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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

22 December 1976

MEMORANDUM FOR: The Director of Central Intelligence
FROM : William W. Wells
Deputy Director for Operations
SUBJECT : MILITARY THOUGHT (USSR): Problems of
Conducting a War in Europe

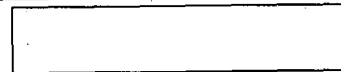
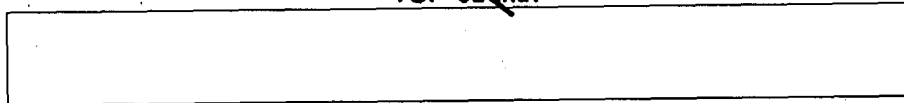
1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article is an assessment of NATO capabilities and intentions regarding the conduct of a war in Europe, based on an analysis of NATO exercises held in the early 1960's. The author examines the concept of limited war, the employment of tactical nuclear weapons and nuclear land mines, and the authorization procedures for nuclear weapons. The ground forces are considered to have the major role in combat operations based on mobile defense, with close air support provided by tactical aviation and carrier strike forces. The article also deals with troop control, particularly the use of mobile and airborne command posts, communications and warning systems, and recent improvements undertaken to increase NATO fire power. This article appeared in Issue No. 3 (79) for 1966.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies. For ease of reference, reports from this publication have been assigned

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Intelligence Information Special Report

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SUBJECT

MILITARY THOUGHT (USSR): Problems of Conducting a War in Europe

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Summary:

The following report is a translation from Russian of an article which appeared in Issue No. 3 (79) for 1966 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal 'Military Thought'. The author of this article is General-Leytenant P. Melnikov. This article is an assessment of NATO capabilities and intentions regarding the conduct of a war in Europe, based on an analysis of NATO exercises held in the early 1960's. The author examines the concept of limited war, the employment of tactical nuclear weapons and nuclear land mines, and the authorization procedures for nuclear weapons. The ground forces are considered to have the major role in combat operations based on mobile defense, with close air support provided by tactical aviation and carrier strike forces. The article also deals with troop control, particularly the use of mobile and airborne command posts, communications and warning systems, and recent improvements undertaken to increase NATO fire power.

End of Summary

[REDACTED] Comment:

Colonel General Pavel Vasilyevich Melnikov has been identified since November 1972 as Commander of the Transcaucasus Military District. The SECRET version of Military Thought was published three times annually and was distributed down to the level of division commander. It reportedly ceased publication at the end of 1970.

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Problems of Conducting a War in Europe

(Based on the views of the NATO Command)

by
General-Leytenant P. Melnikov

The US and NATO commands are diligently studying various methods of unleashing and conducting a war in Europe in light of the doctrine of "flexible response". While placing their main reliance on a general nuclear war through surprise attack against the Soviet Union and the other countries of the socialist camp, they at the same time are devoting ever increasing attention to the study of the possibility of unleashing a war via limited conflict with the employment of conventional types of weapons or tactical nuclear means.

The two basic features of unleashing and conducting a so-called limited war in Europe should be noted. First, the concept "limited war" does not exclude, but, on the contrary, presupposes a large-scale war with the participation of large troop masses deployed over a wide area. This is explained namely by the fact that in Europe two of the most powerful military alliances, NATO and the countries of the Warsaw Pact, are opposing each other. Second, a limited war, judging by the experience of exercises, is brief in nature with the obligatory employment by the NATO armed forces of tactical nuclear weapons. In this case, the leadership of the NATO bloc proceeds on the assumption that its armed forces are not in condition to withstand the armies of the socialist countries when conducting combat operations with conventional means and, therefore, considers it necessary to employ tactical nuclear weapons in any war including a limited one. These principles are reflected in many operational documents and form a basis for training the staffs and troops of NATO in Europe. And although there are still no firm views on the part of the NATO command on individual problems, to date some methods of unleashing and conducting a limited war have already been determined. The experience of exercises conducted by the NATO command during the last two to three years bears graphic witness to this.

The intent of this article is to examine a number of matters pertaining to the unleashing and conducting of a war in Europe based on an

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analysis of NATO exercises. These matters include: the system of alerts for shifting NATO troops from a peacetime to a wartime status; certain features of conducting a limited war with the employment of tactical nuclear weapons in it and of the employment of various branches of the armed forces; troop control as well as separate measures for raising the combat might of the combined NATO armed forces.

The exercise GREEN LION, conducted in September 1962, was an extensive operational measure which marked the beginning of wide-ranging research into the possibilities of conducting a limited war in the Central European Theater of Military Operations. At this exercise, for the first time, a variant of the operational plan for carrying out the "forward defense" concept adopted in 1962 was tested.

