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Notes on Source

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THE CONSTRUCTION AND USE OF NOMOGRAMS FOR OPERATIONAL-TACTICAL COMPUTATIONS

by Col V. RYABCHUK

On the pages of the magazine Voyennaya Mysl' (Military Thought) there are a number of articles on the theory of analysis of operations. The discussion permitted a clarification of the points of view on the subject, content and problems of this theory, a convergence to a certain degree of the various opinions, and a development of the overall views on the bases of this new and burgeoning science.

In regard to the ever growing use of mathematical methods of analysis of operations it is reasonable to devote more attention to the specific forms of their use in the practical work of commanders and their staffs.

The increase in quantity and complexity of operational-tactical computations has required that electronic computing and keyboard calculating machines and other complex computing equipment be placed in the hands of the troops. With this equipment it has become possible to use mathematical methods in analyzing military operations in order to obtain quantitative bases for decision-making in combat and during an operation.

In addition each officer can successfully use the simplest calculating devices, including graphs and nomograms. They can be used under combat conditions to solve quite complex operational-tactical problems simply and with ease. A commander should always have at hand (on the command map-plotting board) the graphs, tables, rulers and nomograms which facilitate calculations regarding the use of nuclear weapons, the radiation levels, and the time element in the employment of forces and resources in combat and during an operation. Using them, the commander can quickly find the necessary quantitative characteristics according to specific input data and immediately use them in his decision.

Nomograms and graphs can be quite accurate, complex and constructed according to EVM computations, or they may be approximate and simple (/Note/: The linear dimensions of the nomograms are somewhat reduced in this article).

Graphs and nomograms have long been used in military training establishments and by staffs and troops for the solution of the most varied problems.

In a number of instances however they are prepared by individual officers who are more knowledgeable in mathematics. The need for a wider introduction of nomograms into headquarters at all levels and into the troops is hindered by the absence of a simple procedure for their construction and use which is applicable to every officer. In addition the skill of all staff officers to independently figure out and compose (construct) the necessary tables, graphs and nomograms plays a large role in the rapid preparation of sufficiently accurate quantitative bases for decision-making, the more so since their preparation is simple and does not require the expenditure of special efforts and resources.

The ease of obtaining the necessary data by using nomograms permits, in preparing operational-tactical decisions, a rapid evaluation of a large number of calculated quantities characterizing different variations of combat operations, and a selection from among them of the one which best answers the combat problem and the specific conditions. Therefore the use of nomograms for operational-tactical calculations can be considered one of the ways of practical realization of the results of the application of the theory of analysis of operations in the control of troops.

We will attempt to show by using specific examples the procedure in constructing and using nomograms.

Functional scales and grids are the necessary elements of any nomogram.

A functional scale is a line on which one set of values is plotted from an initial point, but in place of these values are written others related to the first ones by a definite mathematical dependence (in other words the function is plotted, but its argument is inscribed). The slide rule is a typical example of the use of such scales. On the scales of the slide rule, as is known, are inscribed numbers, but what is plotted is in reality the logarithm corresponding to a number. Thus by adding the logarithms one obtains the products of the numbers inscribed in place of them.

Logarithmic scales and the instruments constructed with their help find a wide use in military affairs. Very many operational-tactical, artillery, engineer, rear service and other calculations are rather easily solved on slide rules. For example, the troops have found a steady use for the artillery slide rule, on which is solved a wide circle of artillery fire problems. Circular logarithmic scales are used in the form of various computers for adjustment of fire, for processing data on target location by intersection, for topographic tying in and for calculating fire possibilities.

Another example of functional scales used in military affairs, especially in operational-tactical computations, are the title scales on which numbers are plotted in a specific scale and the corresponding operational-tactical concepts are inscribed. An example of this are scales on which are plotted the radii of the zones of destruction of a nuclear device of a certain gain, while the nature of the objects affected within the limits of this radius is inscribed (exposed live force, etc.). Of the very same type are scales on which are plotted the amounts of time necessary for given means of destruction to prepare for firing, while the name of these means is inscribed.

A so-called double scale is often used for operational-tactical computations. It is constructed like an ordinary functional scale, but the inscriptions are made on both sides: on one side are inscribed the values of the argument and on the other -- the corresponding values of the function.

An example of such a scale is the nomogram for determining the height of a nuclear explosion in relation to the gain of the weapon.

Nomograms are strictly determined combinations of different functional scales. Both the elements of scale construction and their mutual disposition are described in nomography by a series of complex mathematical relations. These relations are expressed by an entire system of formulas. The use of such formulas in a combat situation is difficult. It is much simpler and more convenient to use functional scales and to construct their combinations according to simple models which will be shown below, and also according to mnemonic rules or even by the method of selection.

We will show this by specific examples.

There are those operational-tactical problems which require a summation of several variable quantities. We will examine the rules for construction of nomograms for this case in an example of determining the overall time needed to prepare a strike by destructive means (Fig. 1). Inasmuch as we will devote special attention later to the rules for constructing nomograms with more than three variables, we will limit ourselves for simplicity to the examination of three parameters: two inputs and one result.

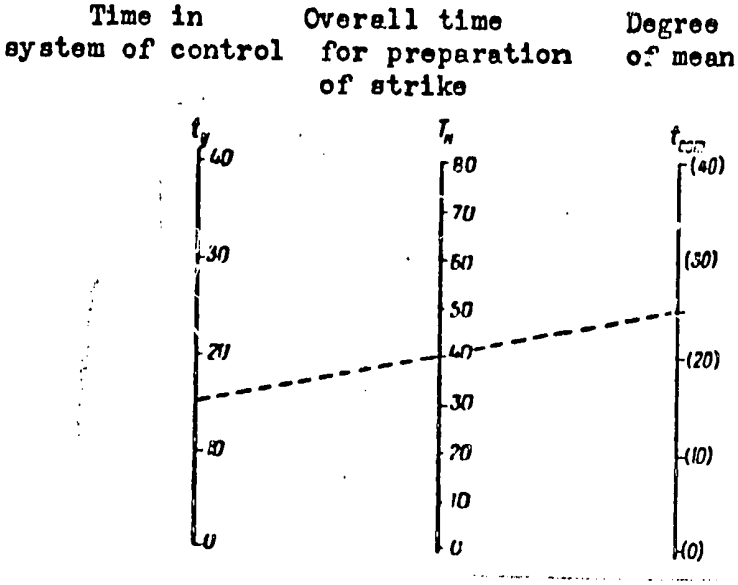


Fig. 1. Nomogram for addition of two variables.

In constructing nomograms for solution of problems involving the addition of two variables, construct two similar uniform scales at an arbitrary distance from each other and construct exactly between them a third scale with a module (scale) two times less than the other two. The initial points of all three scales must lie on one straight line, but this straight line does not have to be perpendicular to the vertical scales. It can pass at a certain angle to them and can even be fully or partially outside the boundaries of the nomogram.

If the quantities to be added are to be plotted on the outer scales and their sum obtained on the middle scale, then the direction of increase in numbers will be the same for all three scales (in Fig. 1 -- from bottom up).

Sometimes it is necessary to obtain the sum on one of the outer scales (usually on the right one). Such a case could occur if one of the addends will be changing within much wider limits than the other. Plot this addend on the middle scale, which, since it contains a smaller scale, contains more numbers than the outer ones. In such a case the increase in numbers on the middle and outer right summing scales will have the same direction, while on the left scale it will have the opposite direction. The alignment line for the scales under these conditions could pass through zero on the left scale and through any two identical numbers accordingly on the middle and right scales.

Having examined the general techniques for constructing nomograms of this type, we will return to the example in Fig. 1.

The overall time for preparation for carrying out a strike with destructive means $T_н$ is summed up from the time $t_у$ expended in the system of control, i.e. the time it takes to receive reconnaissance data, to make the decision to destroy the objective, and to prepare and transmit the order, and the time $t_{гот}$, needed for the means of destruction to be prepared for launch (firing) from the various degrees of readiness.

Having set the limits of change of the variables $t_у$ and $t_{гот}$ from 0 to 40 minutes and having selected the dimensions of the nomogram

we erect at equal distances from each other three vertical parallel uniform scales. We intersect the beginnings of the vertical scales with a horizontal straight line and note the zero readings at the intersections. On the left scale we plot the time spent in the system of control at a scale, for example, of one centimeter to five minutes. On the right-hand scale we plot the time it takes to ready the means of destruction from different degrees of readiness, using the same scale. Opposite the corresponding values of readiness time can be marked the gradations along with the name of the means of destruction and the degree of its readiness. On the middle vertical scale we mark the overall time for preparation of the strike, but in a scale of one centimeter to 10 minutes. It is extremely simple to use the nomogram. To find the overall time for preparation of a strike we lay a straight-edge with one end on the time spent in the system of control, on the left scale, and with the other end on the hachure on the right scale with the name of the means of destruction in the appropriate degree of readiness. We read off the overall time for preparation of the strike on the center scale.

We can use this same nomogram to solve several variations of the problem and to select the most acceptable of them.

The described principle for constructing a nomogram can be used not only to solve addition and subtraction problems, but also for more complicated problems. In particular, if the uniform scales of the nomogram are replaced by logarithmic ones we can add and subtract not the numbers marked on the scales, but their logarithms. But since the sum of logarithms of numbers gives the logarithm of their product, then a nomogram similar to the one depicted in Fig. 1 but with logarithmic scales will permit us to multiply and divide the variables marked on the scales.

The rules for constructing such nomograms for the multiplication and division of variables can be shown by an example of the determination of distances between vehicles according to the formula $d_0 = d_н \frac{v^0}{v_н}$, suggested by K. Lapshin and Ye. Galitskiy in the article "On the question of calculating the troop march while overcoming ruins and obstacles along the way."

The nomogram for the solution of this problem (Fig. 2) assists in selecting such distances (d_0) between vehicles and the march speed (V_0) so as not to create bottlenecks and a dangerous accumulation of vehicles in front of obstacles, the overcoming of which is possible with speed V_n and a distance between vehicles d_n, and also not to allow an excessive elongation and lag in the columns.

We construct three parallel vertical scales at equal distance one from another. The scales must be logarithmic. Here the scale of the center scale must be two times less than the outer scales. We recommend doing this by using logarithmic rulers of different sizes: the center scale should be marked off using the 12.5 centimeter rule and the outer ones with the 25 centimeter one, or the outer ones should be marked off with the basic scale and the center one with a scale of the squares of the numbers. This then will give the necessary relationship of scale for the center and outer logarithmic scales.

In Fig. 2 the logarithmic scales have been marked from the 12.5 centimeter ruler using a gauge: the outer ones from the basic scale of numbers and the center one from the scale of squares.

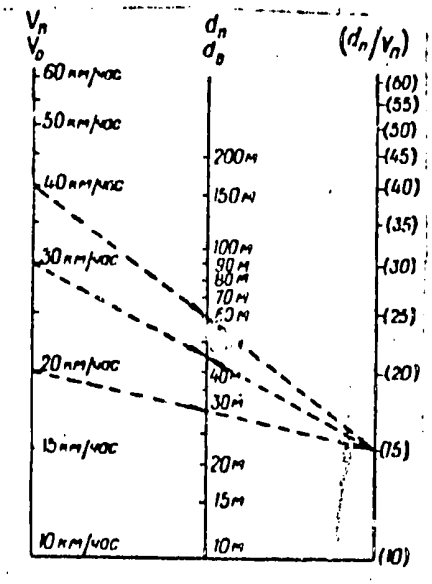


Fig. 2. Nomogram with parallel scales for multiplication and division of variables. Left scale in kilometers per hour.

Laying the ruler on the value for d_n on the middle scale and on V_n on the left, we obtain the quantity $\frac{d_n}{V_n}$ opposite the intersection of the ruler with the right scale. Without changing the point of intersection of the ruler with the right scale, we pivot the ruler to the value V_0 on the left scale, that is, we multiply $\frac{d_n}{V_n}$ by V_0. Then we read off the unknown d_0 at the intersection of the ruler with the center scale.

The advantage of such a nomogram lies in the opportunity, without carrying out any calculations, not only to obtain the unknown quantity, but also to evaluate a large number of variations of combinations of speed of movement V_0 and distance d_0 for every specific obstacle along the route and on the basis of this to make the most reasonable decision in the given circumstances.

The type of nomogram just described is called the "parallel scale nomogram."

So-called "reticular nomograms" are another widely used type in operational-tactical calculations.

With them any arithmetic operation can be expressed which is producible with three variable parameters (addition, subtraction, division, their combinations etc.). Here one of the parameters is plotted along the horizontal axis, another along the vertical, and the third is determined by a family of curves between these axes. Each such curve expresses a mutual dependence of the first two variable parameters with one constant value of the third parameter. And the whole family of curves expresses the mutual dependence of the three variable parameters and is a reticular nomogram with which, given any two parameters, we can find the third.

An example of one of the forms of a reticular nomogram is depicted in Fig. 3.

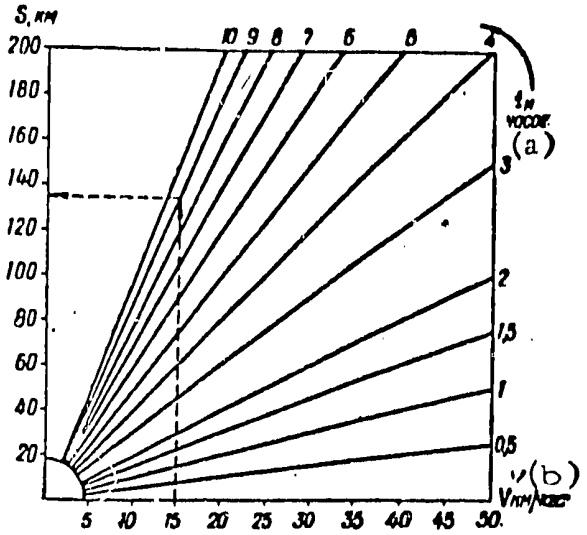


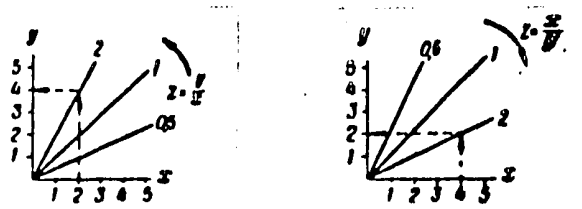
Fig. 3. Reticular nomogram of division. a - hours; b - km/hr.

This nomogram expresses the relationship between the parameters of troop maneuver: $t_M = \frac{S}{V}$, where t_M -- time to complete the maneuver in hours; S -- distance (in kilometers) over which the maneuver is accomplished; V -- average speed of movement in km/hr.

On the horizontal axis of this nomogram are marked (at a scale of one centimeter to five km/hr) the possible average speeds of troop movement. On the vertical axis is marked the size of the maneuver in kilometers (scale of one centimeter to 20 kilometers). We set various times of maneuver with the allowable intervals between them (the time intervals depend on which troop control term will be using the nomogram and for what purpose). For any two values of speed and size of maneuver we calculate the time, and after plotting it on the graph we draw a straight line (since in the given instance the relationship is linear). Inasmuch as all plots of time pass through the origin of the coordinates, even one point is sufficient for construction. For example, in order to plot a straight line corresponding to two hours of movement it is enough to use the origin of coordinates and a point answering a distance of 100 km and a speed of 50 km/hr. We construct in an analogous manner the straight lines for the maneuver time 0.5; 1.5; 3; 4; ... 10 hours.

