

Page Denied

Next 1 Page(s) In Document Denied

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

This material contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Secs. 793 and 794, the transmission or revelation of which in any manner to an unauthorized person is prohibited by those laws.

50X1-HUM

S-E-C-R-E-T

COUNTRY USSR

REPORT

SUBJECT Communications Manual of the Armed Forces of the USSR -- Part II: Communications and Radiotechnical Support in the Air Forces

DATE DISTR. 19 February 1963 50X1

NO. PAGES 140

REFERENCES RD

DATE OF INFO.

50X1-HUM

PLACE & DATE ACQ.

50X1-HUM

THIS IS UNEVALUATED INFORMATION. SOURCE GRADINGS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

50X1-HUM

the Communications Manual of the Armed Forces of the Union of SSR, Part II, Communications and Radiotechnical Support in the Air Forces, published by the USSR Ministry of Defense in Moscow in 1960. It carries the Soviet classification SECRET.

50X1-HUM

S-E-C-R-E-T

50X1-HUM

GROUP 1 EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

STATE	2	ARMY	10	NAVY	3	AIR	10	NSA	4	DIA	3	JCS	1
NIC	1	ONE	1	OCI	1	ORR	2	OSI	1				

(Note: Washington distribution indicated by "X"; Field distribution by "#".)

50X1-HUM

INFORMATION REPORT INFORMATION REPORT

50X1-HUM

Page Denied

SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

MINISTRY OF DEFENSE OF THE UNION OF SSR

SECRET

[Redacted]

50X1-HUM

[Redacted]

COMMUNICATIONS MANUAL
OF THE ARMED FORCES
OF THE UNION OF SSR

PART II

COMMUNICATIONS AND RADIOTECHNICAL
SUPPORT IN THE AIR FORCES

MILITARY PUBLISHING HOUSE
OF THE MINISTRY OF DEFENSE OF THE UNION OF SSR
MOSCOW 1960

-1-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

[Redacted]

50X1-HUM

SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

ORDER OF THE COMMANDER-IN-CHIEF OF THE AIR FORCES

No. 0155

11 May 1960

Moscow

To put into effect the announced Manual for
Communications of the Armed Forces of the Union of SSR,
Part II, Communications and Radiotechnical Support in the
Air Forces.

The Commander-in-Chief of the Air Forces
Chief Marshal of Aviation
K. Vershinin

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

[Redacted]

50X1-HUM

SECRET



50X1-HUM



50X1

The Manual for Communications of the Armed Forces is issued in four parts, correspondingly for the Ground Forces, the Air Forces, the Navy, and the Troops of the Anti-air Defense of the Country.

Part II of the Manual sets forth the regulations for communications and radiotechnical support in the Air Forces, taking into account the modern requirements that are levied against troop control under conditions of the employment of atomic weapons and other means of mass destruction.

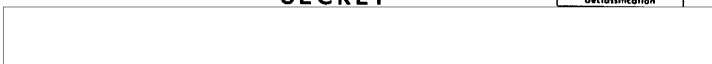
The first section of this part of the Manual presents the basic regulations for communications in the Armed Forces, taking into account the special features peculiar to the Air Forces and the general principles for organizing radiotechnical support in the Air Forces.

The second section presents the problems in organizing communications and radiotechnical support in aviation large units and units of the Air Forces.

The regulations and instructions for communications and radiotechnical support contained in the Manual must be adopted to changing conditions.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET



50X1-HUM



50X1

Section One

Basic Principles of Communications and Radiotechnical

Support

Chapter I

Fundamentals of Communications and Radiotechnical

Support

General Principles

1. The employment in modern combat and operations of atomic weapons and other means of mass destruction, the decisive and mobile nature of combat operations, the rapid changes in the situation, the varied nature of tasks performed by aviation, the need for aviation to maintain close and continuous coordination with the ground and missile troops and with the navy and the troops of the antiair defense of the country, and operations of aviation in small groups and as individual aircraft have sharply increased the role and the significance of communications and radiotechnical means in ensuring aircraft control.

Communications and radiotechnical means are the basic means for ensuring aircraft control on the ground and in the air.

