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CENTRAL INTELLIGENCE AGENCY
WASHINGTON, D.C. 20505

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26 April 1973

MEMORANDUM FOR: The Director of Central Intelligence

SUBJECT : MILITARY THOUGHT (USSR): Restoration of the Combat Effectiveness of an Air Army After a Nuclear Strike

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 cites the results of exercises and war games carried out in the Baltic Military District involving simulated nuclear strikes on air army facilities. The author commands the units involved. Two major problems which he identifies as arising from nuclear attack are the necessity for immediate restoration of communications through tropospheric or helicopter relay and for medical detachments and field hospitals in the air army. This article appeared in Issue No. 3 (91) for 1970.

2. Because the source of this report is extremely sensitive, this document should be handled on a strict need-to-know basis within recipient agencies.

[redacted]

W. E. Colby
Deputy Director for Operations

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Intelligence Information Special Report

COUNTRY USSR

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SUBJECT

MILITARY THOUGHT (USSR): The Restoration of Combat Readiness of Front Aviation and the Organization of Its Combat Actions After a Nuclear Strike in an Offensive Operation

SOURCE Documentary

SUMMARY

The following report is a translation from Russian of an article which appeared in Issue No. 3 (91) for 1970 of the SECRET USSR Ministry of Defense publication Collection of Articles of the Journal "Military Thought." The author of this article is Colonel-General of Aviation F. Shinkarenko. He provides figures for estimated losses suffered during exercises and war games involving air units which he commands in the Baltic Military District. After citing the difficulties arising as the result of nuclear attack, he asserts the need for immediate restoration of troop control, primarily by restoring the air army command post and its communications network. He suggests special communications such as tropospheric and helicopter relay. He emphasizes the lack of essential medical facilities in the air army and calls for the addition of medical detachments and field hospitals to their T/O.

END OF SUMMARY

[redacted] COMMENT:

Colonel-General F. I. Shinkarenko has been identified since August 1970 as Commander of the Air Forces of the Baltic Military District. Military Thought has been published by the USSR Ministry of Defense in three versions in the past--TOP SECRET, SECRET, and RESTRICTED. There is no information as to whether or not the TOP SECRET version continues to be published. The SECRET version is published three times annually and is distributed down to the level of division commander.

[redacted]

The Restoration of Combat Readiness of Front Aviation and the Organization of its Combat Actions After a Nuclear Strike in an Offensive Operation

by Colonel-General of Aviation F. Shinkarenko

To maintain constant combat readiness of front aviation during a nuclear war is one of our most important and complex problems. As is well known, combat readiness of air large units and units is determined by many factors. The basic ones are as follows: the staffing to full strength of units and large units with personnel and combat equipment; the status of equipment; the level of combat training of flight personnel; the degree of preparedness of commanders and staffs in troop leadership; the availability of trained organs and means of control; the availability of materiel; the state of readiness of airfields; the political state and morale of the troops, etc. But the most important aspect in the concept of combat readiness is high combat effectiveness of units and large units.

A massive nuclear strike by the enemy can cause a significant portion of air units and rear area installations to be left in an extremely serious situation. Information from exercises and war games conducted by the armies of NATO countries in recent years shows that in a modern operation up to 40 to 50 percent of front aviation airfields would be subjected to nuclear strikes, about 25 percent would fall within zones of radioactive contamination formed along the path of radioactive clouds, and only 25 to 35 percent would remain intact. Also to be taken into account is that, to achieve maximum success in his objective, the enemy will deliver strikes with surface bursts against airfields and rear area installations of the air army located in the operational depth of the front.

The employment of nuclear arms by the enemy creates a serious situation at airfields by hampering and, in many cases, preventing the execution of combat actions because runways have been damaged, automated control systems have been put out of action, zones of strong radioactive contamination have been formed, etc. Therefore, air units and their supporting units which find themselves in zones of contamination or centers of destruction must redeploy to other airfields or carry out their assigned tasks from contaminated airfields. There may be cases when, as a result of

dangerous contamination of airfields, the remaining personnel will first have to be sheltered for four to six hours in order to protect them from large doses of radiation and then later removed to uncontaminated areas.

Under modern conditions troops may lose their combat effectiveness for a number of reasons. But the main one is heavy losses of personnel and combat equipment from direct nuclear strikes, as well as from radioactive contamination. The calculations and experience of war games conducted in the Baltic Military District during the past several years showed the following average losses from an enemy nuclear strike: aviation equipment, up to 15 to 20 percent; personnel, 10 to 15 percent; and materiel, 20 to 25 percent. One must also take into account the effect of nuclear bursts on the morale of personnel.

All this will have an effect on the combat effectiveness of air units and large units. Heavy losses in personnel, weapons, equipment and materiel will sharply reduce their combat capabilities. Therefore, unless the combat effectiveness of units and subunits is rapidly restored, there can be no expectation for the successful conduct of further combat actions.