Using this nomogram it is possible not only to determine the time of maneuver, but also to solve other problems regarding the given three parameters.

The above reticular nomogram is sometimes called a radian nomogram of division. We can infer certain general rules for the construction and use of similar nomograms depending on whether it is necessary to multiply or divide the values of the variable parameters. These rules reduce to the following (Fig. 4). If we must construct a nomogram of multiplication $y = x \cdot z$, then we plot in the selected scale along the horizontal axis the possible values of x, and along the vertical axis those of y. We set some value of the variable (for example z = 0.5) and opposite one of the largest values of x (for example x = 4) we plot on the graph a point corresponding to the x and y coordinates (y=4·0.5=2). A straight line is drawn through the origin and this point and is tagged with the given value z = 0.5. In the same way are constructed straight lines for all remaining necessary values z.



a) multiplication of x by z (arrow of increase z and course of problem solution in one direction)

b) division of x by z (arrow of increase z and course of problem solution in opposite dir.)

Fig. 4. Rules for construction and use of radian nomograms.

The construction of a nomogram is constructed in a similar manner, except that the point on the graph for construction of the line of a given z is plotted according to the coordinates x and $y = \frac{x}{z}$. In order not to err in the nature of the calculations performed on the nomogram, we recommend a mnemonic rule: if the path for finding the solution to the problem coincides with the direction of increase of the values of z, then we have multiplication; if not, then division.

Until now we have examined nomograms connecting according to specific laws two-three variable parameters. However in the practice of operational-tactical calculations it frequently is necessary to consider the influence of a much greater number of conditions in the combat situation, and consequently to construct and use nomograms with more than three parameters. As a rule, they will be composite ones.

Let us examine the rules for constructing such nomograms.

In using nomograms with parallel scales, the solution of a problem with many variables is accomplished by using intermediate scales.

Fig. 5 shows an example of the construction of a composite nomogram of addition. Using such a nomogram it is possible to add numbers of the I, II and IV scales and find their sum on scale V. Scale III is used as an intermediate, to fix the sum of the numbers of scales I and II. After construction of the nomogram the numbers are removed from the intermediate scale. The scale of the scales and the order of increase of the numbers on them is very simple to determine by a selection depending on the nature of the problems to be solved although, as has already been noted, there does exist a strict mathematical description of the parameters of these scales.

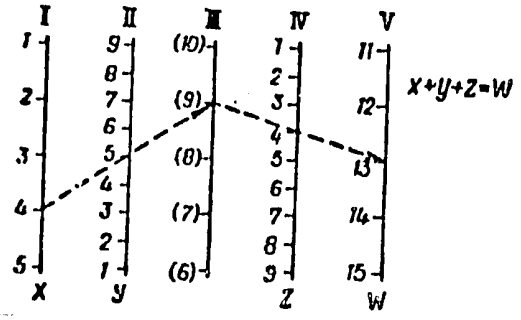


Fig. 5. Scheme of construction and use of a composite nomogram with parallel scales.

Using such a nomogram we can solve problems not only of addition, but also subtraction, and by using logarithmic scales -- multiplication and division. The number of variable parameters also can be increased without limit by introducing additional intermediate scales. The scales themselves can be not only uniform and logarithmic, but also any other functional ones (number or name).

Generalizing the experience of construction of composite nomograms with parallel scales, we can recommend a number of mnemonic rules which substantially simplify the order of construction for use among the troops.

Thus, for the consecutive addition or subtraction (and with logarithmic scales -- multiplication or division) of n variable quantities construct (2n - 1) parallel scales (for example, for multiplying four quantities we construct seven scales).

The scale of all the odd scales is identical and the scale of all even scales is two times less than that of the odd. The increase in quantities on the odd scales should always go in mutually opposite directions. Thus if on scale I the numbers increase from bottom to top, then on scale III they should increase from top to bottom, on scale V -- again from bottom to top etc.

depends on the nature of the producible operations. In sequential addition or multiplication of numbers the direction of increase of values of the even scales must be opposite to the direction of the preceding odd scale. If however we subtract or divide the numbers, then the directions of the even and and preceding odd scales should coincide. This order of construction ensures the solution of a problem with a sequential transition from scale to scale from left to right. The transition from right to left corresponds to the inverse mathematical operations. If, for example, the nomogram is constructed so that by laying the straight-edge on the numbers of the III and IV scales we obtain their sum (Fig. 5), then by laying the straight-edge on the numbers of the V and IV scales we will obtain their difference on the III scale.

The origins of each pair of neighboring odd scales and the even scale between them must lie on one straight line. Thus the origins of I, II, III must lie on one straight line, and those of III, IV, V on another. However in practice the aligning of origins of scales is best done by a selection of elementary examples solved in one's head (Fig. 5).

Not only the nomograms with parallel scales, but also the reticular ones can be composite.

Reticular composite nomograms are also constructed by using intermediate scales. Just as composite nomograms with parallel scales, they represent in the simplest case two ordinary reticular nomograms having a common intermediate scale, which is the end of one and simultaneously the beginning of the other nomogram.

Let us examine a specific example of the construction and use of a composite reticular nomogram. Let us assume that it is necessary for us to construct a nomogram to determine the time of passage of troop columns over the line of departure, a bridge, a pass, etc. This time may be determined by the formula:

$$t = \frac{N(J + l)}{V}.$$

where t -- time of passage of the column by a given point; N -- number of transport units (for example, motor vehicles) in the column; J -- interval between vehicles; V -- average speed of movement of the column; l -- length of the transport unit.

If the length of the transport unit is taken as constant (we will consider it to be equal to seven meters), then the nomogram must be constructed for four variables. By introducing an additional variable L -- overall column length, we can break the initial equation down into two parts of three variables each:

$$L = N(J + l); \quad t = \frac{L}{V}.$$

For each of these equations it is possible to construct a reticular (radian) nomogram according to the rules shown in Fig. 4. Inasmuch as one variable L is common to them, these nomograms can be joined so that the axis L belongs simultaneously to both nomograms. For this it is necessary only to select for both nomograms an identical scale for the L scale. Construction is carried out in the following order (Fig. 6).

On a sheet of paper (best is millimeter paper) lay off a horizontal axis, and erect a perpendicular from its center. This perpendicular is the common vertical axis for the nomograms lying to the left and right of it.

The point of intersection of the vertical and horizontal axes is taken as the common origin of the coordinates of the composite nomogram. To the right of it along the horizontal axis we plot the scale N to a scale of one centimeter to 20 vehicles, and in the opposite direction along the very same axis -- scale t to a scale of one centimeter to ten minutes. On the vertical axis we plot scale L to a scale of one centimeter to one kilometer. To the right of the vertical axis we construct a nomogram of multiplication for the function $L = N(J + l)$, setting particular values of N and J with constant l. For example, for N = 100 motor vehicles and J = 25 meters

$$L = 100 \cdot (25 + 7) = 3.2 \text{ kilometers.}$$

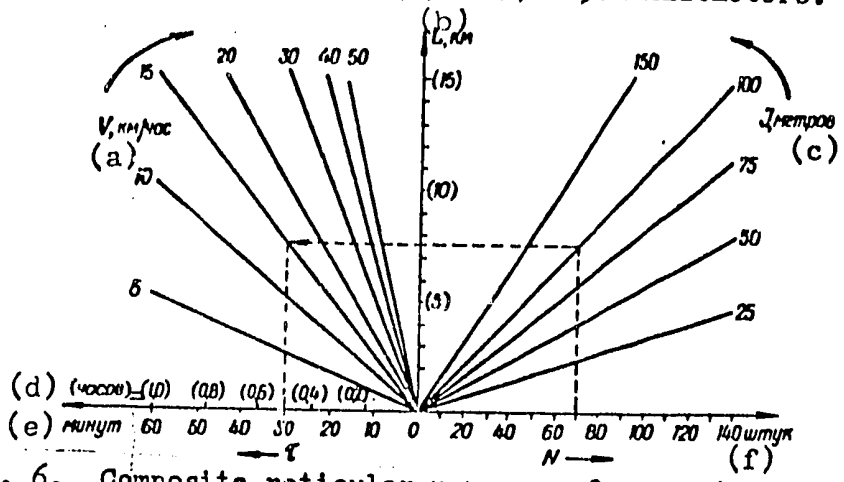


Fig. 6. Composite reticular nomogram for march calculations. a - km/hr; b - km; c - meters; d - hours; e - minutes; f - items.

We plot on the graph a point corresponding to coordinates N = 100 items and L = 3.2 km. We pass a straight line through the origin of coordinates and this point and ascribe to it the number 25. Now using this straight line as a plot, we can determine according to the number of vehicles N the column length with intervals between vehicles of 25 meters. Here the sum of the lengths of the transport means themselves is automatically considered. In the same way we plot the curves for the other possible values of intervals between vehicles. To the left of the vertical axis we construct a nomogram of division for function $t = \frac{L}{V}$, setting various values of V. For convenience of construction, we plot on the horizontal axis the time not only in minutes, but also in hours.

The rules for use of the ordinary and the composite reticular nomogram do not differ. For example, to determine the time for passage of a mountain pass for a column of 70 vehicles moving with intervals of 100 meters and with speed of 15 km/hr, we must (Fig. 6):

-- from the 70 mark (number of vehicles) on the N scale lay out a vertical line to the intersection with the oblique line corresponding to a 100 meter interval;

-- find at this height in the left portion of the nomogram the intersection with the oblique line corresponding to the speed of movement of 15 km/hr;

-- drop a line vertically down and read off the time -- 30 minutes -- on the t scale.

Within the limits of the given variables according to the nomogram described we can perform many other calculations connected with the march. For example, going in the opposite direction in relation to the last example, we can determine how many vehicles (tanks, weapons) can pass over a bridge (defile, pass) in a limited segment of time with given intervals between vehicles and a known speed of movement.

In order to solve operational-tactical computation problems with an even greater quantity of different variable quantities, we can construct a composite nomogram from three or four ordinary reticular nomograms (Fig. 7) in which the adjacent coordinate axes play the part of intermediate scales.

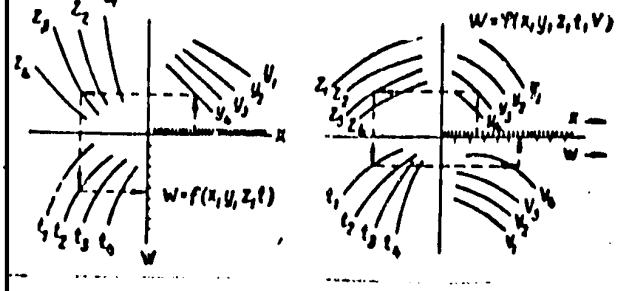


Fig. 7. Composite reticular nomograms for the solution of problems with five and six variables.

In general composite nomograms are not only constructed of monotypic elements. It is possible, for example, to construct a composite nomogram from a reticular nomogram and a nomogram with parallel scales or even from several types of both. The only thing required here is the uniform scale of construction of the intermediate scales of the adjacent nomograms.

Experience has shown that in constructing nomograms it is convenient to use millimeter paper (ordinary or logarithmic). But after construction it is often convenient to redraw it on tracing paper so that the nomogram has no extra lines.

The majority of specific examples of nomograms given have related to the field of calculations of troop movement and have a very elementary nature. However it is not difficult to see that, using the method given, it is possible to construct in the very same way nomograms for any other operational-tactical calculations.

Experience has shown that nomograms can have their widest use in calculations to determine the required gain of nuclear warheads to destroy objectives with the necessary degree of loss; to evaluate the radiation levels and determine the expected radiation doses of the personnel; to determine the time needed to force water barriers; to evaluate the time factor to ensure the timely delivery of nuclear strikes; and to conduct operational-tactical calculations. In addition nomograms can be used to solve more particular problems such as determination of the height of a nuclear air burst, calculation of the necessary periodicity of reconnaissance of the enemy's nuclear delivery means, determination of the safe distance of troops from their own nuclear bursts and a whole series of others.

Specifically which nomograms should be used to solve particular operational-tactical problems? This depends on the mathematical form of expression of the problem and on the number of variable quantities included. To solve computational operational-tactical problems, the mathematical expression of which includes only two variables, it is useful to employ a double functional scale or an ordinary graph of the relationship of the two variables. The nature of the functional relationship itself does not influence the selection

of the type of Lalanne. For instance, it is easier to construct a graph than a double functional scale, but the latter occupies less room and it is somewhat simpler to use. If three variables are encountered in the calculations it is convenient to use for their solution either nomograms with parallel scales or reticular ones. The latter are more preferable in the presence of a complex functional relationship between variables. Problems with more than three variables require the construction of composite nomograms for their solution.

Thus the use of nomograms is possible in any field connected with operational-tactical calculations. Practice has shown that under present-day conditions it is extremely important for officers of all levels to know how to use them. For this is necessary a confidence in the necessity and the effectiveness of the simplest means of calculation and training in the procedures for their preparation and use. Therefore it would be extremely useful on the basis of the scientific direction existing in mathematics, usually called nomography, to develop the foundations of military nomography as an applied instrument of operational skill and tactics.

A knowledge of the foundations of nomography allows each officer not only to construct new nomograms, but also to use effectively those already existing and issued in a centralized manner. The time spent on the construction of nomograms while preparing for combat operations is paid for with interest in a combat situation characterized by extreme transience of events. And the possibility to save time in performing operational calculations and thus facilitate the anticipation of the enemy is difficult to overestimate. Therefore in our opinion one should not balk at the prior preparation of nomograms, especially in peacetime, even if the work at first seems laborious and long drawn out.

We must also beware of the other extreme: the "overproduction" of nomograms in staffs, their unnecessary production when it is easy without them to perform calculations. It is useful also to update nomograms in a timely manner, destroying those which are outmoded. Mastery of the procedures of their construction will be of great help in this.

The question could arise whether nomograms are needed when we have electronic computers. Primarily nomograms and EVM do not exclude, but supplement each other. Many operational-tactical calculations can be performed in advance on fixed EVM and on their results nomograms can be constructed for use in combat operations. Even in headquarters equipped with EVM it is necessary to have a selection of nomograms for performing operational-tactical calculations, even in the simplest form, in case the EVM go out of order. Moreover it may become necessary in the course of combat operations to construct nomograms to solve unforeseen problems which were not programmed for processing by EVM. All this gives a basis to state that the need to use nomograms has not decreased even with EVM in the hands of the troops.

There is every reason to believe that the study of the bases of military nomography as one of the forms of application of mathematical methods of analysis in operational skill and tactics will lead to an even greater efficiency in the work of commanders and their staffs, will increase their general and military culture and in the end will play a positive role in ensuring success in combat operations.

ON THE NATURE OF ARMED STRUGGLE IN LOCAL WARS

by Col S. MALTANCHIKOV

In recent years a number of publications concerning various aspects of local wars have appeared in our press. In them the greatest attention has been devoted to questions of military-political nature and to the course of events in certain wars. In this article I will attempt to generalize the experience of local wars which have taken place since World War II and to show the condition which gave rise to them, the goals pursued in them, the effect of the influence of special features of the areas in which the wars were conducted on the combat operations of troops, the role of the branches of armed forces and the peculiarities of their employment in them, and the nature of armed struggle under different conditions of conducting local wars.

