MEMORANDUM FOR: The Director of Central Intelligence
FROM : William W. Wells
Deputy Director for Operations
SUBJECT : MILITARY THOUGHT (USSR): Special Features of Reconnaissance During the Initial Front Offensive Operation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". This article examines the tasks, capabilities, and methods of conduct of reconnaissance, citing the experience of exercises, and stresses the need for the integrated employment of and close cooperation among all reconnaissance forces and means in achieving success. In discussing areas for improvement, the author points to the limited capabilities of existing radiotechnical systems in determining target coordinates at long ranges and indicates research being done on new azimuth-rangefinder and rangefinder-radiotechnical systems for this. He also mentions that more work is needed in radiation reconnaissance to raise capabilities for fixing nuclear bursts and forecasting the radiation situation. This article appeared in Issue No. 1 (71) for 1964.

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 to recipient agencies.

William W. Wells
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SUBJECT

MILITARY THOUGHT (USSR): Special Features of Reconnaissance During the Initial Front Offensive Operation

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Summary: The following report is a translation from Russian of an article which appeared in Issue No. 1 (71) for 1964 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought". The author of this article is General-Mayor R. Simonyan. This article surveys the general features of reconnaissance in the initial period of a war, and examines the specific tasks of reconnaissance of a front and the methods and forces and means for accomplishing them. In discussing reconnaissance actions in support of the initial nuclear strike and the procedure for conducting final and poststrike reconnaissance, the author points out the shortcomings of existing radiotechnical systems in determining target coordinates at long ranges and indicates research being done on azimuth-rangefinder and rangefinder-radiotechnical systems for this. He also mentions that more work is needed in radiation reconnaissance to raise capabilities for fixing nuclear bursts and forecasting the radiation situation.

Comment: The author also wrote "Certain Reconnaissance Problems in the Preparation of an Initial Front Offensive Operation" in Issue No. 1 (62) for 1962.
Special Features of Reconnaissance During the Initial
Front Offensive Operation
by
General-Mayor R. Simonyan

In the initial period of a war, the combat actions of front troops will begin with the delivery of a nuclear strike by front rocket troops and aviation in cooperation with strikes of the Strategic Rocket Forces, long range aviation, and naval forces, with the simultaneous repelling of the enemy's massed nuclear strikes. The sharp transition from peacetime conditions to wartime actions prompts energetic activities by the front staffs and troops which are to go over to the offensive. And the activities of all reconnaissance organs, forces, and means are intensified.

By the time the initial nuclear strikes are delivered, the troops of both sides will be in motion: missile units will begin wide maneuvering in order to change their launching (firing) positions; tactical nuclear means and attack groupings of troops will be moving forward to the state border; troops will be moving out of zones of destruction and out of zones of radioactive contamination of the terrain; reserves will be brought up from the interior of the country; troops will be further dispersed (as compared to their dispersal during the period of threat); and so on. In addition, due to the losses suffered from nuclear strikes, both sides may make substantial changes in their initial operation plans. And this means that from the very outset of a war, literally in the first hours and minutes, radical changes will occur in the status of the enemy's troop groupings and key installations as compared to their peacetime status. Therefore, immediately after the initial strike, the available prewar reconnaissance data (even the most reliable) cannot serve as the basis for a correct assessment of the enemy and, consequently, it cannot serve as the basis for subsequent control over troop combat actions in the operation, either.

From this stems the most important special feature of conducting reconnaissance upon the initiation of a war. This consists in the fact that in an extremely limited period of time, measured literally in some dozens of minutes, it is necessary to
determine precisely the status of all key enemy installations which were not destroyed in the initial strike. Accomplishing this task is complicated by the fact that we must assume a considerable number of the installations (practically all of them mobile) will have been moved out of their permanent deployment points and will be located in new deployment areas or be in motion.

