done, serves as the basis for planning combat operations and for the development, in more detail, of comprehensive plan which will include [illegible] battle and the operation.

If making the decision is excluded from planning, then it, as the most important process in the organization of combat operations, will deprive the plan of its basis only secondary questions will remain. This, in turn, will result in cutting command out of the planning process, the command, the basic role of which in the planning involves defining the conception of the action and making the decision concerned with the battle and the operation spoken of in the article (p. 23) as well.

So, it is our view that planning should be understood to mean, in the broad sense, the process in which both command and staff participate. Consequently, planning, in addition to the other measures involved, includes arriving at a decision as well.

It is not entirely correct, in our view, to equate to the principles of planning the principles of concentrating forces to carry out the main task in an operation, if it does not reflect the specifics of the planning. It equates to the general position of military science, from which there follow, and upon which are based, the decisions made by command and staff, not only in planning, but, in general, in the organization and the conduct of combat operations, as well. Inherent in it, as a unique process, in the course of which command and staff develop a definite plan of combat operations, are its specific principles and requirements. Included in it, for example, is the fact that the plan of combat operations, as a system of measures, must be purposeful and in agreement in all its parts, concrete, optimum, accurate, flexible. Moreover, it must be developed in timely fashion and in accordance with the particular situation. Such is the nature of the requirement that underlies planning principles.

One may ask why we did not include the concept of "accuracy" in the "optimum" concept. The fact of the matter is that optimality and accuracy (in this particular case with respect to the plan for the battle and the operation) are, while close, different concepts.

Optimality is the most favorable, advisable, plan, but he can also be not entirely accurate in its individual parameters. Optimization is the selection of a number of variants and then the selection from among those variants of the one best suited to the concrete conditions.

Optimization is finding ever increasing use in the practical activities of command and staffs, particularly in planning combat operations under conditions involving the use of nuclear weapons by the antagonists. It has, therefore, become a constant principle, characteristic of planning. This principle requires of command and staffs the selection of that variant of a plan of action which will ensure the greatest effect in achieving the goal of the operation (battle) in the shortest period of time. We therefore also feel that optimality should be set aside as an independent planning principle.

Accuracy is a concept expressing the degree of completeness by which a particular act, calculation, or action, corresponds with some standard. The category of accuracy in planning combat operations is also finding widespread application, particularly in varied and numerous calculations, and it would also be proper to talk about this in the article. Consequently, it is also advisable to relegate accuracy to the category of an independent planning principle.

We felt that it was improper for the author to combine the principle of the long-term aspect of planning with the principle of concreteness, since, in general, and unfortunately, nothing was said about the content of concreteness in planning in the article.

Concreteness of planning refers first of all to the clear-cut definition of combat tasks assigned the troops by target, place, and time of accomplishment, to the selection of methods for the action in accordance with the concrete situation. Clearly, this principle can in no way be connected with the principle of the long-term aspect, since this latter assumes the need to anticipate possible changes in the situation and in the combat tasks assigned the troops. It is therefore advisable to consider the principle of the long-term aspect apart from the principle of concreteness in planning.

Airborne Landings and the Struggle Against Them in Modern War

by

Major General G. Kublanov

The outfitting of the armed forces of the leading countries in the world with nuclear weapons and the development of aviation, including large cargo types and helicopters, has provided a basis for the theoretical military thought that leads to the conclusion that airborne invasions will find unusually broad application in a nuclear war. These invasions can take place at podrazdeleniye, chast', and soyedeniye strength, close up and deep in the rear, on the flanks, in the intervening areas, and ahead of the front of troops in action, at any time, and in any direction. The invasions can be strategic, operational, tactical, and special, depending upon the purpose for which used, and the nature of the missions which must be carrried out. Strategic invasions, with landings deep in the rear, can be designed to develop the success of a strategic offensive in a theatre of military operations, to seize and hold large beachheads along sea and ocean coasts, and to hold important military, administrative and political, and economic regions. Operational invasions will find application mainly in the interests of operating forces in land theatres. By using the results of nuclear strikes they can seize, and together with advance chast's of the offensive forces, hold sections, regions, and objects with operational and tactical advantages until the approach of their main forces; seize and destroy storage areas and bases for nuclear weapons; and disrupt the direction of troops and the work of the enemy's rear. Tactical airborne invasions will be used mostly in the interests of the operations of individual ob"yedineniye. The large operational and strategic invasions, set down in order to cooperate with attacking operational ob"yedeniye to destroy nuclear missiles, important groupings of land forces, and enemy aviation, will be given a special role.

Conclusions such as these flow in an orderly fasion, first of all from the need to use the results of nuclear strikes as quickly as possible in order to complete the enemy's destruction in some particular one of the regions, and to cooperate with the troops in achieving the high offensive tempos needed and to seize the most important of the objectives. Airborne invasions have the qualities which best correspond to this purpose; they are exceptionally mobile, are capable of surprise landings in the immediate vicinity of an operation's objective, and they can be concentrated in planned areas quickly. Moreover, it is considered that nuclear strikes create exceptionally favorable conditions for landings and the subsequent operations of the landing forces in the enemy's rear. Finally, attention must be directed to the fact that the use of mass airborne invasions, which are broad in scope, can be brought about by the high degree of tactical and technical qualities of modern military transport aviation and navigational equipment.

It is considered, on the basis of these views, that the struggle with the invasions will occupy a special place in operations. It is supposed, in particular, that, as a rule, the use of nuclear weapons, as well as the assignment of chast's, and even soyedeniye of troops in action, with tanks in particular assigned, will be required in order to destroy operational landings. The struggle will evolve in the form of decisive offensive battles.

However, all these views are, for the most part, based first on equipping the army with nuclear weapons, and at a time when it is hard to visualize to the full all the subsequent changes which can take place in the development of the armed forces. And these changes can be so drastic that a review of many of the previously developed positions, including those involving the use of invasions, is in order.

What is being talked about here is the fact that in recent years great numbers of nuclear weapons, as well as the most modern means of antiair defense have been delivered to the armed forces. The result is that the possibilities of counter-operation against the air landing of troops have increased sharply. Nuclear weapons, if available in sufficient numbers, make it possible to disrupt the landing of a force of whatever size, and in any region, at least in principle. In other words, we can, at this time, talk of mass air landings of troops in that case when, for the most part, nuclear means powerful enough to disrupt the landing of troops are destroyed, or have been weakened to their limit, obviously.

Nor can the following circumstance fail to be considered in the organization of air landings of troops. The danger of being destroyed by nuclear weapons make it necessary to disperse the troops to be landed, and the military transport aviation, over a great many aerrodromes (fields), both for purposes of embarking, as well as the to have the capability of disembarking. According to the calculations of American specialists, airdropping an attack echelon of an airborne division would require a region with an area of as much as 40,000 square kilometers (approximately 160 by 240 kilometers), in which from 10 to 15 air landing zones can be designated. And this, naturally, very much complicates organization of control over the troops being dropped, while, at the same time, making for conditions for crushing them by chast's.

An important prerequisite for the successful air landing of troops is, as we know, the selection of those regions for the landing, at the edges of which, or close to them, there are no enemy land chast's. However, areas such as these are not always possible to select, for it is not enough to find just aerodromes, or areas, which are "free" of troops, but it is necessary that they be found in regions which best respond to the solution of the missions assigned the landing force. The enemy in areas selected for drops can be destroyed by nuclear weapons, of course. But to do so, his position must be established accurately. This is not so easy to do, considering the great expanse of the regions covered by the air landings and their location in the operational depth, where it will be difficult to penetrate with reconnaissance aviation.

If we now consider the modern means available for antiair defense in the struggle with military transport aviation in flight, the situation involving its use for landings is even more complicated. Since the forces and the territory of the country have been saturated with huge numbers of the latest PVO equipments, airlandings become possible only in those cases when the PVO ground installations in the zones overflown by transport aviation with the landing force are reliably neutralized and when, in so far as possible, the enemy's fighter aviation is kept from entering the zone overflown by the landing force. True, it is sometimes said that landings can be made in the gaps between troop groupings. But this is not all there is to that, obviously. For it is a well-known fact that PVO systems are available in other than with the troops and act in other ways that to cover those troops. Nor are similar gaps in the operational formation of the troops so large that the use in such places of aviation from other directions is precluded. It is, therefore, no accident that the foreign press contains the view that when group landings are used at a considerable depth, air supremacy must be won, and maintained, for the entire landing operation period. Reliable neutralization of PVO forces of the enemy and winning air supremacy have become indispensible conditions for how NATO troops are taught.

It is obviously impossible to discard from the calculation the condition that a great many transport aircraft are required for landing the troops. One example is that of the "Big Lift" Operation, in which the 2nd Armored Division was shifted from the USA to Europe, and in which over 200 transport aircraft were required (even though only with light infantry arms). It must be assumed that it will not be easy to assembly the number of transport aircraft needed for landing troops after the sides have exchanged nuclear strikes.

In the light of the foregoing, it seems to us that the use of large-scale strategic landings in a nuclear war will be possible, for the most part, in those cases when, as a result of the nuclear strikes by strategic and operational-tactical weapons, there will be created a zone of destruction and contamination with a vast front and great depth, and when it will be necessary to move the necessary numbers of troops through this zone in order to complete the operations in the theatre.

Operational landings will find use, in the main, when other methods, forces, and means cannot possible carry out some particular assignment, when the destruction, or the obliteration, of targets by nuclear weapons is undesirable. The Americans hold the view that airlandings such as these can take place when the enemy does not have a sufficient number of nuclear weapons, or when his use of them is considered very probable. In offensive operations the missions of operational landings can be the seizure of bridgeheads (beachheads) along large water frontiers, bridges, river crossings and hydroelectric installations, mountain passes and passages, railroad units, and large control points as well. The assistance of landings to the troops will thus involve not only strikes from the rear, or at the enemy's flanks to rout some particularly enemy grouping, as has been the case in the past, but also in seizing operational objectives, thus making it possible for the offensive soyedineniye and obʺyedineniye to speedily overcome various obstacles which are hard to get at. The strength of these landings will be less than had been assumed earlier. They will have armaments and equipment different from those required in the struggle with operational groupings, and the tactics

But if the use of operational landings in the conditions discussed will not be as broad as has been described, the situation so far as small, tactical landings, is concerned is something else again. These landings, made with helicopters, and having limited purposes, such as the seizure of nuclear installations, crossings, bridges, railroad units, control points, are in a different category. The possibilities for landings such as these will become considerably greater, as the following circumstances will help to explain. The depth involved in the landing is not great, and, accordingly, flight times are short, and if preparations for the landing are made with sufficient secrecy the enemy will have no success in taking timely steps to counteract the airlanding. Small podrazdeleniye can land right on their objectives, something which limits the capability of nuclear strikes against landing troops. The necessary land forces can be drawn upon to ensure the landing and its subsequent operation.

So the field of activity for tactical landings has expanded immeasurably. They have become a most important means for attaining high tempos of attack by ground forces.

To conclude this particular question, something must still be said about conditions when nuclear weapons will not be used, when the possibilities of using air landings are even more limited than in operations with nuclear weapons. Without nuclear weapons the neutralization of the PVO in the interests of landing the troops concerned would require the calling in of so much air power that any large-scale airlanding would require consideration of whether or not the target justified the manpower and the equipment which would be expended. It must be noted that these circumstances do not, of course, equate to local wars, in which the use of landings can have a completely different aspect and will depend upon the concrete conditions under which such wars are conducted.

* * *

With the changes in opinions as to the scope and methods of landing troops has come a change in the view as to how the struggle with landings should be organized. We will attempt to consider this question in more detail. Since the struggle with strategic landings would appear to be the subject of a separate article, we will not discuss it in any detail.

The most characteristic feature of the struggle with airlandings is that all types of armed forces take part. This struggle will begin at the moment the readiness of the troops to participate in the landing operation is established, and it will continue until they are completely destroyed upon landing. Destruction of the landing troops and of the military transport aviation in the attack positions for the landing occupies a special place in this struggle, and the struggle will be by nuclear weapons as the main means of such struggle.

