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CENTRAL INTELLIGENCE AGENCY  
WASHINGTON, D.C. 20505

19 December 1980

MEMORANDUM FOR: The Director of Central Intelligence  
FROM : John N. McMahon  
Deputy Director for Operations  
SUBJECT : USSR GENERAL STAFF ACADEMY LESSONS : Organizing  
Communications in a Front Offensive Operation

1. The enclosed Intelligence Information Special Report is part of a series now in preparation based on a collection of 29 lessons, classified TOP SECRET, prepared in 1977 for use in the Soviet General Staff Academy. The lessons are broken down into two parts: the first 19 lessons deal with the staff preparation of a front offensive operation with conventional and nuclear weapons, the remaining 10 lessons deal with the conduct of an offensive employing conventional weapons at first with a transition to the use of nuclear weapons. This report is a translation of the lesson detailing the organization of the command and control communications facilities, units, and equipment used by a front headquarters to control its major subordinate elements in a front offensive operation across the North German plain to Belgium.

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.

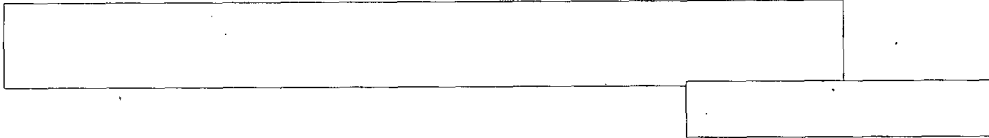
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# Intelligence Information Special Report

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COUNTRYUSSR



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SUBJECT

GENERAL STAFF ACADEMY LESSON No. 17 : Organizing Communications in a Front Offensive Operation

SOURCE Documentary

Summary:

The following report is a translation from Russian of a lesson, classified TOP SECRET, prepared for use at the General Staff Academy of the Armed Forces of the USSR. This lesson is for the instruction of students acting as front chiefs of communications troops in planning and organizing the command, control, cooperation, and intelligence-related communications in a front offensive operation across northern West Germany to Belgium. Covered in some detail are the radio, radio-relay, wire, and courier-postal communications links with the front's control posts, subordinate armies (including the air army), and missile brigades, and with adjacent and supporting forces. The locations of the specific state communications centers involved are identified. Of special interest and value is the tabular presentation of the order of battle and capabilities of the front's communications troops and of NATO's electronic warfare units. Discussed briefly are the protective measures to be taken against NATO radio jamming activities.

End of Summary

 Comment:

Although not specifically identified, the colors representing NATO countries in this lesson probably equate as follows:

Brown -- West Germany

Blue -- Great Britain



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Lesson No. 17

I. Lesson subject: Organizing communications in a front offensive operation.

II. Estimated time for completion of the lesson:

-- individual work by the students -- three hours;

-- group exercise -- four hours.

III. Training objectives of the lesson:

-- to teach the principles of the organization and structure of a front communications system and also the organization of radio, radio-relay, wire, and courier-postal communications;

-- to consolidate the knowledge of the complement of front communications troops, and the organization, capabilities, and function of front communications units;

-- to deepen the knowledge of the tactical-technical characteristics of the main radio, radio-relay, and wire means of communications;

-- to examine the measures concerning the protection of communications against enemy radio reconnaissance and radio jamming.

IV. Method of conducting the lesson -- group exercise in a classroom under the direction of an instructor.

V. Methodological recommendations regarding the students' preparation for the lesson.

At the start of individual study by the students, the instructor will, at the request of the training group, conduct a short briefing in which he will recommend the most advisable procedure for the study of the documents of the communications plan and the sections of it to which fullest attention should be devoted.

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/The instructor/ can suggest the following procedure for individual work by the students:

-- to study chapters 7, 8, and 10 of the textbook recommended in the assignment for Lesson No. 17, which deal with the matters of the organization of communications in a front offensive operation, communications security, and protection of communications against deliberate radio jamming by the enemy;

-- to systematically and comprehensively examine the contents of all sections of the explanatory memorandum for the communications plan, coordinating this with the organization of control and the tasks and nature of troop actions. To study the explanatory memorandum simultaneously with the diagrams of radio, radio-relay, and wire communications;

-- to go over the tactical-technical characteristics of the following communications means: R-110, R-140, R-137, R-133, R-145B, R-404, P-296.

When studying the documents for the communications plan, students must pay special attention to the description of the communications system and troops, the organization of radio communications for the /front/ commander, the staff, and the chief of rocket troops and artillery, in support of cooperation, and also pay attention to the tactical-technical characteristics of the above-mentioned communications means. It is advisable for the students to draw in their workbooks the diagrams of the radio communications for the /front/ commander, the staff, and the chief of rocket troops and artillery, in order to ensure cooperation.

#### VI. Procedure for conducting the lesson.

At the start of the lesson, the instructor will check the individual work assignments completed by the students; following that, he will announce the training objectives for the lesson and he will go over to working out the topics for the plan of the group exercise.

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Estimated time for working out the training topics

Item No.	Training topics	Allotted time (minutes)
1.	General description of a <u>front</u> communications system	20
2.	<u>Front</u> communications troops	35
3.	Radio communications	75
4.	Radio-relay, wire, and courier-postal communications	30
5.	Protection of communications against radio reconnaissance and radio jamming by the enemy	15
6.	Lesson summary	5
	Total time	180

General methodological recommendations.

For the reports on training topics, students will be assigned the roles of the pertinent officials of the headquarters: chief of communications troops, chief of the operations directorate, chief of rocket troops and artillery, and others.

The reports will be illustrated by data set forth in the diagrams of the radio, radio-relay, and wire communications, with the recommendation that these diagrams be hung on the blackboard for display purposes.

When assigning a training topic, the instructor will indicate the procedure for expanding upon its contents and the time allotted for the report -- within five to seven minutes.