The forward defense line, on which the deployment of the main forces of the ground forces is planned in accordance with this concept, is designated at 15 to 30 kilometers from the state border with the German Democratic Republic and Czechoslovakia. In connection with this, at the present time the matter of redeployment of the positions of large units of the Central Army Group and the Northern Army Group is being carried out, as well as a buildup of reserves of materiel nearer to the eastern border of the Federal Republic of Germany, in order that the troops may simultaneously occupy the forward line and support the deployment in positions. During the period of deployment of the ground forces in the theater, movements are planned to be completed in three days. It is calculated that army corps of the first echelon may be deployed on the forward defense line in the course of 24 hours and covering units will occupy their positions in three to five hours.

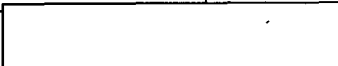
Following the exercise GREEN LION, an exercise with the code name SOUTH-63 was conducted during the second half of September 1963 in the Southern European Theater of Military Operations with the same goals as GREEN LION.

However, matters involving the preparation and conduct of operations in a limited war with its escalation into a general nuclear war were more fully worked out during the strategic exercises FALLEX-64 and COMBINED OPERATIONS of the combined ground forces of NATO which were conducted in September 1964 and involved, essentially, all of the European theaters and the Atlantic.

In May 1961, a new large-scale command-staff exercise CENTRAL FRONT-5 took place in the Central European Theater of Military Operations.

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The beginning of combat operations in the exercises was preceded by a comparatively lengthy period of increased international tension in Central Europe, at the end of which the situation became intensely exacerbated and ended in the unleashing of war. In the NATO countries, the alert systems intended for the gradual buildup of the combat readiness of the troops and for the execution of preparatory measures at the national level were put into effect.*

It can be seen that the NATO command, from exercise to exercise, has gradually reduced the time preceding the transition of the troops from a limited war to a general nuclear war.

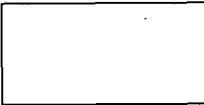
Thus, in the exercise GREEN LION, a limited war lasted nearly four days and was conducted with only conventional means of destruction. In the exercise FALLEX-64, the war lasted 34 hours, and only 30 hours passed before tactical nuclear means were employed. A still shorter limited war was played out during the exercise CENTRAL FRONT-5 and lasted only 30 hours, of which only 16 hours were used for combat operations without the employment of nuclear weapons, and, after that, at first tactical nuclear means, and then strategic nuclear means also were employed.

In division and army exercises conducted in 1965, nuclear weapons were employed as little as eight to ten hours after the onset of war. Thus, at a command-staff exercise of the US Seventh Army with the code name PYRAMID OF POWER, the units requested permission to employ nuclear weapons after seven hours and 30 minutes.

All of this points out the fact that the leadership of NATO actually does not believe in the possibility of any protracted conduct of a war in Europe with the employment of only conventional means.

The increased attention, which the leadership of NATO nevertheless is devoting to limited wars, may be explained, apparently, by the attempt to achieve various military-political goals with fewer losses, without subjecting themselves to the threat of destruction, but creating, at the same time, the same threat to the enemy. Thus, one American journal has said: "We must time and time again assure the enemy of the fact that our goals are limited and that we do not intend to destroy him completely, and that there is a way out from the situation which is being created if only he, under the influence of fear, does not expand the conflict to an unlimited one. In the process, the enemy should be given to understand

* The readers of the Collection of Articles of the Journal 'Military Thought' know about this in detail from various reference books and other published materials.



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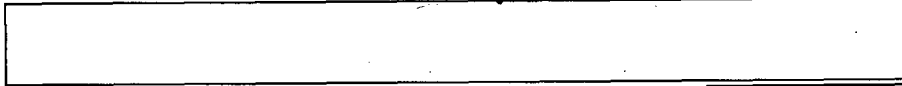
that if he, in his turn, will not strive to maintain his goals and means within limits, then, we will destroy him."

In its methods of conduct, a limited war, as the NATO command considers it, is distinguished from a general nuclear war first and foremost by the fact that it does not have the goal of maximum destruction of all vitally important installations and areas in enemy territory. This, in turn, gives rise to one of the important features of a limited war -- its contradictory nature. For the rapid achievement of the goals which have been set for the war, swift and decisive actions are necessary and at the same time the scale of the forces and means used in it must be limited in order not to cause its escalation into a general nuclear war. In this regard, in military operations, in the opinion of the Americans, some pauses should be allowed for negotiations between the sides. Such a practice was observed at the exercise GREEN LION where, as a result of the negotiations, the war was discontinued altogether.