Missile troops and aviation can inflict the nuclear strikes, depending on the purpose and composition of the landings, as well as the remoteness of the attack positions. The strategic nuclear weapon can be used against the largest landings in remote attack positions. And ground level bursts will, as a rule, be used in order to simultaneously annihilate the troops and the military transport aviation used, and interdict use of the airfields for landings for a long period of time.

Attack positions for landings within the radius of tactical aviation's range of fire will, for the most part, be the targets of its operations. This can be explained by the fact that the great dispersal of the troops and the aircraft used in making the landing, as well as the secrecy of preparations for it, make timely detection and striking by missile troops extremely difficult. Aviation alone has the capability of independently establishing, or pinpointing, the location of landing troops and transport aviation and hitting them at a time most suited for achieving maximum damage. However, considering the fact that landings in attack regions will, as a rule, be given strong cover by PVO means, the initial strike at the landings, and at the PVO means itself at the same time, can be carried out by the missile troops.

Strikes by missile troops and bombardment aviation against fields which are fighter bases located along the probable lines of flight of the transport aviation carrying the landing and the forces taking part in covering the landing will, obviously, be stepped up with the lift by military transport aviation. The in-flight battle with the landings will be continued by fighter aviation, then by AA missile troops, and AA guns. Nor is the possibility that transport aviation will be destroyed in the air by the nuclear charges of missiles of the "air-air" and "ground-air" classes excluded. Moreover, interference with the means used to exercise control over aviation will be an effective means of counter-acting such aviation all along the flight path of transport aviation and the fighter cover. Thus, there will be an uninterrupted buildup in the struggle with the landing as the transport aviation carrying the landing force approaches the landing area. The battle will be particularly acute during the period when the troops are disembarking. The scope, the intensity, and, in the final summary, the outcome of this battle will be determined by the composition of the landing force, the number and strength of the nuclear strikes preceding the landing, the dimensions and the remoteness of the landing areas, by the timely readiness of the corresponding manpower and equipment, and the possibilities of maneuvering them.

Most complicated will be the battle with landings taking place deep in the rear of operating troops, for the use of nuclear weapons against the airlanding areas would hardly be possible because of the undesirability of destroying particular objects which could be in the area of nuclear strikes, as well as the attendent difficulty in calling upon the forces needed for this purpose. For these same reasons it must be assumed that it will not always be desirable to use bombardment aviation carrying bombs with conventional heads either.

Given these conditions, the PVO forces covering targets in a particular area, as well as independently formed, close protection chast' and podrazdeleniye, can, for the most part, be used to fight the landings. And their main forces will be concentrated so as to inflict maximum losses on the first echelon of the troops making the landing, as well as in isolating the area in which this landing takes place from successive echelons. The chast' and podrazdeleniye of the ground forces will attempt to destroy the troops which have landed in the first echelon prior to

the arrival and the landing of succeeding echelons. In order to provide the best possible organization for the struggle with the landings by the chast' and podrazdeleniye indicated, we can, just as was done in World War II, determine zones (regions) in advance and, within them, regions (sectors) of responsibility in which constant air observations are organized, establish the necessary communications between them, and prepare movement routes. Engineering obstacles can be installed in those locations most convenient for landing aircraft, or dropping parachutists, as well as along the probable routes which will be used by the landing forces.

If the timely destruction of the landing's first echelon was not successful, and if succeeding echelons have made their landings, the troops, before reinforcements have arrived, will, naturally, attempt to bar landing ob"yedeniye, chast', and podrazdeleniye in the various regions from their objectives, as well as to prevent their movement towards planned objectives. Reinforcements can consist of chast' of reserve soyedineniye, or of specially created otryad for use in the struggle. These chast' can be thrown into the region in which the landing has taken place, either by vehicular transportation, or by air, depending on which of the foregoing is used, as well as on the location of the region in which the landing has occurred. The American Army believes that helicopters are best suited for this purpose.

The struggle with landings in regions within a combat zone, or in the near rear of fighting forces, is another matter. The most distinctive of its features will be the widespread participation in this struggle of missile troops, aviation, PVO forces, and ground forces, and, primarily, the possibility that nuclear strikes will be directed against the landing.

In this case operational and tactical nuclear weapons can be used by missile troops, as well as by bombardment and fighter-bomber aviation. And, because of the comparatively small areas in which the individual landings will take place, the nuclear charges will, as a rule, be of low power. In so far as the type of bursts used is concerned, the most effective in such cases will be air bursts, since they will cause the destruction of manpower and transport aviation over a large area to a greater extent than will ground-level bursts. Moreover, air bursts will not result in dangerous radioactive contamination of the locality and, consequently, will not hinder operations of chast' and soyedineniye of the ground forces mopping up the landings. The time to launch the nuclear strikes will depend on the method used to effect the landing - by parachute, or by the aircraft touching down, as well as on how the landing is echeloned. If the landing is by parachute drop the strike can be launched as soon as the drop is begun, and prior to its completion at any moment, since the results are approximately identical in all these cases. If, however, the landing is effected by having the aircraft touchdown, the strike can be launched when the main body of the transport aircraft and helicopters have completed the landing. In this case the maximum number of aircraft, which are unloading equipment and personnel, can be destroyed. Delay in the strikes will result in the possibility of the aircraft taking off and of removal of equipment and personnel from the danger zone. A strike launched ahead of time will not achieve its purpose, because transport aviation will leave the area and complete its landing at some other airfield.

Aviation will play a particular role in the struggle with landings. The most favorable time for fighters and fighter-bombers to destroy transport aircraft is when the latter are making their approach for the landing. The reason for this is that the maneuver is a complex one at that particular moment, and, in addition, the possibilities of fighters providing cover are limited. When the transport aircraft have landed bombardment aviation can, if it has not been launched for nuclear strikes, use high-explosive fragmentation bombs, while fighter-bombers, in addition to these, can use rockets and cannon fire. Aviation supports the ground forces from the beginning of their action to destroy the landing.

A very important weapon in the struggle with landings in the period when parachutists are coming down and when aircraft are landing can be armed helicopters, since they are capable of inflicting heavy losses on transport aviation and on the troops making the landing.

Naturally, heavy participation of ground force soyedineniya will be called for to rout the landing of the airborne forces as well. If the enemy's preparations for making the operational landings have been successfully established in advance, some of the soyedineniye can be assigned the mission of coping with them in good time. Most of the time podrazdeleniye and chast' of reserve soyedineniye will be used for this purpose, but sometimes airborne forces will be used as well.

Rear chast', stationed in the particular region, will usually be called upon for the direct defense of objectives in the rear areas. But this does not preclude assigning combat chast' and podrazdeleniye to reinforce the defenses of the most important objectives, particularly if the enemy's intentions of effecting an airborne landing in a particular region have been kept secure.

The combat actions of the ground forces undertaken to destroy the landings will be distinguished by great swiftness, aimed at maximum utilization of the initial disorganization of the landing after it has been set down, at the denial of the possibility of the landing forming up and engaging in the planned action, at destroying it in pieces. If men and equipment for this purpose are not sufficient, the ground force podrazdeleniye and chast' can use the strength they have to contain the landing and create conditions for its subsequent destruction. Axiomatic too is the effort to prevent units of the airborne landing from joining up with troops advancing from the front, as well as to interdict landings by following echelons. The first forces used for this purpose can be the reserves under the direct command of the particular commander.

Since it can be taken that the landing will be made over a large area, it can be assumed that the use of entire soyedineniye, or chast', engaged in widespread offensive operations against the landings will not be typical. Were this so a lot of time would have to be spent on organizing the struggle and the landing would then be successful in setting about carrying out the main part of its mission, or it might even have the time to carry it out completely. For it is too much to expect that landings will, in all cases, assemble to full strength first, and only then go into battle. Once the landing is made some of the forces can begin to carry out the main missions, without waiting for the entire landing force to assemble.

And only independent podrazdeleniye which are in a high state of readiness, and which can maneuver quickly, can counterattack in time. There are times when the timely use of small podrazdeleniye, even if lightly armed, will yield considerably better results than will the belated actions of forces many times in excess of the initial ones used. Accordingly, actions by independent podrazdeleniye, formed up into a unified command and directed at destroying airborne landings piecemeal, will be most characteristic of the struggle with such landings.

It will not be mandatory to devote the primary attention to concentrating on routing the largest of the units in the landing force, although this will depend on the purpose of the airborne landing. The main objectives of the struggle will, obviously, be the podrazdeleniye in the landing which are closest to the target they have been used against. This section of the landing can be destroyed not only in the drop area (landing area), but along the movement routes (if the podrazdeleniye assigned to the battle were not successful in arriving in the landing area in time). It is possible that this latter will be the reason for sending independent podrazdeleniye, or chast', as immediate reinforcements in the defense of the objectives which were the reasons for the landing. Given these conditions, we cannot exclude the probability that routing of the rest of the landing (even a large part of it) will become the next assignment of the troops carrying on the struggle with the landing.

We cannot overlook the fact that the airborne landing is usually preceded by the dropping of an echelon of paratroopers assigned the mission of providing for accurate arrival of the rest of the landing force in the assigned region. Destruction of these podrazdeleniye will be the primary mission of all troops, of all podrazdeleniye guarding objectives, of the local population. These podrazdeleniye will be destroyed, or captured, immediately upon the initiative of those commanders who have successfully established their point of arrival. And sometimes podrazdeleniye which are first to receive orders to destroy the parachute landing will not have reinforcements (artillery, tanks), but will be ordered to do so because they are in the particular region. Upon successful destruction of the first echelons of the landing by the podrazdeleniye indicated it is only natural that there will be no further landings on that particular field (in that particular area) so reinforcements will not be required. At the same time, reinforcements can be very much needed elsewhere, where the enemy has made an airborne landing without having first dropped a paratrooper echelon. Hence, it is incorrect to assume that the main forces used in the struggle with the landings will, in all cases, be directed immediately to those regions in which the commencement of the landing operation has been established. The struggle with landings can thus be carried out in two stages, as it were: forward podrazdeleniye go into action in the first stage; the main forces in the second. As we have already said, there may not be a second stage. However, if there is one it is extremely difficult to organize and carry out and it requires overall preparation.

The possibility of the sides using nuclear weapons in selecting methods of destroying a landing cannot be discounted.

As the experience of World War II shows, the greatest success in the struggle with airborne assaults was achieved when the overall direction of that struggle was in the hands of that commander who had the corresponding means for destroying the landing over a considerable depth and in the air, right from the moment landings were detected in regions of concentration, and until destruction was completed after the drops, while commanders of ob"yedineniye and soyedineniye responded to the struggle with the landings in sectors (zones, regions) of combat actions assigned by the overall commander. Leadership of combat actions of chast' and podrazdeleniye assigned to destroy airborne landings was vested in the senior commander of the troops assigned, or in a special organ, created for the protection and defense of the rear. In all cases, control of men and equipment destined for use in destroying airborne landings was concentrated in one pair of hands. And the commander's (chief's) place for leading the struggle with the landings was where he could most reliably direct the battle.

In conclusion, we would like to say a few words concerning the possibility of organizing observation and warning of airborne landings. It is our conception that this problem can be resolved by using all the PVO electronic posts, as well as a network of observation posts manned by troops, rear installations, and objectives. Moreover, a 24-hour watch can be organized at the air posts of soyedineniye and chast' (otryad) of the Civil Defense acting in conjunction with the PVO electronic posts in regions of probable landings.

The Victory of the Soviet Armed Forces in the Far East

(Twenty Years After the End of World War II)

by Marshal of the Soviet Union M. Zakharov

The operations in the Far East, conducted during the final stage of World War II, properly occupy a merited place in the history of Soviet military science and are deserving of the most serious attention. These operations graphically reveal the superiority of Soviet strategic thought, flexibility, dynamism of military leadership, troop mobility, and the matchless moral and military qualities of those troops. The Far Eastern campaign of the Soviet Armed Forces was an outstanding example of the solution to great strategic problems in the shortest period of time, and this is based on a profound and all-round evaluation of the capabilities of the adversaries.