In the 20 years since the end of World War II there has hardly been time when the imperialists have not carried out aggressive acts and unleashed local wars in some part of the globe. The thunder of World War II had not yet died away when in 1945 Dutch colonialists perpetrated aggression against Indonesia; in 1945 French imperialists unleashed a war in Laos and, in 1946, against the Democratic Republic of Vietnam. Their successors were the US imperialists who are now conducting a war in Vietnam. In 1950 the United States of America and their accomplices provoked a war against the Korean People's Democratic Republic; in 1954 French colonialists began a war against the people of Algeria; and in 1956 there was the English-French-Israeli intervention against Egypt. In 1957 Great Britain unleashed military operations against Oman and Yemen in the southern part of the Arabian peninsula, and in 1958 US and later British troops landed in Lebanon and Jordan. In 1960, with the help of Belgian, US, and British colonialists, a hot bed of military actions sprang up in the Congo. 1961 was marked by such events as the attack on the Republic of Cuba by counterrevolutionary bands organized by the United States of America, the aggression of France against Tunisia, and the war unleashed by Portuguese colonialists against the people of Angola. In most cases, these local wars were of a prolonged nature. Even now the heroic struggle against imperialism for freedom and independence is being waged by freedom loving peoples in various parts of the world. The aggression of US imperialists in Southeast Asia has taken on a particularly dangerous and wide scope.

The local wars of the post war period may conditionally be divided into three groups. In first place (by number) are wars of imperialists against weak countries recently freed from colonial dependence. Approximately the same number of wars are unleashed against colonial and dependent countries which are fighting for their independence. There have been wars or attempts of imperialists to carry out aggression

against certain countries which have chosen the socialist way of development.

All these wars were reactionary and predatory on the part of the imperialists. The common objectives of imperialist countries in local wars unleashed by them are the prevention of the disintegration of the colonial system and the appearance of national liberation movements in colonial and dependent countries and the strengthening of their own influence there, the support of reactionary regimes in this or that country for strengthening their own domination, the holding or seizure of important economic and stratigic areas, and the creation of bases around countries of the socialist camp for preparation of world nuclear war. Imperialist countries use local wars, especially large ones, as laboratories for testing a number of military theories and the combat capabilities of means of armed struggle.

All these objectives, which speak eloquently of the imperialistic direction of local wars, give only an over-all impression of the internal political efforts of the aggressive ruling circles of the leading countries of the West. Each war has its own political objectives.

The most reactionary objectives and those most dangerous for peace are pursued by imperialists in local wars directed against a socialist country. They are created to destroy the socialist structure in a given country and to restore the former regime favorable to the imperialists, thereby weakening the socialist camp and the national liberation movement and strengthening the position of the imperialists. These were the goals of the imperialists in unleashing the war in Korea, in organizing the aggression of Cuban counterrevolutionaries against the Republic of Cuba, and, at present, in expanding aggression against the Democratic Republic of Vietnam.

The experience of local wars against certain socialist countries has shown how unsound are the aggressive plans of the imperialists. In these wars the aggressors have not achieved their objectives and have lost their military and political prestige.

By perpetrating aggression against countries recently freed from colonial dependence and on their way toward independent development, imperialists attempted to establish domination over them, to derive profits from the exploitation of national resources, to hold important strategic areas, and to suppress developing national liberation movements in other areas by the armed defeat of a country which has gained its freedom. The imperialists pursued these goals in wars against Egypt, Tunisia, Laos, Indonesia, Malaya, and the Congo. For example, during the British-French-Israeli aggression against Egypt in 1956, the British and French imperialists attempted to derive profits from the exploitation of the Suez Canal and to gain control over this

important area. Moreover, they were worried -- not without justification -- that the nationalization of the Suez Canal might be a signal for an uprising of other enslaved peoples, especially in the Near East, where capitalist nomopolies make enormous profits from the exploitation of petroleum resources. In the war unleashed by French imperialists in Tunisia the primary objective was to retain on the territory of that independant country a military base in Bizerte, used as an important outpost in North Africa.

In wars conducted in colonies and ependent countries the imperialists tried to suppress the national liberation movement and retain the domination of the imperialist bourgeoisie, who derive huge profits from the exploitation of the national resources of these countries. Here we must first of all talk about the bloody wars of the French colonialists against the people of Algeria, of the British imperialists in the southern part of the Arabian peninsula, and of the Portuguese colonialists, who are still spilling the blood of the people of Angola. However, the experience of colonial wars shows that under modern conditions imperialism can no longer stop the disintegration of the colonial system and retain its domination in colonial and dependent countries through the force of arms.

With weapons in their hands, the peoples of the countries suffering from aggression have taken up the struggle against the imperialists for liberation from colonial servitude and in defense of national independence and revolutionary achievements. And this struggle always has the support of the progressive forces of the world. The experience of the most important local wars, which are especially directed against the countries of the socialist camp, shows that the imperialists did not try to achieve their aggressive objectives alone, but created a coalition of countries unified in their hatred of the socialist camp. In this way they expected to quickly destroy the armed forces of the enemy and achieve their objectives through their combined efforts. At the same time they hoped to give such an approach the appearance of a 'lawful act' under the falg of the United Nations, to deceive peace-loving peoples and to pose as defenders of freedom, justice, and as the champions of peace. Most often the main organizer of crusades against socialist countries and other freedom loving peoples is US imperialism. This was best shown in the war in Korea. Soyedineniya and chasti of 16 countries took part in that war in a coalition on the side of the USA. The military-political defeat of the aggressors in Korea and the failure of the adventurist politics of the USA in Cuba testified to the failure of the political and military plans of the imperialists in regard to socialist countries. Another example of the creation of coalitions of imperialist countries in local wars is the British-French-Israeli-aggression against Egypt in 1956. Here the plans of the imperialists failed because of the decisive resistance of the Egyptian people and the firm position taken by the Soviet Union.

Today the United States of America is attempting to form a coalition of states for waging a local war in Vietnam. Failing to achieve the desired results in the struggle against the Vietnamese, the USA has expanded aggression, increasing forces and bringing its allies and satellites into the war. However, the United States has not been able to create a "united front" of imperialist aggression. The participation in the war of a certain number of troops from Australia, New Zealand, and South Korea have not brought the desired results. This once again testifies to the fact that the Vietnam adventure of the USA is not popular even among its allies.

The question of the regions of local wars deserve attention. In the majority of cases they arose and were conducted in peripheral regions far from the aggressor countries: in the Near East and Middle East, in Southeast Asia, and Latin America. Many of them took place in regions surrounded by seas (Korea, Vietnam, Algeria, Tunisia, Indonesia, Lebanon, and others). The unleashing and conduct of these wars involved the necessity of transporting forces and meteriel great distances by sea and air, and also the employment of considerable naval forces. The latter gave large advantages to the aggressor who possessed superiority on the sea. The regions of local wars were dissimilar in physical-geographic and climatic conditions and these factors had different effects on the conduct of combat operations -- some of these facilitated and others hindered troop actions. Concerning the territorial scope of the local wars, it should be noted that military operations were conducted in relatively small regions and usually were limited to the territory of the country being subjected to aggression, but in certain cases included the territory of neighboring states. The wars against socialist states were the largest in scope. Thus the war in Korea covered the entire Korean peninsula, which is 800 kilometers long and 250 kilometers wide. The use of ground troops in this area was limited by its operational capacity.

The more limited objectives of local wars also accounted for their small territorial scope. Thus, for example, French imperialists began aggressive actions in Tunisia in 1961 to maintain their strategic positions in that part of Africa. Accordingly the combat operations were limited to the area of Bizerte, where the French had naval and air bases and a garrison of 5,000 men.

It should be noted that the limited territorial scope of local wars sometimes takes on a purely conditional character. The experience of a number of wars, including the one in Vietnam, shows that the borders of neighboring states are provocatively violated by the aggressors. Local wars, especially those affecting the interests of countries of the socialist camp, carry with them the threat of expansion beyond their initial territorial boundaries. This should seriously warn peace-loving peoples to mobilize for the struggle to block the aggressive plans of the imperialists.

The forces and means used in local wars were greatly varied. Their number and their combat make-up were usually dictated by the objectives of the imperialists in this or that war, by the expected forces of the country being subjected to aggression, their degree of resistance, and the physical-geographical features of the area of combat operations. Accordingly, for conducting some wars only individual chasti and soyedineniya were used, and for others large forces in the form of operational ob'yedineniya were used.

Experience shows that the more reactionary the objectives of imperialists in a war, the more forces and materiel they use to conduct it. For example, in the attempt to eliminate the socialist structure in the Korean People's Democratic Republic, comprising over 90 percent of the ground troops, 99 percent of the air force, and 94 percent of the naval forces. (Yefremov I. Ye., Behind the Cloak of "Limited" Wars, Voyenizdat, 1960, page 52). According to figures in the US press, the US used 1,200,000 men, 1,600 airplanes, up to 1,000 tanks, and the greater part of the 7th fleet in the war. Although the aggressors had great technical superiority, they were unable to achieve their objectives. They suffered heavy losses: of the 1,900,000 "UN troops" killed, wounded, or captured, more than 390,000 were Americans, as was an even larger amount of equipment. (The History of International Relations and the Foreign Policy of the USSR, 1870-1957, a publication of the Higher Party School, 1957, page 446). These US losses are even more significant if, for example, one keeps in mind that during the entire Second World War in the Pacific theater they lost only a little more than 170,000 men (G. M. Gel'fond. The History of the War in Korea in 1950-1953, a publication of the Higher Naval School imeni M. V. Frunze, 1964, page 240).

The war against the Korean People's Democratic Republic clearly shows that imperialists have nothing to gain in aggression against socialist countries. In the final analysis these adventures always ended in military-political defeat. Unquestionably, such a fate awaits them in Vietnam.

The imperialists also used considerable forces and means in a number of other local wars. For example, the better part of a division of the French army was needed to conduct the bloody and prolonged war in Algeria. Altogether the French forces in Algeria totaled 800,000 men, nearly 1,500 aircraft, and 250 helicopters against the 130,000-man Algerian National Liberation Army and partisans. (Problems of Peace and Socialism, 1965, No 1, pages 53-54).

During the British-French-Israeli aggression in Egypt in 1956 the invasion forces of Great Britain and France alone numbered over 80,000 ground troops (La Revue Maritime, November, 1958), over 1,000 aircraft, and nearly 185 combat ships (Questions of History, 1963, No 9, page 75).

The forces of the sides were unequal, the young Egyptian army having just been formed. On the main axes the British and French troops outnumbered the Egyptian forces by 4 to 5 times.

In their Indochina adventure, US imperialists long ago discarded the mask of "advisor," and have openly participated in the war against the Vietnamese people. By October 1965 up to 140,000 American soldiers and officers and a large amount of various types of combat equipment were involved in military operations against the partisans and troops of the National Liberation Front.

Speaking of the forces and means used in local wars it should be noted that military actions in them were conducted by the very latest means of armed struggle, with the exception of nuclear weapons. Already in the first, most important, local wars of the post war period (Korea, Egypt), jet aircraft, helicopters--including those based on aircraft carriers -- and also guided aerodynamic missils (created on the basis of the Hellcat fighter) were used and tested under combat conditions.

In many wars (in Korea, Algeria, Vietnam) imperialists used means of mass destruction in the form of napalm bombs not only on the fields of battle, but also against the peaceful opulation. Recently the world witnessed monstrous new criminal acts when the American aggressors used poisinous chemical substances and phosphorous bombs against the people of South Vietnam. Using modern means of amred struggle in combat situations, they used local wars as an experimental laboratory for testing and improving equipment and armament.

Thus, despite the fact that the local wars took place on relatively small territories, the aggressors used large forces and modern means of armed struggle to conduct them, giving them great numerical superiority over the enemy in men and combat equipment.

However, whereas the wars of the 50's were conducted with the help of conventional means of destruction, the situation has changed somewhat today. The use in Vietnam of poisonous chemical substances goes beyond the limits of conventional means of armed struggle. As is known, the chemical weapons of capitalist countries are regarded as means of mass destruction and the fact of their use in a local war indicates an extremely dangerous tendency.

Of unquestionable interest is the question concerning the participation in local operations. It is noteworthy that the forces and means used by the aggressors in most local wars represented all branches of the armed forces: military actions were conducted with the participation of ground troops, air forces and the navy. The ratio of the branches of the armed forces was determined by the conditions of the unleashing of the war, the features of the theater of military operations, and the

[illegible] aggressors.

Because the military operations in all local wars were conducted primarily on land theaters, the main role belonged to the ground troops. For example in Korea the United States had nearly 20 divisions (G. M Gel'fond. The History of the War in Korea, page 246). This figure is considerably increased if one counts the troops of South Korea and the other participants in the aggression. Here it should be noted that nearly all the countries which were subjected to aggression had, for the most part, ground troops in the form of a young regular army or partisan detachments. The main mission of the ground troops of the aggressors in the final analysis was the destruction of the army of the enemy and the mastery of his territory. The fulfillment of this mission by the ground troops in essence determined the success or failure of the combat operations of the war in general.

Organizationally the ground troops in a number of wars were made up of mobile units -- motorized, armored, and airborne soyedineniya, often combined under corps (Algeria) or army (Korea) commands. Here of course, we are talking about the most important local wars. In smaller wars, for the most part in colonies, the employment of ground troops was limited to the operations of individual combined-arms soyedineniya and chasti. In local wars in general the soyedineniya and ob"yedineniya of the ground troops were of the same organization as those which were intended for conducting a world war.

In local wars the operations of airborne troops played an important role. In some of them the aggression actually began with air drops to capture air fields and road centers and to create conditions for strengthening the efforts of interventions. Airborne troops were also used widely in wars conducted in areas having special conditions and where there were a limited number of roads. For example, in the Vietnam jungles the French colonialists air-dropped troops to capture important positions, depots, and supply bases, and also for joint operations with mobile troops against partisans. The size of an airborne landing varied from one to three -- and sometimes more -- battalions. Before the air drop the drop zone was subjected to an intense bombardment. After the landing the airborne troops consolidated their position or, having carried out their mission, returned to their own base. Airborne troops are also being widely used by American interventionists in the war which they are now conducting in Vietnam.

Airborne forces up to a regiment in strength were used by the US in Korea to capture road centers and withdrawal routes of North Korean troops. Airborne troops were not used widely in this war, however.

Air and naval forces also played an important role in local wars. It was these forces which most often began combat operations.

The air forces were used for bombing raids against enemy troops, for transporting troops, and for providing support for ground troops. Many of the operations of the enemy's aviation involved strikes against objectives in the rear of a country which often had no military importance. Even strategic aviation was used for this purpose. Thus, in an attempt to wear down the resistance of the Vietnamese people, US aviation bombs bridges, roads, hydroelectric installations, and ordinary population centers and rice fields. Aviation played an important role in the initial periods of wars, when they delivered the first contingents of troops to the area where aggression was being unleashed and carried out invasion operations. Striving to achieve a decisive success at the very beginning of a war, the aggressors used aviation for delivering massive strikes against air fields, air defense means, large population centers, and also against enemy troops in the drop zones of their own airborne troops. For example, in Korea and in Egypt from 500 to 1500 sorties were made in a single day. In invasion operations transport aviation was widely used for landing airborne forces and for transporting materiel.