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The students will respond to an assigned topic as designated by the instructor or from among those wishing to answer. When it is necessary, the reports will be supplemented or repeated by other students.

The instructor will give necessary explanations on the topics being worked out and he will teach the students to make concise, accurate, and clear reports concerning the organization of communications.

In the opening remarks, the instructor will recall the subject and point out the objectives of the lesson. He will draw the students' attention to the necessity of maintaining reliable control of the front's troops and ensuring communications when relocating control posts during the offensive operation, under conditions in which the enemy is employing nuclear and chemical weapons, conducting radio reconnaissance, and producing jamming.

Each instructor, based on the level of language knowledge and preparedness of a national group, will formulate the pertinent topics shown below.

1. General description of a communications system (20 minutes).

Students in the role of chief of communications troops of the Coastal Front will report a communications plan to the chief of staff in the following sequence: composition of a communications system and its description; procedure to ensure communications when control posts are rendered inoperative.

The communications plan of the Coastal Front will include diagrams of the radio, radio-relay, and wire communications and a schedule of the operation of the mobile means of communications.

Communications are planned in detail to ensure troop control from the command post, alternate command post, rear control post, and airborne control post to the depth of the immediate task of the front.

The front communications system will have a common pattern for the formations and large units of all the branches of the armed forces, branch arms, and special troops taking part in the operation.

The basis of the communications system will be made up of the communications centers of the control posts of the front, 4th, 6th, 7th, and 9th armies, 10th Tank Army, 2nd Army Corps, 1st Air Army, 2nd and 3rd front missile brigades, the auxiliary communications centers, the radio,

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radio-relay, and wire trunk (communications main arteries and links), and lateral communications lines.

To ensure troop control in the departure position, the fixed communications net of the Coastal Front will be used, including the communications centers of control posts, auxiliary communications centers, centers of state communications networks, and fixed radio-relay and underground cable lines.

It is planned that during the operation the communications system will be expanded by field means.

Radio and courier-postal communications will be organized directly between control posts, while radio-relay and wire communications will be organized both directly and also through auxiliary communications centers.

All means of communications will be employed in an integrated manner. In so doing, it is planned that before the start of the operation, troop control will be provided mainly via radio-relay and wire channels of communications and courier means; but during the operation, along with these, radio communications will be widely used.

In the event the front command post is rendered inoperative, allowance will be made for communications to be provided from the alternate command post, and if the command post and alternate command post are simultaneously destroyed, from the rear control post of the front. In line with this, to establish supplementary communications from the alternate command post, plans are to use reserve means of the 12th Alternate Command Post Communications Battalion (one R-102, one R-118, one R-137), and also the surviving radio means of the groups of transmitters from the front command post communications center. In case the rear control post takes over troop control, plans are to establish new communications by using the reserve and surviving radio sets of the front command post communications center.

In case the command post, alternate command post, and rear control post are rendered inoperative and the 7th Army command post takes over control of the front's troops, by the close of 2 September the following are to be sent to the staff of the army: a copy of the front radio operating data, a diagram of radio-relay and wire communications; the orders on the procedure for ensuring communications with the General Staff, the 4th, 6th, and 9th armies, 10th Tank Army, 2nd Army Corps, 1st Air Army, front reserves, and with the cooperating formations and large units of the branches of the armed forces taking part in the operation; and also the

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orders about the reinforcement of the army with communications means of the 15th Radio-Relay Battalion and the 18th Line and Cable Communications Battalion.

2. Communications troops of the Coastal Front (35 minutes).

The function, organization, and capabilities of /communications/ center and line units, and also of the courier-postal communications units and facilities will be examined with the students.

One of the students will report the complement of communications troops of the Coastal Front and write it on the blackboard /as follows/:

a) /communications/ center /troops/ -- 11th Communications Regiment, 12th Alternate Command Post Communications Battalion, 13th Rear Control Post Communications Regiment;

b) line /troops/ -- 14th and 15th radio-relay battalions, 16th, 17th, 18th line and cable communications battalions, 25th, 26th, 27th, 28th, 29th, 30th radio-relay/cable communications battalions (for armies and army corps), 33rd and 34th radio-relay/cable communications battalions (for front missile brigades), 31st and 32nd rear control post radio-relay/cable communications battalions;

c) courier-postal /troops/ -- 50th and 51st courier-postal communications centers, 20th, and 21st SAES /?special air liaison squadrons/, 80th, 81st, 82nd SFPS /?courier-postal communications stations/.

Students will then report the function, organization, and capabilities of the /communications/ center, line, and courier-postal communications units and facilities.

The front communications center units include the 11th Communications Regiment, 12th Alternate Command Post Communications Battalion, and 13th Rear Control Post Communications Regiment.

The 11th Communications Regiment has the function of deploying and servicing the command post communications centers. It is made up of two equivalent servicing battalions and of servicing subunits.

The 12th Alternate Command Post Communications Battalion will deploy and service one communications center for the front alternate command post,

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and is made up of the following communications companies: two radio, one telephone and telegraph, and one radio-relay/cable.

The 13th Rear Control Post Communications Regiment will deploy and service the communications centers of the rear control post. It is made up of two equivalent servicing battalions and of servicing subunits and will deploy two positions for the communications center.

The line communications units of the front include the 14th and 15th radio-relay battalions, 16th, 17th, and 18th line and cable communications battalions, the 25th to 30th and 33rd and 34th radio-relay/cable communications battalions, and the 31st and 32nd radio-relay/cable communications battalions of the rear.

The 14th and 15th radio-relay battalions are used for the construction of the front's radio-relay main artery and lateral communications links. Each battalion is made up of four radio-relay companies and provides for the construction with R-404 sets of up to 1,000 kilometers of radio-relay lines (22 sets), and with R-409 sets of up to 250 kilometers (eight sets).