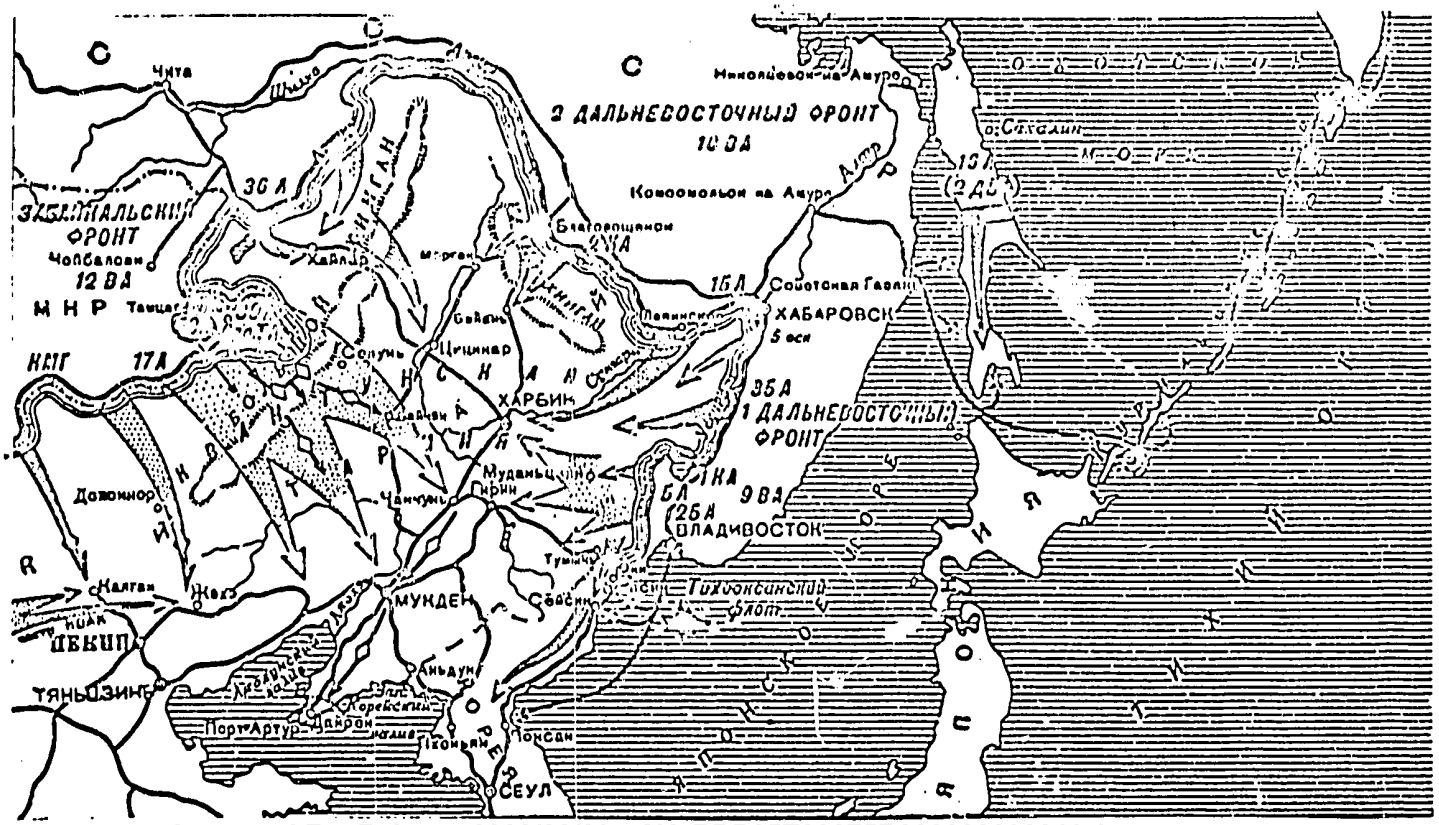
This campaign lasted a total of 24 days. Large enemy forces, the backbone of which consisted of crack Japanese units which were part of the Kwantung Army, were routed during the campaign. That force consisted of 31 infantry divisions, 9 infantry brigades, 2 tank brigades, and 2 aviation armies. The battle with the troops of Imperial Japan was one of the most important campaigns waged during the second World War, so far as its scope, and its final results, were concerned.

The military and political situation at the beginning of Soviet Army combat actions in the Far East was characterized by the disintegration of the Fascist bloc and the further strengthening of the position held by the countries of the anti-Hitlerite coalition. Japan was the only belligerent power in the Fascist bloc. However, finding herself in military and political isolation, Japan had not chosen to lay down her arms. The estimates made by the Japanese militarists were based on the following factors. First, American, English, and Chinese troops occupied none of Japan's territory, and the military industry developed on the Asiatic continent, in Manchuria and in Korea, was comparatively intact. Second, the United States and British monopolies were not interested in the decisive destruction of the Japanese armed forces. All they were trying to do was to eliminate Japan as the main economic competitor in the Far East, but, at the same time, retain Japan as the force hostile to the Soviet Union. Third, the ruling circles in Japan cherished the hope of being able to drive a wedge between the powers of the anti-Fascist coalition. Finally, Japan had over 7 million men under arms, over 5.5 million in the land forces. In August 1945, the Japanese armed forces had 173 divisions and almost a hundred independent brigades, over 10,000 aircraft, and 500 warships. This was a huge force, and the reason for the confidence the Japanese imperialists had in their aggressive designs.

The unique conditions under which the Soviet troop operations unfolded must also be mentioned.

The front line, over all, was in excess of 5,000 kilometers. The theatre of military operations [illegible] an area equal to that occupied by Germany, Italy and Japan when added up. Northeastern China is covered with mountain ranges on the west, north, and east, and for a long time, ever since 1934, work had been going on in this area to establish fortified areas. The mountain passes, the rocky spurs, as well as the multitude of rivers and streams, dense forests and swampy areas, were all serious obstacles to troop movements. Northeastern China had been converted into a strong, strategic base of operations, with a great many Japanese troops concentrated in the area. Manchuria and Korea were in a special category in the strategic plans of the Japanese command, for this territory was the bulwark of the defense system for the entire Asiatic continent, as well as the source of strategic materials and the arsenal for weapons for the Japanese Army. It was here that there was the strongest grouping of Japanese troops - the Kwantung Army - which was a group of Fronts.

According to the last alternative contained in the strategic plan, developed in the spring of 1945, the following was the mission of the Kwantung Army in the event the Soviet Union entered the war. During the first stage limited forces (approximately one-third of the troops) were to be used to force upon the Soviet Army heavy, exhaustive, battles in the heavily fortified areas, particularly in the zones in the border areas, in the desert, mountain forest, and swampy regions, and, in this way, halt the advance of Soviet troops, or force them out onto the Central Manchurian Plain at different times. In the second phase (the situation evolving favorably) the main forces of the Kwantung Army, concentrated in the central regions of Manchuria, and the strategic reserves, which were to be pulled out of North China (two armies) and Korea (one army), were to go over to the attack, counterattacking and throwing the Soviet troops back to their original positions.



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Operations of Soviet Armed Forces in the Far East - 9 August to 2 September 1945.

The local puppet troops, the Manchukuoan army, the Inner Mongolian army, the Suiyuan group, which numbered 15 divisions, 14 brigades, and several regiments, as well as the Sungari River Flotilla with its 25 warships, were subordinate to the Commander in Chief of the Kwantung Army. Soviet troops in the Far East had to hold out against 49 divisions, 27 brigades, and some 2,000 aircraft, counting the troops assigned to the 5th Front occupying Southern Sakhalin and the Kurile Islands.

The Expeditionary Army in southern, central, and northern China had about a million men, and these too could be thrown into Manchuria.

The plans of the American-British command, approved by the Combined Committee of the Chiefs of Staff after the capture of the Philippines and of Okinawa, called for the invasion of the Japanese islands in two phases; 1 November 1945 - the 6th American Army (Operation "Olympic"); 1 March 1946 - the 8th and 10th American armies (Operation "Coronet"). The plans then called for the introduction into the assault of the 1st American Army, which would be brought in from Western Europe. However, the American-English command was not entirely certain that it would be possible to carry out these plans without the cooperation of the Soviet Union. The extreme interest of the Allies in the help of the Soviet Union was clearly shown in the Yalta and Potsdam conferences. According to the official American review, United States Relations With China, at that time "the primary concern of the American government had become that of bringing the Soviet Union into the war with Japan as soon as possible in order to prevent the return of the Kwantung Army to the homeland at the time of the invasion."[1] The American-English command was proceeding from the assumption that, with the cooperation of the Soviet Army, the regular Kwantung Army would be pinned down in Manchuria, thus denying to the Japanese the possibility of transferring reserves from the Asiatic continent to the mother country.

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1. United States Relations With China With Special Reference to the Period 1944-1949. Washington, 1949, p. 8. TRANSLATOR'S NOTE: The original English text, which appears at page VIII, is as follows: "...It thus became a primary concern of the American Government to see to it that the Soviet Union enter the war against Japan at the earliest possible date in order that the Japanese Army in Manchuria might not be returned to the homeland at the critical moment...."

The entry into the war of the Soviet Union was, consequently, a main link in the concluding period of World War II and a decisive factor in basically changing the strategic situation and the relationship between the opposing forces in the Far East to the advantage of the anti-Fascist coalition.

The Soviet Union, having obligated itself to enter the war against militaristic Japan, sought to liquidate the breeding ground of agression in the East as quickly as possible and to cooperate in the restoration of general peace as soon as that was possible; to liquidate the constant threat of attack to the Soviet Far East posed by the Japanese militarists and to regain southern Sakhalin and the Kurile Islands, which had been torn from us by the Japanese, and thereby ensuring ourselves of a free passage to the Pacific Ocean; to banish Japanese invaders from the countries of Asia, and to deliver the peoples from future sacrifices.

The main strategic task of the Soviet armed forces was the destruction of the Kwantung Army in Northeastern China and in Korea, and also the destruction of Japanese troops on southern Sakhalin and in the Kuriles. This strategy was to be carried out by forces from the group of fronts, in cooperation with the fleet, in the Manchurian strategic offensive operation, the southern Sakhalin offensive, and a Kuriles landing. A High Command of Soviet Troops in the Far East was created in order to coordinate military operations at a distance from the theatre's General Headquarters. Marshal of the Soviet Union A. M. Vasilevskiy was designated Commander-in-Chief, Colonel General I. V. Shikin was appointed a Member of the War Council, and Colonel General S. P. Ivanov was designated Chief-of-Staff.

Three Fronts were formed, as planned: the Trans-Baykal, with Marshal of the Soviet Union R. Ya. Malinovskiy as Front Troop Commander, Lieutenant General A. N. Tevchenkov as Member of the War Council, and General of the Army M. V. Zakharov, the author of the present article, as Front Chief-of-Staff; the 1st Far East, with Marshal of the Soviet Union K. A. Meretskov as Front Troop Commander, Colonel General T. F. Shtykov as Member of the War Council, and Lieutenant General A. N. Krutikov as Front Chief-of-Staff; and the 2nd Far East, with General of the Army M. A. Purkayev as Front Troop Commander, Lieutenant General D. S. Leonov as Member of the War Council, and Lieutenant General F. I. Shevchenko as Front Chief-of-Staff. The Pacific Fleet, Commander-in-Chief Admiral I. S. Yumashev, Lieutenant General, Shore Duty, S. Ye. Zakharov, Member of the War Council, and Vice Admiral A. S. Frolov, Chief-of-Staff, was brought in to participate in the operations.

The Red Banner Amur Flotilla, under the command of Rear Admiral N. V. Antonov, was assigned to the 2nd Far East Front for operational subordination.