To ensure the combat effectiveness of front aviation which has been subjected to a nuclear strike, a number of measures must be undertaken, of which the most important are: restoration of disrupted control and communications systems; rescue work and assistance to personnel in centers of destruction; return to service of damaged equipment; replacement of losses in personnel and combat equipment; restoration of the functioning of the rear area; and raising the morale of the personnel.

All these measures must be carried out simultaneously, within short periods of time, and with minimum expenditure of material and technical resources. Let us examine a possible procedure for restoring combat effectiveness of units.

First priority is given to the rapid restoration of control.

During combat operations, as is known, an air army has set up within it a main command post, a forward command post, and a rear control point; also, operational groups of the air army are

sent to the command posts and forward command posts of combined arms and tank formation. The employment of nuclear weapons by the enemy will put them out of action and inflict heavy losses among personnel.

In our opinion, if army command posts are destroyed, control of units and large units may be restored in the following manner: concentration of the forces and equipment of the staff of the air army at the command post which remained intact; using the operational groups at the command posts and forward command posts of combined arms formations; and assigning the command functions to the staff of one of the air army divisions.

If an air army command post is put out of action, control is carried out from the forward command post. But in view of its limited means of communications and limited officer personnel, the forward command post will not be able to provide effective control of units nor maintain stable communications with higher level headquarters and neighboring elements for extended periods of time. Therefore, it will be more expedient to restore the command post by using an intact staff of one of the divisions which has lost part of its combat effectiveness.

If the command post and the forward command post of an air army are both put out of action simultaneously, temporary control of units and large units can be maintained by the surviving rear area command post. If command posts of divisions are put out of action, the staff of the air army must assume direct control or send small operational groups to the units. For the solution of this problem it is very important to create reserve control organs in an air army which would be able to provide control of aircraft during combat operations and also to replace a command post that has been put out of action.

In conjunction with this, it is necessary to increase the viability and mobility of command posts. All their elements should have either highly mobile vehicles or helicopters (for example, MI-8).

Under conditions in which nuclear weapons are used, considerable importance is attached to the viability of communications and especially radio communications. High nuclear air bursts may disrupt shortwave radio communications for a considerable period

of time and at great distances from the epicenter. In order to avoid this it is obviously necessary to switch to tropospheric ultra-shortwave and radio-relay communications and to make wider use of relay using special radio equipment installed on helicopters and aircraft.

Also of significance is the conduct of rescue work in centers of nuclear destruction. The volume of this work varies and depends on the number of personnel, combat equipment, and materiel which was located at the airfield or installation at the time of the strike, as well as on the yield and type of burst, on the protective features of the terrain, on its engineer preparation, and on other factors.

The main tasks of rescue work are: clearing obstacles blocking the exit of personnel from damaged shelters and defenses, as well as obstacles blocking access roads; rendering emergency medical aid to the wounded and evacuating them from the zone of destruction; putting out fires and removing personnel from areas of high contamination. All rescue and restoration work in the center of the destruction area is carried out with due consideration to radiation conditions. It is also necessary to take into consideration the radiation situation created by the strike against the airfields, as well as the radiation situation beyond the boundaries of the airfields (along the path of the radioactive cloud).

The work carried out in the centers of destruction and the rendering of first aid and the evacuation of personnel require a considerable amount of personnel and equipment. Recently some suggestions have been made for creating composite nonorganic detachments in units and subunits to perform a number of tasks for the restoration of combat effectiveness of troops. In our opinion, this method is not acceptable for the following reasons. In order to carry out their functions successfully, these detachments must be equipped with means for evacuating personnel and damaged combat equipment, means for putting out fires, etc. At the present time air and air-technical units do not have the manpower or means for the formation of such detachments. The creation of such detachments from the authorized strength of units would mean that a significant number of specialists and transportation equipment would have to be removed from their tasks of supporting combat actions.

The elimination of the aftereffects of a nuclear strike is tied in with the conduct of specific types of work in centers of fires, of barriers, and of radioactively contaminated terrain. Therefore, it is important to have personnel welded together as a unit, and their morale built up in preparation for action under these difficult conditions. All this points to the need to create in air-technical units, as well as in the army, organic components which can be reinforced from units located in centers of destruction.

Experience from exercises shows that heavy personnel losses can be expected from the initial massive enemy nuclear strike in the front combat zone. About 2 to 3 percent of the front air army personnel will be irretrievable losses, and up to 8 to 10 percent incapacitated. Assistance to casualties requires large numbers of medical personnel, transportation and evacuation equipment, and hospital spaces. On the basis of special studies and calculations it has been established that about 30 to 40 percent of the casualties will need skilled medical attention of an emergency nature. To fill this need the air army will require 3 or 4 separate medical detachments from which 15 to 20 surgical brigades may be formed. However, not a single individual medical detachment is mentioned in the wartime T/O of the air army. This problem should basically be solved by the contemplated organizational structure for the air army rear services which calls for the inclusion of aviation-technical regiments.