It is perfectly obvious that the relatively limited reconnaissance forces and means of a front, which moreover will have suffered some or perhaps even considerable losses, will not be able to ensure that all key enemy installations are examined concurrently within a short period of time. But, in our opinion, there is no need for this. When military actions are initiated, all means will begin to conduct reconnaissance without any restrictions whatsoever, which could not be done in the prewar period. For example, if aerial reconnaissance could be used in peacetime, or even in a period of threat, and for obvious reasons to only a very limited extent, in view of which it would play only a secondary role, then at the initiation of a war it would become one of the most effective means, permitting us to obtain the necessary reconnaissance information within a short period of time and to a considerable depth. During this period, much data on the enemy can also be obtained by tactical reconnaissance forces and means as well as directly by the troops which have gone over to the offensive.

Nevertheless, in the initial operation, as a rule, reconnaissance will be conducted only by those forces and means which the front has available at the beginning of the war. Therefore, still during peacetime, the reconnaissance organs, units, and subunits of the border military districts (groups of forces) should be fully manned or at least close to their wartime table of organization. To count on being able to muster them or at best to man them fully when a war begins or even in a period of threat is to create wholly unfounded illusions.

Consequently, the timely receipt of reliable data on the nature of the changes that have occurred in the status of key enemy installations from the very beginning of an initial front operation will depend directly, first of all, on the level of combat readiness of all reconnaissance forces and means to take immediate actions, and secondly, on the ability of the front
staff, within a very limited period of time, to have both the reconnaissance forces and means which are already operating and those not used in peacetime shift over to wartime operations.

The beginning of the initial operation signifies for reconnaissance something like a climax. The point is that at this moment, the front staff will have to put into action the considerable forces and means of aerial, agent, and special reconnaissance, to refine (and frequently change) the tasks of the forces and means already operating, and to direct the efforts of the reconnaissance of combined-arms formations and large units, branch arms, and services to the tactical and operational depth, that is, to the areas where the enemy's key installations are probably located. The speed with which all reconnaissance forces and means shift over from peacetime activities to combat activities is, in the final analysis, one of the principal and determining factors which ensure the successful accomplishment of the tasks confronting reconnaissance in support of routing the enemy and achieving the goals of the initial operation. From the very beginning of a war, the side that seizes the initiative will be the one which is able to most quickly react to the changing situation and, in accordance with it, deliver effective strikes with nuclear weapons and other means against the enemy.

In this regard, not only is it very important to collect and process reconnaissance information within a short period of time, and report it to the front commander, but also to convey the data in a timely manner, first of all to the rocket troops and aviation. Under conditions of a war which has already begun, this time for transmitting reconnaissance information from a reconnaissance organ (source) to the addressee must be sufficient for our nuclear strikes and conventional fire means to destroy their targets before they have begun to operate or before they have been relocated to new areas.

The fundamental rule is -- destroy the targets immediately upon detecting them. But if this does not appear to be possible for some reason or other, it is necessary to establish continuous surveillance over the affected targets. In addition, it should be taken into account that in the course of fast-moving and fluid combat actions many enemy installations will be located in the same area for a very short time, which may cause our reconnaissance means to lose sight of them. In this case,
additional reconnaissance forces and means must be expended to search for the installations which have been relocated. During this time the enemy can employ by surprise the nuclear weapons and other means we have lost sight of and launch unexpected actions by his troop groupings.

To prevent this we must establish continuous surveillance over such enemy installations and deliver timely strikes against them.

Calculations and the experience of exercises have revealed that during an offensive operation, enemy installations must be surveilled as follows on the basis of the approximate time they remain in the same place: those in the tactical depth must be observed every 1.5 to two hours, and those in the operational depth -- every three to four hours. The frequency with which stationary enemy installations in the depth of a theater of military operations must be surveilled will amount to once or twice a day. At this rate we can virtually rule out losing sight of detected installations.

I should like to emphasize one more feature in conducting reconnaissance at the beginning of the initial operation. If in peacetime the main efforts of our operating reconnaissance are concentrated on detecting the permanent deployment areas of the enemy's main grouping and his probable operational deployment areas, then, at the initiation of military actions, and especially as the operation develops, the main efforts of reconnaissance are shifted over to the axes of advance of the front troops and also to the enemy's axes of actions, which will cease to be probable axes and become actual axes. In so doing, reconnaissance must possess great flexibility and must be rapidly retargeted to the necessary axis or to those enemy installations on which information is most needed at a given time.