In concept the strategic offensive operation to destroy the KwantungArmy envisaged the simultaneous carrying out of two main strikes, from the territory of the Mongolian People's Republic (MNR) and from the Soviet Maritimes, as well as a number of secondary strikes converging at the center of the attack in the direction of Manchuria. Its purpose was the rapid envelopment of the main forces of the Kwantung Army, the disruption of its communications with the homeland and with the Japanese troop grouping in Northern China, and the subsequent dispersion and destruction by units.

This concept, based on a decisive military and political purpose, and advantageous because of our front configuration, provided us with more desirable utilization of all our forces and material, from all Fronts, during the operation and, at the same time, limited the enemy's possibilities in the use of his reserves to parry the blows inflicted by Soviet troops.

The simultaneous onslaught of several heavy frontal and army attacks, combined with the unified startegic concept, made it possible to smash the enemy in a short time, despite the isolation of the directions of attack. The planned, swift movement of troops into the center of Manchuria reduced the perimeter of the front as a whole and increased the strength of the Soviet troops as they came out onto the Central Manchurian Plain. This, in turn, made it possible to form a solid front at this point and to organize the tactical interaction of the forces involved.

The Trans-Baykal Front occupied the most advantageous position with respect to the overall grouping of the Kwantung Army. Consequently, it was assigned the leading role in the Manchuria strategic offensive operation. A higher attack tempo was envisaged for the troops of the Trans-Baykal Front.

The left flank of the Army occupying the western front, was the weakest place in the Japanese defense. The position was held by unreliable troops provided by the puppet regimes created by Japan. They held individual strong points in the defense along the broad expanses of the Gobi Desert. However, an assault along the extreme left flank of the Kwantung Army would not guarantee reaching the the vital centers in Manchuria, but might, instead, lead only to the isolation of the main forces of the Kwantung Army from the Japanese troops in northern China. Therefore, the Soviet command decided to launch the main attack from the Tamtsak-Bulagskiy salient along the shortest possible attack line leading to the Chanchun' (Changchun), Mukden area from the west. The assault in this direction was aimed at the junction between the Kalgan-Suiyuan army group and the Solun' grouping of Japanese troops in a deep envelopment from the south of the fortified areas to the Soviet-Manchurian border and the splitting of the 3rd Japanese Front into two parts. The advance in this direction by Soviet troops meant that they would have to overcome the obstacle of a 200-300 kilometer strip of waterless, desert steppe and the Great Khingan Shan (mountains). If the enemy's attempts to seize the passes through the Great Khingan could be forestalled, the Japanese would be deprived of the possibility of forcing us into prolonged battles in unfavorable areas and and we would be assured of a rapid advance into the central Manchurian areas. The 6th Guards Tank Army, part of the Front striking force, was assigned a big part in carrying out these missions.

Plans called for a second major strike by troops of the 1st Far East Front in the general direction of Girin. This strike, from the Maritimes, was to meet up with the Trans-Baykal Front's strike force.

The 2nd Far East Front, by advancing along a line Blagoveshchensk-Tsitsihar and Leninskoye-Harbin, was to pin down enemy troops in the Maritimes.

The campaign's concept, for all its originality, was extremely complex, and bringing it off required a great many troops, particularly mobile units, technical equipment for the struggle, particularly artiller and engineering troops, and a great deal of skill on the part of all officers, as well as combat experience and training of troops. The forces in the Far East were inadequate. Accordingly, the Soviet command transferred large forces of troops from the west and from the central regions of the Soviet Union to the Far East via the only main line there was, the Trans-Siberian Railroad, in May-July 1945.

After the transfer from the west of three combined-armed, and one tank, armies (39 divisions and brigades) the effective combat strength of the Soviet forces in the Far East at the beginning of the war with Japan had doubled, almost. The three Fronts, the three air armies, and the three PVO armies numbered 80 divisions (including 2 tank divisions), 30 independent brigades (including 23 tank brigades). The following combined-arms armies were included in the Trans-Baykal Front:

17th, Commander, Lieutenant General A. I. Danilov;
39th, Commander, Colonel General I. I. Lyudnikov;
36th, Commander, Lieutenant General A. A. Luchinskiy;
53rd, Commander, Colonel General I. M. Managarov; as well as the
6th Guards Tank Army, Commander, Colonel General of Tank Troops A. G. Kravchenko;
the Soviet-Mongolian Mounted and Mechanized Group, Commander, Colonel General
I. A. Pliyev;
and the 12th Air Army, Commander, Lieutenant General S. A. Khudyakov.

The main forces were sent to Manchuria, for it was here that the events which would decide the issue of the campaign, and upon which its success depended, would take place. The Trans-Baykal Front was given great importance. Saturating it with mobile forces - tank, mechanized - was the result of the great depth of the operation, in the course of which the troops would have to overcome the mountain ranges and the great distances in bad weather conditions, and to strike the enemy the powerful blow needed to develop the converging advance in the depths of Manchuria.

The 1st Far East Front, which too possessed large forces, was assigned the complex missions involved in breaching the enemy's defenses and advancing to meet the Trans-Baykal Front. The forces assigned to this Front, particularly the combined-arms armies, included:

35th, Commander, Lieutenant General N. D. Zakhvatayev;
1st Red Banner, Commander, Colonel General A. P. Beloborodov;
5th, Commander, Colonel General N. I. Krylov;
25th, Commander, Colonel General I. M. Chistyakov; and the
9th Air Army, Commander, Colonel General of Aviation I. M. Sokolov.

The 2nd Far East Front had three combined-arms armies:

2nd Red Banner, Commander, Lieutenant General M. F. Terekhin;
15th, Commander, Lieutenant General S. K. Mamonov;
16th, Commander, Lieutenant General L. G. Cheremisov; and the
10th Air Army, Commander, Colonel General of Aviation P. F. Zhigarev.

The availability of these forces made it possible for the Soviet command to form heavy strike groups along the main strategic lines of advance.

On 6 August, and then on 9 August, atomic bombs dropped on the Japanese cities of Hiroshima and Nagasaki. These were the atomic bombs on which the ruling circles in the USA placed so much hope. However, they did not justify the calculations of the American command. The Japanese government did not change its position, but, as before, held its course of continuing the war "to a victorious end." The entry of the Soviet Union in the war in the Far East put an end to this resistance, for it caused a sharp change in the situation and compelled the Japanese militarists to reject further prolongation of the war.

On 9 August 1945, Soviet troop distributions simultaneously launched massive strikes in a determined advance from the Trans-Baykal along the Khingan-Mukden line, from the Amur region along the Sungari River line, and from the Maritimes along the Harbin-Girin line. Bomber aviation from the Fronts flew massive strikes against the most important of the military objectives of the enemy in Harbin, Changchun, and Girin, as well as against objectives in the rear, against areas in which troops were concentrated, against communications centers and the lines of communication in the frontier zone occupied by the Kwantung Army. The Pacific Fleet steamed out into the Sea of Japan, along the lines of communication connecting Korea and Manchuria with Japan, and cut them and then inflicted sea and air strikes against ports in northern Korea - Yuki, Rashin, Seishin.

On 10 August the Mongolian People's Republic also declared war on Japan. That Republic's troops, part of the Mounted-Mechanized Group of the Trans-Baykal Front, began an advance along the Kalgan and Dolon Nor operational directions of attack.

Troops of the Trans-Baykal Front went over to a determined attack on the night of 9 August, and by 18-19 August had overcome the waterless wastes and the Great Khingan mountain range and had routed the Kalgan, Solun and Halaerh dispositions of Japanese troops, and had converged on the Manchurian plain, on the most important industrial and administrative centers of the enemy, over a vast expanse from Tsitsihar to Kalgan, in independent columns along six operational lines of attack. On 20 August the main forces of the 6th Guards Tank Army, the attacking force of the Front strike distribution, entered Changchun and Mukden, and then began to advance in the direction of the Liaotung Peninsula, towards the cities of Antung, Dal'nniy (Dairen), and Port Arthur. The Mounted-Mechanized Group of Soviet-Mongolian troops moved into Kalgan and Jehol and cut off the Kwantung Army from the strong disposition of Japanese troops active in China and made contact with the advance elements of the 8th People's Army of China.

Troops of the 1st Far East Front, attacking to meet the Trans-Baykal Front, during this time broke through the belt of fortified border regions, beat off heavy counter-attacks by the Japanese in the Mudan'tszyan (sic) region and on 20 August entered Kirin, and together with units of the 2nd Far East Front entered Harbin. Elements of the 25th Army, fighting on the left flank of the front, in cooperation with Pacific Fleet landings seized the north Korean ports of Yuki, Rashin, Seishin, and Wonsan, thus cutting off the right flank grouping of the Kwantung Army from central and south Korea and cutting its retreat route to the south to Japan.

Units of the 2nd Far East Front, in cooperation with the Red Banner Amur Flotilla, successfully forced the Amur and Ussuri rivers at several points, broke through the long-standing defenses of the enemy in the Sakhalyan area, overcame the Lesser Khingan mountain range and on 20 August advance units, collaborating with the Amur Flotilla, entered Harbin, dispersing the northern grouping of the Kwantung Army into separate units

Thus, Soviet troops, by 19 August, that is, by the end of the tenth day of the attack, had inflicted heavy losses on the enemy; they had overrun his strong, long-standing fortifications, they had conquered the difficult terrain of the waterless wastes, the mountain forests and the swamps, and, penetrating deep into Manchuria from the west for from 500 to 800 kilometers, and from the east for from 200 to 300 kilometers and from the north for as much as 200 kilometers, exited onto the central Manchurian plain and, while so doing, cutting the Japanese troops up into a great many isolated groups. Convinced of the futility of further resistance, the enemy, on 19 August, almost everywhere began to lay down his arms and surrender to become prisoners.

Exploiting the success of the Manchurian operation, the 25th Army of the 1st Far East Front, in conjunction with ships of the Pacific Fleet, liberated north Korea.

Simultaneously with our signal victories in northeastern China and Korea in the period from 11 August to 1 September, a portion of the forces from the 2nd Far East Front, in conjunction with the fleet, successfully carried out operations to liberate Souther Sakhalin and the Kurile Islands.

Air drops were made in cities in central Manchuria, in Korea, in Southern Sakhalin and in the Kuriles, seizing prisoner of the Japanese troops, as well as to prevent the Japanese from evacuating and destroying valuable equipment.

The swift advance of Soviet Army troops, together with the units and forces of the Mongolian People's Revolutionay and the Chinese People's Liberation armies, placed the Japanese military command in a hopeless situation. "The orders issued to the Kwantung Army - as Japanese war researchers have confirmed - the directive to the Expeditionary Army in China to transfer troops to the assistance of the Kwantung Army - all of this remained on paper. The General Staff lost complete control of operations on the Soviet-Japanese front, and all it could do was to wring its hands and watch the Kwantung Army's destruction." [1] The hopes of the Japanese command that the Soviet troops would bog down in the fortifications along the border zone and in the difficult to cross mountain ranges and would be bled white by small covering forces before they could reach the central Manchurian plain were not justified. Nor did the attempts of the Kwantung Army command to engage Soviet troops in a general engagement, as previously planned, in the central regions of Manchuria along the Tumen-Changchun and Changchun-Dairen railroad have the desired results. The successful advance of shock groups of the Trans-Baykal, 1st and 2nd Far East Fronts, in conjunction with the Fleet, and with the support of strong air forces, disrupted all Japanese plans.

With the rout of the main part of the Japanese armed forces - the Kwantung Army - in Manchuria, and with the isolation of Japanese troops in north China, Japan was, for all practical purposes, left without land armies. Losing her military and economic base on the Asiatic continent - Manchuria and Korea - Japan was deprived of real forces and of the possibilities of continuing the war in Manchuria, but beyond that, gone as well were the forces and the possibilties of defending the homeland. Thus, there occurred on 2 September the obligatory signing of the act of unconditional capitulation. With the capitulation of imperialist Japan came the conclusion of World War II, which had lasted for six years.

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There are many facets of the campaign of the Soviet Armed Forces in the Far East which still have not been given their necessary interpretation and the many sides to the experiences of those forces have not lost their significance, even today. The reference is, first of all, to the problem of forming a new front in the armed struggle within just three months after the destruction of Hitlerite Germany, at a time when the main body of the armed forces was still on the Western front.