The 16th, 17th, and 18th line and cable communications battalions are intended for the construction of the front's main artery and lateral cable links. Each battalion is made up of a long-range communications company and four line-cable companies, and provides for the construction of lines extending 480 kilometers (P-296) and the deployment of four auxiliary communications centers.

The 25th to 30th radio-relay/cable communications battalions (according to the number of combined-arms and tank armies and army corps) are intended for the construction of radio-relay and wire communications links to the armies and army corps. Each battalion has two radio-relay and two cable companies, and is capable of establishing up to 450 kilometers of radio-relay links with the R-404 (10 sets), up to 250 kilometers with the R-409 (eight sets), and 240 kilometers of wire links (with the P-296).

The 33rd and 34th radio-relay/cable communications battalions are intended for the construction of radio-relay and wire communications links to the 2nd and 3rd front missile brigades. Each battalion has two radio-relay and two cable companies and is capable of establishing up to 150 kilometers of radio-relay links with the R-404 (four sets), two /links/ of 250 kilometers with the R-409 (15 sets), and 240 kilometers of wire links (with the P-296).

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The 31st and 32nd radio-relay/cable communications battalions of the rear are used for the construction of the communications links of the front's rear and also the connecting links to the auxiliary communications center/s/ of the front communications system. Each battalion is made up of three radio-relay/cable companies and has 21 R-409 radio-relay sets, 240 kilometers of P-296 cable, and two auxiliary communications centers.

The courier-postal communications units and subunits of the front include the 50th and 51st courier-postal communications centers; 80th, 81st, and 82nd SFPS /courier-postal communications stations/; and 20th and 21st SAES /?special air liaison squadrons/.

The 50th and 51st courier-postal communications centers have the function of delivering combat documents and secret and postal dispatches from the front's command post (50th Courier-Postal Communications Center) and rear control post (51st Courier-Postal Communications Center) to the General Staff and to the staffs of subordinate and cooperating formations and large units.

The 80th, 81st, and 82nd SFPS /courier-postal communications stations/ have the function of receiving, processing, and delivering combat documents and secret and postal dispatches to the directorates and departments of the front's command post, alternate command post, and rear control post, and also to large units and units located nearby.

The 20th and 21st SAES /?special air liaison squadrons/ provide for the delivery of combat documents, secret and postal dispatches, and staff officers to the troops (20th SAES) and to rear services facilities (21st SAES). In its complement there are: in the 20th SAES -- six AN-2 aircraft and ten MI-8 helicopters; in the 21st SAES -- six AN-2 aircraft and six MI-2 helicopters.

### 3. Radio communications (75 minutes)

Students in the role of chief of communications troops will report the following: from which of the control posts, with whom, and by what ways and means (their tactical-technical characteristics) the radio communications of the following are organized:

-- of the General Staff with the front;

-- with commanders and staffs of the armies, and the composition and function of an airborne control post;

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- with rocket troops and artillery;
- with operational airborne landing forces;
- between the staffs of cooperating formations and large units;
- of the chief of intelligence;
- of the chiefs of chemical and engineer troops;
- of the chief of air defense troops;
- of the chief of the rear.

In the process of analyzing these topics, the capabilities of radio communications, in accordance with the tactical-technical characteristics of the R-110, R-140, R-102, R-137, R-130, R-111 radio sets, and the R-133 tropospheric set, will become known.

Front radio communications in the operation are to be provided from the command post, alternate command post, and rear control post over shortwave and ultra-shortwave radio nets and radio links by means of radio sets which provide telephone, audio telegraph, and teleprinter operation. The basic types of communications in the radio nets are the radio telephone and audio telegraph, and in radio links, the teleprinter.

Radio communications of the General Staff with the front command post are to be organized via a radio net and radio link. In the event that direct communications are disrupted, the exchange of information between the General Staff and the Coastal Front can be accomplished through an auxiliary communications center of the General Staff.

Communications of the General Staff through the chain of command with the 4th, 6th, 7th, and 9th armies, 10th Tank Army, and the 2nd Army Corps are to be provided for via a radio net. When it is necessary to conduct an extended exchange, radio sets of the armies and army corps can shift over to reserve radio links for operation. The exchange of information through the chain of command is usually done to speed up the transmission of instructions, and also when direct communications of the General Staff with the front or of the front with subordinate armies or the army corps are disrupted.

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Radio communications of the front commander with the commanders of the 4th, 6th, 7th, and 9th armies, 10th Tank Army, and with the commander of the 2nd Army Corps are to be organized via shortwave and ultra-shortwave radio nets with the capability of having any shortwave radio set come up on a radio link. This increases the reliability of radio communications under conditions of radio jamming and makes it possible to increase the volume and efficiency of the exchange of information. When organizing a forward control post (PPU), during the departure of the /front/ commander to the line units, and during his relocation to the command post in a new area, his personal radio sets go with him. They make it possible to provide radio communications with the front control posts and subordinate and cooperating formations and large units, both during movement and during momentary halts.

For troop control, the /front/ commander can use an airborne control post (VzPU). Radio communications from an airborne control post are provided for in the radio nets of the General Staff, the front commander, the chief of rocket troops and artillery, the airborne control posts, and operational and tactical air reconnaissance.

Radio communications of the front staff with all armies and the army corps are to be provided for by shortwave radio sets via a radio net and radio links and with the 4th, 6th, 7th, and 9th armies, 10th Tank Army, and 2nd Army Corps, as well as via radio links with tropospheric stations.

The organization of radio communications simultaneously on shortwave and ultra-shortwave increases the reliability of operation, especially under conditions of deliberate radio jamming by the enemy, and also allows the volume and efficiency of the information exchange to be increased.

When summing up the matter of the organization of radio communications with the commanders and staffs of the armies, the instructor is to point out that according to the calculations that have been set forth, through the above-mentioned radio nets and radio links it is possible to provide for 14 five-minute telephone conversations and the telephone exchange of up to 800 groups (words) per hour. This amounts to 65 to 70 percent of the requirements for the exchange of basic operational information with the command posts of the armies per peak-load hour.