In the course of military operations, for example in Korea, aviation carried out missions in the interest of ground troops, to a certain degree making up for the lack of artillery, especially in neutralizing targets and objectives in the depth of an enemy position. Tactical aviation was usually used for this. For operations against objectives located deep in enemy territory medium and heavy bombers were also used. Helicopters were widely used for making tactical troop landings, observation of the battlefield, and for communications and the delivery of cargoes. In wars where the front line was not clearly drawn, armed struggle took on the form of guerrilla warfare. For example, in the jungles of Vietnam helicopters are widely used for combatting guerrillas as well as for air strikes against objectives of the rear.

Thus, in local wars all types of aviation form helicopters to strategic bombers were employed, and the physical-geographic features of the theaters of military operations largely determined the diversity of the missions which they fulfilled.

The ocean and sea expanses separating the territory of the aggressor states from the countries where they unleashed local wars demanded the wide use of naval forces. Thus the 7th US Fleet, made up of ships of all classes, including aircraft carriers; and part of the naval forces of Great Britain, Australia, and South Korea also participated in the Korean war. Ships of the 7th US Fleet are now drawn up along the shores of Indochina for participation in the Vietnam adventure. A significant part of the British and French navies participated in the aggression against Egypt.

sistance because the countries being subjected to aggression lacked the necessary combat means. Therefore, the boastful statements of the representatives of US naval forces concerning the difficult operations of the navy in local wars are, to say the least, tendentious.

A large part of the operations of the navy were connected with landings. A rather large landing was made in Korea, near Inchon; over 250 different ships and 1100 aircraft took part in this operation.

The landing force was made up of a marine division, an infantry division, and separate support units. Its mission was to capture Seoul, cut off the troops of the People's Army from their rear and then, together with other forces of the 8th US army, launch an offensive to the north. A marine division was landed in the first echelon and it in turn established a combat formation in two echelons. Units of an infantry division were landed in the second echelon. An artillery and aerial bombardment were conducted for several days prior to the landing. Groups of air support, artillery support, security, and cover were established for the landing. In the air support group there were aircraft carriers with their escort vessels, and in the artillery support group -- gun boats. During the landing their fire was directed against the podrazdeleniya defending Inchon, and it provided cover for the flanks of the landing force. The carrier based aviation of one group supported the landing, and the other delivered strikes against units of the People's Army.

The landing of the first echelon (an infantry division) was carried out in a period of two days. The landing was made on an almost undefended shore. It was this fact which, to a large extent, determined the success of the operation.

During the aggression against Egypt the invasion of British and French troops began with airborne landings in support of the naval landing. Airborne landings were made in the area of Port Said and Port Fuad on the eve of the naval landing operation for the purpose of capturing air fields, bridges and road centers. Four airborne battalions were brought in from the island of Cyprus by transport aircraft. The naval forces supporting the amphibious landing consisted of over 100 ships, including 5 aircraft carriers. Special landing craft combined into several landing detachments were used to land infantry and combat equipment. The landing of a marine force up to a brigade in strength was preceded by a 30-minute bombardment of Port Said and the area around Port Fuad by aviation and shipboard artillery. The landing at both points was made in two echelons: the first echelon consisted of two marine battalions with tanks and separate podrazdeleniya; the second echelon was landed by helicopters from two aircraft carriers. In carrying out missions in interest of the ground troops the naval fleets operated in

a conventional fashion, supporting troops of coastal groupings with the fire of shipboard artillery. Groups of ships often conducted fire for several hours. Carrier-based aircraft were usually used to deliver strikes against troops and objectives in the rear of the country being subjected to aggression.

An analysis of the missions and nature of the operations of the navy of the imperialist aggressors shows that their military leadership gives an important role to naval forces in local wars. They used, for the most part, surface ships of various classes: aircraft carriers, cruisers, destroyers, minesweepers, landing crafts, and battleships.

The nature of military operations in local wars is determined by their objectives, the combat make-up and numerical strength of the armed forces of both sides, and the special features of the theater. In certain of the more important wars contact was made between the two sides and a front line was drawn at the very outset of military operations. This was rather clearly demonstrated in the wars in Korea and Egypt. In these cases the methods of armed struggle had much in common with those of operations of World War II.

Combat operations were characterized by maneuvers. The main mode of combat operations was an offensive of well equipped aggressor troops, beginning with the penetration of the enemy defense, which was preceded by an artillery and aerial bombardment. American troops in Korea, despite their considerable superiority in forces and means, literally had to chew their way through the defense of the Korean People's Army and the Chinese volunteers. In the sectors of penetration between 80 and 100 artillery pieces were concentrated along one kilometer of the front. The penetration of the defense was accomplished at a rate of 1.5-2 kilometers in a 24 hour period, and the pursuit was made at a rate of 10 - 17 kilometers in a 24 hour period. The infantry advanced together with tanks, which under conditions of a mountainous theather operated at company and battalion levels up to regiment and division strength with the support of artillery and aviation.

The US command was able to conduct offensive operations with decisive objectives only in the second period of the war, since this required the creation of a large superiority in forces and means. An offensive was usually conducted during the day because the US troops were poorly prepared for night operations. To avoid excessive losses, the North Korean and Chinese troops attacked at night in chasti and soyedineniya.

The experience of local wars gives examples of the creation of both position and maneuver defenses. For example, in the Korean war, when the forces of the sides were equal, the defense took on a positional character. It was based on the use of mountain terrain features and on

the Armed Forces [illegible] organized in depth. However, the position forms of conducting battle were not frequent occurrences in local wars. Defense operations were usually of a maneuver type and were based on the successive holding of defensive positions with the wide use of counterthrusts and counterattacks.

All these methods of conducting combat operations were characteristic for those local wars in which armed struggle was conducted under conditions of established fronts and where both sides used soyedineniya and ob"yedineniya which were intended for waging a large, modern war. It should be noted that the US infantry division, having many rear service units and a considerable amount of equipment, proved to be too cumbersome and insufficiently mobile in mountainous and forrested terrain. The infantry soyedineniya of the Korean People's Army and the Chinese volunteers were better prepared for operations under these conditions. They possessed greater stability than US divisions.

In wars where the armed forces of the imperialists faced young, poorly equipped armies and an armed populace defending their freedom and independence, they used other forms of combat. These peoples used guerrilla warfare against the technical superiority of the aggressors and proved the latter to be unsuitable for a prolonged struggle under difficult physical-geographical and climatic conditions. The freedom loving people of Vietnam used these methods of strong resistance against the French colonialists in 1946-1954 and are now successfully fighting against US aggressors.

The patriots made skillful use of familiar terrain features and climate. The tropical forest, the large number of rivers, the rice fields, and the limited number of roads greatly hinder troops operations, make it difficult to maneuver, and reduce the combat potential of equipment and its employment. The high temperature and humidity have an exhausting effect on people who are unaccustomed to this kind of climate. All this seriously complicates troop operations of the aggressors.

The nature of military operations under these conditions differs from the positions covered in the regulations by which the regular troops of the aggressors learn to fight. This was one of the reasons for the failure of troop operations of the French colonialists. Here there were no clearly drawn front lines or clearly defined groupings against which it was possible to inflict massive air strikes. Combat operations were conducted everywhere, wherever there were aggressor troops. If the enemy was weak, the patriots attacked it; where it was strong, they avoided contact. Ambushes along roads, paths, and in ravines, attacks on garrisons and airfields, and organized diversion were the most widespread methods of operation of army units and partisan detachments. Conducting small but successful battles they

weakened the strength of the enemy, at the same time increasing their own strength and acquiring experience in warfare. As the people's armies acquired combat experience and increased in strength the armed struggle began to be conducted by larger forces. The offensive operations of both sides were carried out along separate axes, along roads and riverbeds. Making skillful use of terrain features, small guerrilla forces inflicted destruction on enemy troops drawn out in columns. Strikes against the enemy were often unexpected. The command of the French troops, for example, had to disperse its forces and create a system of strong points and posts, and the Vietnamese army took advantage of this to destroy the enemy piece meal.

The conduct of military operations in jungles is greatly dependent on lines of communications. The regular troops of the colonialists with their large amounts of equipment were especially dependent on them. Roads did not have this significance for the local people's army, which did not have heavy equipment and armament, therefore they destroyed them to hinder the movement of the enemy. This forced the aggressors to make wide use of air transport and waterways for transporting troops and materiel. In the people's army carriers were enlisted from the local inhabitants, who often carried ammunition and supplies over distances of several hundred kilometers.

The experience of war in jungle conditions showed the unsoundness of the military art of the French army in the struggle against the Vietnamese people who were defending their freedom. This is a serious warning to the US imperialists, who are waging a predatory war in Vietnam.

The Vietnamese people are putting up strong resistance against the US imperialists. Despite the steady increase of forces, the inability of the US militarists to change the course of the war in Vietnam in their favor is becoming more and more obvious. The forms of waging armed struggle worked out by the US command for conventional conditions have proven unsuitable for jungles. Having a numerical superiority in men and materiel, the US and South Vietnamese troops can not capture the initiative, and their operations do not bring the desired results. The strikes of the interventionists often do not accomplish their objectives. The troops of the National Liberation Front and partisans, operating in separate mobile units and making wide use of the dark hours, make surprise attacks against the enemy and his airfields and military bases. Operating from ambush, the patriots remain unseen by the enemy. This method, together with the difficult terrain, prevents the aggressor from making effective use of the power of his equipment.

The colonialists encountered great difficulties in the war in Algeria. Here also the operations of regular troops were opposed by the

tactics of a guerrilla war, which spread over the entire country. French divisions of the NATO forces which were thrown against the Algerian patriots were well armed but were unable to gain a victory over the Algerian army, which used guerilla forms of warfare.

The inadequate preparation of regular troops of the armies of imperialist states for warfare against the forces of patriots using guerrilla forms of conducting a war and for operations in theaters having difficult terrain (in jungles, in deserts, in mountainous and forested areas) was demonstrated in many local wars. The US command, analyzing the experience of these wars, took a number of steps to reorganize ground troop soyedineniya: pentomic divisions were abolished and divisions having a single three-element organization were established, and measures were taken to increase their combat capabilities for conducting limited wars with the use of conventional means of destruction and tactical nuclear weapons. According to the US press, two airborne divisions have been reorganized to adapt them for operations, for the most part, in Southeast Asia. The US has created a so-called mobile division of 20,000 men equipped with 428 helicopters. Units of this division are now conducting combat operations in South Vietnam.

In the US great attention is given to training special forces for operations in the rear of the enemy and for combat against guerrillas. Special combat means for operations against guerrillas in jungle conditions are being created and are now being used in Vietnam. These include cluster bombs and rapid-firing grenade launchers mounted on helicopters, metal pins scattered in forests, and others.

However, it is becoming clear that no attempts of the imperialists to break the determination of the peoples to establish their freedom will be successful. The criminal actions of the imperialist aggressors increase hatred toward them and strengthen the courage and steadfastness of the peoples.

The experience of local wars is of definite interest. Although this experience cannot have a large influence on the development of military art in general, its study will be useful for certain areas of military affairs.

ON THE QUESTION OF THE ROLE OF ECONOMICS
IN NUCLEAR WARFARE

Commentary by Lt Col G. Miftiyev:

In several issues of the periodical Voyennaya Mysl' there have been published during the current year some articles devoted to the achievement of military-technological superiority and to the clarification of the role of economics in modern warfare. In answer to these articles we would like to express some observations concerning the special characteristics of mobilization of economic resources in nuclear warfare.

"Every war puts direct and immediate force in the place of law" (V. I. Lenin, Complete Works, Volume 30, page 69). As F. Engels emphasized, "the victory of force is based upon the production of arms, and the production of arms in its turn, is based upon production in general: (K. Marx and F. Engels, Works, Volume 20, page 170). This is one of the most important Marxist principles on the necessity of the mobilization of resources of economy in the interests of military operations and on its role in the progress and outcome of armed conflict.

However, in its contents and form the mobilization of economic resources of countries to meet the requirements of armed forces has been unequal in the course of its historical development. During the lifetime of F. Engels and right up to the time of the First World War, arms were produced by the regular military industry, or by a military economy constituting a small proportion of the entire economy. This economy provided the army and the navy with that amount of arms and ammunition which was sufficient for coping with local wars. In the wars of the 19th century, military needs (which included meeting other needs of the army) of a country (on the average) took from 8 to 14 percent of its national income.

The picture underwent a readical change when imperialsim brought forth world wars. The military economy of this or that country is now characterized principally by the fact that the necessary level of military power for the conduct of armed conflict on a world-wide scale has been achieved through current production during the course of the war.

Military economy came into being on the basis of a mass application of conventional arms as the main means of armed conflict, accompanied by an objective contradiction between the growth of economic potential of the countries and the still more rapid growth of military requirements. Thus, according to the average annual indices, the average annual gross national product of the US in the years 1940 to 1945 came to $326,200,000,000 as against $220,700,000,000 in 1939, constituting an increase of approximately 1.5 times. During the same period the expenditures of the US federal government on purchases of goods and services for military needs (in 1962 prices) increased from 3,400,000,000 dollars in 1939 to $103,300,000,000 in the period 1940 through 1945.

(cont'd)

In accordance with the above considerations, before the commencement of military operations, countries could and actually did support their military capacity only to that level which assured the development of the main forces and the military restructuring of the entire national economy. This consitutued the essence of the preparation of the national economy for a world war. Military economy constituted merely a form of economic provision for the waging of armed conflict.

Such are the main features of military economy. Its significance went far beyond the limit of one of the sides of the objective ties of a world war with the national economy, and it became the alpha and the omega of the military-economic theory, which even tho this day is known as the problems of military economy. All other problems of armed conflict, such as human resources, material and financial expenditures of military organization increase of strategic efforts etc., were considered only on the basis of and within the framework of this logical development. Even the role of production relations was reduced to a determination of social differences between the socialist and capitalist military economy.

Since the clarification of the peculiarities of military economy, such as the forms of manifestation of the determining role of the national economy in a conventional world war, or in a special mobilization of economic resources, it has been easier for us to talk about the specific character of meeting military needs of the state in nuclear warfare.

Nuclear War, if it should be unleashed by the imperialists, will take on a worldwide character. Conventional arms will also retain their significance in combat operations. All of this, at first glance, confirms the concept that military economics is a form of the mobilization of resources of the national economy in the interests of satisfying the needs of the armed forces. From the point of view of nuclear warfare the question, it would seem, would apply only to some change in the volume of mobilization, or the strengthening of the role of pre-war preparations of the economy, and so forth. In our opinion, however, such an assertion cannot be reconciled with the radical changes in the material and technical base of the war, with the level of military preparations of countries, and with the character of nuclear warfare. The author of the article under discussion emphasizes with complete justification the fact that a revolution in military affairs has taken place, which apparently, has affected not only the means of waging war, but also the ways of meeting the armed forces requirements for material and technical means

Thus, in clarifying the contents and form of the mobilization of resources of the economy from the point of view of modern war, it is necessary to proceed on the assumption of a decisive fact: in an armed conflict of today, the principal means of inflicting defeat has become nuclear weapons; the economy of the nuclear powers has already provided the armed forces with weapons of such power, as their economies could not have provided either before the war nor during past war. Furthermore, one must not

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forget that there are several times more conventional weapons in the world now than there were on the eve of the Second World War. Thus, the NATO countries have more than 16,000 tanks, that is, three times more than the Hitlerites sent against the USSR in 1941. In 1962, the aggressive blocs of the imperialist had more than 3,000 warships and five times more military airplanes than the Germans had at their disposal when launching the war against our country in 1941. All of these quantitative comparisons still do not take into account the qualitative changes in armaments, which today have taken on a decisive significance.