As of May 1945, there were in the Far East in the eight combined-arms armies and the two independent corps (5 rifle corps and 10 mechnized corps) of the Maritimes group and of the Far East and Trans-Baykal fronts, which had 47 divisions (rifle divisions - 41, cavalry divisions - 2, mechanized rifle divisions - 2, tank divisions - 2) and 31 brigades (rifle brigades 4, mechanized rifle brigades - 3, tank brigades - 24), a little

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1. History of the War in the Pacific Ocean. Vol. IV. Foreign Literature Publishing House, 1958. p. 210.

over one million personnel, including all rear units and installations. Consequently, in combat and numerical strength the relationship of Soviet to Japanese troops was approximately one to one.

The forces in the Far East were inadequate for the decisive rout of the Japanese Kwantung Army, which was concentrated in Manchuria and in Korea, as well as of the troops located in southern Sakhalin and in the Kuriles, in a short period of time. It was possible to augment these forces by transferring troops and equipment released on the Soviet-German front. Nor is it difficult to understand that with only the Trans-Siberian Railroad, with its limited through put for carrying troops and military supplie from the west and from the central regions of the country over a distance of 10,000 to 12,000 kilometers in limited periods of times and keeping secret the reasons for the operational transfers, the problem was anything but a little one.

Between May and July 1945, the Administration of the former 2nd Ukrainian Front, and the 53rd and 6th Guards Tank Armies were transferred from Czechoslovakia to the Far East; the 5th and 39th Armies were transferred from East Prussia, as were a great many independent units of division, or larger, size and regiments, or smaller units, of various types of troops, coming from the central regions of the country and from the west. The three combined-arms and the one tank army alone numbered 27 divisions and 12 brigades. The regrouping of so many troops and their material and techical supplies in relatively short periods of time, and over the quite considerable distances involved, was unprecedented in the history of military science. The experience gained in this unusually large and successful regrouping is instructive from the point of view of its organization and practical accomplishment.

However, the transfer of the huge mass of troops and equipment from the west and from the central regions of the country to the Far Eastern theatre of military operation was only part (albeit a fundamental part) of the overall strategic regrouping of the Armed Forces in the preparation of the campaign against imperial Japan. During this same period there were quite a few inter-front and intra-front regroupings by rail over distances of up to 1,500 kilometers (from the Blagoveshchensk area to the Maritimes) and combined marches (foot and motor transport) over distances of between 250 and 500 kilometers.

The scope and volume of the rail transportation involved can be seen by merely noting that between May and 9 August some 136,000 rail cars of troops and freight moved from the west and from the central regions of the country to the Far Eastern theatre. And of this total some 63% was operational, 37% supplies. The inter-front and intra-front transportation involved over 51,000 cars.

In all, between May and July 1945, as many as a million Soviet troops were en route in Siberia, the Trans-Baykal and in the Far East in trains, waiting to be embarked, and on foot in the deployment area. Carried and unloaded at the same time were thousands of guns, tanks, trucks, and tens of thousands of tons of ammunition, fuel and provisions.

The characteristics of the Far Eastern theatre of military operations were such as to require special steps being taken as a first order of business to provide transportation support to the offensive campaign. As early as April 1945, the State Committee for Defense arrived at a decision concerning "Improvement in Railroad Operations in the Far East." This was the basis for the organization of a special railroad district for the Far East, with its center in Chita, in May. Five railroads, the East Siberian, the Trans-Baykal, the Amur, the Far Eastern, and the Maritimes, were included in this district. The office of the representative of the Central Administration for Military Communications of the Red Army (TsUP VOSO) was established within the newly created district, and all line and field organizations concerned with military communications in the Far East were made subordinate to that office. The representative of the TsUP VOSO supervised all services dealing with military communications, coordinated the activities of chiefs of VOSO's of fronts and chiefs of troop transfers by rail subordinate to him, did the transportation planning and monitored that transportation in the interests of the campaign which was in preparation. The formation of a Rear Administration under the High Command, Soviet Troops in the Far East, under which were all sections of the Trans-Siberian Railroad from Irkutsk to Vladivostok, also lent itself to the solution of problems dealing with transportation support.

These transportation support measures proved to have a positive effect on the accomplishment of the transfer of additional forces and equipment in the extremely compressed periods of time, on the successful regrouping and deployment of the troops and, in the final analysis, resulted in the favorable accomplishment of the mission.

The rapidity with which large forces could be transferred from the west to the Far East was of great importance to the system of steps taken to ensure the strategic regrouping. No more than the minimum number of personnel needed to organize and carry out the centralized troop transportation assignments were committed to the task; the number of documents required for transportation were kept to a minimum; detraining stations and stations to be used for servicing the echelons were numbered; the transmission of the echelon movement reports were strictly monitored by VOSO officers, and telephone conversations concerning these matters were forbidden; in the sectors bordering on the Far East individual groups of military echelons were brought in at night, echelons were also detrained from the Maritimes Railroad, which ran close to the border, at night and then the troops were immediately taken to concenration points. Many of the echelons were moved through main junctions without stopping and the technical maintenace of certain units in the echelons was carried out at intermediate stations, or between stations.

These measures played a positive part in the overall plan to camouflage the movemen and made it possible to achieve the surprise for the beginning of military operations in the Far East.

Despite the fact that the Japanese high command, through the Japanese consul in Chita, knew of the beginning of the gradual increase in the number of troops in the Far East in the spring of 1945, and of the mass transportation of Soviet troops from the west that began in June, it was still not able to make an accurate determination as to the scale of the strategic regrouping of forces in the Far East, or of the alignment and composition of the troops deployed along our Far Eastern borders.

The railroads played the main role in transferring troops and freight over long distances during the strategic realignment of troops in the Far East. The experience from the campaign also showed that march movements of forces and units by organic vehicular transportation for purposes of concentration and deployment were also quite significant. In this connection, the experience along the Trans-Baykal Front, within which were almost half of all echelons transferred from the west to the Far East, is particularly instructive.

The reception of the enormous flow of echelons to the Trans-Baykal Front became quite difficult because of the limited through put of the rail sections along which the Front was based. The arriving forces and units had to be detrained in Choybalsan. However, the very first days of the beginning of the transportation of troops and freight, given the low through put of the railroads, showed that the dates set for the concentration and deployment of troops would not be met. The result was an immediate decision to detrain the motorized units and artillery with mechanized traction power 500 to 600 kilometers away from assembly areas. Once detrained they were ordered to travel under their own power over the military-automobile road to Choybalsan where they were to join up with the units arriving by rail and then move from there at full strength to the deployment line. In sum, the troops had to complete forces marches under their own power over the waterless steppes of the Trans-Baykal and Mongolia, in great heat and in very thick dust, over distances ranging from 600 to 900 kilometers. Yet even under conditions such as these the infantry troops covered 40 kilometers a day, while the motorized troops covered as many as 100 kilometers. Despite the obvious difficulties, and despite the heavy fuel consumption (the over-expenditure, based on the total limit for the Front, was 3,000 tons), the task of timely concentration and deployment of forces of the Trans-Baykal Front was carried out successfully.

* * *

The rich experience gained on the fields of battle with the German-Fascist armies, as well as the adequacy of the forces and equipment concentrated in the Far East, made it possible for the Soviet Army to successfully carry out its strategic offensive operation of a group of Fronts converging from different directions.

This manner of conducting an operation had in its favor the fact that scale at which strikes against the enemy could be made increased sharply, giving him no time or possibilities for parrying the strikes of the attackers. All of the Kwantung Army reserves were pinned down and could not be concentrated in any one particular direction.

A complex problem for the Soviet high command was the planning and the execution of the simultaneous strikes along the broad expanses of the Far Eastern theatre, the organization of the operational and strategic cooperation between the land forces, air, and the fleet, the use of the kinds of troops, and the types of armed force along each direction of attack, each of which had its own characteristic features.

The waterless steppes, the mountain desert, the mountain taigi, and the swampy regio were such that action was possible only along directions of attack which had means of com munications, and these were separated from each other, often by hundreds of kilometers. Operational combined forces, and in certain cases even units of division size and above, operated along isolated lines. This not only complicated cooperation and control over th troops, but also greatly limited troop maneuvering and greated great difficulties in the work of the troop and operational service areas, calling for a high degree of skill on th part of all levels of command. Never the less, and despite the great isolation on the pa of the attacking formations, command and staff were successful in achieving precise agree ment in operations during the campaign between fronts, air, and fleet. This cooperation was expressed in the strategic plan in the coordination of operations of fronts, air, and fleet by the Supreme Commander of Soviet Troops in the Far East and his staff by time, place, and mission, and by the mutual exchange of representatives of the types of armed forces.

The actual operational cooperation between a great part of the assault groups of the fronts and armies was possible, from a practical point of view, only in the concluding stage of the Manchurian strategic offensive operations, with the breaking out of the Soviet troops onto the central Manchurian plain. In so far as tactical cooperation was concerned, this was completely out of the question, or was possible of accomplishment in individual cases similar to those indicated for the operational aspects, only with the break out of the advancing troops into the central regions of Manchuria, where a continuous front was formed.

Cooperation between land forces and the fleet was such that the main task of destroy ing the main forces of the Kwantung Army was to be carried out by the forces of the three Fronts, whereas the Pacific Fleet was, at this time, to disrupt the communications of the enemy grouping in Manchuria with its homeland and to cover operations by land forces from the sea side. Moreover, some fleet units, by making landings, cooperated directly with the 1st Far East Front during its attack in North Korea, and with the 2nd Far East Front during its operations in southern Sakhalin and in the Kurile landing operations.

The experience in the organization and carrying out of the strategic and operational cooperation in the Manchurian operation, when troops were active on isolated lines of attack, can be of great significance in the theory and practise of modern military scienc

Soviet military strategy in the concluding stage of World War II demonstrated its unquestioned advantages over the strategy of one of the largest of the imperialist plunde ers - militaristic Japan. The great effectiveness of the strategic operations, the curtailment of the time they lasted, as well as the high tempo of the onslaught of the troops under difficult geographic and climatic conditions prevailing in the theatre, were the direct consequence of the growth in the military mastery displayed by our troops and of the growth in military leadership on the part of Soviet battle commanders.

In considering the campaign of the Soviet armed forces in the Far East we should bear in mind the fact that that campaign was conducted in the last, concluding, stage of World War II, on a new front in the armed struggle, that is, it was the last campaign in World War II from the standpoint of resolving strategic tasks. The specific features of the campaign are of importance for Soviet military science. The campaign began under conditions which saw the armed forces of the adversaries already deployed. The campaign made full use of the very great wealth of combat experience obtained on the Soviet-German front. The Soviet Army entered the war with Japan thoroughly prepared in all respects, possessing a wealth of equipment, the technical level of which was high. Hardened in the crucible of a fierce and lengthy struggle, the troops of the Soviet Army were seized with an irrepressible offensive impulse.

There was one strategic operation during the campaign which, when carried out, led immediately to the final aim of the war - the destruction and capture of the Kwantung Army and of the puppet troops, the capitulation of Japan and the end of World War II.

The originality in the campaign's concept consisted of the fact that the Soviet Supreme High Command, because of the great operational capacity of the theatre, planned for high operational tempos because the conditions in the TVD (theatre of military operations) did not permit carrying on a long campaign with the available forces. Taking this as its departure, and also taking the configuration of the front and the disposition of the enemy groupings into the planning, the main blow was delivered by the troops of the Trans-Baykal Front over the shortest possible line of attack, despite the fact that there were strongly fortified regions along that line, and despite the fact that the Japanese expected the blow to be struck along that line. However, it was felt that an auxiliary strike at Kalgan and Pekin, covering the main grouping on the right, would bring Soviet troops into a vast region (Pekin, Yanan) occupied by the People's Liberation Army and partisans of China. The 6th Guards Tank Army, rich in experience in the conduct of military operations in mountainous conditions, was put into the first echelon of the main disposition.