Under all conditions, front reconnaissance must be conducted, both in peacetime and in a period of threat, as well as from the beginning of a war, to the entire depth of the front operation, that is, virtually over the entire depth of the theater of military operations. The necessity of this is dictated both by the overall interests of conducting the operation successfully and by specific factors. These, above all, are: the deep echeloning and dispersal of the forces of the
probable enemy and of his nuclear attack means to the entire depth of the theater of military operations, the ever-increasing range of the means of destruction, the increased maneuvering capabilities and high rates of advance of our troops, as well as the high mobility of enemy troops, as a result of which those key installations located some distance away from the front line, for example, those 400 to 600 kilometers or more away, may, within a period of one to one and a half days, end up being directly in the combat action zone.

Consequently, whereas previously the depth at which reconnaissance (aside from agent reconnaissance) was conducted upon the initiation of combat actions usually was increased gradually, at present reconnaissance, after having been reinforced at the beginning of a war primarily by the actions of aerial, radio, radiotechnical, and special reconnaissance, must be conducted continuously to the entire depth of the theater of military operations. As a rule the main efforts of reconnaissance must be concentrated to the depth of the range of front means of destruction.

These, then, are certain general special features of the conduct of reconnaissance which are directly tied in with the unleashing of a nuclear war by an aggressor and with the nature of a front's initial offensive operation.

Proceeding to a discussion of the specific tasks which will confront the front's reconnaissance from the very beginning of the development of combat actions, we must first of all emphasize that the volume of these tasks when conducting the initial offensive operation will considerably exceed the capabilities of available reconnaissance forces and means. Therefore, the efforts of the reconnaissance organs and of the available reconnaissance forces and means are concentrated first of all on obtaining those data which are most necessary to ensure the successful fulfilment of the combat task to be accomplished by the troops at the given time. Fragmenting reconnaissance efforts, as unfortunately still occurs quite frequently in exercises, will only do harm.

Stemming from the fact that the top-priority and most vital task of front troops at the beginning of a war will be the effective delivery of the initial nuclear strike, both at this time and in the prewar period the main content of the activities
of all reconnaissance organs and means must consist of carrying out measures to support this task.

The initial nuclear strike, carried out simultaneously by the front and the Strategic Rocket Forces, represents, as is known, not a one-time salvo but a series of successive strikes delivered by various forces and means. It may last several hours. For example, in the BURYA (STORM) command-staff exercise, the delivery time for the initial nuclear strike amounted to 4.5 hours, and in the DUNAY (DANUBE) exercise it was 2.5 hours. For reconnaissance this is of great importance, since over the indicated span of time it is in a position to obtain a considerable amount of data, on the basis of which even during the initial strike the front commander can introduce needed refinements into the procedure for the subsequent employment of his forces and means in this same strike. These refinements may consist of cancelling previously planned strikes against those targets whose presence in given areas could not be confirmed or in assigning new tasks to rocket troops and aviation to deliver strikes against newly detected targets or against those previously designated as alternate targets.

Thus, in one of the front command-staff exercises, initially it was planned to hit 68 enemy installations in the initial nuclear strike. Based on data obtained from reconnaissance immediately in the course of delivering the initial nuclear strike, it became necessary to introduce considerable changes. These changes amounted to the following: 27 of the planned nuclear strikes were cancelled since the installations against which they were to be delivered had by this time been relocated to new areas. Five strikes were retargeted to installations newly detected as a result of final reconnaissance (including two Corporal guided missile sites and three tank columns). In addition, it was decided to deliver three strikes, not against the primary targets, but against the alternate targets -- depots for special fuel.