The figures cited, of course, are only illustrative, and their accuracy cannot be vouched for; but they bear witness to the threat which imperialism present. There is no doubt, however, that our country and the entire socialist camp now has at its disposal such great power as to be completely sufficient to defend successfully the great achievements of socialism from the encroachments of the imperialist aggressors.

[illegible] radical changes in the material and technical base of war and the increase of economic opportunities is being used by US imperialism for the continuing intensification of its military potential. Thus, during the years 1959 to 1956, the US government spent for military purposes an average of 6.5 billion dollars more per year than during the period 1941 through 1945. The national product of the US during the period under comparison, increased at least by a factor of 1.5.

In order to understand the indicated specific fact, peculiar to the current military development, one must consider that in the production and combat use of nuclear-rocket weapons considerably fewer materials and labor resources are required than for the production of conventional weapons of an equal destructive capacity. It is common knowledge that in the United States, in England, and partly in France, nuclear arms constitute the main striking force of the army and the navy. However, in the fiscal year 1963-1964 only 30 percent of US military appropriations was expended on nuclear forces, while this figures amounted to 12 percent for France and 10 percnet for England. Consequently, the overwhelming part of military expenditures was directed toward the production of conventional arms. As far as labor resources are concerned, it is not coincidence that the progressive American journalist Victor Perlo emphasized that today each dollar of military expenditure provides less work than it did formerly.

The share of military expenditures in the national income and in the total product of countries is a concentrated expression of expenditures on military affairs. For this one must compare the corresponding indicators of the period of world wars (there already was a military economy) with the comtemporary period, when the needs of the armed forces are met differently than they were in the last war. In theperiod under comparison the military might of the countries is maintained on a level sufficient to provide for the conduct of armed conflict. It is common knowledge that the Second

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World War absorbed more than 60 percent of the national income of the warring countries. In the capitalist countries today, from 15 to 20 percent of the national income goes into armaments.

The concrete forms of intensified militarization of the economy in the capitalist countries and the increasing burden of the arms race cannot be invariable. It is know that at the end of the 19th century the share of military expenditures in the national income (and even more so their volume) was lower than it is now. Nevertheless, F. Engels was completely justifued in writing: "The army has become the principal aim of the state, it has become an end in itself: the people exist only to provide and feed soldiers. Militarism holds sway over Europe and devours it" (K. Marx and F. Engels, Works, Volume 20, page 175). However, all this was only the beginning. World wars gave rise to an intensification of militarization of the national economy in the form of the capitalistic military economy.

The CPSU program and the documents of international conferences of communist and workers parties give an analysis of the process of the further development of militarization, its burden and social consequences for the peoples. This analysis amounts to a demonstration of the fact that production for wartime needs has today become a permanent element of the economy. The level of military expenditures in the capitalist countries is several times higher in comparison with the prewar period: in the US it is higher than average yearly indicators for the period 1940 through 1945. The life of the peoples is poisoned by a specific issue of contemporary imperialism -- "the cold war", which is a characteristic of the so-called nuclear age. Over the world, like the sword of Damocles, hangs the threat of nuclear war. The creation of the military machine of capitalism calls for a great expenditure solely for its support and improvement.

As has been emphasized by the Central Committee of the CPSU, "nuclear-rocket weapons, created in the middle of our century, have changed the former concepts of war". It can be logically assumed that there must be a change in the point of view regarding the effect of war on the ways of providing for its needs. The possibility of a sudden unleashing of nuclear war by the imperialist, the special role of its initial period (when the main problems of the war could be decided), as well as the unprecedented destructive consequences of nuclear strikes, and so forth, agree only with the objective trend radical changes in the forms of economic mobilization reflecting our opinion, the observed trend also reflects the following peculiarities of nuclear warfare. It stands before mankind in two aspects i.e., of the necessity of its prevention and the possibility of its being waged. The modern aggressor, as is known, attempts to gain his end by conducting politics from "a position of strength" and plans to wage nuclear warfare on the basis of mobilized forces and resources. "In order to discourage an aggressor from ciminally playing with fire, -- it is pointed out in a declaration of the Soviet government, -- he must be made to know and

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to see that in the world there is a force ready with all its arms to repel any design on the independence and security of peace-loving states."

Thus, the mobilization of economic resources in the interests of meeting military needs has taken on a specific form.

Modern military economics is called upon to assure during a long period of time the maintenance of the military capacity of the countries at that level which is required for coping with the basic problems of a possible world war. Its production is aimed at covering the current expenditures of the armed forces, and further increases in armament stockpiles, and principally, at the renewal of the material and technical base of an armed conflict by means of improving new equipment and replacing the new equipment with newer equipment.

All that has been said about the peculiarities of the mobilization of resources may be characterized as a new objective trend of economic provision for armed conflict with the use of weapons of mass destruction.

However, among the different classes the attitude toward this trend is extrmemly varied not only regarding the goals of its use (in the interests of pursuing an aggressive course or a struggle against it) but in regard to the magnitude of its realization. It is generally known that in the imperialist countries, especially in the US, there is a deliberate expansion of military expenditures, and an intensification of the arms race. Thus, the US Defense Department using as a pretext the necessity of developing the means for delivering nuclear warheads, has increased the number of intercontinental ballistic rockets to 500, and plans by 1966 to bring the number to 1,700 units. The atomic submarine fleet will by 1967 have 81 submarines instead of the 26 which are now in commission. For the reinforcement of the US Navy it is planned by 1973 to build 500 new vessels to replace old ones.

Formulating the question of the influence of economics on the course and outcome of a nuclear war within the framework of the development of a war economy, is, in our opinion incorrect. Proceeding from the Marxist-Leninist concept of the social, material and technical essence of the modern from of the mobilization of resources, one should talk about the development of a military economy within the framework of the economic provisions for a retaliatory strikes against the aggressor, which reflects the actual situation more fully making it possible to resolve the gap between theory and practice. All this is of great significance, since it assumes the concentration of attention of the researcher and of those doing practical work on the main issue -- the most efficient utilization of assigned forces and resources for the economic support of crushing blows against the aggressor.

An analysis of all the other sides of the correlation between nuclear warfare and the economy can be fruitful only if it is subordinated to this

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basis indeed. Thus, all arguments concerning the necessity of mass armies for the conduct of a possible nuclear war lose their value if they are examined against the standards of past world wars, when armies of many millions were also necessary. Taking into account the constant threat of attack from the imperialist, we are obliged to "hold to the principle of maintaining a regular army, which by virtue of its composition, its numerical strength, and its training could at the commencement of a war immediately repel an attack and crush the aggressor". But this requires a scientifically based approach and a solution of the problem of the mass army in modern warfare.

Commentary by Col V. Vasin:

The problem of the role of economics in a possible world war undoubtedly deserves close consideration. The destructive nature of modern war confronts us, with all its acuteness and urgency, with the task of not only insuring the timely economic support of the war, but also insuring the vitality of military and strategic branches of economi. Naturally, this compels the government of large states to pose the question concerning the role and significance of the economic factors in a different way. The treacherous aggressive politics conducted by the governing circles of NATO countries, headed by the US, makes it necessary not only to prepare the armed forces for nuclear warefare, but also to prepare the economics, state apparatus, and population of the socialist countries.

The growing significance of the economic factor in the course and outcome of a possible world war have resulted in the fact that the atomic, rocket, aviation, tank, and artillery plants, and all radioelectronics, chemical, metallurgical, machine-building, and electric power enterprises have become strategic targets, which at the very beginning of military operations will be subjected to nuclear strikes. For this reason, the defense of the rear area of a country and of the groupings of armed forces from enemy strikes with weapons of mass destruction, will be one of the decisive types of military operations in a future war; this would unreliable without a well organized anti-aircraft and anti-rocket defense.

Past experience shows that with each war the quality of military equipment is perfected more and more and its quantity increases. The principal countries taking part in the First World War had produced 190,000 airplanes, over 9,000 tanks, 140,000 artillery guns, and 43.7 billion cartridges.[15] This production increased even more in the Second World War. During the course of the war, the USSR, US, England, and Germany alone produced over 652,000 airplanes, about 286,000 tanks, over 1,681,000 guns and mortars, and 85.3 billion cartridges.[16]

In modern wars, the amount of combat equipment has sharply increased, its production has become more complicated, and its cost has increased. Thus, for example, about 200,000 man-hours were expended on the construction of the strategic bomber B-17, and several years later 9,340,000 man-hours were expended on the B-58. From this example it is obvious that a great deal more time is required for building a modern airplane than was required in the Second World War.

A colossal increase in budget allocations for military expenditures is observed, which comprise not 8-14 percent of the national income as it was in the 19th century, but up to 50-60 percent as was the experience of the last two world wars.[17] In military expenditures themselves, as a rule, 65-70 percent of all these expenditures are for combat equipment --

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tanks, airplanes, guns, bombs, and submarines. According to certain NATO calculations, compiled by its staff and applicable to its armies, air-force casualties, for example, during the first 15 days of a modern war could amount to 60-85 percent and ground forces casualties to 30-40 percent. In view of this, it is clear that losses of arms and combat equipment could be approximately 6-8 times greater than in the Second World War.[18]

In connection with the scientific-technical revolution, army requirements for combat equipment have sharply increased even in peace time. During the Second World War, the US Army daily expended about 12 kilograms of various military materials for each soldier. Now, during peace time, it expends 38-49 kilograms of various materials, spare parts, food, ammunitions, etc.

It is not difficult to imagine how much these figures could increase in a new world war, which is being prepared by the imperialists and in which numerous and complex equipment will be used. This circumstances alone sharply increases the role of economics.

Historical experience teaches that only that country can successfully conduct a modern war whose material-technical and scientific-research base is capable of producing modern arms, machine tools, equipment for their production, and also the needed facilities for manufacturing the machine tools. Therefore, the expanded production of combat equipment, and the ensuring of constant superiority in scientific-technical progress is a most important condition for achieving victory.

The use of combat equipment on the battlefield in the past world wars made huge requirements on the entire national economy of the countries fighting in the war. The regular military plants along, producing arms and equipment, were unable to cope with the increasing requirements for the active fronts. In order to continuously provide the army with new equipment and ammunition, the mobilization of all economic resources and of the production apparatus of the country was required, therefore, basically the entire economy was converted to military production.

The appearance of rockets and nuclear weapons brought qualitative changes in the relationship between economics and war. According to the opinion of some bourgeois military economists, in an all-out nuclear war the military-economic potential is significant only in that degree to which it was effectively utilized for producing military products before the outbreak of war. Or, in other words, it is important that the armed forces be provided with everything required for conducting a war before the outbreak of war, and not with the potential resources of the economy for producing products during the time of war. The economists go on the assumption that the war will be of short duration. The military economists of the West reason that because of this the countries fighting will

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neither have the time nor the real potentialities for expanding and intensifying military production. They state: "...it appears that only those reserves which are mobilized in good time will be effective. During the course of military action the industrial potential cannot influence the outcome of the war fast enough."19

This concept of the aggressive imperialistic circles of the US aims at justifying the mad armaments race, which has developed in the postwar period. The fact that direct military expenditures alone in NATO countries during 16 postwar years (1969-1964) amounted to over 902 billion dollars, over 674 billion dollars of which belonged to the US, speaks of the gigantic scope of this race.

How is the rôle of economics in a future war to be evaluated? Economics will be the basis of military power. Moreover, the economy of the socialist countries must be prepared in time of peace for replacing the great losses in combat equipment and for the economic provision of all requirements of the armed forces during the course of a war, by making use of their current military production.

In order to accurately determine the role of economics in a future war it is necessary to have an exact idea of the probable duration of the war. Mar SU R. Ya. Malinovskiy stated: "At the present time, no one can deny the possibility of a short-lived war.... However, it is quite obvious that depending on the conditions of origin of the war, the armed struggle to the finish will not be limited only to attacks with nuclear weapons. It may be dragged out and may require long and maximum effort of all forces of the army and of the country as a whole".21

Going on this assumption, Soviet military science believes that economics has to play a large role even during the course of a modern nuclear war. The potentialities of the economy of any country, its mobility, vitality, and relative invulnerability are capable of fulfilling this role even in the final phase of a war.

The destructive nature of a nuclear war poses the question, with objective necessity, of preliminary preparations of industry and of raising its vitality during the course of a war. One must also consider the possibility of a sudden outbreak of war, which may result in very difficult conditions for the intensification of military industry. In this connection, the necessary measures have to be taken in time of peace.

Economics is a direct, active participant in a war and it determines the over-all strategic capabilities of the armed forces of any country.

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A brief examination of the problem concerning the role of economics in a possible nuclear world war suggests many conclusions.

1. The dependence of a modern war on economics will continue to increase
2. In the event of a probable world war, countries in the world system of socialism will have to face opponents who are strong in a military-economic and scientific-technical sense. Therefore, one should not underestimate the capabilities of our potential opponents.
3. The Soviet military doctrine of preparing the country for war requires that early preparations be made in the entire economy of the country.
4. It must be emphasized that the socialist economy, in view of its planned character and the absence of antagonistic contradictions, has great advantages over the capitalist economy in speed, depth, and thorough mobilization of their resources to meet the needs of war, which was brilliantly confirmed by the experience of the Great Patriotic War of 1941-1945.
5. The strengthening of the economic power of our socialist country together with that of all countries of the Warsaw Pact, is the foundation upon which the defense capacity of the country should be strengthened, because the sources of the military strength of any state are found first of all in its economy. V. I. Lenin warned the party and the Soviet people that mass enthusiasm alone is not sufficient for conducting a successful war, but that it is necessary to thoroughly develop the economy so that it is capable of producing all facilities for an armed struggle. He said, it is necessary to prepare for war for a long time and seriously, starting with the economic upsurge in the country. This principle of Lenin's sounds especially valid in our times.

In our opinion, Col A. GUROV, the author of the article under review, accurately presented the problem concerning the role and significance of economics in modern warfare, we only wished to supplement it and to define some of the economic problems raised, which are connected with requirements resulting from the nature of modern warfare.

Commentary by Col M. Srednev:

In his article entitled "Economics and War," Col A. GUROV posed a number of interesting problems regarding the material supply of armed forces in modern war.

We shall attempt to supplement the efforts of the author by discussing the role of transportation in wartime.

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In characterizing the economy of a country, K. Marx wrote: "In addition to extractive industry, agriculture, and manufacturing industry, there is a fourth factor in the sphere of production, namely, the transportation industry." (K. Marx and F. Engels, Works, Vol. 26, Part I, Page 422) Transportation is the connecting link between the producer and his many consumers in the country. The importance of transportation increases in wartime. The task of materiel supply in modern war cannot be carried out if the materiel needed for waging combat operations by all branches of military forces is not delivered.

Let us recall recent experience. In World War II, especially in the conduct of high-speed offensives and pursuit of the enemy, transportation played a decisive role in supplying the military personnel with all kinds of materiel needed for successfully carrying out the offensive operations.