Instructive as well is the experience of the 1st Far East Front in striking the main blow to meet the main disposition of the Trans-Baykal Front. The feature of military operations on this Front involved the fact that the troops had to overcome a belt of heavily fortified regions in the area. The attack, which began under the cover of darkness, was in the form of stikes by the troops at points at which the flanks of adjacent units came together, within the fortified region as well as within each unit within each fortified region, between individual strong points. This enabled comparatively small forces and minimal amounts of equipment to overcome the entire fortified belt, even without preliminary use of artillery, and to penetrate the operational depth of the enemy on the very first day of operations. The success was aided by the fact that the fortified areas along the main line of the front were breached by the 5th Army, which had a wealth of experience from breaching the fortified belts of the German Fascist troops. The assault detachments were widely used in this area.

Military operations in Manchuria were characterized by the broadness of the scale of maneuvering which took place. This was made possible because of the high degree to which the fronts were supplied with armored and mechanized troops and the successful employment of them. The mass use of tank and mechanized troops made it possible to carry out the assault at great speed and aided in the rapid routing of the main forces of the Kwantung Army.

Despite the fact that the attack was developed over a tremendous expanse (from the Gobi Desert and the Great Khingan Shan to the Pacific Ocean) by independent dispositions, the units and combinations of which had great independence of action along isolated strategic and operational lines of advance, the Soviet command had been able to organize precise cooperation between the land forces, the fleet, and air. The Soviet command conducted large-scale landing operations, particular the operation for the seizure of the Kuriles, during the campaign.

The poorly developed communications network, as well as the difficult and unpredictable weather, in combination with other specific features of the theatre, imposed definite criteria not only on the planning and execution of the operation by the land forces, but on the use of air as well.

The majority of the air units and forces were operationally subordinate to the commanders of the units and combinations of land forces. Whereas, in the war against Germany, this method of cooperation between air and ground forces was used primarily to ensure operations of mobile units (from the moment they were able to effect a breakthrough until the assigned mission was carried out), in the campaign against Japan the principle of transferring air to the operational subordination of the command of a combined arms unit became, for all practical purposes, the basis for the use of the Air Force.

Such decentralization of control over air was the result of the unique conditions of the situation and was planned even during the preparatory stages of the operation. Ground forces attacked along isolated lines, without tactical cooperation on the part of assault dispositions from the fronts along the flanks, and this was made necessary by the difficult sections of mountain forests and deserts in the region. It is quite natural, therefore, that the role of air in this particular case increased to an unusual degree. The Air Force was assigned many other special, and important, missions, in addition to the one of direct support of the troops on the battle field and in the operational depth by providing air cover and in neutralizing and eliminating pockets of resistance by the enemy along the lines of advance of the main forces of the Fronts.

One feature of the use of the Air Force in the campaign in the Far East was the growing allocation of air strength to the conduct of air reconnaissance of the enemy. Whereas, in the Soviet Air Force operations against Fascist Germany in 1944-1945 from 8 to 12% of aircraft sorties involved air reconnaissance, this type of operational use went to 30% right from the beginning of military operations against Japan. This can be explained by the fact that prior to Soviet Army's shifting over to the attack in the Far East theatre our aviation had not violated Japan's borders and had not made flights deep into Japan's territory. As a result the Supreme Command of the Soviet Armed Forces did not have at its disposal sufficiently complete data concerning enemy troop dispositions, his reserves, his system of defenses, his airfield network, etc. Hence, with the beginning of military operations came the active participation of air reconnaissance over a broad front and at a considerable depth. For example, aviation of the 12th Air Army of the Trans-Baykal Front, while supporting the land forces as they were conquering the desert region, simultaneously flew air reconnaissance over an area 1,500 kilometers wide and 600 kilometers deep. Air operations on the other fronts were just as active and continuous.

The difficult relief of the region in the zone of operation of the Fronts, as well as the poorly developed road network and the uncertain weather, created considerable difficulties for the advance by the ground forces, and particularly for the mobile forces. This fact made it incumbent upon aviation not only to provide continuous support for the advancing troops from the air, but also called for close cooperation with the ground forces during the operation and, in addition, to carry out other missions which were not so greatly varied during the armed struggle in the European theatre.

The role of transport aviation increased first of all. Providing the advancing troops with everything they needed for battle and for living was made possible thanks to the active participation of aviation, for the most part. Even during the planning period the Soviet command had been faced with the serious problems involved in supplying fuel to the 6th Tank Army of the Trans-Baykal Front during the period of its involvement in crossing the mountains. Given the conditions involved in the rapid pace of the advance, the consumption of fuel, lubes, and water increased. Timely delivery of these necessities by the ordinary means of transportation was impossible, so this mission was assigned to the two Air Transport Divisions which were part of the 12th Air Army of the Trans-Baykal Front. The use of considerable air transport strength for supplying the mobile forces advancing along one of the decisive lines of attack was a feature of the use of the Air Force in the campaign in the Far East.

The expediency of widespread use of transport aviation for solving the problem of transferring troops by air and for supplying mobile forces with fuel, ammunition, and rations was confirmed by everything which transpired as events unfolded. Transport aviation delivered 3,000 tons of fuel and lubes, 550 tons of ammunition, and some 1,500 tons of rations, fresh water, and other types of supplies, to the mobile forces during the operation. Air transferred 16,500 soldiers and officers at this same time.

Given the conditions prevailing in the Far Eastern theatre as the attack along the separate, isolated lines of advance developed, the significance of auxiliary types of aviation, such as the medical and communications aviation, increased.

One characteristic feature of the use of the Air Force in the campaign in the Far East can also be mentioned because, as distinguished from military operations by air in the Western theatre, here a prominent place was occupied by the struggle with rail transportation of the enemy. A series of strikes against rail junctions, as well as stations, which the enemy could use for regrouping his troops were planned during the preparatory period, as well as during the unfolding of the operation. In the Trans-Baykal Front sector several railroad stations were hit systematically by small groups of bombers and attack planes. This resulted in disrupting the movements along certain of the sections and made it impossible for the enemy to maneuver his reserves in order to forestall Soviet troops from seizing terrain in the Great Khingan Shan region, an area of extreme importance to the Japanese command. The mountain ranges were captured without substantial interference on the part of Japanese troops. Later on, as the operation progressed, fighters, as well as the bombers and attack aircraft, were thrown into the struggle with transportation. The strikes against the stations, the junctions, and the stretches of

track, destruction of rolling stock along the movement routes, resulted in the Soviet Air Force achieving almost total isolation of the zone of military operations from the flow of fresh reserves and aided in interrupting the purposeful evacuation of valuable property, to say nothing of creating considerable difficulties for the enemy in the assignment of his armed forces.

As has already been pointed out, the Far Eastern theatre was a special case, so far as natural conditions were concerned, and questions of basing aviation there and of transferring it there during the advance took on particular significance. Initially, that is, prior to the commencement of military operations, all aviation attached to the Fronts was concentrated on stationary and newly built air fields, from which it was proposed they carry out the missions assigned during the opening days of the operation. As the advance developed, and because of the rapid movement of the troops deep into the enemy territory, support from the air for the troops from permanent bases within their radius of operations became possible only for bomber aviation. Consequently, it became necessary to follow behind the advancing troops and to make timely shifts in bases for aviation in order not to weaken air support for the advance.

However, there were great difficulties involved in shifting the aviation units. The problems involved in timely rebasing of aviation, given the conditions which prevailed in the rugged mountain terrain, as well as the insufficiently developed airfield network on enemy territory, and the complexity of creating the new landing areas under such conditions, made it necessary to find new ways to solve those problems.

The most desirable method of attaining the goal indicated in the Far Eastern campaign proved to be the seizure of earlier known and newly discovered enemy airfields and their use for rebasing the necessary numbers of fighter and attack aircraft. The mission was carried out by ground units (particularly the mobile units) as well as by the dropping of parachute forces which were small in size, but numerous, so far as the actual air drops were concerned. By decision of the Front commanders, air drops were made in the majority of the main cities in Manchuria between 18 and 27 August. They not only had to prevent the enemy from destroying and wiping out military property, warehouses and installations, carrying away valuable supplies, but they also had to assist in demoralizing his troops and thus aid in seizing the airfields and provide for our aircraft landing on them.

The drops were made using transport aviation under heavy fighter cover. Air force representatives, together with their radio equipment, made the landings with the drop forces and these representatives immediately organized control over aviation operations, communications with Air Army commanders, and the transmission to such commanders of information concerning the situation in the drop zone. Widespread use of air drops for purposes of seizing key positions deep in the enemy rear was yet another feature of the use of the Air Force in the campaign against Japan.

The successful accomplishment of the operation by Soviet Armed Forces in the Far East was furthered by the fact that moral superiority, the advantage of initiative, operational surprise, as well as overwhelming superiority in the means for the armed struggle, particularly in tanks and aviation, were all on the side of the Soviet Army. Moreover, Soviet troops had tremendous experience in modern warfare which had been successfully used by them in the European theatre of operations which prevailed in the Far Eastern theatre of military operations.

The operations of the Soviet Armed Forces against the Japanese imperialists have gone down in the glorious annuls of victories over the enemies of our Motherland. These operations didn't last very long, but in so far as their scope and final results are concerned, they were one of the most decisive events in all of World War II. There is every reason for calling the campaign in the Far East a lightning one.

The crushing defeat inflicted on Japanese troops in northeastern China and in Korea by the Soviet Armed Forces played a decisive role in the final destruction of militaristic Japan and led to a basic change in the force relationships in east and southeast Asia. The destruction of imperialistic Japan weakened the forces of world reaction and strengthened the security of the Soviet Union's Far Eastern boundaries. With the return to our Motherland of southern Sakhalin and the Kuriles, the Soviet fleet obtained free access to the expanses of the Pacific Ocean.

The Soviet Union's victory resulted in the creation of favorable conditions for the further, mighty development of the national liberation, anti-imperialist struggle of the oppressed peoples for the building of a new life along the lines of democracy and socialism. The destruction of the mighty Kwantung Army by the Soviet Armed Forces, and the loss by the Japanese imperialists of their bridgehead in northeastern China finally solved the issue of the struggle between Japan and the peoples of China and of other of the Asiatic countries enslaved by Japan, a struggle which had lasted for many years. Colonialism was dealt a death blow. The liberation struggle resulted in a number of countries dropping out of the imperialistic system. The victory of the revolution in China, the formation of the Chinese People's Republic, as well as the formation of the Korean People's Democratic Republic and the Democratic Republic of Viet Nam, all have strengthened the forces of socialism throughout the world.

The victory of the Soviet Armed Forces over imperialist Japan was the result of the effect of factors flowing from the power and viability of the socialist system and which ensured the destruction of Fascism. The historical victory over Fascist Germany and the conclusion of the war with Germany did not sap the will of our troops, nor did the battle with the Hitlerites exhaust their strength, thanks to the constant concern of our Party to strengthen the fighting power of the Soviet Army.

The successful conclusion of the Far Eastern campaign by the Soviet Armed Forces is a new certification of the correctness of the Party line, which teaches us to be in constant readiness, to display great vigilance, and to constantly increase the military might of the Motherland.

The Aggressive Plans of the US in Southeast Asia

by Colonel I. Moskvin

Each day sees the spread of the national liberation movement in the countries of Asia, Africa, and Latin America. The processes of revolutionary democratic reorganization are expanding in many of the countries which have recently thrown off the political oppression of the colonizers. The union between the forces of the national liberation movement and the peaceful socialist camp and the international working class is being strengthened. The three main revolutionary forces of modern times - world socialism, the national liberation movement, and the struggle of the international working class - flowing into a unified stream, are increasingly undermining the foundations of imperialism. All of this confirms with new vigor the position formulated in the Declaration of the Congress of Representatives of Communist and Workers Parties concerning the complete failure of imperialism as being inevitable. This is the sentence of history.