The timely organization and the maintenance of uninterrupted operations of communications and means of radiotechnical support are the most important duties of commanding officers and staffs.

2. Radio, radio-relay, wire, mobile and signaling means of communications are used to provide communications.

Included in the means of radiotechnical support are ground radio beacon and light (radiosvetotekhnicheskii) and radar means.

3. By means of radio, radio-relay and wire means of communications and their corresponding stationary equipment, it is possible to have telephone, telegraph, facsimile, television, remote signal (telesignalnyy),

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET



50X1-HUM



50X1

and special types of communications.

Telephone and telegraph communications are used for direct conversations by commanding officers and staff officers and for transmitting (receiving) commands, orders, instructions, reports and warnings.

Facsimile communications are employed for transmitting (receiving) combat documents, maps and sketches.

Television communications are used for transmitting (receiving) moving and stationary images, combat documents, maps and sketches.

Remote signal communications are employed for transmitting information, control and command signals to aircraft crews and to control points.

Special types of communications are employed for transmitting information and commands between devices of automatic and automated systems installed at control points and on aircraft.

Mobile means of communications are used for delivering combat and service documents.

Signaling means of communication are used for transmitting short commands and messages with the aid of prearranged visual and audio signals,

4. Ground radio beacon and radar means are employed for the radiotechnical support of aircraft control and for the support of the combat operations (flights) of aviation.

Radiotechnical support is a complex of measures for the organization and support of uninterrupted operations of radio beacon and radar means which are used for aircraft control, air navigation support, bombing, control of cruise missile flights, drops (landings) of airborne landing forces, identification of airplanes (helicopters) and missiles, aerial photography, target designation, and landings of airplanes (helicopters).

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification.



50X1-HUM

SECRET

50X1-HUM



50X1

5. The means of communications and radio-technical support are employed in accordance with their tactical-technical characteristics, with the tasks performed by aviation, and with the situation. Depending on the actual conditions of the situation those means should be used whose characteristics ensure the fullest and most reliable aircraft control on the ground and in the air.

6. Communications and radiotechnical support are organized in accordance with the decision of the commanding officer, the directives of the chief of staff, and the orders of the higher headquarters, and by taking into consideration the situation and the availability of forces and means of communications and radiotechnical support.

7. The chief of staff is responsible for the organization of communications and radiotechnical support in the aviation (aviation-technical) large unit (unit). He directs the work of the chief of communications (chief of communications and radiotechnical support) and, on the basis of the commanding officer's decision, assigns communications and radiotechnical support tasks to him.

The chief of communications is directly responsible for the timely organization and for the condition of communications and radiotechnical support in the large unit (unit).

8. The basic tasks of communications are:

-- the timely transmission of orders, instructions, directives, and commands that relate to aircraft control, to subordinate commanding officers on the ground and in flight and to the headquarters of aviation large units and units; the reception of reports and reporting documents from them; and ensuring the capability of conducting conversations;

-- the timely transmission of signals and information to flight control instruments, (devices) aboard aircraft and missiles;

-- the reception at control points of tasks, commands, and documents concerning coordination, from the control points of coordinating formations, large

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

units, and units of other arms of troops;

-- the timely transmission and reception of mutual information between the aviation formations, large units, units, subunits and the crews of airplanes (helicopters), as well as between aviation and coordinating formations (large units, units) of other arms of troops;

-- the transmission of directives (instructions) and requisitions to large units, units and rear area installations, and the reception of information from them concerning materiel, airfield-technical, and engineer-airfield support;

-- the reception and transmission of warning signals about the air enemy and about the danger of an atomic or chemical attack;

-- the transmission of instructions and commands to crews of radiotechnical support means and the reception of necessary data from them at control points and by crews of airplanes (helicopters) in the air.

To perform these tasks, a communications system is created.

A communications system is the aggregate of signal centers, stations and lines combined in a definite order corresponding to the commanding officer's decision for the organization of aircraft control and to the nature of their combat operations (flights) and the tasks that are being carried out.