It is considered that a characteristic feature of conducting a limited war should be the continuous maintenance of diplomatic contacts between the sides in order that the essence of the political goals of the enemy and the nature of the primary limitations of the war are always known to them. The Pentagon actually proposes to work out specific rules ahead of time for conducting a limited war, to establish necessary restrictions, and to show them to the opposing sides, while threatening the delivery of a massed nuclear strike in the event that one side did not comply with the specified conditions.

Special importance is attached to the preliminary stipulation of the scales of employment of tactical nuclear weapons. The US and NATO commands, apparently, still do not have fully developed views on this matter. However, the experience of exercises shows that in order to avoid a general nuclear war, they consider it important to: notify the enemy early of the scales of employment of tactical nuclear means; limit the yields of warheads; warn the civilian population of the possibility of a nuclear attack; and deliver strikes, at first, only against those troops which have already driven a wedge into the territory of the NATO countries. In this regard, attempts are being made to classify nuclear warheads into tactical warheads with yields up to 300 to 500 kilotons and strategic warheads with yields higher than 500 kilotons. In doing so, employment at the outset of air bursts mainly in air defense zones is recommended, as well as the employment of nuclear land mines.

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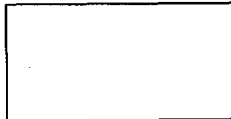


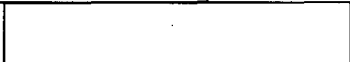
The NATO command attaches a great deal of importance to the employment of nuclear land mines, especially at the outbreak of war. Suffice it to say that during the first half of this year, the US planned to transfer to Western Europe about 300 nuclear mines in the course of increasing the reserves of nuclear weapons. It is believed that in the Central European Theater of Military Operations, an important army group must have up to 250 nuclear land mines which may be employed for the purpose of delaying an attack of the enemy ground forces and for forcing them to concentrate in an area where they can advantageously destroy them by nuclear and conventional fire means. It is recommended that the employment of nuclear land mines be strictly coordinated with the actions of aviation, the rocket troops, and nuclear artillery.

Undoubtedly, in employing these land mines, the enemy can inflict considerable losses on the advancing troops. Therefore, delay and the bunching up of troops when negotiating obstacle zones cannot be permitted, especially on those axes and in those areas where the highest probability of nuclear strikes exists. We must, therefore, devote serious attention to the development and introduction of the most effective methods of negotiating zones of nuclear land mines.

The seizure and disarming of such land mines will be an extremely difficult task, primarily because control of their detonation may be carried out by radio and by wire (from a distance of 16 and eight kilometers, respectively) at the time most dangerous to the advancing troops. In addition, delayed-action fuzes, timed to go off in from five minutes up to 48 hours (depending on the type of mine), may be set in the land mines.

According to the experience of exercises, the authorization to employ tactical nuclear weapons, including nuclear land mines, is given by the Supreme Commander-in-Chief of NATO in Europe, in accordance with the US President's decision, with a declaration of "S" hour. He does not determine, however, the scales of employment of nuclear means, which areas and targets they may be employed against, and for what purposes, or the yields and types of nuclear warheads. The problem of granting the rights to employ nuclear land mines and other warheads to the commanders-in-chief in the European theater of military operations is being studied. Some military leaders of NATO demand that the decision to employ nuclear means be decided by lower command levels. If such a proposal is accepted, the circle of persons possessing this right will be enlarged to such proportions that it will already be difficult to carry out any kind of control and, therefore, nuclear weapons may be employed at any time during





combat operations.

The system for declaring the signal for putting "S" hour into effect is rather complicated but it is being continuously studied and improved. In the exercise CENTRAL FRONT-5, the NATO command in the Central European Theater of Military Operations already noted that considerable progress has been made in this regard. For example, the time needed for getting authorization to employ tactical nuclear means, from the moment of transmitting the request until the answer is received, was, on the average, five hours for the Northern Army Group and seven hours for the Central Army Group, while in the exercise FALLEX-64 it took 13 hours. Half of this time usually went into making the decision and the remainder of the time into transmitting the decision to the troops. However, even this time does not satisfy the NATO command since the troops receive authorization to employ tactical nuclear means very late and do not have time to fully employ them. In particular, in the exercise CENTRAL FRONT-5, the Supreme Commander-in-Chief, during a limited war, authorized the troops to employ about 100 tactical nuclear warheads, whereas they were able to employ only up to 20 warheads and the remainder were employed only with the onset of the general war. They are, therefore, searching persistently for methods of reducing this time by as much as four hours. They intend that this will eliminate submission of unjustified requests by the staff for authorization to employ tactical nuclear means. In order to receive such authorization in good time, the staffs, often on the basis of purely conjectural information about the enemy, strive to request the employment of tactical nuclear weapons in advance, when the employment of them is not called for by the situation.