However the imperialists, headed by the United States of America, are desperately trying, with new methods, and in new ways, to retain, and to consolidate, their positions in the colonies and dependent countries, to subordinate to their supremacy the young Asiatic and African states. The neo-colonialists are actively drawing these countries into the military blocs and alliances, giving them economic and military "assistance" on one-sided terms, planting military dictator regimes which are servants of the imperialists in them, creating military bases on the territories of the countries indicated, and locating their troops on those bases, all to further those aims. When similar measures backfire the imperialists resort to open military actions.

These calculations on the part of the imperialists are perverted and adventurous, so they are everywhere in the process of failing. Many of the American political figures and reviewers understand this.

The famous Washington columnist, Walter Lippmann, in his estimate of the foreign policy of the USA, emphasizes the fact that "after the end of World War II we assumed an obligation extending far beyond the limits of our vitally important interests and our military and political capabilities. We are in no condition to impose in Africa and Asia an order which would respond to our ideas of the ideal order. We are having a great deal of trouble in these areas because we overestimated our strength and we have now encountered the problems, for the solutions to which we lack qualified and experienced personnel. These of our undertakings do not enjoy genuine national support, and Americans quite correctly for their sakes do not want to put their destiny on the map." [1]

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1. New York Herald Tribune, December 31, 1964.

As we know, prior to World War II the United States had only the Philippine Islands as a support base in the western part of the Pacific Ocean. When the war was over their occupation included Japan, South Korea, the Carolines, Marshall, and Marianas islands, and later on, the island of Taiwan as well. Striving to carry out the notorious idea of American imperialism concerning the conversion of the Pacific Ocean into an "internal American Sea," the State Department and the Pentagon concentrated all their efforts on expanding the sphere of American influence in the direction of the French colonies in IndoChina.

Speaking of US policy with respect to the countries of the Far East and of Southeast Asia, John Foster Dulles confirmed the fact that "the interests of the United States in this area, from the point of view of strategy, are quite closely connected with the so-called coastal chain of islands. This coastal chain of islands has, in essence, two mainland bases. In the north there is continental Korea, and in the south, as we hope, is Indochina. Between them are the islands themselves - Japan, the Ryukyus, including Okinawa, Formosa, the Philippines, Australia, and New Zealand. The United States has agreements concerning guarantees of security, in one form or another, with each of these areas which, while not formulated in the form of a treaty in certain cases, are nevertheless extremely realistic."

This was said in 1954. Already signed at that time was the "American-Australian-New Zealand Mutual Defense Treaty" (the ANZUS bloc, 1 September 1951), the "American-Japanese Pact Concerning Security Guarantees" (8 September 1951) [2], and the "American-South Korean Pact Concerning Mutual Security Guarantees" (1 October 1953). By the conclusion of a "Mutual Security Treaty" (2 December 1954, with the Kuomintang clique, the Americans in substance formalized the previously established fact of the occupation of Taiwan by the armed forces of the USA.

The neocolonialists, in putting the SEATO bloc together, the Treaty for which was signed on 8 September 1954, in Manila (the Philippines), gave themselves a special stake in the area. They felt they had of course been successful in setting up an adjunct of NATO in Asia and, as the New York Times wrote, to ensure the President of the United States of the right to interfere in affairs in Indochina. Included in SEATO are the USA, Great Britian, France, Australia, New Zealand, and only three of the Asiatic countries in the Southeast Asia area, all three dependent on American monopolies in the countries - Pakistan, Thailand, and the Philippines. Later on the American diplomats planned on drawing other of the Asiatic countries, particularly India, Indonesia, Burma, and Cambodia, into the bloc, by whatever means.

By putting together similar blocs and alliances the American strategy believed that anti-communism, hostile to the socialist camp, and particularly to the Soviet Union, would lend itself to uniting the world's bourgeoisie, to liquidating the contradictions between the old and the new colonizers. However, if the fear of the movement by the colonial peoples and the attempt to profit drew the imperialist plunderers together, division of the the loot and the danger proved to be economically exhausting in the course of the struggle with the national liberation movement, and alientated them and evoked antagonisms between them.

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2. On 19 January 1960, replacing the Pact indicated, the USA and Japan signed the "Treaty of Mutual Cooperation and Security".

Thus, the American imperialists, appearing as the initiators for the creation of various alliances, attempted in particular to unite the forces of their allies to suppress the national liberation movement. But, drawing into these alliances the former French and English colonies, they hoped to oust their competitors and take over control of all phases of economic and political life, completely ignoring the interests of their young partners. They established similar patterns; in particular, England in Australia and New Zealand, and France in Indochina. This also serves to explain the internal contradictions which occurred in the imperialist blocs from the first days of their existence. Very much indicitive in this particular case is the position of France.

The fact of the matter is that French capital even now controls half of the industrial enterprises in South Vietnam, four-fifths of the plantations, almost half of the bank capital. The total capital investment of France is 320 million dollars. Forty percent of Southvietnamese exports go to France and countries dependent on France. And after ten years of overlordship by the Americans these positions are threatened; the South Vietnamese market is choked with American goods, and the State apparatus is under complete control of the American "allies." This is why the DeGaulle government, at the end of 1963, advanced the suggestion that the war in South Vietnam be stopped and that all of Southeast Asia be neutralized. France, as we know, refused to send her Minister of Foreign Affairs to the May session of the SEATO bloc, and, instead, sent only an observer. France also refused to take part in operation "Sea Horse" of the armed forces of the SEATO countries, an operation which was held in the Southeast Asia region. And, in this connection, the Western press spoke, with complete foundation, of crisis, and even of the complete breakup of SEATO, of the lack of desire on the part of France to associate herself with any obligations in connection with American aggression in Indochina. And there is confirmation of these conclusions in what President of France, in his address on Paris television on 27 April 1965, stated right out, "we denounce war in Asia, a war which is spreading with each passing day."

No less illuminating is the "anti-Americanism" which has also appeared in England. The latter, having created Malaysia, has tried, according to the information in the weekly "Tribune" to retain her "commercial interests in the tin and rubber industries of the country." Yet it is primarily these interests which threaten the USA monopoly. It is a generally known fact that in the postwar period English capital in Malaya, just as in other of the colonies, was very much undermined and its place has come to be occupied by American moneybags.

A major place in the calculations of theEnglish was occupied as well by the effort to "protect" Singapore, the largest of the military bases, which, in the estimate of the foreign press, along with Gibraltar, Malta, Cyprus, Suez, Aden, and Hong Kong, in the old days made up the "framework of the Empire." Yet even here the shadow of the American Seventh Fleet has fallen, visiting Singapore frequently as it does.

The neocolonial venture with Malaysia has turned out to be hopeless, even for England herself. Her project to "gain a federation while losing a colony" can be considered as buried. "Now," wrote the London Times, "when the downfall of Malaysia is being predicted by many observers, it can be acknowledged that the entire experiment with federation was doomed from the very beginning. It is impossible to find enthusiasm with respect to Malaysia in a single one of the countries of Southeast Asia." [3] The tenseness of the situation in connection with the establishment of Malaysia required an increase in her army to the war time levels. Funds were lacking for the support of an army of this size for just the Federation alone, and England could hardly augment the funds for, in the opinion of the New York "National Guardian," just the operation against the partisans in Kalimantan alone was costing 3 million pounds sterling a week. The American bankers were not slow to make use of these difficulties, since they had long since agreed to give "help" to Malaysia. In the final analysis, this led to a further strengthening of the influence of the USA in the Federation to the detriment of English interests.

A sharp cooling of relationship of official Japan with respect to USA undertakings in the Far East can be noted. The commercial restrictions between Japan and the socialist countries, the discrimination against Japan in American markets, the conversion of Japanese territory into a nuclear missile base and Japan's armed forces into "cannon fodder" is meeting more and more resistance, not only among the masses of the people, but even among the representatives of the ruling circles. Japan, as the local press expresses it, does not want to be put foward as crutch for the rotten regimes created by the Americans in Asia.

In an interview published in the newspaper Asahi, Prime Minister Sato said that between the United States and Japan there are unresolved, difficult, problems, particularly the question of the islands of Okinawa and Bonins, illegally seized by the USA, and that of trade relations. And not too long ago political figures in the USA, obviously with a telling basis in this regard, confirmed the fact that without the participation of Japan, "there was no possibility of a combination in the Far East."

The great hopes for a "flood of mutual understanding" on the part of the allies, expressed by the American militarists as they caused the outbreak of military conflicts, proved to be sad ones for them right from their very first attempts to bring them about. For example, the desired results in enthusiasm for the appeal made by the USA to 25 capitalist countries in May 1964 for support in the "dirty war," as the American press calls it, "to internationalize" the undeclared war in South Vietnam, never materialized. France and Pakistan replied to this appeal with a categorical "no." England, while approving the gangster actions of the American imperialists

3. Times, January 16, 1965.

nevertheless refused direct military assistance because she herself was thoroughly mired down in Malaysia.

Only Australia, New Zealand, and South Korea have, as of now, sent small podrazdeleniye to South Vietnam. Even the most "responsive" of those to similar appeals, the Kuomintang puppets, have been limited to the sending to South Vietnam of "advisers" only. Consequently, the entire burden for the Pentagon's having unleashed the aggression rests squarely on the shoulders of the USA. And this "burden," as we know, has cost over seven billion dollars in ten years of war. Yet the "situation in South Vietnam is worse than after the world war," according to Drew Pearson.

Nor has the military science of the USA withstood the tests, particularly the theory of limited wars, one of the initiator's of which is considered to be the former Ambassador of the USA to South Vietnam, General Taylor.

To be persuaded of this one must trace the path along which the USA "was drawn into" the "dirty war," and the conversion of that war from a "French" one into an "American" one. This path can divided into four stages, conventionally speaking.

The first stage covers the period 1950-1953. During this period US participation was limited to the rendering of military "aid" to the French (although the aid was quite extensive). But this did not save the 200,000 man French Army from destruction. The destruction of French troops at Dien Bien Phu, in May 1954, forced the French Government to discussions and to the signing of the Geneva agreements.

This issue had not entered into the plans of the American imperialists and they immediately took upon themselves the functions of the French colonizers. This was the beginning of a new stage (1954-1963). During this period the US gave the South Vietnamese authorities 3.3 billion dollars (4 billion, according to other data); American advisers, the numbers also increased considerably, "began to work in direct contact with the Vietnamese populace." By the end of this stage podrazdeleniye of US regular troops had arrived in South Vietnam; American aviation and military advisers began to take a direct part in combat actions against the patriotic forces in South Vietnam.

A plan for the "final destruction" of the patriotic forces was developed for each stage. None of this brought with it the results desired by the Americans and their South Vietnamese puppets. In fact, the interference of the US strengthened the hatred for the new oppressors and brought about activization of combat actions by the patriotic forces of South Vietnam.

The beginning of the third stage is considered to be the second half of 1964, when American aviation and the US Navy started to hit targets on the territory of the Democratic Republic of Vietnam. In making these flights Washington attempted to tip the scales in its favor.

However, as subsequent events point out, the American aggression was not successful in bringing the Vietnamese people to their knees or to bring about a turning point in the combat actions. Recently, the New York Times Magazine had to make what was, for the American imperialists, a bitter admission that "in South Vietnam nothing can withstand the faith of the Viet Cong, and, as a result, the Saigon government, and we, are losing the civil war." [4] Subsequently, the foreign press spoke of a new stage of the war in Indochina.

At a conference of military and diplomatic representatives of the US in Honolulu, the decision was made to strengthen the grouping of American troops in Indochina and to increase the effective strength for combat of the South Vietnamese Army. On 8 June of this year the President of the United States decided to authoriz the American troop command in South Vietnam to use US troops in combat against the patriotic forces on land. The 3rd Marine Division and the 173rd Airborne Brigade were transferred to South Vietnam for this assignment. The first combined operation involving over 3,000 American puppet and Australian troops, occurred at the beginnin of July. The American high-command began to use strategic aviation, based on Guam, in the struggle against the patrictic forces. As will be seen from recent statements made by Secretary of Defense McNamara, the Pentagon has decided to increase the number of their men to 100,000 and more. Included will be airborne troops, and the "airmobile" forces specially created for operations in this area. Moreover, the American press is beginning to report more and more frequently on the intentions of the American "madmen" to begin bombing military and economic centers in the Chinese People's Republic. This is indicative of how the "local" war in Vietnam can become a bigger conflict, all because of the ruling circles in the USA. And equally without a future have proven to be those calculations of the Americans that they could establish supremacy in the liberated countries by giving them economic and military "assistance." Many of these countries refused the American "assistance," because clear expressions of neocolonial aspirations were involved.