9. The tasks of radiotechnical support are:

-- providing commanding officers (headquarters) with data on the air enemy and on friendly airplanes (helicopters) and cruise missiles located in the air and observed with the aid of radiotechnical means;

-- controlling the flights of friendly airplanes (helicopters) and cruise missiles, determining their location with the aid of radiotechnical means, and transmitting such data by the means ~~/word: missing/~~ control points or to crews of airplanes (helicopters);

-- ensuring the timely and accurate operation

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

of ground radiotechnical means, that are used by crews in the air in determining their location, in arriving at a definite point or landmark (target, landing field, and other points), in determining the moment for dropping means of destruction or an airborne landing force (cargo), and in identifying friendly troops; and for landing and regulating the movement of aircraft on the airfield.

Ground radiotechnical means may also be used for reconnaissance of meteorological conditions.

In order to perform these tasks, a ground radar support system and a radio beacon support system are created.

A ground radar support system is a complex of radar centers, posts and stations located in a definite order for the purpose of creating a single radar field over the territory of combat operations (flights) of aviation or over areas (installations) which are being covered.

A radio beacon support system is a complex of radiotechnical, beacon (svetotekhnicheskiy), and pyrotechnical means and of navigation and landing means located in a definite order for the purpose of creating a single radio navigational field over the territory of combat operations (flights) of aviation, as well as for ensuring the safety of flights in areas of airfields and the landing of airplanes (helicopters) on them.

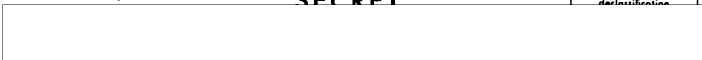
10. In order to set up communications between the senior commander (higher headquarters) and subordinates, radio, radio-relay and mobile means are allocated by the higher headquarters and its subordinates, and the wire lines (channels) of communication are allocated by the higher headquarters. The higher headquarters is responsible for communications with subordinates. When communications with the senior commander (higher headquarters) are lost, the subordinate is obliged to take measures to restore them.

In all cases the capability of carrying out communications with the next lower echelon is provided for; and communications with airplanes (helicopters) in flight are provided for down to the crews of individual airplanes (helicopters).

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

When the commanding officer is located on the ground and away from control points, he must have communications with the senior commander, with subordinate commanding officers and with his headquarters. In this case, communications with coordinating formations, large units and units are established through their own headquarters or through the higher headquarters.

When the commanding officer is located in the air, he must have communications with his ground control point, with the control point of the senior commander, with the crews of airplanes (helicopters), within the combat formations of which he is carrying out the flight, and, when necessary, with the control point of the coordinating large unit (unit).

11. Combat orders, instructions and reports which are transmitted over open channels of radio, radio-relay and wire communications are first encoded or enciphered.

Transmission in plain text over radio and radio-relay means is permitted:

- when issuing combat commands in flight;
- when effecting control in aerial combat;
- when transmitting reports from airplanes (helicopters) on observed ground (sea) and air targets;
- when guiding friendly aviation to air and ground (sea) targets;
- during forced landings or forced abandoning of an airplane (helicopter), if encoding is impossible because of the lack of time;
- when issuing commands during take-offs and landings;
- when giving a warning on the danger of an atomic, chemical or bacteriological attack and when giving a warning about the appearance of the air enemy.

In all cases of transmission in the clear, the numbers and designations of units, the duty assignments and surnames of commanding officers, and areas

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

and points of the terrain are encoded.

12. Communications among coordinating formations (large units, units) of different branches of the Armed Forces, arms of troops, special troops and adjacent troops are established by instructions of the commander or the commanding officer (headquarters) organizing the coordination of troops during the preparation and course of an operation (battle). In the absence of instructions or in case of loss of communications, the commanding officers (headquarters) of all coordinating large units (units, subunits) must take immediate measures to establish communications among themselves.

The best conditions for ensuring uninterrupted communications between coordinating formations (large units, units) are achieved by personal contacts by commanding officers (commanders) and by locating control points jointly or in the immediate proximity of each other.