Purposeful and actively conducted reconnaissance and final reconnaissance in the course of delivering the initial strike permitted us, first, to achieve relatively high accuracy and effectiveness with the nuclear strikes delivered, and second to save 27 nuclear warheads which otherwise would have been launched against unoccupied areas. From this, a very important conclusion
is forced upon us, that the first missile launching in the initial strike is carried out against targets (having limited mobility and stationary) which have been reconnoitered in peacetime; that follow-up launchings and strikes by aircraft making their initial and subsequent sorties are carried out as a rule against mobile enemy targets detected as a result of the reconnaissance and final reconnaissance conducted during the period of threat and especially in the course of the first missile launching. This reconnaissance task must be carried out in each specific case on the basis of the actual plan (schedule) for the initial strike itself.

Conducting reconnaissance and final reconnaissance after the initial strike has begun is dictated by other reasons also, namely: the necessity of ascertaining the results of the nuclear strikes delivered (their accuracy and the degree to which enemy nuclear means and troop groupings have been neutralized). This will give us the opportunity of ensuring a more effective and purposeful completion of the initial strike and of having the front combined-arms formations and large units best exploit its results (insofar as they are known to us) in order to achieve success in the initial operation. That is why during the delivery of the initial strike we must utilize the bulk of the available operational and tactical reconnaissance forces and means, primarily aerial reconnaissance, which, in a short period of time, is capable of obtaining the necessary information over a large territory and of rapidly transmitting it according to its functional purpose. To conduct aerial reconnaissance the following can be allocated: separate operational and tactical reconnaissance regiments which are in the front, a spotting-and-reconnaissance air regiment, non-organic reconnaissance subunits of air divisions, and when necessary, combat aviation subunits.

As we know, in the offensive zone of a front to the entire depth of the theater of military operations, there will be from 700 to 750 enemy installations including from 280 to 300 that are stationary or have limited mobility, the final reconnaissance of which can and should be assigned to the operating agent net and to radio and radiotechnical reconnaissance, and from 420 to 450 mobile installations whose final reconnaissance and all poststrike reconnaissance from the outset of a war must be carried out primarily by aerial reconnaissance. As a rule, the
forces and means of other types of reconnaissance will, in this case, be used to back up the actions of aerial reconnaissance.

Calculations show that for the purposes of final reconnaissance, during the first three to four hours of a war in the zone of a front it is necessary to carry out 80 to 120 aircraft sorties, based on the capabilities of each reconnaissance aircraft crew to scan two to three installations per sortie. In so doing, the greatest number of aircraft sorties have to be in the first wave going over enemy territory at the very beginning of a war.

This being the case, when specifying the targets for final reconnaissance and poststrike reconnaissance by front means, we should keep in mind that at the same time strategic reconnaissance forces and means will be carrying out the reconnaissance and final reconnaissance of the enemy in order to ensure the effective conduct of the initial strike by the Strategic Rocket Forces, long range aviation, and the navy. We cannot rule out the possibility that a number of reconnaissance tasks in support of strategic nuclear strikes may be assigned to the front. In these instances it is necessary in advance to allocate between strategic and front reconnaissance the tasks associated with the final reconnaissance of the enemy installations to be destroyed in the initial nuclear strike and the carrying out of poststrike reconnaissance. The timely resolution of this matter by the General Staff will enable front reconnaissance forces and means to be employed in a purposeful manner and to best and most efficiently fulfil the tasks confronting them.

As for allocating the final reconnaissance and poststrike reconnaissance tasks within a front, it has been shown by exercise experience that in support of front missiles it is advisable to employ an operational reconnaissance air regiment; in support of army missiles -- a tactical reconnaissance air regiment and subunits of spotting-and-reconnaissance aviation; and in support of front aviation -- the air large units which will themselves fulfill combat tasks in the initial strike. Depending on the specific conditions of the situation, there may be other variants in the allocation of front aerial reconnaissance means. But in all cases, the principal means of conducting the reconnaissance and final reconnaissance of targets
in support of the combat employment of missiles and aviation in the initial nuclear strike should be visual observation with the employment of radiotechnical systems permitting us to precisely determine the coordinates of the targets.

True, the shortcoming of these systems is that in order to determine the coordinates of a target, a reconnaissance aircraft must be right over the target, and it is very difficult to do this given the enemy's existing air defense system. Therefore, at present we are researching the question of determining target coordinates without requiring the aircraft to go out to the target being reconnoitered by means of azimuth-ranging systems and ranging-radiotechnical systems connected to the aircraft sights.