To evacuate flight personnel to aviation mobile hospitals and the seriously wounded to the front hospital base will require a squadron of MI-4 helicopters. These helicopters should also be used for rescue work and for the evacuation of personnel from dangerously contaminated zones.

None of the above-mentioned equipment is as yet available in the air army. Ambulances of units will only be able to remove the wounded from the center of destruction for first aid. They cannot be used for further evacuation to the front hospital base. Yet calculations and experience from exercises show that 75 to 80 percent of all casualties should be taken there.

In determining the requirements for hospital beds, estimates must be based on the number of wounded and sick during the entire duration of the operation since there will be no turnover of

beds for 10 to 12 days. For this purpose the air army needs two mobile field hospitals with 300 beds each.

Aircraft and support equipment of units in centers of destruction will require repair work. As a rule, routine repairs will be carried out directly in the area of destruction, for which purpose sections of terrain will be selected in the area of the airfield which are suitable from the viewpoint of radiation. If the radiation situation makes this impossible, the aircraft will be evacuated to airfields which are not contaminated.

Based on experience from exercises on the repair of aviation equipment under field conditions and on calculations made in the context of combat operations under conditions of an intensive enemy attack with weapons of mass destruction, it is possible to postulate that military repair organs (TECh and DARM) will not be able to perform minor and routine repairs on a large portion of aircraft. During intensive combat action it is advisable to reinforce aviation repair shops with mobile brigades from stationary repair plants.

Considerable importance must be attached to the rapid evacuation and delivery of aircraft requiring major overhaul to repair installations. To accomplish this an air army must have technically equipped evacuation subunits. Also, MI-4 and SU-7B aircraft which are equipped with simple lifting devices can be evacuated by MI-6 helicopters from highly contaminated areas.

A nuclear strike will also inflict damage on motor transport equipment, communications equipment, and radar equipment (RTO). On the basis of experimental nuclear bursts it has been established that nearly 60 to 70 percent of all vehicles put out of action will require routine repairs, 10 to 15 percent will require medium repairs, and the other 15 to 30 percent will require complete overhaul or will be beyond repair. The repair facilities of an army rear area have the capability of restoring up to 450 vehicles requiring routine repair in one day and 20 to 25 percent of those requiring medium repair. Thus, the restoration of all motor transport will require two to three days.

The inevitability of conducting combat actions under conditions of extensive contamination of both terrain and air space focuses us sharply on the question of special treatment of troops.

According to computed data from war games experience, after a nuclear strike special treatment will have to be given to 5000 to 6000 men and, in addition, to 200 to 250 aircraft and 800 to 1000 units of motor transport.

The difficulty in resolving this task lies in the very limited capabilities of organic chemical defense subunits of air-technical units to treat aircraft and airfield support equipment and to give medical treatment to personnel. Because of the inadequate number of personnel, not even a minimum number of the assigned tasks can be fulfilled. It should also be kept in mind that these subunits will likewise suffer casualties from nuclear weapons.

The above-mentioned volume of work of special treatment by organic subunits for chemical defense, taking into consideration their casualties from nuclear strikes, can be completed within the following time frames: treatment of personnel, 10 to 12 hours; treatment of aircraft and airfield support equipment, 6 to 7 hours. The speed of treatment may be increased if much broader use is made in units and subunits of TMS-65 and DDA-53A vehicles (in place of DDP installations) and of DK-4 and KSO special processing sets. However, this does not lessen the need for increasing the organic structure of chemical defense subunits of air-technical units or for creating a separate company within the air division.

As a result of the initial enemy nuclear strike, there will be a substantial reduction in the number of airfields in the combat operations zone of the front from which aircraft can take off. The capability of separate airfield-engineer battalions of air armies to construct unsurfaced airfields is still low and does not make up the losses in the airfield network. And the facilities of all 4 or 5 separate airfield-engineer battalions (OIAB) of an air army can construct 2 or 3 airfields in one day. It will often prove inadvisable to rebuild destroyed airfields which require a great amount of work, especially if they were hit by surface bursts.

It is also possible that, because of an inadequate number of airfields in the zone of the front offensive, it may become necessary to use improved sections of roads and to conduct combat

actions of two air units from a single airfield. This will greatly complicate matters and increase the time required to prepare aircraft for the next combat sortie.