Radio communications with motorized rifle and tank divisions of front and army (corps) subordination are to be provided for via two shortwave radio nets. One of them is the on-alert radio net which is used to establish communications between the front and the divisions of the armies

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and army corps when they lose communications with their senior staffs.

By plan, communications between front control posts are to be via a radio net with the capability of having the subscribers come up on radio links.

Radio communications of the front chief of rocket troops and artillery with the chiefs of rocket troops and artillery of the armies and the army corps are to be organized via a shortwave radio net, and with each front missile brigade via two ultra-shortwave radio links with tropospheric and shortwave radio sets.

Centralized control will be provided for with front, army, and corps missile brigades and their battalions via a radio net established especially for this purpose.

Radio communications with the 2nd and 3rd front mobile missile technical bases and the 3rd Missile Transport Battalion are to be provided for from the front command post and rear control post via radio nets with the capability of having any radio set come up on a radio link. Direct communications from the front mobile missile technical bases and missile transport battalion to the chief of rocket troops and artillery and chief of missile-artillery armament service are to be provided via a radio net, as are also the cooperation communications among the missile-technical units.

Control of the front antitank reserves (4th and 5th antitank artillery brigades) is to be provided via the radio net of the staff of rocket troops and artillery. Also included in this radio net are to be the radio sets of the staffs of the 6th, 8th, and 11th artillery divisions of the Reserve of the Supreme High Command /RVGK/, which are attached to the first-echelon armies and which allow communications to be maintained with them during resubordination.

Radio communications of the Coastal Front with the Western Front and the Combined Baltic Fleet will be handled via radio links organized by instructions of the General Staff.

To support cooperation among front troops, several shortwave and ultra-shortwave radio nets have been established.

To ensure cooperation of the combined-arms armies, tank armies, and the army corps among themselves and with operational airborne landing

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forces, two shortwave radio nets are to be provided. The first provides for communications among the 4th, 6th, 7th, and 9th armies, 10th Tank Army, and the 2nd Army Corps; the second is /for communications of/ the 6th Army and 10th Tank Army with the 30th Airborne Division and its paratroop regiments.

Radio communications between the flank large units of the 4th, 6th, 7th, and 9th armies, 10th Tank Army, and the 2nd Army Corps are planned to be handled via a shortwave cooperation radio net for the flank large units. When it is necessary to conduct a prolonged exchange, radio sets of formations and flank large units can, by mutual arrangement, shift over to operation in reserve radio links.

Radio communications have been organized also among the front's large units and units, and of these with the units of the 30th Airborne Division when operating to link up with one another. For this, two radio sets for mutual cooperation have been set up on shortwave and ultra-shortwave bands.

Cooperation of the 4th, 6th, 7th, and 9th armies, 10th Tank Army, and the 2nd Army Corps with supporting aviation will be handled through the 1st Air Army's combat control centers that go to the command posts of the first-echelon armies and army corps.

To ensure control of reconnaissance, engineer, and chemical large units and units, radio nets are to be established, comprised of the radio sets of the appropriate special troops and of radio means at the front command post (alternate command post). In line with this, to ensure high efficiency in the transmission of reconnaissance information, radio communications with the chiefs of intelligence of the armies and the army corps are to be organized via a radio net, from the command post of the 1st Air Army via radio links, and with reconnaissance units via composite radio nets.

Reception of air reconnaissance data directly from on board reconnaissance aircraft will be handled by switching the shortwave and ultra-shortwave band radio receivers at the command posts of the front, armies, and army corps to the radio nets for operational air reconnaissance and /by switching/ ultra-shortwave band /receivers/ to the tactical air reconnaissance radio nets. Radio operating data for reception of information from on board tactical air reconnaissance aircraft will be passed on to the staffs of motorized rifle and tank divisions and regiments.

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The number of air reconnaissance radio nets to be established will depend on the number of reconnaissance aircraft in the air. Based on experience, in the course of an hour, each crew ought to transmit an average of six messages concerning detected targets and the weather. An average of 40 seconds is required for transmittal of a single message. Consequently, each aircraft will transmit for four minutes per hour. Based on this, data from 15 aircraft can be transmitted in one hour on a single radio net. However, realistically this figure will be lower as it is necessary to consider the waiting time between the end of one transmission and the start of another. Therefore, in actual practice, up to 10 reconnaissance aircraft will engage in transmission on a single radio net.

That is why, based on the reconnaissance aircraft available in the Coastal Front's complement and to ensure the timely transmittal of reconnaissance data from on board the operational reconnaissance aircraft, two radio nets on shortwave and ultra-shortwave bands are to be provided, and for the tactical reconnaissance aircraft, three ultra-shortwave radio nets (one per squadron). In addition, to augment the transmission capacity and increase the stability of air radio communications, reserve and secure radio nets for operational air reconnaissance (not shown on the diagram) are planned. When conducting aerial reconnaissance at low altitudes, radio retransmission posts can be included on the aircraft (helicopters) to augment the communications range of ultra-shortwave radio nets.

Collection and processing of data about the coordinates and parameters of the nuclear bursts detonated by the enemy and about the chemical situation will be done by the front computation and analysis station (RAST). It will obtain the necessary data from the special monitoring battalions of the front, the RASTs of the armies and the rear control post of the front, the computation and analysis groups (RAGs) of the army corps and the divisions of front subordination, and from the ground and aerial radiation and chemical reconnaissance units.

To support the collection of data and transmittal of information concerning the enemy's nuclear strikes and chemical attacks several shortwave and ultra-shortwave radio nets have been organized.

Accordingly, the collection of reconnaissance data about the enemy's nuclear strikes and chemical attacks is handled on three radio nets, and one radio net will transmit the information about the radiation and chemical situation to the front troops.