The German- Fascist command regarded the paralysis of our railroad system as its most important task. In the first 2 years of the war alone, more than 400,000 large bombs were dropped on important rail centers of the Soviet Union. However, the enemy failed to knock out our railroad system. Our railroad workers worked heroically and quickly restored the facilities wrecked by the fascist bombers.

Our motor transport, which loaded materiel at railroad stations and delivered it to the fighting forces worked equally successfully. Moreover, the trucks supported the railroads by delivering materiel over great distances from bases and arsenals directly to the front. In World War II, motor transport of the fronts (districts) and centrally subordinated transport (Staffs of the Supreme High Command) hauled 145 million tons of materiel. It is known that the total mileage run by truck transport in 1943 was three times that of 1942 and in 1944 there was a further 2-fold increase. The heroic work of the military truck drivers was equal to that of the railroad workers.

Skillful utilization of rail and truck transport assured delivery of all kinds of materiel to our fighting forces on the fronts of World War II.

By contrast, the German-Fascist army was unable to solve its transportation problem in World War II, especially on the Eastern Front.

Describing transportation problems in World War II, German Colonel G. Teske wrote: "The German transport service was never able to prepare for such tremendous tasks. And one might say that, in the final analysis, the whole course of war was determined by the manner in which transport carried out its tasks." Emphasizing the scornful attitude of the German command toward the performance of its transport, he noted that "the fate of transport in this war was truly tragic."[22] And it is true that neither rail nor truck transport of the Germans was able to meet the needs of their fighting forces on the Soviet-German front. The German-Fascist forces contended

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with these difficulties from the very beginning of the war. In their operations near Moscow, materiel deliveries lagged far behind actual needs. Throughout the war, the German-Fascist command never fully solved the task of materiel transportation.

We should also mention the US Army. In the European theater of military operations, the Americans had concentrated more than 700,000 motor vehicles by 1945. This was 11 times as many as in World War I (1918) and represented a 58-fold increase in hauling capacity of all trucks. The US command thought that this number should meet all needs of US forces in this theater. However, it turned out that truck transport was able to cope with its tasks only up to the time when US forces began their rapid advances eastward through France. The US command failed to pay adequate attention to restoring the French railroads. Thus, the railroads were able to play only a secondary role and truchs continued to be the main means of transportation. For the transportation of liquid fuel, pipelines were widely used.

Air transport of the Americans, even though they had sone 2,000 transport aircraft, played only a secondary role.

Such are the main facts to which attention should be paid, since it is of the essence in waging modern war that the transport facilities of a country must be adequate to supply its armed forces in time of war.

Bringing about this essential condition proceeds differently under various government and social systems. Under a socialist system, there is the advantage that all transport is in the hands of the state. This makes mobilization easy and also facilitates the use of all kinds of transport for the needs of the armed forces. At the same time, it is easier to organize repair and service facilities.

In a modern nuclear war, the role of transport is enhanced. When it is possible that large rail centers and stretches of rail lines may go out of operation, transport flexibility (substitution of one kind of transportation for another) grows in importance. Under the new conditions of waging war, the most flexible means of transportation are truck and air transport, including both helicopters and aircraft capable of landing on unequipped airstrips. According to foreign press reports, experiments in the use of rockets for transport purposes are being carried out.

In modern warfare, it is highly important to increase the capabilities of trucks in traversing terrain and to make other improvements. Modern trucks are subject to many new requirements in fulfilling their functions of transporting materiel and moving military personnel. Pipeline transport plays an important role in modern warfare as a means of transporting all kinds of liquid fuel.

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The development of transportation in peacetime, with a steady growth in the movement of goods and passengers, by motor vehicle and by air, will help solve transportation problems in times of war.

A few words should be said about the organs that deal with supply of an existing army, air force, and navy. This function is performed in all armies by the rear services. Unfortunately, Col GUROV did not touch on this subject in his article.

Engels pointed out that the entire organization and combat method of an army (in other words, the methods of waging combat operations) depend on the quantity and quality of people and equipment. Therefore, the organization of armed forces, their tactics, operational skill, and strategy depend on the equipment which they have. Organization of the rear services of armed forces must, therefore, be adequate to meet the demands of modern equipment and also conform to the nature of a war, operation, or battle.

Analysis of the organization and operation of the rear services of armed forces in World War I and World War II indicates that organization of the rear services in some cases lagged behind the requirements of rapidly developing military skill. The rear services of the German-Fascist forces in World War II operated poorly, for example, with consequent ill effects on operations and, in the final analysis, contributing heavily to their ultimate defeat. There were also supply problems in our troops. However, our rear service organs were based on the growing military production of the country and they were able to supply with materiel of all the important operations of the Soviet troops that finally resulted in a victorious outcome of the war.

Therefore, the rear services must not lag behind the requirements of military art in either organization or technical equipment. Proper organization of the rear services is one of the decisive factors for success in carrying out operations and campaigns.

In other words, organization of the operational and military rear and technical equipment of rear units must correspond to the organization of military units and also to the nature of a modern war, of an operation, or a battle.

The problems of materiel supply of armed forces in a modern war are growing more complex, and require a careful examination of the organization and operation of rear services, and their constant improvement.

Notes

1. Comments on an article by Col A. Gurov, "Economics and War" (Voyennaya Mysl', No 7, 1965)

2. Militarizm. Razoruzheniye. Spravochnik. (Militarism; Disarmament. A Handbook), Gospolitizdat, 1963, p. 14.

3. Computed by the author from the Economic Report of the President, January, 1963, pp. 172-173.

4. Computed by the author from Statistical Abstract of the United States, 1963, p. 256.

5. Computed by the author from Economic Report of the President, January, 1963, pp. 172-173.

6. Interavia, 1963, April, p. 454.

7. Militarizm. Razoruzheniye (militarism; Disarmament), p. 14.

8. Materials of the 22d CPSU Congress, Gospolitizdat, 1962, p. 131.

9. Materials of the 22d CPSU Congress, p. 340.

10. Open letter of the Central Committee of CPSU to party organizations and to all Communists of the Soviet Union. "Pravda" Publishing House, 1963, p. 17.

11. Pravda, 31 August 1961.

12. Army-Navy-Air Force Journal and Register, 1963, Vol 101, No 2, 23 November, p. 2.

13. Jane's Fighting Ships, 1962, P. V-VI.

14. R. Ya. Malinovskiy, "The CPSU Program and the Problem of Strengthening the USSR Armed Forces," Kommunist, No 7, 1962, p. 20.

15. Mirovaya Voyna v Shifrakh (The World War in Figures), Voyenizdat, 1934, p. 33.

16. A. Lagovskiy, Strategiya i Ekonomika (Strategy and Economy), Voyenizdat, 1961, p. 105.

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17. A. M. Alekseyev, Voyennyye finansy kapitalisticheskikh gosudarstv (Military Finances of Capitalist Countries), 1952, pp. 11-13.

18. Voyennaya Strategiya (Military Strategy), Voyenizdat, 1963, p. 428.

19. Charles Hitch and Roland Mackin, Voyennaya Ekonomika v Yadernyy Vek (Military Economy in the Nuclear Age), Voyenizdat, 1964, p. 50.

20. Computed by the author from data in The Commonwealth Survey, 2 February 1965, p. 112.

21. R. Ya. Malinovskiy, Bditel'no stoyat' na strazhe mira (Vigilantly Watch the Peace), Voyenizdat, 1962, p. 26.

22. Itogi Vtoroy Mirovoy Voyny; Sbornik Statey (Results of World War II; Collection of Articles), Voyenizdat, 1957, pp. 398-399.

ON THE MORAL FORCES OF SOVIET TROOPS IN MODERN WARFARE

Major D. VOLKOGONOV

The solution of problems arising with the appearance and use of new weapons is mainly connected with the thorough fundamental evaluation of the new opportunities which they open up and the new requirements which they present to men.

The military-technical revolution introduces substantial qualitative and quantitative changes in the relationship of man to equipment. Man more and more carries out his functions with the use of equipment. Nuclear energy and the various newest means of control and communications, of obtaining and processing information, extraordinarily increase the powers of man but do not replace him. The revolution in military affairs in undoubtedly leading to an increase in the effect of one of the fundamental laws of warfare, according to which the course and outcome of war depends on the moral-political condition of the people and the moral forces of the army. Therefore along with an increase in the significance of the material factor in warfare, and accordingly in the military-technical training of troops, the ideological and moral-psychological preparation of troops for operations under conditions of the use of present-day weapons plays an exceptionally important part.

The demands are increasing on the moral forces of troops. Dynamism in the development of combat equipment must be accompanied by a spiritual growth in man. It was F. Engels who revealed the most important law of warfare according to which the means for armed conflict depend on elements organically tied together: the human material and the new weapons. Equipment without man is dead, but even the moral forces of troops do not play their part autonomously, but through the process of armed conflict, i.e. through equipment. An understanding of these most important elements in the dialectic unity permits us to see the entire complexity of the process taking place.

One of the central problems of troop training in our army has always been the [illegible]'s moral vigour, which is based on a high ideal conviction. V. I. Lenin stressed more than once that we are strong chiefly through "our moral strength" (Polnoye sobraniye sochineniy (Complete Collection of Works), vol. 43, page 135). In writing about the powers of the struggling workers, Lenin included a very specific content in the understanding of moral strength: "...this broad layer has proletarian instincts, proletarian understanding and an awareness of duty" (Polnoye sobraniye sochineniy, vol. 38, page 252).

A man without firm ideal convictions could at critical moments succumb to a torrent of spontaneous feelings: confusion and fright, with resultant consequences. On the other hand, strong willpower which is not hallowed by high ideals is blind. Thus moral preparation of troops cannot

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be contrasted with psychological preparation: it can only be moral-psychological.

The moral forces which cement into a common whole all the spiritual and physical resources of soldiers are one of the most important components of combat power. They give man the possibility of handling himself in the most trying circumstances and determine his capability to endure the extremely difficult trials of modern warfare without losing the will to fight and be victorious. The status of moral forces finds it concrete manifestation in the moral-combat qualities of soldiers. Mass heroism, courage, iron endurance and discipline, and a readiness for self-sacrifice for the sake of victory show up where the moral strengths of soldiers are firm.

The chief source for the fortress of moral strengths of Soviet soldiers is a social one: the social structure, communist conceptions, and the just goals and nature of war which derive from this. This is the fundamental sources. The training of the officers' corps, the technical outfitting of troops, the degree of mastery of the equipment and the readiness for combat operations have an enormous influence on the fortress of moral strengths.

Characteristic of this modern military-technical revolution is the harmonic union of new equipment and new men, which appears as the leading mechanism in the qualitative jump in military affairs.

It is known that the military-technical revolution has also taken place in the principal capitalist countries. Does this mechanism appear there?

The fact is that the revolutionary jump in the field of military affairs which is taking place in the West is similar to ours only in the technical sense. It is occurring in a different social medium, is guided by different goals and is having chiefly a quantitative effect on the "human material" in the sphere of equipment preparedness. Our military-technical revolution took place under socialism and coincided with the beginning of communist construction, when one of the most important tasks -- the formation of a new man -- was being solved.

What then are the traits of the moral countenance of the present-day Soviet soldier? There is no doubt that the main mass of Soviet soldiers has been elevated to a higher level of spiritual maturity, based on dedication to the ideals of communism. The moral changes are felt chiefly in the conscientious voluntary fulfillment of legal standards in the observance of the principles of communist morality. The growth in spiritual maturity appears in specific matters. For example, almost every other soldier in the strategic rocket forces is outstanding in training, and every third man in the air forces has cross-trained in another specialty and has earned two or three decorations for military valor. In the past three years

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over five thousand Soviet soldiers have been given governmental awards. The conclusion can be drawn through observations that the present-day Soviet operations leads to an earlier and more rapid moral maturity of our troops. This is also facilitated by the fact that the military-technical revolution directly unites many soldiers with weapons of strategic designation, which increases their moral responsibility to an unprecedented level.

This clear new feature in the countenance of the Soviet soldier appears in the enormous drive for mastery of the knowledge of modern science and the new technical specialties. This tendency has now already become a moral standard of the majority of servicemen. Two intertwining directions can be seen here: the need for interchangeability breeds universalism, but the complexity of new equipment demand further specialization.

A new feature is the widespread desire by troops for self-education, by means of which a person can himself take steps toward the collective and become an inalienable part of it.

A man's relation to time, as to a value of the first degree, takes on a moral tone. The tempo of present-day life is precipitate. The rapid tempo of technical progress imperiously lays new requirements on the soldier -- to do more and do it better in the same framewrok of time, for example, to be able to hit a target with the first shot, to master a specialty ahead of schedule, to reduce standards of time, etc. The skill of making wise use of the time available disciplines the serviceman, allows his to succesfully accomplish his duties, facilitates the broadening of his outlook and the satisfaction of intellectual needs, and this without doubt is also a new feature in the personality of the modern Soviet soldier.

New equipment and weapons introduce noticeable changes in the relation of the soldier to the military collective. The role of the individual is increased and at the same time he becomes more dependent on the entire collective. The role of the individual soldier is great, but nevertheless he is only a part of the collective which mans a specific systme or complex. And his role will be highly regarded if this entire collective functions well. In this can be observed an essential feature: while 20-30 years ago one or more activists stood out in the collective and spurred on and educated the others, now as rule the entire collective focuses attention on the education of several induviduals. The further adoption of crew-served weapons will facilitate this under army conditions.

In attentively studying the new qualitative changes in the development of our society one cannot help but notice one other important feature: today the soldier with an elementary education is rare; a soldier giving a lecture is not uncommon; a serviceman who has mastered a number of specialties is a common occurrence. This process is the expression of the elimination of differences between the worker and the peasant and between physical and mental labor which have carried over to us from the past. An objective

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process of acceleration of the spiritual development of all Soviet soldiers is taking place.

If we consider the growth in mental development and sharpness of vision, the drive for knowledge by the troops, their intolerance for routine and that which is dying out (such characteristic qualities in the present-day Soviet man), then it becomes still more evident that the changes in the "human material" are substantial and that they are continuing, having in their turn a revolutionizing effect on military-technical development.

The qualitative advances in the spiritual sphere attest to the considerable increase in the moral opportunities for personnel of the Soviet Armed Forces. Moreover the demands on the moral strengths of soldiers continually increase. And in peacetime the problem of full retention of these strengths in a situation of continually high combat readiness stands out in its complexity, when over a long period of time, day in and day out, a man must strain his thought, will and senses in order to be always on guard. For the solution of this complicated problem one must consider a whole series of principally new features of the psychologic effect of modern warfare on the moral forces of man. One can arbitrarily break them into two groups and consider as the first group those connected with weapons and equipment.

The broad adoption of automation and telemechanics has fostered the need in military work for unique methods of control of a multitude of complex mechanisms, instruments and installation. The process of control itself has become more complicated: a soldier must simultaneously perceive, evaluate and correctly react to the date from amny measuring instruments. The burden on intellect and senses has considerably increased.