The grounds for authorizing the unlimited employment of nuclear weapons ("R" hour) in exercises is usually based, on the one hand, on data on the number and location of enemy nuclear strikes, and on the other hand, on information on the results of strikes by tactical nuclear means of NATO. Whereas the information about enemy nuclear strikes comes in rapidly, the collection of data on the results of employing their own tactical nuclear means requires several hours and is the main reason for delays in the declaration of "R" hour. In order to reduce these delays, in the exercise CENTRAL FRONT-5, data about the time and ground zeroes of their own nuclear bursts were supposed to be transmitted to the higher staffs directly from divisions and army corps by the nuclear, biological, and chemical warfare attack warning net.

The authorization for employing nuclear weapons, as we know, is given by the President of the US. For this, appropriate signals are worked out,



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including training signals, for the purpose of training the staffs to bring nuclear weapons to the highest level of combat readiness. However, it should be noted that at the exercises, the putting in effect of "R" hour was usually announced with an abbreviated designation, and along with this code words often were changed just before the beginning of the exercise; this led to confusion and brought about the failure of some executors to take the appropriate actions. Thus, for example, in the exercise FALLEX-64, army corps received the signal very late, and their missile units were unable to deliver a nuclear strike any earlier than one hour after a massed enemy nuclear strike. In the exercise CENTRAL FRONT-5, the mobile control post was not notified of the declaration of "R" hour at all.

Considering this, the NATO command recommends declaring "R" hour by approximating actual conditions, sending packets with signals to the staffs in advance, and in so doing having separate packets for declaring "R" hour for training purposes and in combat situations.

Employment of the branches of the armed forces. The practice of exercises shows that the main role in a limited war is assigned to the ground forces.

In the exercises, the NATO command places its troops, as a rule, under fairly complex conditions. Usually a variant is worked out for the onset of a war in which the enemy preempts in developing offensive operations with the employment of conventional means. A balance of forces, especially in ground forces, is set up with a significant enemy superiority. In the exercise GREEN LION, for example, in the Central European Theater of Military Operations, the balance was approximately 2:1 (64 divisions against 33), and in the number of large units of the first echelon, it was 1.2:1 (30 divisions against 25) in favor of the enemy. Almost the same balance of forces in this theater also existed in the exercise FALLEX-64 -- 68 divisions against 33; and for the air forces the balance was 1.7:1 in favor of the enemy, although, in terms of quality, NATO aviation, in the opinion of the NATO command, surpassed enemy aviation.

Under these conditions, the ground forces usually were assigned the task, in cooperation with the air and naval forces, of not allowing the enemy to encroach upon the territory of the NATO countries, of destroying groupings which had broken through and, if successful, seizing part of the territory of the socialist countries.

The basis of combat operations is considered to be the conduct of a mobile defense. In the European Theater of Military Operations, a defense

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includes a covering zone with a depth of 15 to 50 kilometers and a defense zone with a depth of up to 200 kilometers which consists of several defense lines.

In the covering zone, as a rule, up to 25 percent of all defending troops are deployed; this normally includes the armored regiments as well as the tank and motorized infantry brigades allocated from army corps and divisions positioned on the forward defense line. The covering troops receive the task of executing delaying actions and of preventing enemy penetration into the forward defense line, of covering the deployment of the main forces on it, and of organizing reconnaissance of the enemy and the security of their own troops. They are generally reinforced by demolition teams with nuclear land mines.

Negotiating such a defense in the covering zone, without a doubt, demands significant forces on the part of the advancing troops: it demands thorough planning for the neutralization of fairly large forces of armored and mechanized troops on lines which they occupy in sequence; repelling of powerful air strikes; seizure and disarming of nuclear land mines; and negotiation of considerable destruction and flooding. Therefore, in the training practice of our ground forces, training for quickly negotiating covering zones must be given a great deal of attention.

In the exercises, a grouping of the troops was generally established which was similar to the actual grouping, with allowance for its planned reinforcement. About nine to ten additional divisions of the armies of the US, Great Britain, Canada, France, Belgium, and The Netherlands were transferred to the ground forces in the Central European Theater of Military Operations. In all, an army group has 12 to 18 divisions, a field army has five to seven divisions and more, and an army corps has two to three divisions. The main forces of the army group, the field armies, and army corps, in accordance with the requirements of the "forward defense" concept, were concentrated on the forward defense line.