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The reception of reports from subordinate computation and analysis stations and groups will be handled via the shortwave radio net for data collection about nuclear strikes and chemical attacks. The computation and analysis station will obtain data from front reconnaissance units and chemical troop subunits via the shortwave radio net controlling ground radiation and chemical reconnaissance, and via the ultra-shortwave radio net controlling aerial radiation reconnaissance.

The data obtained, after collation, will be transmitted to troops via the radio net for information about the radiation and chemical situation. Radio receivers of the command posts of the armies, army corps, and divisions and units of front subordination are to be included in this radio net.

Radio communications have been organized via three shortwave radio nets to link the front chief of air defense troops with the air defense command posts of the armies, the air defense control posts of the army corps and of the divisions of front subordination, and with the 18th and 19th front SAM technical bases.

Peculiar to the organization of radio communications from the front air defense command post is the establishment of composite radio nets in which instructions (commands) to subordinate staffs (command posts) are transmitted by collective call via a radio net, and reports from them are received via radio links. This increases the efficiency of information exchange and reduces the expenditure of radio transmitters as compared to communications via radio links.

Communications with surface-to-air missile, antiaircraft artillery, and radar reconnaissance large units and units have been organized via three composite radio nets.

For warning about the air enemy, two radio nets have been provided. In one, the air defense command posts of the armies, army corps, and reserve divisions are warned, and in the second, the large units and units of front subordination not having air defense control posts /are warned/. In addition, to obtain information about the air situation in the zone of the adjacent front and in the zones of action of the naval forces and the air defense troops of the country, the radio nets for reciprocal warning of the air defense command posts of the Coastal Front, the Combined Baltic Fleet, the Western Front, and the 5th and 6th air defense corps of the 8th Army of Air Defense of the Country have been provided.

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Cooperation with fighter aviation will be handled through the 1st Air Army's combat control center, which is deployed at the front air defense command post.

Communications with the 30th Airborne Division will be provided as follows:

-- in the departure area for an airborne assault -- through the operations group for airborne troops at the front command post via the wire and radio-relay channels allocated on General Staff and front communications links and by mobile means;

-- in flight -- by radio through the operations group for military transport aviation at the front command post with its own means;

-- after an airborne landing action -- via the radio nets of the front commander and staff. Radio sets of paratroop regiments are to be included in the radio net of the staff. In addition, the staff of the 10th Tank Army, when cooperating with the 30th Airborne Division, will establish radio communications with it via a radio link.

From the rear control post of the front, radio communications have been organized with the Staff of the Rear Services of the Armed Forces and with the rear control posts of the 4th, 6th, 7th, and 9th armies, 10th Tank Army, 2nd Army Corps, and 1st Air Army -- via radio nets and radio links directly or by coming up on the radio links as necessary.

Radio communications with the rear control posts of divisions of front subordination, front forward bases, front rear bases, mobile hospital bases, rear hospital bases, and their branches, have been planned via radio nets. Special radio nets have been set up for each chief of front rear services: motor /transport/, road, medical, and others. This provides them convenient control over subordinate units and installations. Radio communications with rear services units and installations having only low power ultra-shortwave radio sets will be organized through rear auxiliary communications centers.

Warning of rear services large units, units, and installations will be handled via all functioning radio nets and radio links.

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4. Radio-relay, wire, and courier-postal communications (30 minutes).

Students in the role of chief of communications troops will report the organization of radio-relay, wire, and courier-postal communications:

- description of the front's fixed communications nets;
- in the departure position for the offensive (one or two reports);
- during the offensive operation (one or two reports).

Radio-relay and wire communications in the operation will be organized from all front control posts. The most fully developed communications will be available from the front command post.

It is planned that the front's radio-relay and wire communications will be handled in the departure position for the offensive via the links of the fixed communications nets.

The fixed communications net of the Coastal Front includes:

-- the communications centers of the command post, alternate command post, and rear control post of the front; the command posts of the armies, army corps, front reserve divisions and front missile brigades;

-- the auxiliary (MEYENBURG, LETZLINGEN, PAULINENAUE) and state communications centers (GREIFSWALD, GUSTROW, SCHWERIN, PERLEBERG, STENDAL, BURG, GENTHIN, BRUCK, ZOSSEN, FRANKFURT, BIESENTHAL, PASEWALK, NEUBRANDENBURG);

-- the fixed mainline (BIESENTHAL, MIROW, PARCHIM, ZOSSEN, HALDENSLEBEN) and lateral radio-relay communications links (MEYENBURG, PERLEBERG, HALDENSLEBEN; MEYENBURG, PAULINENAUE, ZOSSEN; BIESENTHAL, ZOSSEN);

-- the fixed mainline underground cable communications links (PASEWALK, NEUBRANDENBURG, SCHWERIN; BIESENTHAL, MEYENBURG, PERLEBERG, BURG; GUSTROW, MEYENBRUG, POTSDAM, BRUCK; NEUBRANDENBURG, BIESENTHAL, ZOSSEN).