13. Communications of aviation large units (units) with coordinating formations (large units) of ground troops are established: by radio, through forward command posts, through operational groups or through ground control and target designation officers of aviation large units who come to control points of ground troop formations (large units) with their own radio means; by wire and radio-relay communications lines, through signal centers of coordinating formations (large units) of ground troops and through signal centers of higher headquarters.

14. Communications of aviation large units (units) with coordinating missile large units (units) are established: by radio, directly by the means of each of the coordinating large units (units); by wire and radio-relay communications lines, usually through signal centers of senior commanders (higher headquarters).

15. Communications of military transport aviation with an airborne landing force are provided at the departure area for the landing, by the instructions and means of the staff of the formation employing the airborne landing force; with the departure of the airborne landing force for waiting areas and to the airfields (landing strips) for boarding (loading) and when the landing force is in flight, by the instructions and means of military-transport aviation.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

50X1

16. Communications of aviation large units (units) of front and long-range aviation coordinating with formations and large units of the navy are established: by radio, through operational groups of aviation large units or through ground control and target designation officers who come to coastal command posts of formations and large units of the navy with their own radio means; wire and radio-relay communications on shore, by the order of the commander (headquarters) organizing the coordination.

Aviation representatives who come on board ships are issued radio communications means by the commanding officers of the ships.

As a rule, communications of aircraft with submarines are carried out through shore signal centers of the navy and through signal centers of formations (large units) of front, long-range and naval aviation. Direct communications of aircraft of long-range aviation with submarines are established only for a prearranged period of time or by instructions transmitted from control points of fleets and formations (large units) of long-range aviation.

17. Communications of aviation large units (units) with coordinating large units (units) of anti-air defense troops of the country are established: by radio and mobile means of communications, by the means of each of the coordinating large units (units); by wire and radio-relay communications, by the order of the headquarters organizing the coordination.

18. Communications between large units (units) of fighter aviation and anti-aircraft means, as well as between fighters in the air and control points of anti-aircraft means, are established: by radio, through the forward command posts and through operational groups of fighter aviation large units arriving with their own radio means at control points of commanders of anti-air defense troops of ground forces' formations. Here, radio communications of the commander of anti-air defense troops with control points of anti-aircraft artillery are effected on his means, while communications with control points of fighter aviation large units and with fighters located in the air are effected on the means of forward command posts and of operational groups of aviation large units; large units (units) of anti-aircraft artillery and anti-aircraft guided missiles are warned about the location

-11-

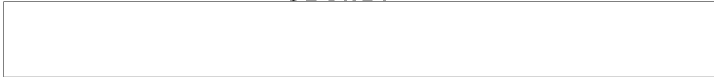
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

and operations of friendly fighter aviation by the information radio net, organized by the chief of the anti-air defense troops of the formation. In addition, control points of large units (units) of anti-aircraft artillery and anti-aircraft guided missiles tune their receivers in to the control radio net of fighter aviation.

19. Communications between aircraft of coordinating aviation large units (units) of branches of the Armed Forces are effected over radio nets whose composition and operating procedure are determined by the headquarters organizing the coordination.

Communications between aircraft of front fighter aviation and of fighter aviation of the anti-air defense of the country are effected by radio on a common frequency of coordinating large units of fighter aviation.

Communications between aircraft of front, bomber, long-range, mine-torpedo and military-transport aviation are effected by radio on a common frequency of the coordinating large units.

Communications of fighter aircraft with the airplanes (helicopters) of large units of other arms of aviation being covered can be effected by radio on the frequencies for controlling fighter aviation large units (units), on the frequencies for the coordination of fighter aviation, or on frequencies specially allocated for these purposes.

20. Communications between control points of large units (units) of the various arms of aviation are organized on the order of the commander or of the commanding officer (headquarters) organizing the cooperation, and are effected: by radio, in the coordination radio net of the higher headquarters or in the radio nets (radio links) organized by the coordinating aviation large units; by wire and radio-relay communications, usually through the signal center of the higher headquarters; by mobile means of communications, by the means of each coordinating large unit (unit).

Communications between control points of coordinating fighter (fighter-bomber) aviation large units (units) are established: by radio, in the ground radio nets of control points of fighter aviation; by radio-relay and wire, directly or through the signal

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

centers of the higher headquarters.