Nor has there been any success in achieving planned goals, even in those countries which have taken the "assistance." Most of these countries have puppet regimes of the type found in South Korea, the Kuomintangists, South Vietnam, etc. Drawn into the armaments market by the will of their overseas protectors, they have had to spend the major parts of their budgets, and virtually all of the American "assistance," including the funds allocated for investment in the peaceful branches of their economies, for military supplies. This has resulted in even greater disorganization of the local economies and in the conversion of these "allies" into perpetual dependents of the USA.

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4. New York Times Magazine, April 18, 1965.

Connected with this is the need to constantly increase the scope of the "assistance" for the countries in this category, and this is a heavy drain on the economic potential of the USA. This is why there has been an attempt on the part of the government of the USA in recent years to curtail this "assistance," an attempt which has seen expression in the form of a change from the free deliveries to allocation of military loans. There was a considerable cutback in allocations for these purposes in 1964, and this action, in turn, resulted in greatly strained relations between the USA and its satellites because the latter, deploying large armies, were in no condition to maintain them because of their budgets. There was no way they could reduce the armed forces because they were endangered by their own people.

Equally groundless have proven to be the calculations of the Americans in their efforts to create regimes in the "allied" countries which would be favoraably disposed to them. There has been no success in forming anything resembling a stable government in any of these countries. Indicative is the fact that since 30 January 1964 the government has has changed hands over ten times; the regimes in South Korea, on Taiwan, and even in Thailand, are maintained by the bayonet. Eloquent in this regard in the extreme is the statement of Walter Lippmann, the American commentator, that "We cannot find a government in South Vietnam which would be able to use the weapons, the economic aid, the military support and the military advisers we can provide." 5

The American, by taking upon themselves the main military expenditures, planned on creating among their allies those armies which they would be able to use to suppress the national liberation movement and as the "cannon fodder" for the war they are fashioning.

The generally known statements of the famous American political and military figures concerning the fact that the USA will rely on land forces of the allies, whereas the contribution of the United States will be expressed primarily in naval and air forces, and in supplying the allies with armaments.

But the stamp of hopelessness fell on these calculations of the American militarists almost immediately. The American allies acknowledged that most of the puppet armies were in no condition to maintain order, even in their own countries. Nor were they in any condition to protect the interests of Wall Street. More and more frequently both of these tasks have had to be carried out by the soldiers of Uncle Sam, fulfilling the role of the international policeman.

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5. New York Herald Tribune, December 22, 1964.

This can be seen in the example of the South Vietnamese puppet authorities, the armed forces and police of which are almost four times those of the forces of the National Freedom Front of South Vietnam, but which, despite their superiority, are losing everywhere. "A half a million armed officers, soldiers, and functionaries," writes the New York Herald Tribune, "cannot cope with the elusive and ubiquitous Viet Cong detachments, who have a total of 30,000 to 35,000 soldiers in their regular army and 85,000 armed helpers." [6] In order to gain the victory, it is recommended that the allies have forces ten, and even twenty, times those of the enemy, that is, that a puppet army of several million men be formed, something clearly beyond the capacity of the South Vietnamese authorities or of their mentors.

Even in South Korea, where there is no "hot war," the local authorities cannot rely on their own armed forces. When the American press raised the question of the withdrawal of American troops the South Korean dictator promptly stated that he was unable to guarantee the situation in the country.

The English have been overtaken by a similar fate. Neither the supplies nor the training they gave the Malaysian army were able to avoid the need, as was the case many years ago, to sent troops from the British Isles to protect their interests in the colonies.

Finally, the so-called "policy of fear" can also be considered as dead. By converting the Pacific Ocean into a range for testing new types of weapons, by creating the many bases, and concentrating their troops on them, the American strategists have made it as one of their aims the intimidation of the peoples of this region by "nuclear omnipotence" and, at the same time, the forcing of those people to submit to the fate prepared for them by the imperialists.

However, the authors of this policy were not able to foresee what the reaction on public opinion would be. Immediately after the first tests of nuclear arms in the Pacific Ocean virtually all the countries in the Far East and in Southeast Asia began a powerful movement to prohibit the weapon.

In the estimate of the foreign press, the presence of military bases and the troops based on them does not "provide tranquility" for the imperialists, but serves as a "constant source of every increasing, terrible shocks." It is just this danger from these shocks. which brought about a review of the views on base construction. The American strategists prefer to locate their bases a long way away from people now, on uninhabited islands. "The island bases," wrote the Washington Post, [7] "have long been one of the aims of the planning of certain American naval strategists because of the political storm which has blown up in other countries over base rights. They are frank to admit that the only reliable bases, in the final analysis, are those which are not involved in nationalistic agitation."

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6. December 15, 1964.
7. September 3, 1964.

 [illegible]n the continental USA from advanced bases too have proven to be failures. The appearance of ICBMs has reduced the value of these bases in protecting the USA to zero.

But it would be completely erroneous to underestimate all of the dangers to peace of the military preparations on thepart of the imperialist states in the Far East and Southeast Asia. Threatened by a loss of their supremacy, the imperialists are mobilizing all their reserves - economic, political, ideological, and military. The imperialists, despite the unsolvable and ever intensifying contradictions, are trying to strengthen their union. At the present time the United States State Department has been successful in enmeshing the countries of the "free world" in a spider web of military treaties. Using the "right" imposed by these treaties, the USA high-command has concentrated a troop grouping in the Pacific Ocean area second (after Europe) in strength and size to none, it has built numerous bases on the territories of its "allies," and has considerably strengthened, and in some countries has created from scratch, local armed forces. In general, according to information from the American leadership, today the armed forces of the USA are double the number of troops in this area at the height of the war with Japan. So far as the armed forces developed by their "allies" are concerned, these have increased 15 times in recent years.

Overall leadership of the troop dispositions by the USA in this region is carried out by the armed forces high command for the Pacific Ocean area (with its headquarters in Pearl Harbor).

It has at its disposal over half a million men, 7,000 aircraft, and 400 combatant ships.

The main maneuvering force in the western Pacific is the Seventh Fleet, based on Japan, Taiwan, the Philippines, and South Vietnam. The Fleet usually has some 130 warships, 650 aircraft, and over 60,000 men.

The peace-loving peoples are particularly watchful of the measures which the American command is carrying out, and has carried out, in recent years. In particular, as of this time the political and the military leadership has not curtailed its efforts to even more tightly bind the military obligations of the countries of the Far East. In 1964 they took steps to create a bloc with the participation of Australia, New Zealand, the Philippines, South Korea, Taiwan, South Vietnam, and Thailand. The purpose of setting up this alliance was to use the large armies, mostly made up of South Korean and the Kuomintang puppets, to suppress the national liberation movement, and in particular for the struggle against the South Vietnamese patriots. The treaty regularizing relations between Japan and South Korea, signed on 22 June 1965, by command of the US Department of State, was a considerable help in bringing these plans about.

In May 1962, under the pretense of liquidating the "communist threat" from Laos, the USA transferred troops to Thailand and, for all practical purposes, occupied it. The United States Air Force command built advanced air bases on Thai territory, from which the American aircraft are making barbarous flights against the DR

The military potential of these countries is steadily increasing as a result of the refitting of the puppet armies with more modern weapons. In recent years, for example, the Americans have given the "Nike" and "Hawk" missiles to the Japanese, the Kuomintangists, and the South Koreans. By virtue of the political dependence of the capitalist countries of the Far East and of Southeast Asia on the USA, all of these armed forces are always under the control of the American high-command.

Thus, characteristic of the USA's Far Eastern strategy is not only calculation, but, to a considerable, degree, recalculation. Events of recent years taking place on the territories of these countries have indicated with all possible convincingness the inability of imperialism to change the force relationships to their use. The aggressive actions of the USA against the South Vietnamese patriots and the DRV, the further build up of armed might in Southeast Asia, havebrought irreparable losses to the United States, and have seriously damaged the prestige of the United States throughout the world, and particularly in the countries of Asia. There is no country in the world whose people would not condemn US provocation in Vietnam.

There is every basis for saying that the plans of the American imperialists to create an "all-embracing anti-Communist system" in the western part of the Pacific Ocean have failed. The Department of State and the Pentagon have not been able to draw the largest of the Asian states, India, Indonesia, as well as Burma and Cambodia, into a military-political alliance. Moreover, these countries, convinced of the aggressive intentions of the USA, have receded even further than ever from the political course of the US.

Just as is the case in NATO, the relationships between the SEATO members have been sharply strained. England, France, and Pakistan, who usually tend to shy away from participating in the military actions of the USA, have formally adhered to the SEATO name, but the American imperialists are finding themselves all alone more and more frequently.

And the calculations of the English that they could strengthen their position in Southeast Asia by creating the artificial state framework, the Federation of Malaysia, turned out to be illusory as well. The result was even greater isolation of the pro-English regime.

Yet sorely wounded, but not yet dead colonialism is resisting violently, is now and then counterattacking. The American plans for expanding the "dirty war" in South Vietnam, the steady increase in their armed might in Malaysia by the British, the attempts to create a new bloc in the Far East, show, again and again, the danger colonialism has for freedom loving peoples.

The most aggressive of the circules in the USA have not given up their plans to create military bases on the islands in the Indian Ocean to expand the "sphere of operations" of the Seventh Fleet into this ocean. In the summer of 1964 a special American-British commission worked on investigating the Seychelles, the Maldives, and the Chagos Archipelago for purposes of building military installations in those areas.[7] Already decided on is the construction of a radio station on Diego Garcia Atoll (in the Chagos Archipelago) for use in controlling submarines and which will close the ring of radio stations extending from Eritrea through Australia, the island of Guam, to Japan. This creates a direct threat to India, Indonesia, and the countries of East Africa as well.

The publication United States News and World Report reported, in the spring of 1964, that the American command had reviewed its strategic plans, in so far as the Pacific Ocean was concerned. In accordance with these plans, the B-47 aircraft of the Strategic Air Command on Guam were replaced by B-52s with will nuclear loads. Simultaneously Squadron 15, consisting of seven submarines carrying Polaris missiles was ordered to get ready to patrol in the Pacific Ocean. And on the eve of the new year the American press reported that the first submarine, Daniel Boone, carrying Polaris missiles, had departed Guam and was headed for the shores of the Asiatic continent.[8] Today the flotilla has four combat ready submarines, two of which are are constantly on a war patrol in the western part of the Pacific Ocean.

Since 1963, in accordance with the "general program of moderizing equipment of the US Air Force in the Pacific Ocean and in the Far East," the reequipping of tactical aviation units which had F-100s with F-105s has been going on. This latter can carry hydrogen bombs.

A great danger to peace is the multitude of military bases which the USA has set up on other territories. They can in no way be equated to defense, not from the nature of the equipment or the distance they are from the USA. For example, the "forward" or "external" line of these bases passes from Alaska through Japan, South Korea, Taiwan, the Philippines, South Vietnam, and Thailand to Pakistan. This line includes missile, air, and naval bases. The "intermediate" line extends through the islands of Hawaii, Wake, Guam, Samoa, the Bonins, the Volcano, Marcus, the Marshalls, Marianas and the Carolines, to Australia. The "rear" line passes along the west coast of the USA. There are considerable stocks of equipment and armaments (including nuclear missiles) on these bases.

Spending vast sums on economic and military "assistance" for their "allies," the American militarists have created and trained huge armed forces - in all, some 70 regular, and over 20 reserve, divisions, while the total number of personnel is almost 2 million men.[9]

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8. November 30, 1964.
9. Report of the Institute of Strategic Studies, London, November, 1964.