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In the departure position for the offensive communications have been organized as follows:

a) From the front command post:

-- with the General Staff, Staff of the Rear Services of the Armed Forces, and when necessary, with the main staffs of the branches of the Armed Forces and the Combined Baltic Fleet through the General Staff's Auxiliary Communications Center No. 2 (CHOJNA): radio-relay and wire communications;

-- with the Western Front, the Combined Baltic Fleet, and the 5th Corps of Air Defense of the Country: radio-relay and wire communications via front lateral and mainline links. Also, bypass communications and cooperation channels among the formations and large units subordinate to the front will be provided for via lateral links;

-- with the front's alternate command post and rear control post: radio-relay and wire communications via main artery links;

-- with the 4th Army command post: radio-relay via links of the front's fixed communications net, and wire communications via two ground cables: FURSTENBERG, NEUBRANDENBURG, GUSTROW, and Auxiliary Communications Center No. 1 (MEYENBURG), PERLEBERG, SCHWERIN;

-- with the 7th Army command post: radio-relay and wire communications via Auxiliary Communications Center No. 1, PERLEBERG, STENDAL, and a bypass link through the communications center of the front alternate command post;

-- with the 9th Army command post: radio-relay and wire communications via two links; via links of a fixed net of Auxiliary Communications Center No. 2 (PAULINENAUE), ZOSSEN, BURG, and via the main artery through the communications center of the front alternate command post;

-- with the 2nd Army Corps command post: radio-relay communications via a link of a fixed net of Auxiliary Communications Center No. 1, MIROW, and subsequently with R-409 field sets, and wire communications via two underground cables: Auxiliary Communications Center No. 1, GUSTROW, GREIFSWALD, and FURSTENBERG, NEUBRANDENBURG, GREIFSWALD;

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-- with the 6th Army command post: radio-relay and wire communications via cables and radio-relay links of the fixed net PAULINENAUE, ZOSSEN, BIESENTHAL, and a bypass link through the communications center of the front rear control post, BIESENTHAL;

-- with the 10th Tank Army command post: wire communications via cable links of a fixed net of Auxiliary Communications Center No. 2, ZOSSEN, FRANKFURT, SWIEBODZIN; and a bypass link through the General Staff's Auxiliary Communications Center No. 2, DREZDENKO, SWIEBODZIN;

-- with the 1st Air Army command post: radio-relay and wire communications via links of a fixed communications net of the front;

-- with the 2nd Front Missile Brigade command post: radio-relay and wire communications via links of a fixed communications net of the front;

-- with the 3rd Front Missile Brigade command post: radio-relay and wire communications via a communications main artery;

-- with the command posts of the 13th Motorized Rifle Division, 20th Tank Division, and 6th Corps of Air Defense of the Country: radio-relay and wire communications via links through auxiliary communications centers No. 1 and No. 2, and the BRUCK communications center of the state network.

b) From the front alternate command post:

-- with the 7th Army alternate command post: radio-relay and wire communications via links with R-404 sets and P-296 cables through Auxiliary Communications Center No. 3 (LETZLINGEN), and a bypass link through the communications center of the 7th Army command post;

-- with the 9th Army alternate command post: radio-relay communications via a link with R-404 sets, a bypass link through the communications center of the 9th Army command post and Auxiliary Communications Center No. 3, and wire communications through the communications center of the 9th Army command post and Auxiliary Communications Center No. 3 with P-296 cable;

-- with the alternate command posts of the 4th Army, 2nd Army Corps, 1st Air Army, 2nd Front Missile Brigade, 13th Motorized Rifle Division, and 20th Tank Division: radio-relay and wire communications through the communications center of the front command post, a bypass link through the STENDAL, PERLEBERG communications centers of the state network, and

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Auxiliary Communications Center No. 1;

-- with the 6th Army command post: radio-relay and wire communications through the communications center of the front command post, and a bypass link through the BURG, BRUCK, ZOSSEN, BIESENTHAL communications centers of the state net;

-- with the 10th Tank Army command post: wire communications through the BRUCK, ZOSSEN, FRANKFURT, SWIEBODZIN /communications/ centers of the state net and a bypass link through the communications center of the front command post;

-- with the 3rd Front Missile Brigade command post: radio-relay and wire communications via the principal communications main artery of the front, a bypass link through the BRUCK, ZOSSEN communications centers of the state net, and Auxiliary Communications Center No. 2 of the front.

Thus, in the departure position for the offensive, communications with the General Staff, Combined Baltic Fleet, Western Front, 5th and 6th corps of Air Defense of the Country, with armies, army corps, divisions of front subordination, and front missile brigades will be provided for by two to three radio-relay and wire links that are independent from each other, which is conducive to an increase in the survivability of communications.

During the operation, provisions will be made to construct the following field means /of communications/:

-- a principal communications main artery from the rear control post to the command post and alternate command post and next along the relocation axis of the front command post: CELLE, ESPELKAMP, STADTLOHN, LEOPOLDSBURG using R-404 radio-relay sets and P-296 cables with an overall capacity of 36 telephone channels;

-- an auxiliary communications main artery along the relocation axis of the 7th Army command post up to the fulfillment of the front immediate task with radio-relay and wire means, and subsequently along the relocation axis of the 6th Army command post with radio-relay means;

-- communications links to the armies and army corps with R-404 (R-409) radio-relay sets to the entire depth of the operation and with P-296 cables to the depth of the immediate task of the front;

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--- lateral links at the deployment lines of the front command post: BOSTEDT /sic -- BOCKSTEDT/, SYKE, ESPELKAMP with R-404 radio-relay sets and P-296 cables; ESPELKAMP, DETMOLD with R-404 radio-relay sets; LUBECK, MUNSTER, WEYHAUSEN, PEINE; DERSUM, NEUENHAUS, STADTLOHN, and SCHOTEN, LEOPOLDSBURG, GELEEN, with R-404 (R-409) radio-relay sets.

To increase the flexibility and survivability of the communications system, it is planned that auxiliary communications centers will be deployed where the lateral links intersect with the communications main artery and the links: No. 4 -- five kilometers south of LUBECK, No. 5 -- 30 kilometers northeast of CELLE, No. 6 -- five kilometers east of BOSTEDT /sic -- BOCKSTEDT/, No. 7 -- 10 kilometers northwest of SYKE, No. 8 -- 15 kilometers northwest of ESPELKAMP, No. 9 -- 10 kilometers west of NEUENHAUS, No. 10 -- five kilometers north of STADTLOHN, and No. 11 -- 10 kilometers northeast of LEOPOLDSBURG.