The operational disposition of an army group in the exercises was in one echelon with one to three divisions in the reserve. Field armies were deployed in various ways. Thus, the US Seventh Field Army usually had a one-echelon disposition and the French First Field Army had a two-echelon disposition. A deeper disposition of the battle formation was observed at the corps and division level. Therefore, negotiating the defense of these large units will require the greatest effort of the forces of the advancing troops. This should underlie the concept of the combat actions, the determination of methods of operational disposition of the troops, and the



employment of the main mass of their fire means.

For conducting a mobile defense, the Northern Army Group was deployed along a front of about 650 kilometers with a density of up to 12 kilometers for each division, and the Central Army Group was deployed on a front of 600 to 800 kilometers with a density of up to 35 kilometers for each division. The field army occupied a defensive front of up to 150 to 300 kilometers and more, the army corps, up to 45 to 60 kilometers, and the division, 20 to 30 kilometers on the average.

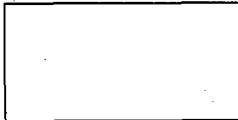
Consequently, the operational disposition and battle formations of the troops, as well as the width of the zone of action of formations, large units, and subunits of the troops are planned, provisionally, to be the same as those in a nuclear war, since the NATO command considers that a sufficient threat exists of the limited war escalating into a general nuclear war.

In playing through combat actions, the directing body of the exercises usually allowed the enemy to advance to a depth of 80 to 100 kilometers from the eastern border of the Federal Republic of Germany and allowed a breakthrough in certain sectors of the forward defense line. In that case, when it became clear that the line could not be held by conventional means and that throwing the enemy back to their departure position would be impossible, authorization was requested to employ tactical nuclear weapons. These requests were normally received on the second and third day, but in a number of recent exercises they were received significantly earlier.

Thus, it is most probable that NATO troops will begin to employ tactical nuclear weapons in a limited war, as the experience of exercises shows, in the battle for the forward defense line and especially at that critical moment when the defending troops are not in a condition to hold it. In that period following nuclear strikes, counterattacks and counterthrusts, as a rule, will be carried out for the purpose of restoring their position. Detonating nuclear land mines and employing nuclear warheads in support of certain air defense tasks are possible even earlier.

The working out of methods of combat operations of tactical aviation in a limited war which is escalating into a general nuclear war occupied the most important place in the exercises.

The task of close air support of the ground forces, and air defense of the troops and other installations, as well as the conduct of reconnaissance, is mainly assigned to aviation. A negligible portion of



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the delivery aircraft usually was allocated to deliver nuclear strikes.

We must mention here the high degree of combat readiness of the tactical air forces. Thus, the alert forces of the combined air forces in the Central European Theater of Military Operations, which permanently include up to 17 percent of the combat strength of nuclear weapons delivery aircraft, up to ten percent of the strength of units using conventional weapons, and nearly 50 percent of the Mace cruise missile launchers are, as a rule, kept in a 15-minute readiness state. After declaring an ordinary alert, the numerical strength of alert aircraft was doubled and reached 270 nuclear weapons delivery aircraft and 250 aircraft with conventional means of destruction. For an increased readiness alert, more than 50 percent of the missile delivery aircraft and aircraft with conventional armament were brought to a 10-minute to 15-minute state of readiness and the remaining aircraft were kept in a three-hour state of readiness. This completed the bringing of air units to combat readiness. All nuclear weapons delivery aircraft on alert had nuclear bombs on board.

The great numerical strength and high state of readiness of the tactical air forces give us grounds to assume that from the very beginning of a limited war they are able, except for the forces fulfilling tasks by conventional means, to maintain a considerable number of aircraft in readiness to deliver nuclear strikes.

It is worthwhile to note that in the exercises a large amount of aviation was allocated for close support of the ground forces. Five to six air wings usually cooperate with a field army and approximately 30 to 50 aircraft sorties and more per day are planned for close support of a division operating on the main axis.

The methods of operations of aviation in support of the ground forces is of definite interest. Aviation usually fulfils its task in small groups (up to four to twelve aircraft) and from low altitudes (less than 1,500 meters). In doing so, breaking through the air defense system is carried out at low altitudes and by hedge-hopping.

In order to withdraw tactical air forces out from under an enemy nuclear strike, it is planned to put the greater portion of the aircraft into the air. Thus, in the exercise FALLEX-64 up to 50 percent of all combat-ready aircraft were put into the air 15 to 20 minutes prior to the beginning of an enemy massed nuclear strike, and within 35 to 40 minutes after the strike, these aircraft had already delivered nuclear strikes in accordance with the plans of the NATO command.