Other methods of conducting final reconnaissance (aerial photography, etc.) are generally well known and we will not dwell on them. Let us only mention that in the future, as the processing time for aerial photography data is drastically shortened, this method of final reconnaissance may well become one of the most advantageous.

As regards the methods of conducting poststrike reconnaissance of the results of our nuclear strikes, the principal ones are television reconnaissance and aerial photography. Under adverse weather conditions, which prevent television observation and aerial photography, poststrike reconnaissance may be carried out by visual observation from low altitudes.

In order to create the most favorable conditions for the final reconnaissance and reconnaissance of the enemy during our initial nuclear strike, it is advisable to divide the zones of tactical and operational aerial reconnaissance into sectors and areas, assigning them ahead of time to the reconnaissance air regiments, squadrons, flights, and even crews.

At the same time the initial nuclear strike is delivered, front air defense troops will have to repel the enemy's massed air attacks and his unmanned means. From this it follows that together with the detection and destruction of enemy aviation and unmanned means on their home airfields and launch sites, it is necessary to aggressively and continuously reconnoiter these
means when they are already in flight. This is one of the main tasks of reconnaissance at the beginning and during the entire course of the front operation. Also, the efforts of reconnaissance must be focused on the timely detection and warning of air targets at maximum ranges with an accurate determination of their quantitative and qualitative composition, battle formation, bearing, flight speed, and altitude.

A significant factor directly affecting the course and outcome of military operations in a nuclear war is radioactive contamination of the terrain. This is a distinctive feature of the initial operations, when, as a result of the very powerful initial strikes by both sides, extensive zones of contamination will be formed, not only in those sectors and areas of the terrain where nuclear bursts occur directly, but also outside of them. Therefore, one of the main tasks of reconnaissance upon the initiation of the first front offensive operation will be to determine the zones, areas, and sectors with high levels of radioactive contamination and with much destruction, as well as the capabilities of having the troops negotiate them.

We must mention that in exercises little attention as yet has been devoted to this problem. During exercises, the overall assessment of the radiation situation in the front's zone of actions following nuclear bursts is prepared on the basis of the information on the parameters of these bursts, primarily the ground bursts, and also on the basis of meteorological data. Fixing the ground zeros of the nuclear bursts is assigned to the air defense radar posts and the artillery reconnaissance observation posts. However, allowances are not made for the fact that the capabilities of these means are extremely limited. Thus, by using radar we can reliably detect a nuclear burst and determine the coordinates of its ground zero at a distance of from 50 to 100 kilometers, but in so doing, we cannot establish the yield of the burst or its type. Observation posts with ordinary optical devices cannot determine the yield of a burst either, not to even mention their considerably lower range of action.

True, there is already theoretical development of a system of fixing nuclear bursts. The most efficient method in the troops is acknowledged to be the registering of the electromagnetic pulse of a burst. The radio pulse system permits
us to register nuclear bursts and determine their parameters at ranges of up to 500 kilometers with a resolution capability of up to 10 bursts per second.

A special illumination device, developed for a division, affords the capability of fixing nuclear bursts and determining their characteristics up to a range of 40 kilometers. However, until such time as this device is introduced into the troops, it is necessary to fully utilize available means, despite their limited capabilities.

At the same time, it should be emphasized that our accuracy in forecasting the radiation situation, even when timely and complete information on the ground bursts and meteorological conditions is available, is still relatively low, as a result of which forecast results can be used primarily to assign tasks to radiation reconnaissance units and subunits. A true picture of the contaminated terrain can be gained basically only as a result of careful radiation reconnaissance.

At present we have already developed models of an aircraft device for automatically determining the coordinates of a radiation measurement point, for introducing corrections in flight altitude, and for introducing standard programs and transmitting them to ground information collection points. With the introduction of these means, the main tasks of radiation reconnaissance will be accomplished by aerial reconnaissance forces. Therefore, it is necessary to rapidly introduce this device into the troops, to master it, and skilfully utilize it.