From the front command post, plans are to organize communications as follows:

-- with the 4th Army command post: radio-relay communications via links with R-404 sets and P-296 wire cable to the entire depth of the operation;

-- with the 2nd Army Corps command post: radio-relay and wire communications via links with R-404 sets and P-296 cables to the entire depth of the corps task;

-- with the 7th Army command post: radio-relay and wire communications via the auxiliary communications main artery with R-404 sets and P-296 cable to the depth of the front's immediate task, and subsequently radio-relay communications via links using R-409 sets to the entire depth of the army task;

-- with the 9th Army command post: radio-relay and wire communications via links to the depth of the army's immediate task, and subsequently radio-relay communications via links and the communications main artery of the front with R-404 sets to the entire depth of the army's operation;

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-- with the 6th Army command post: radio-relay and wire communications via an auxiliary communications main artery of the front up to the arrival of the army at the line of commitment to battle (SYKE, UCHTE), and subsequently radio-relay communications with R-404 (R-409) sets to the entire depth of the operation;

-- with the 10th Tank Army command post: radio-relay and wire communications via the communications main artery of the front up to Auxiliary Communications Center No. 11, and subsequently via links to the entire depth of the operation;

-- with the 2nd and 3rd front missile brigades: radio-relay and wire communications via the communications main artery and through auxiliary communications centers of the front;

-- with the motorized rifle and tank divisions of the front reserve: radio-relay communications through the communications centers of control posts and the auxiliary communications centers;

-- with the Western Front command post: radio-relay communications via lateral /links/ with R-404 sets at the deployment lines of the command posts of the fronts, and a bypass link through auxiliary communications centers of the General Staff.

Continuity of communications during relocation of control posts will be attained by echeloning the communications centers of the command posts and rear control posts of the front and armies and the command posts of the 2nd and 3rd front missile brigades, by the timely deployment of radio-relay and wire links immediately following advancing troops, and by using the airborne control posts of the front and armies.

For purposes of reducing the time to establish the main communications to the new location areas of the front and army command posts, the mobile (forward) portions of the communications centers will move forward initially and then the main portions will move up.

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The plan provides for the following allocation of communications troops:

Communications centers & links	Communications units	Comms centers		Line means of comms		
		Mobile	Auxil	R-404	R-409	P-296
1	2	3	4	5	6	7
CP comms center	11th Comms Rgt	2				
Alt CP comms center	12th Alternate CP Comms Bn	1				
Rear control post comms center	13th Rear Ctrl Post Comms Rgt, 32nd & 31st rad-relay/cable comms bns	2	4		42	480
Comms main arteries and lateral links of the <u>front</u>	14th Rad-Relay Bn, 15th Rad-Relay Bn (minus a company), 16th & 17th line and cable comms bns		8	38	14	960
Link to 4th Army	25th Rad-Relay/Cable Comms Bn			10	8	240
Link to 7th Army	26th Rad-Relay/Cable Comms Bn			10	8	240
Link to 9th Army	27th Rad-Relay/Cable Comms Bn			10	8	240
Link to 6th Army	28th Rad-Relay/Cable Comms Bn			10	8	240
Link to 10th Tank Army	29th Rad-Relay/Cable Comms Bn			10	8	240
Link to 2nd Army Corps	30th Rad-Relay/Cable Comms Bn	.10/sic/	8/sic/	10	8	240

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1	2	3	4	5	6	7
<u>Link to 2nd Front Msl Bde</u>	33th Rad-Relay/Cable Comms Bn			4	15	240
<u>Link to 3rd Front Msl Bde</u>	34th Rad-Relay/Cable Comms Bn			4	15	240
Total available		5	12	106	134	3,360
Deployed for fulfillment of <u>front's immediate task</u>		5	8	62	38	1,650
Reserve of the Chief of Comms Troops	18th Line and Cable Comms Bn, 4th Co of 15th Rad-Relay Bn		4	6	2	240

Protecting communications against the enemy's radio reconnaissance and radio jamming (15 minutes)

It is recommended that two items be examined concerning the protection of communications:

-- the enemy's capabilities for radio reconnaissance and for radio jamming against the front's troops;

-- the basic measures to protect communications against enemy radio reconnaissance and radio jamming.

To conduct radio reconnaissance and produce radio jamming in the Coastal Front zone, the enemy has these radioelectronic warfare units -- the Blue 13th RP SV /?special troops radio regiment/, 5th KrS /?communications wing/, 2nd and 226th radio squadrons; Brown 71st Air Forces Communications Regiment, an air force squadron, 51st BS SV /?special troops communications battalion/ (50 percent of it in the front zone), 120th, 420th, and 620th RTB /radiotechnical battalions/. The capabilities of these for radio reconnaissance and production of radio jamming in the front zone are set forth in the table that follows.

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Coastal Front	Capabilities	Intercept		Direction Finding	Radio jamming		No. of major radio nets	
	Designation	Posts	Surveillance nets	DF nets	Jamming transmitters	No. of radio nets subjected to jamming		
	Enemy electronic warfare units		continuous intermittent		Number of bearings /?fixes/ per hour			
1	2	3	4	5	6	7	8	9
4th Army	Brown 620th Rad Tech Bn	42	$\frac{84}{168}$	2	100	30	60	220
7th Army	Brown 420th Rad Tech Bn	42	$\frac{84}{168}$	2	100	30	60	220
9th Army	Brown 120th Rad Tech Bn, Blue 2nd and 226th radio squadrons	122	$\frac{244}{488}$	6	300	60	120	220
1st Air Army, air defense	Brown 71st Air Forces Comms Rgt, Brown air force squadron, Blue 5th KRS /?comms wing/	196	$\frac{392}{784}$	4	400	54	108	127
Front (operational depth)	Blue 13th RP SV /?spec trps rad rgt/, Brown 51st BS SV /?spec trps comms rgt/ (50 percent)	181	$\frac{362}{724}$	2	200	35	70	115
Total		583	$\frac{1,166}{2,332}$	16	1,100	209	418	902

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The capabilities set forth in the table enable the enemy:

- to detect the main radio communications of front troops within six to eight hours from the start of unlimited transmitting operation by radio sets and to subsequently keep them under continuous monitoring;
- to produce radio jamming to a depth of 20 to 30 km against 25 percent of the main radio nets and links of the first-echelon troops of the 4th and 7th armies and against 50 percent of those of the 9th Army;
- to produce radio jamming in all main radio nets of the 1st Air Army, army aviation, air defense troops, and also in the major shortwave radio nets and radio links of the armies, the front, and the rocket troops to the entire depth of the operational disposition of the front troops.