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In a general nuclear war, the main efforts of the air forces, as experience shows, are directed toward participating in a nuclear offensive and carrying out air reconnaissance. At the same time, aviation continues the struggle for air superiority, carries out close air support of the ground forces, and fulfils air defense tasks.

During the training of the combined armed forces of NATO, the methods of employing the naval forces both in a limited war and also in a general nuclear war are continuously being improved.

According to the experience of NATO exercises, we are of the opinion that with the declaration of a high state of alert around 1,000 combat ships and over 1,200 aircraft may be included within the combined navies. Approximately 520 ships and up to 300 combat aircraft (almost half of them are nuclear weapons delivery aircraft) are allocated for joint operations with the troops deployed in the European theaters. The main groupings of these navies at the exercises generally were American and British carrier strike large units operating in the North Atlantic, the Norwegian and North seas, and an American carrier strike large unit operating in the Mediterranean Sea. Each of these large units usually consisted of two aircraft carriers.

In a limited war, as the practice of exercises shows, tasks mainly for the support of the ground forces in the theaters, for the destruction of enemy naval forces at bases and at sea, and also for the defense of straits are assigned to the navy. For the purpose of increasing the depth of operations of carrier-based aviation in support of the ground forces the combat maneuvering areas of strike aircraft carriers are designated most often no further than 50 miles off the coast.

For supporting the NATO ground forces in the theater, up to 50 percent of all carrier-based ground-attack aircraft were allocated. The remainder of the aircraft, comprising the nuclear might of the aircraft carriers, were maintained in readiness for delivering strikes upon receipt of signal "R". / Carrier-based aviation generally was not allocated for delivering nuclear strikes in a limited war. / The operations of the carrier strike large units were covered closely by the forces and means of air defense and antisubmarine defense. The depth of the air defense zone of the strike fleet in the Norwegian Sea, for example, reached over 1,300 kilometers, and the antisubmarine defense reached over 500 kilometers. Such a depth of the zones was provided by the aircraft of shore-based aviation from airfields in Iceland and Great Britain. The interception of enemy aircraft by fighters from a strike aircraft carrier usually was carried out 200 to 250

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kilometers from it, and the ships with surface-to-air missiles moved out 40 kilometers, and sometimes even up to 100 kilometers, from the aircraft carrier.

When organizing combat against a NATO strike fleet, a feature of its combat employment which must be borne in mind is the movement and shifting of the forces and means in support of the ground forces from one theater of military operations to another. Thus, in the exercise COMBINED OPERATIONS, the NATO strike fleet in the Atlantic supported, at first, the combined armed forces in the Northern European Theater of Military Operations where its carrier-based aviation delivered conventional bombing strikes, and with the declaration of "R" hour, nuclear strikes against enemy targets. Then, the strike fleet moved into the Bay of Biscay, and its aviation accomplished tasks in cooperation with the Second and Fourth Allied Tactical Air Forces for support of the NATO ground forces in the Central European Theater of Military Operations.

Air defense problems at the NATO exercises, in both a limited and a general nuclear war, were worked out without carrying out any special changes in the existing grouping of forces and means, with the exception of the planned dispersal of fighter aviation. The air defense was organized according to the principle of covering the territory as a whole and not separate targets. With this, exceptionally great attention was devoted to the detection and interception of low-flying targets, for which a forward line was established in exercises for detection by the air defense; it was carried out by the forces of tactical aviation and by the means of the ground forces, mainly by surface-to-air missiles.

Troop control. In the exercises, a great deal of attention was devoted to organizing the cooperation of the branches of the armed forces. For the close air support of the ground forces, a forward operations center was set up at the command post of the Northern Army Group, and operations centers for air support were set up in the staffs of its corps. In the staffs of the US Seventh Field Army and the French First Field Army, operations centers were also set up, and in the staffs of the corps of the Central Army Group, posts for the guidance of aircraft against ground targets were set up. Operations centers for air support not only consolidated requests of the corps and armies for air support of large units and formations, and for the conduct of reconnaissance, but also informed the ground forces of the air situation, and coordinated with them the troop safety lines.

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Combat operations of the naval forces were closely coordinated with the operations of the aviation and ground forces in the theaters. Carrier-based aviation of the strike fleet, for example, during the second stage of the exercise COMBINED OPERATIONS was assigned targets for close support of the ground forces in the Central European Theater of Military Operations from the command and staffs of the Second and Fourth Allied Tactical Air Forces, which also carried out the control of this aviation during the delivery of strikes.