Responsibility for the timely establishment of communications is levied /2 or 3 words missing/ higher headquarters on the commanding officer (headquarters) of one of the coordinating large units (units).

21. In order to transmit warning signals about the air enemy, special radio nets are organized on the order of the higher headquarters; and, when necessary, use is made, regardless of any operating procedure, of the radio, radio-relay and wire communications of the aviation large unit (unit, subunit), as well as of the signaling means of communications.

In addition, in order to receive reports from the nearest radar posts (centers) of antiair defense, radio receivers at the control points of the aviation large unit (unit) are tuned in to the reporting radio net (radio link) of this post (center); and, in individual cases, direct radio and wire (radio-relay) communications are set up with them.

22. The most important requirements levied against communications and radiotechnical support are: timeliness in establishing communications and organizing radiotechnical support; continuous operation of communications and means of radiotechnical support; speed and security of communications and radiotechnical support.

23. Timeliness in establishing communications and in organizing radiotechnical support is achieved by:

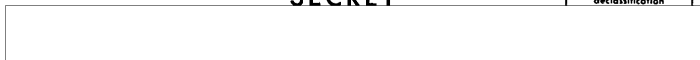
-- the assignment of tasks by the chief of staff (commanding officer) to the chief of communications, taking into account the time needed to organize communications and radiotechnical support;

-- the adoption of measures to organize communications and radiotechnical support;

-- the employment of such means and methods of organizing communications and radiotechnical support that will permit, under given conditions, the establishment of communications and the carrying out of radiotechnical support measures in the stipulated periods of time;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

-- the assignment of tasks to communications and radiotechnical support units and subunits and the issuance of instructions to headquarters of subordinate aviation (aviation-technical) large units (units, subunits), taking into account the time needed for the organization of communications and radiotechnical support;

-- the timely informing of flight personnel concerning the necessary data on communications and radiotechnical support;

-- the constant readiness of communications and radiotechnical support units (subunits) to carry out assigned tasks, and a display of initiative and skill in operations by all the personnel of communications and radiotechnical support units (subunits).

24. Continuity in the operation of communications and radiotechnical support means is achieved by:

-- the utilization of the means of communication and radiotechnical support in accordance with their tactical-technical qualities and with the conditions of the situation;

-- the comprehensive employment of the various means of communication and radiotechnical support, as well as the creation of alternate communications on the most important axes with the use of duplicating means of radiotechnical support;

-- the constant 2 to 4 words missing/communications and radiotechnical support units (subunits) for carrying out assigned tasks;

-- the constant availability of a reserve of communications means and of radiotechnical support means;

-- the timely putting into operation of signal centers and means of radiotechnical support;

-- the proper organization for the displacement of the means of communications and radiotechnical support when aviation large units and units change bases and when control points are displaced;

-- the carrying out of a maneuver by the forces and means of communications and radiotechnical support during combat operations;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

-- the carrying out of technical measures that ensure the stable operation of the means of communication and radiotechnical support;

-- the carrying out of measures to protect radio and radio-relay communications and the means of radiotechnical support from enemy radio jamming;

-- the carrying out of measures for the protection of forces and means of communications and radiotechnical support from atomic weapons and other means of mass destruction;

-- the quick repair of damages to signal centers, communications lines and means of radiotechnical support;

-- the protection and defense of signal centers, stations, and lines, as well as the means of radiotechnical support.

25. Speed in establishing communications and in organizing radiotechnical support is achieved by:

-- the employment of means and methods in the organization of communications and radiotechnical support that permit the carrying out of the transmission of orders and instructions /one line missing/ data, as well as the detection and definition of coordinates and the identification of airplanes (helicopters) within set periods of time;

-- the employment of high speed apparatuses and of apparatuses with automated (automatic) systems;

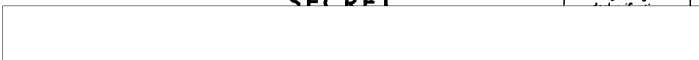
-- the employment of multichannel means of communications;