During the offensive operation, enemy radio jamming with the following constitutes the main threat to the radio communications:

- with motorized rifle and tank divisions and regiments;
- with the 2nd and 3rd front missile brigades;
- with the 30th Airborne Division during and after its airborne landing action;
- with the operational and tactical air reconnaissance aircraft, with the radar reconnaissance posts, and with the radio communications posts for warning about the air enemy;
- with the Western Front, the Combined Baltic Fleet, and among cooperating formations, large units, and units.

For this reason, general and specific measures in radio camouflage and protection of communications against enemy radio jamming will be carried out in the Coastal Front offensive operation. The general measures refer to:

- banning the use of radio communications in the transmit mode from control posts in the departure position before the start of combat actions and restricting the transmitting operation of medium power shortwave radio sets during the operation;

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- shifting frequencies on radio nets and radio links when radio jamming is present;
- employing directional antennas;
- operating with the audio telegraph instead of the telephone or teleprinter.

Specific measures refer to:

- simulating the communications centers of the front command post, alternate command post, and airborne control post; the command posts of the 4th, 6th, 7th, and 9th armies, the 2nd Army Corps, 2nd Front Missile Brigade, and the 1st Air Army in dummy areas in accordance with the operational camouflage plan;
- employing a secure communications device on the communications channels with armies, 2nd and 3rd front missile brigades, reserve divisions, and among front control posts;
- organizing shortwave and ultra-shortwave radio, tropospheric, and radio-relay communications with the 4th, 6th, 7th, and 9th armies, 10th Tank Army, 2nd Army Corps, 2nd and 3rd front missile brigades; and shortwave radio communications on composite radio nets with the air defense and reconnaissance large units and units.

#### Courier-postal communications

Courier-postal communications have been organized:

- along links with the 4th, 6th, 7th, and 9th armies, 10th Tank Army, 2nd Army Corps, 1st Air Army, 2nd and 3rd front missile brigades, Combined Baltic Fleet, and the Western Front;
- along circular routes with the front rear control post, 5th and 6th corps of the 8th Army of Air Defense of the Country, and the 20th Tank Division;
- from the front's rear control post along circular routes.

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To provide courier-postal communications, the 50th and 51st courier-postal communications centers (in areas of the command post and rear control post) and the 80th, 81st, and 82nd courier-postal communications stations (at the command post, alternate command post, and rear control post) will be deployed.

Delivery of combat documents, secret and postal dispatches will be carried out by helicopters of the 20th and 21st special air liaison squadrons and by motor vehicles (armored personnel carriers) of the 50th and 51st courier-postal communications centers in accordance with the operating schedule for mobile communications means (Appendix 4).

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Appendix 4Operating schedule for mobile communications means

Number	Designation of links and circular routes	Number of trips	Time		Mobile means		
			Departure (hours & minutes)	Departure from destination	AN-2	MI-8, MI-2	GAZ-69, BTR-40
1	2	3	4	5	6	7	8
1.	<u>Front</u> CP to 4th Army CP	1 2	0600 1700	0700 1800	1	1	
2.	<u>Front</u> CP to 7th Army CP	1 2	0700 1730	0800 1900		1	1
3.	<u>Front</u> CP to 9th Army CP	1 2	0700 1700	0800 1830		1	1
4.	<u>Front</u> CP to 6th Army CP	1 2	0630 1800	0730 1900	1	1* 1	
5.	<u>Front</u> CP to 10th Tank Army CP	1 2	0800 1700	0900 1800		1 1	
6.	<u>Front</u> CP to 2nd Army Corps CP	1 /2/	0800 1800	0900 1900	1	1	
7.	<u>Front</u> CP to 1st Air Army CP	1 2	0800 1800	0830 1830			1 1
8.	<u>Front</u> CP to 2nd <u>Front</u> MSI Bde CP, 13th MtrR Div CP	1 2	0700 1700	0800 1800		1 1	

\* Translator's note: apparently a typographical error (cf. Total).

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1	2	3	4	5	6	7	8
9.	Front CP to 20th Tk DIV CP, 6th Corps of Air Def of Ctry (circular route)	1 2	0600 1700	0900 2000	1 1		
10.	Front CP to 3rd Front MSI Ede CP	1 2	0730 1800	0830 1900			1 1
11.	Front CP to Front Rear Control Post, 5th Corps of Air Def of Ctry (circular route)	1 2	0800 1800	0930 1900		1* 1	1
12.	Front CP to Combined Baltic Fleet CP	1	0700	0830	1		
13.	Front CP to Western Front CP	1	0800	0900	1		
	Total activated				7	10	7
	In reserve				5	6	4

Lesson summary (5 minutes).

The director will remind the students of the subject of the lesson and the training objectives, and he will note how these have been attained during conduct of the lesson. He will describe the students' reports, discuss the positive and negative aspects of the reports, give orders concerning the elimination of the deficiencies detected during the lesson and, when necessary, give individual assignments to specific students.

In the concluding remarks, he will orient students on the preparation for the next lesson (task No. 12a and Lesson No. 1f /sic/) concerning communications support during the offensive operation following an enemy nuclear strike.

\* Translator's note: apparently a typographical error (cf. Total).