One of the main tasks of all command-staff and troop exercises of NATO was checking the effectiveness of the communications and control systems. Special exercises and training in communications means were systematically carried out for these purposes.

We note that not long ago the control system for NATO troops was based, in the main, at stationary posts which were equipped to protect personnel from nuclear strikes with nuclear warhead yields up to 100 kilotons. However, considering the increase in the yield of nuclear warheads and the increase in the accuracy of their delivery on target, based on the experience of exercises of recent years, the NATO command has changed its views somewhat. It believes that along with strongly protected, stationary control posts, there should also be mobile control posts which are less vulnerable.

Thus, at the exercise CENTRAL FRONT-5, troop control on the first day of combat operations was carried out from the main control post, and on the following days from the mobile control post. A rear control post was not set up in this exercise since the personnel of the staff of the combined ground troops in the theater in peacetime are sufficient for only two wartime control posts. The main and mobile control posts operated as joint command posts of the ground forces and aviation.

The main control post in peacetime usually is set up no closer than 15 to 20 kilometers from the permanent deployment points of the staffs and is considerably better equipped with communications means than the mobile control post. In addition, it is tied in with the SCARS automated control system, which ensures the transmission of signals from the staff of the Supreme Commander-in-Chief of NATO in Europe concerning the declaration of alerts and orders for the delivery of nuclear strikes.

The distance of the main command posts from the forward edge of the defense line in the exercise usually was: for a field army -- 95 to 100 kilometers, for an army corps -- 30 to 50 kilometers, for a division -- 10

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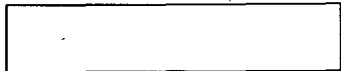
to 40 kilometers, and for a brigade -- five to ten kilometers.

The organization of a system of airborne command posts and retransmission centers, set up in transport aircraft with means of ultra-shortwave, radio-relay, and shortwave radiotelephone communications, and single-channel printer communications, is arousing a certain interest. Such a system was used at the level of the Supreme Commander-in-Chief of NATO and the Commander-in-Chief of the US Armed Forces in Europe for the first time in the exercise FALLEX-64. In it, the aircraft of the Supreme Commander-in-Chief and ten aircraft acting as retransmission centers were employed. With the putting up in the air of all elements of the combined airborne command post, a self-contained system of troop control was established which was quickly connected via the stationary ground-based automatic switching centers to the combined system of control of the armed forces. During the exercise, a total of two hours and five minutes were spent on the changeover to control using the airborne command posts and communications retransmission centers, after the disruption of control from the ground-based command posts.

The organization of communications in the exercises was carried out according to the following principle: the staff of the NATO combined armed forces in Europe provided communications with the staffs of the armed forces in the theaters and with separate formations on the most important axes; the staffs of the armed forces in the theaters provided communications with the troops subordinate to them within the boundaries of their theaters; cooperation communications between theaters were provided "from north to south". In doing this, for control of nuclear forces, tactical aviation, and the means of air defense, automated systems were widely employed. In support of the ground forces in the Central European Theater of Military Operations, however, a combined communications system of the "grid" type was set up which included radio-relay, cable, and wire lines of communications. With the beginning of a general nuclear war, radio means of communications were widely employed at all levels of control. Courier communications by aircraft, helicopter, and motor transport were also often used. A great deal of attention was devoted to the use by the NATO command of rented civil wire and radio-relay lines for long-range and short-range communications.

The organization of radio communications in the warning system, which ensured the transmission of signals in about ten minutes, is deserving of attention. For this purpose at the higher level, radio nets and radio links of the reserve communications system of the Supreme Commander-in-Chief of NATO were used, and at the operational level, a

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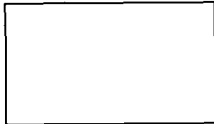
permanently operating system and part of the reserve means were used. Also of significance was the collective-call warning radio net of the nuclear strike forces of NATO, which made possible the rapid transmission of alert signals, bypassing many intervening levels in the chain of command.

An analysis of the organization of the communications system reveals that in spite of major shortcomings existing in its operation in the exercises, the communications provided sufficiently stable control of the troops even when the main ground centers were put out of operation. The neutralization or complete disruption of the operation of such a highly extensive system, using varied means of communications, requires a great effort of forces and means, taking into account, moreover, the fact that our probable enemies attach an extraordinarily great importance to ensuring security of communications.