-- knowledge on the part of commanding officers, staff officers and flight personnel concerning the tactical-technical capabilities of the means of communications and radiotechnical support and the ability to use these means in accordance with the situation;

-- the ability on the part of commanding officers to use documents and means of communications for the secure control of troops and the ability to conduct conversations briefly;

SECRET

GROUP 1
Excluded from automatic
downgrading and



50X1-HUM

SECRET

50X1-HUM



50X1

-- the employment of prearranged short signals for transmitting reports, commands and information;

-- a high level of training on the part of personnel of communications and radiotechnical support units (subunits) ;

-- knowledge on the part of personnel concerning the location of message centers to which combat documents are delivered;

-- the location of terminal equipment of communication and radiotechnical support directly in the working areas of the control point crew.

26. Security in communications and radiotechnical support is achieved by:

-- maintaining the strictest secrecy concerning the organization of communications and radiotechnical support;

-- employing scrambling devices for conversations and transmissions;

-- employing high speed apparatuses and reducing to the maximum possible degree the transmission time of the means of communications and radiotechnical support;

-- limiting or completely prohibiting the use of some of the means of communications and radiotechnical support for definite periods of time, depending on the situation;

-- limiting the number of persons permitted to conduct conversations over technical means of communications;

-- a high degree of vigilance, personnel discipline, communications discipline, and radiotechnical support discipline;

-- carrying out measures for radio camouflage and for the camouflaging of areas where means of communications and radiotechnical support are located.

27. Communications and radiotechnical support discipline consist of the strict observance of the prescribed operating procedure for communications and

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

radiotechnical support; and the fulfilment of requirements of regulations, manuals, rules, and instructions, as well as the directions of commanding officers (commanders) who define the organization and the procedure for using communications and the means of radiotechnical support.

Communications and radiotechnical support discipline are achieved by:

-- a high level of training of commanding officers, staff officers of aviation large units one line missing on questions of communications and radiotechnical support;

-- a sound knowledge and observance of existing regulations concerning traffic and conversations over means of communications, and of the prescribed procedure for using the means of communications and radiotechnical support;

-- the strict observance of the regulations for secure troop control;

-- the establishment of strict control over the use of communications and the means of radiotechnical support.

Commanding officers and chiefs of staffs are obliged to demand the observance of communications and radiotechnical support discipline and to educate subordinates on a continuing basis in the spirit of unswerving fulfilment of all the requirements of discipline.

28. Radio camouflage is a combination of measures designed to hinder enemy radio intelligence in its attempts to discover the organization of communications and radiotechnical support and the location of control points and airfields, and in its attempts to receive data which would reveal the composition and the activity of our aviation.

The basic radio camouflage measures are:

-- the employment of methods of radiotechnical support, organization of radio communications and carrying out of radio traffic, as well as methods of designating and changing radio data, that will

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM

[Redacted]

[Redacted]

50X1

ensure the greatest security under specific conditions;

-- depending on the situation, limitations on transmissions by ground and aircraft radiotechnical means, including the checking of radio communications at airfields prior to take-off, during take-off and during the landing of aircraft;

-- the observance of communications and radiotechnical support discipline;

-- the employment of high speed apparatuses and other measures for reducing transmission time;

-- the operation at low power of radio sets and other means of radiotechnical support;

-- the employment of directional antennas;

-- the removal of the medium and high power transmitting equipment of the communications and radiotechnical means of support beyond the limits of control points and airfields;

-- the organization of dummy radio nets and radio links, the transmission of false commands, instructions and reports over any radio net or radio link, and the organization of the work of roving means of radio communications and radiotechnical support in accordance with prescribed operational camouflage measures;

-- a high degree of vigilance and discipline on the part of personnel.

29. In order to carry out the tasks of organizing communications and radiotechnical support, each chief of communications must have, in any situation, a reserve of forces and means of communications and radiotechnical support and must constantly look after its replenishment.

30. A maneuver by forces and means of communications and radiotechnical support is effected by using reserves and regroupings of forces and means to carry out new tasks that arise in the course of combat operations.