In view of the fact that from the beginning of combat actions the enemy will widely employ radioelectronic devices of all types, it will become necessary for radio and radiotechnical reconnaissance means to change over to more intensive work by establishing a two-shift alert for the operating radio and radiotechnical posts and also by setting up supplementary posts using front and army means as well as tactical reconnaissance means of the first-echelon divisions.

The deployment of the considerable forces and means of radio and radiotechnical reconnaissance requires the centralized allocation of shortwave and ultra-shortwave bands among all of the OSNAZ units and subunits of the front, the armies, and the
divisions in order to carry out reconnaissance search for the enemy's key installations. This will permit us to allocate an adequate number of posts both for search and for conducting continuous surveillance over the enemy radioelectronic means of control and communications which have been detected.

Allocating the radio frequency bands for reconnaissance search among the OSNAZ units and subunits must be carried out in accordance with the tasks they are accomplishing as well as with due regard for the necessary overlapping of those segments of the shortwave and ultra-shortwave radio bands in which the radio means of the units and subunits of nuclear weapons, aviation, and combined-arms large units are operating. Thus, for the conduct of reconnaissance search, to the army OSNAZ battalions and divisional tactical radio reconnaissance companies should be allocated the shortwave and ultra-shortwave bands which are used by the radio and radiotechnical means located in the enemy's tactical zone; to the front OSNAZ radio regiment -- the radio band segments within which the nets of the enemy's missile units, aviation, and ground forces of division level and above are operating; and to the OSNAZ radiotechnical regiment -- the shortwave band segment in which the radio means controlling missile weapons are operating and also the radio sets and radio nets servicing the radio remote control, radar, and radio navigation systems. Reconnaissance of radio-relay communications lines and of "aircraft-to-aircraft" and "aircraft-to-ground" aircraft radio sets in the shortwave band is carried out by all radio and radiotechnical reconnaissance means within their zones of action without the allocation of radio bands by segments, since in this case this will ensure timely detection (intercept) of the operation of aircraft radio sets when they show up in a given sector of the front.

We will not dwell on the special features of the actions of aerial reconnaissance since these were illustrated when we discussed the problems of the final reconnaissance of targets during the delivery of the initial strike and during the poststrike reconnaissance of its results. We should only add that throughout the entire operation, aerial reconnaissance will play one of the principal roles in the accomplishment of the tasks confronting front reconnaissance. Aerial reconnaissance is a decisive means for final reconnaissance, particularly of mobile enemy targets, in the period immediately preceding the delivery
of nuclear strikes against them, as well as for the conduct of continuous surveillance over the battlefield.

As for reconnaissance by the forces and means of combined-arms large units, branch arms, and services when the troops go over to the offensive, it must be conducted aggressively during the entire operation. Here, the actions of strong reconnaissance detachments and separate reconnaissance patrols (reconnaissance groups), as well as the data obtained from airborne landing forces and forward detachments, acquire special importance. From the very outset of combat actions they will be the first to penetrate into the depth of the enemy disposition and they can detect the enemy's operational-tactical nuclear attack means and also ascertain the presence and strength of his ground forces groupings and other important targets.

In conclusion, let us mention that the successful conduct of reconnaissance from the initiation of combat actions can be achieved only by the integrated use of all forces and means of both operational and tactical reconnaissance and by their close cooperation and constant readiness for mutual interchangeability. This means, for example, that when a long-range reconnaissance group determines the presence of a key installation in some particular area, aerial reconnaissance means are immediately targeted against it and, at the same time, continuous radio and radiotechnical surveillance over the given installation is established. If it is planned to deliver a nuclear strike against the detected installation, then all measures are taken to have the reconnaissance group move a secure distance away in a timely manner. During this period the surveillance of the installation is entrusted to reconnaissance aviation and to radio and radiotechnical means.

When aerial reconnaissance detects enemy nuclear means or other key installations, long-range reconnaissance groups are sent out to them and radio and radiotechnical means are targeted against them. The observance of this very important principle in
the conduct of reconnaissance will undoubtedly ensure that detected installations are continuously under surveillance and reliably neutralized under any conditions of the initial front operation.