Along with preparing the troops and staffs for operations under various conditions of the unleashing and conduct of war in Europe, the NATO command devotes a great deal of attention to increasing the combat might of the combined armed forces, primarily the ground forces. On the one hand, raising the power and mobility of their operational-tactical missiles and nuclear artillery is proceeding by means of replacing obsolete models with more contemporary ones. Thus, the liquid-propellant guided missiles Redstone and Corporal were replaced by the solid-propellant, more mobile and powerful guided missiles Pershing and Sergeant; and the free rockets Honest John and Little John are beginning to be replaced by the guided missile Lance, which is capable of being transported by air and dropped by parachute and has a launch range of 75 kilometers. In place of the towed 203.2-mm nuclear howitzers, self-propelled 203.2-mm howitzers were introduced into the ground forces; and in place of the 280-mm atomic cannon which was taken out of service, a 175-mm self-propelled gun with a range of fire of 32 kilometers was introduced, for which a nuclear warhead is being developed.

On the other hand, the fire power of the ground forces is being increased by equipping large units and units with more powerful fire means, which are capable of firing both conventional and nuclear warheads. Thus, in divisions and separate armored cavalry regiments of the US Seventh Field Army, 105-mm howitzers were replaced by 155-mm self-propelled howitzers, for which a nuclear warhead was developed.

Such replacement is taking place in large units from other NATO countries such as the Federal Republic of Germany, Great Britain, and Denmark as well. We must also mention here the continuous increase in the





equipping of large units and units of the ground forces with tanks. During the current year, the number of tanks in US mechanized divisions deployed in the Federal Republic of Germany is planned to be increased from 208 to 256 tanks by introducing into the divisions still another (a fourth) tank battalion. Besides this, in the near future it is proposed to introduce new light tanks, armed with the newest models of antitank guided missiles, into the large units of the US Army. The tank power of large units of the Federal Republic of Germany is growing significantly; these large units have accepted the Leopard medium tank with a 105-mm gun to replace the American M-47 and M-48 tanks which they have now. This tank has equipment for underwater driving at a depth of up to five meters.

Increasing the striking power of tactical aviation as a highly maneuverable force capable of delivering powerful strikes against the enemy occupies an important place in preparing the armed forces of NATO for conducting limited and general nuclear war. Air units are being intensively re-equipped with the newest models of aircraft and their organizational structure is being improved. With this, the main directions in the development of tactical aviation are: reducing the number of aircraft types by building multipurpose models capable of fulfilling the tasks of the bomber, the fighter, and the reconnaissance aircraft; decreasing the dependency of aviation on large airfields; and also working out effective methods for negotiating the enemy air defense.

A significant role in the plans of the NATO command is assigned to strengthening the naval forces. Their core, as is well known, is the American and British fleets which, with the declaration of an increased alert status, are placed at the disposal of the command of the combined armed forces of NATO. From the remaining member countries of the bloc, only individual ships are included in these forces. Future development of naval forces envisages a qualitative improvement of ships of all categories. According to the national programs of the bloc countries up to 1970, nearly 200 ships are planned to be built, including more than 30 submarines, up to ten guided missile ships, 35 motor torpedo boats, 75 landing ships and landing craft, and others.

However, the development and improvement of the strategic nuclear forces continues to take the decisive role in preparing the NATO armed forces, primarily the armed forces of the US, which is the main member of the bloc. By mid-1967, as is well known, the Americans plan to have 1,000 strategic Minuteman missiles, 54 Titan-II missiles, and 656 Polaris missiles on 41 nuclear submarines. It is believed that they will renovate part of the aircraft inventory of strategic bomber aviation by replacing



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B-52 and B-58 aircraft with new B-111 bombers. As for Great Britain and France, they also are speeding up the development of their own national strategic nuclear forces. Great Britain, in the next few years, is planning to construct four nuclear submarines armed with 16 American Polaris missiles each. France has already formed three bomber squadrons with a total number of 48 Mirage IV medium bomber nuclear weapons delivery aircraft, armed with French-produced nuclear bombs. In addition, they plan to build missiles with a launch range of up to 3,000 kilometers and three submarines armed with French missiles.

All this indicates that the military leadership of the US and NATO is preparing its armed forces primarily for the conduct of a general nuclear war against the socialist countries. At the same time, as the experience of exercises of the last few years has shown, they are devoting more and more attention to preparing the troops for actions in a limited war.

In this article we have touched only on some of the problems of the preparation of the aggressive NATO bloc for unleashing and conducting a war in Europe. This, of course, is far from exhausting the whole range of questions which are being systematically studied and checked by the NATO command in numerous exercises.

This obligates our command personnel to thoroughly study the experience of the enemy's exercises, to continuously follow all the changes in his views on unleashing and conducting war, and to detect in a timely manner the appearance in service of new means of combat, in order to oppose him with even better means of destruction and methods of combat operations.

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