The constant combat readiness and capability of troops depends in large part on the clarity and reliability of the actions of numerous categories of servicemen: operators, radio men, acoustic technicians etc. Their work demands intensive daily attention and an ability to concentrate and not give way to confusion, since one hundred sure steps can be wiped out through one unsure one. It has been scientifically confirmed that a person's prolonged capability for productive work depends on his moral-psychological reliability. Along with the fundamental moral-psychological preparation this requires a further increase in professional mastery. It is not by chance that the concepts of "firm," "courageous", "volitional" are inseparably connected in our time with the concepts of "skilled" and "knowing". We have engineering psychology to assist us here, recommending how best to adapt equipment to the soldier. But the determining factor will nevertheless always be the moral staunchness of man. In conjunction with the optimal work procedures, the reasoned interchangeability and the spacing of rest periods it is always capable of ensuring his precise action.

The second group of specific features of the effect on the moral forces of soldiers is connected with the nature of nuclear warfare. The conditions of modern combat operations force commanders to consider a number of

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completely new circumstances. F. Engels stressed that new equipment"...gives a completely different character and a different course to conflict... And we must more and more contend with similar quantities not subject to consideration under the conditions of this constant revolutionizing of the technical basis of the conduct of war" (K. Marx and F. Engels. Sochineniya (Works), Vol. 22, page 394).

It is most probable that troops will not have time for a gradual transition from peacetime condition to combat. The unexpectedness and power of the first nuclear blows along with the material destruction will have an enormous moral-psychological effect on personnel. The speed of the processes of modern warfare is tremendous. In the face of transient combat operations there will be demanded of soldiers an exceptional moral mobilization and endurance, and the capability for a rapid "liberation" from temporary shocks.

In nuclear warfare a considerable portion of the personnel (and in the initial period -- the absolute majority) will not directly see the enemy, but the feeling of danger will spread to all. For many soldiers, especially those of the rocket forces, the enemy will be perceived in a certain sense "abstractly". A prolonged nervous tension will require that commanders and political workers seek opportunities to give the soldiers necessary rest.

The autonomous operations of units and podrazdeleniyes, individual submarines, missile ships, etc., acquire special meaning in modern warfare. Their activity could take place in complete isolation from the main forces and control points, without sufficient information and communications. The role of various emergencies and numerous opposing tendencies will increase. Combat operation will frequently begin and develop under conditions of poor visibility (night, smoke, dust). This could cause persons to have the feeling of isolation, uncertainty, and confusion, which have an extremely depressing effect. This mental condition of the troops will be intensified by the constant threat of mortal danger from radioactive, bacteriological and chemical contamination. Therefore they must know well and skillfully carry out the entire complex of measures which ensure protection from these means. Of undoubtedly enormous moral-psychological effect on the combatants will be the picture of combat itself in a nuclear war: they will become eye-witnesses to mass losses, gigantic destruction and fires: they will sense the strong effect of light and sound, of sharp drops in pressure, and may happen to be in a vast zone of inundation.

M. V. Frunze wrote on the psychic influence of any new weapon: "The amount of this psychic damage cannot be calculated, and under certain conditions it could exceed by many times over the material loss caused by these weapons of destruction. (M. V. Frunze, Izbrannyye proizvedeniya, Voyenizdat, 1951, p. 413) The possibilities of such a damage have now increased a hundredfold. It is therefore extremely important for commanders to also foresee the moral consequences of the effect of weapons of mass destruction in order to be always prepared to abate its influence on the psychology of the troops.

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How then can we preserve combat capability, avoid or reduce the moral-psychological shock and ensure that each soldier fulfills his duty and the tasks placed before him under themost complex conditions of modern warfare?

The most important and most difficult thing is to preserve combat capability after the first enemy blows at the beginning of combat operations. The unavoidably prolonged state of tension intensifies the processes of inhibition and increases the danger of negative emotions and involuntary reactions which overwhelm one's will. Under such conditions the attention becomes abruptly dulled, the memory is weakened and a person begins to make mistakes. The appearance of mental impotence in individuals is just as dangerous as an enemy force. Even isolated instances of a soldier losing self-control in present-day warfare are fraught with serious consequences. At critical moments, expecially immediately following a nuclear blast, a man needs a sharp jolt from without in order to free himself from a momentary shock: the confident order of a commander or the inspiring word and personal example of a political worker, a party member or an agitator. This stability and frimness of control must be evidenced from top to bottom, right down to the crews, squads and teams.

The essence of the active and continual influence of commanders and political workers on the consciousness and senses of the soldiers lies in the fact that every member of a crew, team or podrazdeleniye must be capable of unswervingly carying out his military duty. The words of M. V. Frunze sound with special force today. He said that political work "as before will be a new and supplementary form of weapon, terrible for any of our enemies" (M. V. Frunze, Izbrannyye proizvedeniya, Voyenizdat, 1951, p. 243).

The experience of the past, contemporary military teaching and tests confirm that the ideally vigorous person can summon his will to carry out the specific functions mastered by him under any complex and difficult situation. It has been shown that the feeling of fright occurs especially strongly in those persons who are undisciplined and have ahd a weak military-teahnical training. The more uncertain a soldier is with his equipment and the weaker is his combat mastery, the greater it is that various emergencies, dangers and alarms influence him. However excellent soldier-specialists, even masters of their field, if they do not have an ideal-political vigor and are not prepared in the psychological sense, are capable of displaying vacillation and uncertainty and are subject to panic when in the presence of a strong emotional influence under difficult conditions. Such person need timely moral support. Then the feeling of fright and uncertainty gradually passes in them and is replaced by marital excitement, moral lift and a combat recklessness.

Huge losses and destruction will not only have a negative effect on the psychological condition of the troops. Therefore the problem of the timely restroation of the combat capability of troops is immeasurably more difficult than formerly. Success will be on the side of he can most quickly regain the normal combat and psychological state of the troops and by decisive actions accomplish the rout of the enemy. Commanders constantly concern themselves with lowering the vulnerability in order to permanently preserve the moral stability of the units: they try as much as possible to disperse them, increase speed of movement, provide duplicate systems of control, have a maximum reduction of the time necessary to prepare for battle, and exploit success as quickly as possible.

The actions of commanders and political workers in supporting the moral and psychological stability of troops in modern warefare must not be reduced merely to ensuring that the troops can "endure" in the initial period of the war. This is not an end in itself, but only a prerequisite for the creation of a high aggressive passion, i.e. such a state when there is an inner mobilization of all spiritual powers and capabilities, and a moral-psychological adjustment of every soldier toward the destruction of the enemy. It is extrememly important to create and systematically cultivate this enthusiasm and to support it with all ways and means, using all the levers of control by the command and political element on the troops.

In such a situation there is an unprecedented increase in the meaning of heroism and the readiness of the troops for self-sacrifice. The decisive, unusual, outstanding apct of individual soldiers and crews at a very critical moment can play an enormously inspiring role. Everyone is familiar with the deeds of Soviet soldiers who threw themselves under enemy tanks with grenades and covered deadly gun ports with their breasts. In this regard the nuclear war will in no less a degree require deep intentional self-sacrifice from many soldiers. It will probably be necessary not only to overcome portions of terrain contaminated by a high level of radiation, but also to wage battle on them. Many soldiers will have to carry out orders with risk to their lives even more frequently than in past wars. This demands from officers and enlisted men alike displays of corage, decisiveness and readiness to attain the goal and inflict destruction on the enemy at any cost.

There is not doubt that under conditions of nuclear warfare the very concept of "heroism" will take on new content. A deed cannot be regarded merely as a bright splash or a brief burst of the best qualities of one man. And although individual heroic deeds will also be sidespread in modern warfare, heroism now has acquired the character of a collective action of entire crews, groups and detachments who are constantly and reliably working under the most trying conditions of battle. Elements of this heroism can even be seen today in the intense work of soldiers while on duty with vehicles, installations and instruments. The practice of combat and political preparation for the conduct of armed conflict in a nuclear war is the

[illegible] combat readiness and capability of our Armed Forces."

The problem of "man in a nuclear war" is now being persistently studied by bourgeois military science from the most diverse sides. Knowing the class unreliability of their "human material", the ideologists of imperialism dream of finding an opportunity to replace man by a machine, a robot. But life has repudiated these attempts and, inasmuch as they appeared impractical, the revanchist circles of imperialism in recent years have intensified the training of their soldier and officers, striving to have them reliably and effectively carry out their design. The direction of this work is based on the principles of psychology and on the newest achievements of science and technology, and also by calling on nationalistic, corporate, religious, and of course on base feelings and instincts characteristic of many people of capitalist society.

Official heads of military departments place great hope on the techniques of the technocratic aspect, stressing the psychological development of personnel. Jerome Frank in the article "Psychological Problems of the Nuclear Age" writes: "War permits the development of heroism, enterprise and boldness. But how can these qualities be obtained in peacetime? Only modern science and technology are capable of ensuring the development of such moral equivalents." (Break through to Peace, New York, 1962).

American engineers and psychologists, for example, are testing special training chambers in which soldiers are to "develop" the capability to withstand a whole complex of the strongest experiences: a struggle with the fear of death and unexpected dangers. In the test chamber the person is placed in an extremely difficult situation from which he must "extricate" himself independently, making an instataneous decision and acting at his own risk. In the scientific centers of the USA there are also being conducted tests of a means of a biological nature which can excite or inhibit psychic processes and make a person indifferent to danger, phlegmatic, apathetic. Special laboratories are developing specific recommendations and a multitude of instructions on the psychological preparation of troops. This direction, for example, is widely reflected in field regulations of the American army in a section entitled "Intangible Factors of Combat", by which is meant the moral-psychological factors. The militarist arsenal of moral-ideological corruption of soldiers is continually being replenished with new and modern means capable of crippling the psyche of people and turning them into dumb beings.

The moral supremacy of the Soviet Armed Forces is indisputable and evident. This is the spiritual preponderance which gives a number of specific, decisive advantages, permitting the command to place before personnel tasks of the highest complexity and guaranteeing with firm assurance that all efforts will be applied for their accomplishment. Thanks to a preponderance in moral stability, Soviet soldiers are to a lesser degree subject to ideological diversions in peacetime and to "psychological attacks" on the part of the enemy in the course of war. Finally, a spiritual preponderance per-

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mit our troops [illegible] of modern armed conflict. Our moral supremacy is determine by the objective nature of the socio-political and ideal sources, and by the entire Soviet way of life. But it also depends on subjective factors: the state of combat training and of political and military education. An enormous role in this matter belongs to the commanders, party organs, party and Komsomol organizations. A constant concern about the mastery by Soviet soldiers of Marxist-Leninist theory and military knowledge and on their education in high party and moral-political qualities is the direct responsibility and primary task of all commanders and political workers of the army and navy. The continual improvement of moral-psychological preparation is the most important condition for the further strengthening of the moral forces of Soviet soldiers and the cultivation of our moral supremacy.

The basic direction of this work lies in the system of combat and political training, and in the ideological and military education of Soviet soldiers. It provides for the solution of a dual problem: not only to develop and strengthen needed qualities, but also the expose the specific weaknesses of each soldier -- sluggishness, timidity, susceptibility, impatience -- and by means of a considerate selection of individual tasks, to assist him in overcoming them. If these deficiencies remain unnoticed in peacetime, then it will be immeasurably more difficult to eliminate them in the course of a war. This is why those qualities which are vitally necessary to a soldier are worked out or developed first.

Keenness and flexibility in thinking on the part of military commanders will acquire exceptional significance in a nuclear war. The scale of things and the need to instantaneously comprehend various information and to make decisions place before him the requirement to fully master the most important techniques and methods of dialectical logic. The training of our command cadres is based primarily on a deep undertanding of general principles and methods, and not on rote learning of specific solutions and diagrams. Flexible thinking based on firm knowledge and exercises of the mind strengthens the moral forces of a commander, since it permits him to make an exceedingly rapid evaluation of what has taken place and to pick the most reasonable and logically sound solution.

Modern warfare demands from every serviceman a high state of discipline and self-discipline. Every Soviet soldier must learn to carry out his duties not only on the basis of an order, but according to the dictates of his reason and his heart. The more deeply he realizes the necessity for unquestioning discipline, the easier it is for him to accept military service. The essence of discipline is the fulfillment of the requirement of regulations and obedience to orders, instruction, rules and laws. But frequently the soldier must himself decide how to act. Self-discipline helps him in such instances. It affords the opportunity to fully control one's feelings, master them, and suppress temporary outbreaks of weakness. Self-discipline also plays a tremendous role in the peacetime training of troops. The fighter pilot, radar operator, sentry, driver and tank crew, and soldiers

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[illegible] specialties are for long periods of time alone with the elements, alone with themselves. And only their own conscience, their sense of duty and high state of self-discipline guide them in this period.

Issuing from the nature and demands of modern warfare, of paramount significance is the training of a commander who is ready for actions which are decisive to the point of audacity, and who has a high and firm moral endurance, by which is understood the capability of a person to endure long physical and psychic burdens.

Education in moral-combat qualities enriches the personality of a soldier and immeasurably strengthens his moral powers. Therefore it is reasonable to create in the course of training such a situation as has an element of risk (controllable by the commander). The serviceman must become accustomed to meet danger face to face, because the element of war is danger.

When dangerous situations arise quite frequently the soldier develops stable reactions: he reacts more calmly to unexpected situations and overcomes them more cold-bloodedly. Parachute jumps, operations at night, in bad weather or heavy smoke, on unfamiliar terrain, forcing water barriers, work with sharp light or sound pulses adapt the psyche of the soldier to nervous overloads, harden will power and strengthen moral forces. Man gradually becomes accustomed to danger as an unavoidable companion of combat activity.

In light of the peculiarities of modern warfare there is being developed a system for the professional selection of soldiers for certain specialties demanding high responsibility under conditions of extremely limited time and strong emotional tension. During the selection consideration must be made for the physical and psychological features of the person, his inclinations, character, temperament, quickness of reaction, attention, composure and other qualities. This assists commanders to determine the capabilities of each soldier more successfully and with greatest benefits in accordance with the type of nervous system he has and his mental and physical resources.

There are now taking place major qualitative advances in the spiritual countenance of Soviet people, in their education and professional preparedness, and there are changes in the motives for acts, in interests and needs. Consequently the further development of new methods for the moral-psychological preparation of troops is completely justified. Sociological research is being conducted to this end, permitting the development of scientifically based practical recommendation for the training and education of personnel. Thanks to this, military theory and practice is more successful in solving many actual problems in military affairs.

The continual work of commanders and political workers in forming in Soviet soldiers a communist world-outlook and an ideal conviction is based on the requirements of the moral code of a builder of communism. On this basis is built the entire education of the soldier-citizen and the soldier-warrior who is ready to overcome difficulties and is capable of withstanding and conquering the enemy in modern warfare.

LEGAL AND MORAL STANDARDS IN THE USSR ARMED FORCES

Lt. Col L. ALEKSEYEV

The organization of our Armed Forces is inseparable from communist morality and Soviet law, which have been approved in socialist society. As is known, service regulations directly control life in the army and navy. Reflected in them are the legal and moral standards which play a major role in education of personnel, strengthening of military discipline and increasing the combat readiness of units. Soviet military science is called upon to devote much attention to these questions.

Unfortunately our military theoreticians are not very active in the study of this important problem. Only three special works have emerged in recent years. Certain questions of legal and moral standards have received partial attention in works devoted to other subjects. The given article suggests a new aspect of the problem: the dialectic nature of the connection between morals and law and its appearance in military fact.