A nuclear strike by the enemy can result in the complete destruction of both materiel supplies and rear area units and subunits at several airfields and at rear area installations. Under these circumstances, the limited capability of the various komendatura of separate battalions of air-technical support (OBATO) to move materiel supplies with their own means and with the transport of the air army rear service may pose the threat of a breakdown in combat operations support. Therefore, the replacement of materiel losses will become one of the most important tasks for the rear area.

During maneuvers by air units, the problem of supplying them with fuel, missile equipment, and munitions comes sharply into focus. The fuel reserves (three fuelings) and munitions reserves (one unit of fire) which are presently being provided for at alternate airfields and dispersal airfields are not adequate to keep aircraft functioning continuously.

In order to provide units with air-technical material quickly and efficiently, it is necessary to disperse the supplies, taking into account their proximity to base airfields, and to utilize fully railroad transport facilities, selecting freight stations that are near branches of warehouses or airfields. Because of this, distances traveled by motor transport may be reduced 40 to 50 percent. The proposed organization of the air army rear service will permit losses in aircraft and materiel to be replaced more completely. However, transporting fuel still remains a weak link. The organic motor transport battalion of an air army has the capacity to handle only 0.4 to 0.5 of the average daily consumption of aviation fuel by the army.

Of considerable importance in solving the problem of fuel supply is the use of pipelines, front motor transport, and trucks with removable containers (hard and soft-sided), and the procurement of motor transport POL supplies from forward bases of the front. Expenditures and losses of materiel can be replenished quickly by using military air transport facilities and by making use of supplies seized from the enemy.

Personnel losses in air large units and units must be replaced from previously formed subunits in internal military districts. However, in our opinion we should not overlook using separate crews as replacements, especially flight personnel, aviation mechanics, communications and radar specialists, and drivers. As is known, the demand for them is very high.

An important task of commanders and political organs in restoring combat effectiveness of troops is to maintain a high level of morale among the personnel needed to carry out further combat tasks. The most effective factor under these conditions is the personal example of commanders, political workers, and Communists. They must inspire soldiers to display steadfastness and courage, suppress the spread of false rumors, prevent panic, and strive to convince every soldier that permissible doses of radiation, contusions and first-degree burns do not lead to loss of combat effectiveness.

Thus, as a result of the above-mentioned effects of an enemy nuclear strike against installations of an air army and as a result of the difficulties in the rapid replacement of losses, the combat capabilities of the army may be reduced considerably. Simultaneously with the execution of measures for the restoration of combat effectiveness of air units and large units, it is necessary to introduce amendments to the plan for combat actions for an air army in a front offensive operation. In the war games and command-staff exercises conducted in the Baltic Military District, the first matter to be clearly defined in the plan was to designate the most important enemy targets to be destroyed by the forces of the front and of the air army. At the same time, provisions were made for a fuller use of the combat capabilities of front rocket troops and of front aviation. The main efforts of the air army were switched to providing cover and support for the front forces operating on the main axis; and it was assigned only those targets which could not be destroyed by other fire means of the front. Also, if favorable weather conditions prevailed, it was contemplated to use part of the fighter aviation forces of the air army for attacking ground targets to augment the strike force of fighter-bombers.

Of particular significance in combat operations under the conditions being examined is the organization of aerial reconnaissance, which must locate in advance the most important enemy targets for strikes by the rocket forces of the front and by the

air army. Since it is very difficult to fulfil this task with the forces of reconnaissance units alone, all crews engaged in carrying out combat tasks should be used in aerial reconnaissance.

In planning combat operations following an enemy nuclear strike, it must be borne in mind that some of the air units will continue their combat activities from contaminated airfields. In this case personnel will have to carry out their activities in individual protective means. This will mean, of course, that their work will slow down. Research on this subject conducted in our formations has established that, with personnel working in individual protective means, the time required to prepare an air squadron for takeoff increases 30 to 40 percent and for a regiment 40 to 50 percent (as compared to working under normal conditions).

The amount of time consumed and the success achieved in restoring combat effectiveness and in organizing combat operations of air units and large units depend to a great extent on timely planning of appropriate measures and on timely decisions by commanders of formations, large units, and units. These decisions must cover the methods and sequence of work, the necessary forces and means, and the capabilities for carrying out future tasks in the operation.

In determining the amount of time needed to restore combat effectiveness, one must take into account the radiation situation in areas of operation (disposition) of units and large units, the amount of time it will take them to move out of their areas, the possibilities for eliminating the strike aftereffects, and the replacement of losses in personnel, aircraft, support equipment, and materiel. In addition to the total amount of time needed for preparation, it will also often be advisable to determine the intermediate amount of time needed for the execution of certain individual measures. This will make the task of restoring combat effectiveness of a unit more purposeful.

All measures for restoring combat effectiveness of front aviation and for organizing its combat operations after a nuclear strike must already be carefully studied and planned in peacetime.