Legal and moral standards in the Soviet Armed Forces have a number of peculiarities. The first of them is that the basic principle of communist morality are deeply and completely embodied in military laws: devotion to communism, love of the socialist Motherland, proletarian internationalism, conscientious work for the good of society, collectivism and others. The principle of devotion to communism which is contained in the basic documents of Soviet military legislation -- the military oath of enlistment and regulations -- joins the legal standards active in the Soviet Army with the standards of communist morality, at the foundation of which, as V. I. Lenin said, lies the struggle for strengthening and completing communism (Polnoye sobraniye sochineniy [Complete Collection of Works], vol. 41, page 313).

The idea of the devotion of soldiers to communism as laid out in Soviet military regulations determines the specific political meaning and communist direction of all the requirements of the remaining law-making documents. In this lies the basic difference from similar documents of any army of nonsocialist states.

The presence of identical terms in our regulations and those of imperialist armies in no way signifies a similarity of meaning in the ideal and moral sense. Thus for example in the West German "soldier's code" enacted in 1956 are included demands for loyalty, integrity, courage, maintaining strict military secrecy, and following orders to the letter. In bourgeois military regulations these requirements serve as camouflage for the grasping goals which are foreign to the working masses, whose representatives form the majority of the personnel of capitalist armies.

The second feature of the legal and moral standards embodied in military laws is the broad and many-sided use of the categories of duty, honor, worth and justice which are inspired by communist morality. The requirement for soldiers to "conduct themselves with dignity and honor when outside the unit, to restrain themselves and others from violating public order and assist in every way to defend the honor and dignity of citizens" is written into our Code of Disciplinary Punishment. These same categories of morality found a place in our Interior Service Regulations: "The serviceman values the honor and combat glory of the Armed Forces of the USSR, of his unit and the honor of his military rank." The broad use in our regulations of the categories of morality underlines the honorableness and eminence of service in the Soviet Army and plays an essential role in the exact, unwavering fulfillment of the demands of discipline by servicemen.

The third feature of Soviet military laws is that many moral standards in them have been invested with juridicial form. For example, Article 40 of the Interior Service Regulations demands that all servicemen in addressing each other always be polite and dignified and use the term "You" (Translator Note: polite form as opposed to the personal form of address), and Article 44 obliges the Soviet soldier to salute his chief or superior and in public places in the absense of free seats to give up his own.

Many articles could be cited from Soviet military regulations which attest convincingly to the fact that in military legislation there is not one juridicial requirement devoid of moral force, that here it is difficult to find a moral standard which has no legal status, and that in the life and activities of the Soviet Army legal and moral standards are closely inter-related. But no matter how large is the number of examples confirming this conclusion, they show only the outer manifestation of the unity of morality and law. A statement of the facts does not help in revealing the internal essential ties of legal and moral standards and the regularity of their development. V. I. Lenin stressed the inadequacy of the bare conception of "interaction" in analyzing complex social phenomena. "Interaction' alone is a void," he wrote in the margins of Hegel's book The Science of Logic. "The requirement for a means (of communication), this is what we mean in using the relation of causality" (Polnoye sobraniye sochineniy, vol. 29, pages 146-147).

The unity of legal and moral standards in the Soviet Armed Forces is determined above all by the nature of the economic, socio-political and ideological attitudes of socialist society. From the point of view of internal conditions, the Soviet Union needs no army. But inasmuch as there remains a military danger stemming from the imperialist camp, the existence of an army is necessary. As regards the foundations of military discipline and the regulation of relations between servicemen, these are determined by internal conditions. Inherent to socialism are public

ownership of the means of production, the absence of the exploitation of man by man, an inviolable union of the working class and the peasants, the firm friendship of nations and peoples, and the predominance of Marxist-Leninst ideology. These have a decisive influence on the life of the Armed Forces, on the attitudes of Soviet soldiers toward service and on the formation within them of high moral military qualities. In view of this, Soviet military discipline is distinguished by its awareness and by the voluntary fulfillment of regulation requirements by servicemen. Discipline in our army is based on the firm ideal conviction of the Soviet people, on their undoubting confidence in the right of their cause, and on the inevitable creativity of communism in the whole world. Not coercion, not fear of punishment, but a deep understanding by troops of their patriotic duty and international problems, and a supreme fidelity to the socialist Motherland, the Communist Party and one's own people -- this is what characterizes Soviet military discipline and forms the foundation of its durability.

It is characteristic for our troops to have an efficient organization, strict regulation order and a unity of actions in solving problems put before them. Moreover in a nuclear war the responsibility of each soldier for his actions sharply increases. The requirements have increased for the combat readiness of troops and for a discipline which can be irreproachably observed by a serviceman who has firm ideals and who is stricltly guided by the requirements of communist morality, by regulations and by the oath of enlistment.

The unity of legal and moral standards in the Soviet Armed Forces is determined by the socialist public and state system and the necessity for the conscientious and voluntary fulfillment of the prescribed order by servicemen. If the unity of standards of communist morality and Soviet law in relation to the public and state system appears as a consequence, then in relation to military discipline and a high combat readiness of troops it is one of the most important immediate conditions.

The standards of communist morality in our regulations reflect a process taking place now within the Soviet Armed Forces of an ever firmer adoption of them in the practice of military life and existence of the troops. The presence of many moral standards in the regulations of the Soviet Army bear witness that they are simultaneously legal standards, the observance of which is not only voluntary (on the basis of personal conviction), but is also enforced by the authority of the military commander as given to him by the state.

The close, unbreakable interrelationship, deep interpenetration of legal and moral standards and the extremely important role of moral origins in the fulfillment of regulation requirements are sometimes examined from one side only. For example military duty is seen only as a moral obligation. Thus, in the opinion of Colonel V. Morozov, "Soviet military duty stems from the conditions of life of Soviet society and is the moral

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obligation of Soviet people, above all soldiers of the Soviet Armed Forces, to defend the conquests of socialism and the peaceful labor of the people from aggression on the part of the imperialists." This statement is true. But military duty cannot be reduced to only a moral standard. It is also a legal obligation which is expressed in the categoric demands of the laws to observe strict discipline and the order established in the Soviet Army, and with weapon in hand to defend the Motherland. If a particular serviceman for some reason does not fulfill this obligation, then in addition to measures of moral influence there are applied measures of legal influence in the form of disciplinary punishments or criminal punishment.

The existence of a legal and a moral side to Soviet military duty and the difference between juridicial and moral evaluations of the actions of servicemen attests that the unity of legal and moral standards in the Soviet Armed Forces does not mean that they are identical. It, like any other unity of interrelated sides, is relative and incomplete. "A complete correspondence," as V. I. Lenin pointed out, "does not occur even in the simplest forms of nature...Unity (correspondence, identity, equivalence) of opposites is conditional, temporary, ephemeral, relative" (Polnoye sobraniye sochinenly, vol. 26, pages 152-153 and vol. 29, page 317). The relegation of Soviet military duty only to a moral obligation leads teachers to an idealization of the motives for the conduct of servicemen and causes serious errors in the practice of educational work. When it is necessary to make use of the authority granted them, they use persuasion. This especiallly concerns those intolerable cases of drunkenness occurring in the army which frequently lead to serious incidents.

But the otherextreme may bring no less damage. We are speaking here about relegating military duty only to a legal obligation. Those who favor this point of view underestimate the enormous force of communist moral teaching, substitute for it bare administration and abuse disciplinary laws. They believe the surest means of strengthening discipline to be threats and the application of strict punishment measures. But punishment alone cannot ensure the proper conduct of a serviceman, especially in a combat situation. Here a conscientious, voluntary obedience is extremely necessary.

Soviet military duty is at the same time both moral and a legal obligation. They are determined on the one hand by the diverse origin of juridicial and moral standards and the dissimilar degree of their independence relative to the economic foundation and its political superstructure, on the other hand; by the variance of controlled social attitudes, the difference in regulation, detail, determination of their requirements, authorizations and prohibitions, and finally on the diverse relationship and role of conviction and coercion. These differences lead inevitably to contradictions, in the solution of which legal standards are renewed in a timely manner and are cited in accordance with the moral criterion of society at the given level.

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In our active service regulations the basic demands of communist moral standards have found the greatest reflection. Everything in them that was out-moded has been eliminated, the enormous importance of measures of encouragement in troop training has been stressed, and also there have been introduced many new statements answering the daily requirements of the time and the program requirements of the party in educating a builder of communism, a man of high awareness -- a soldier and reliable protector of his Motherland. As a result, there have been intensified interrelationships, interaction and interpenetration of administrative-legal and moral standards which answer the requirements of the time -- the period of developed building of communism in our country.

The decisions of the 22nd Party Congress and the Program of the CPSU accepted there have created new premises for the best transformation into life of the requirements of combined arms regulations. The Program of the CPSU points out: "In the process of transition to communism the role of moral origins is increasing more and more in the life of society, the sphere of influence of the moral factor is broadening and accordingly the significance of administrative regulation of the interrelationships between people is decreasing." This most important conclusion of the Program of our party has also a great meaning for our Soviet Armed Forces. As there is an increase in the comprehensive development of spiritual and moral qualities in the Soviet people entering the army, the significance of coercion in the education of troops will decrease.

The interrelations of Soviet soldiers are based on the principle of the moral code of a builder of communism: one man is to another a friend, comrade and brother. Based on the program requirements of the moral code of a builder of communism, our regulations receive a richer moral content which is perceived still more clearly and strongly by the consciousness of servicemen. But this is not the only thing. Much depends on their practical fulfillment, in other words, on the accumulating disciplinary practice in the troop units and the actions of the servicemen themselves.

It is known that the acts and deeds of soldiers can correspond to or contradict the legal and moral standards, and on the force of this can be correct of incorrect. Therefore the category of justice includes a legal and a moral side. If the legal evaluation of acts is performed on the basis of legislation in effect and acknowledges them as lawful or unlawful (juridicially significant or indifferent), then the moral evaluation implies a recognition of good or evil in a particular act, and censure or praise of it. On the force of this the moral and legal sides, as a rule, coincide, and comprise a united (common) evaluation of a serviceman's acts.

There are times, however, when these evaluations do not coincide. The objective source of their divergence is that in the military regulations it is impossible to foresee all the diversity of situations which could practically arise in life and in the combat activities of troops. Regulation statutes cannot pretend to be an absolutely exact reproduction of the necessary order in all components and details, although the legislator strives for this to the maximum. Therefore the evaluation of an act, based only on regulation standards, will not always be exhaustive. The moral evaluation is freer, reacts more flexibly to the smallest changes in the situation, and better and more fully considers personal motives in view of its lesser formalization.

Therefore the more purposeful is the objective unity of regulation and moral standards, the more effective are these standards and the greater benefit they bring in the combat and political training of troops.

Experience has shown that in disciplinary practice as in other forms of service activity, when giving orders it is obligatory to give a thorough consideration to the relations of the legal and moral elements. Only under this condition will any disciplinary punishment, encouragement, or requirements of orders and instructions of commanders and supervisors be accepted by subordinates as just from all points of view and subject to incontrovertible fulfillment, and it will have the strongest moral influence on the soldiers.

One-man command is a political phenomenon inasmuch as its content reflects the policy of the Communist Party and the Soviet government as carried out in the Armed Forces. In addition it is also a legal phenomenon, since the rights and obligations of commanders are secured in Soviet laws, the oath of enlistment, regulations, manuals, instructions and orders. But at the same time one-man management is also a moral phenomenon. Inasmuch as the activity of commanders touches the moral relations between servicemen along with the service relationships, so the personal merits and actions of one-man managers also play an important part in the education of subordinates. The essence of the moral side of one-man command in the Soviet Armed Forces was clearly defined by the Minister of Defense, Marshal of the Soviet Union R. Malinovkiy: "The one-man-command should so exert his influence on subordinates that all respect and love him"

The moral side of one-man command acquires an especially important meaning under present-day conditions, when the moral origins have been renewed in the life of all our society, when the Soviet Armed Forces are being transformed into an army of highly conscientious builders of communism and as a result of the revolution in military affairs the role of the moral-combat qualities of a man in war has increased. The renewed significance of the moral side in the activities of commanders demands that they be extremely exacting and at the same time display a more hu-

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man warmth and respect toward subordinates.

The constant tie of a commander with his subordinates and his concern for them was always an important factor in the successful activities of one-man managers in our army and navy, but they are especially necessary in present-day conditions. The Soviet commander has always sought the most reasonable methods and best ways to fight human faults and errors, and has weighed his decision to make sure it did not cause unnecessary mental pain and useless moral suffering to the subordinate. His actions raised those who stumbled, and caused them to carry out any order without hesitation. All this has an especially important meaning under present-day conditions. In deciding the fate of soldiers, the commander will not act thus: he determined the weight of the act, considered how many times this error has been committed by the subordinate, and the decision is ready -- receive your punishment. Unfortunately some commanders, without thinking of the consequences of their decision, concern themselves only with not overstepping the rights given them by the military regulations. Such a one-sided approach causes great harm to disciplinary practice and does not facilitate the prevention of violations of order by servicemen, but on the contrary, leads to a repetition of the violations of discipline and the regulation requirements on the part of some of the soldiers. Consequently only a thorough approach to a soldier can produce positive results in the practice of training and education of subordinates by superiors.

The most important condition of the effectiveness of educational measures is the authority of the superior in the eyes of the subordinates and his high commander's official qualities: military mastery, military-technical knowledge and habits. Each commander must know military affairs well, must carry out his service obligations in exemplary fashion, and also must serve as a positive example for subordinates in observing the standards of communist morality. How he conducts himself, how he is on and off the job -- on this to a large degree depends his success in the leadership and education of subordinates. Subordinates love a superior who is exacting, but just, direct and honest, and they sincerely emulate him. A commander who is himself not faultless, even though he be demanding, does not enjoy authority over his subordinates and his formal punishments do not give the desired positive results.

Unlawful orders and nonregulation measures of influence on subordinates on the part of certain commanders cause an especially great harm to the education of subordinates. Such instances in the practice of some officers are explained on the one hand by their low level of legal knowledge, unfamiliarity with the laws and regulations, and on the other hand by a formal approach to the observance and execution of legal standards. But the most reasonable ways and means of active education of subordinates appear in Soviet military legislation and in military regulations. The correct use of regulation standards and the skillful use of their enormous

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[illegible] moral educational force will also ensure the corroboration of the standards of communist morality in the consciousness and conduct of Soviet troops. It should be stressed that the inability of certain commanders and political workers to organically combine in educational work the moral and legal standards is partiallly explained also by the absence in omstrictprs pf sufficient knowledge in the field of Marxist-Leninist theory and socialist law, pedagogy and psychology.

It is extremely necessary to overcome this deficiency. For this, along with other measures, we must intensify the legal training both of already experienced officers and of young officers, and give the latter the foundations of knowledge of Soviet legislation in military schools. At present, unfortunately, the future commanders do not receive that minimum of juridicial knowledge necessary to them for practical work among the troops. Arriving at a unit after completion of school, the young officers by far do not everywhere and always have opportunities to supplement their knowledge. Therefore the suggestions expressed in our military publications about the creation of juridicial faculties in evening universities of Marxism-Leninism and about the inclusion into plans for officer training the foundations of Soviet legislation deserve thorough support.

These are some of the recommendations which come out of an analysis of the unity of legal and moral standards in the Soviet Armed Forces at the present stage.

The theoretical development of this problem will undoubtedly be of use to the practice of combat and political training and the matter of training and education of the troops of our Armed Forces.

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