31. In order to ensure secure troop control and

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

[Redacted]

SECRET



50X1-HUM



50X1

convenience in conducting conversations over radio, radio-relay, telephone and telegraph sets and over radiotechnical support means, code names and call signs are assigned and a uniform procedure is established for addressing documents transmitted over communication means.

Call signs are also assigned for commanding officers, commanders, responsible staff personnel, and commanding officers of aircraft crews.

The procedure and time schedules for changing call signs are established by the higher headquarters.

Radio Communications

32. The radio is one of the basic means of communications, and for controlling aviation in the air it is the only means capable of ensuring continuity of control under complex conditions of the air situation.

Radio communications permit the carrying out of rapid transmissions of combat orders, instructions, reports and signals simultaneously to a large number of commanding officers, staffs, control points, airfields and airplane (helicopter) crews.

33. When organizing and supporting radio communications, it is essential to take into consideration:

-- the possibility that the transmission will be intercepted and that intentional radio jamming will be created by the enemy;

-- the possibility that the enemy will be able to determine the locations of transmitting radio sets with the aid of radio direction finder stations;

-- the dependence of stable radio communications on atmospheric and local electrical interference at the reception point, and also on the conditions of radio wave passage;

-- the possibility of mutual interference created by the operation of friendly radio and radio-relay sets and radiotechnical means.

When organizing radio communications, particular

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

attention must be devoted to measures for protecting it from radio jamming by the enemy.

34. Depending on the situation and on the availability of forces and means, radio communications can be organized on radio links and radio nets.

The radio link is a method of organizing radio communications between two commanding officers (control points, headquarters), wherein each of them is given a radio set that operates on radio data established for this radio link.

A radio net is a method of organizing radio communications between several (three or more) commanding officers (control points, headquarters), wherein each of them is given a radio set that operates on radio data, established for this radio net.

In aviation large units and units the radio net is the most prevalent method for organizing radio communications between ground control points (headquarters), control points and airplanes (helicopters), as well as between crews of airplanes (helicopters) in the air.

Operations in a radio link can be organized on a single frequency or on different frequencies for transmission and reception.

Depending on the use for which it is intended, the operation of a radio net can be organized on a common frequency or on different frequencies for transmission and reception, on one call sign and on several operating frequencies, and on standby reception frequencies and transmitter frequencies (combined radio net).

In case of need, radio communications can also be organized by mutual participation in radio nets and by using an intermediate radio set.

35. In order to organize radio communications the higher headquarters establishes the operating procedure for radio means and assigns radio data, frequencies, radio set call signs, radio recognition signals, keys and radio documentation.

In order to ensure communications between coordinating

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

troops, it is necessary to assign frequencies that are in the bands of the radio sets of all coordinating large units (units).

Radio recognition signals are employed to establish the affiliation of radio sets.

The use of arbitrary radio data is prohibited.

Changes of radio data are carried out on the order of the higher headquarters.

Essential radio data must be drawn up for subordinate large units (units, subunits) in a manner that would give them the capability of carrying out communications not only with the senior commanding officer (headquarters) but with the next lower echelon.

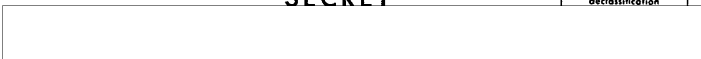
36. In the resubordination of an aviation large unit (unit) during combat operations, the chief of communications of the formation (large unit), of which the aviation large unit (unit) is a part, is obliged to send radio data immediately to the chief of communications of the resubordinated aviation large unit (unit) and to indicate the operating procedure of the radio means.

37. Radio communications between control points (headquarters), and also between control points and airplanes (helicopters) in the air, may be effected directly or through intermediate radio sets. Intermediate radio sets are employed in those cases when direct communications cannot be carried out because of the inadequate range of operation of radio sets or because of unfavorable conditions for radio wave passage, when working on radio sets with different bands, when strong radio interference is present, and when needed for purposes of camouflage. Intermediate radio sets can effect the transduction or relay of transmissions. In aviation large units (units), airplane (helicopter) relays may be used for these purposes.

38. In each radio net and radio link, the radio set of the senior commander or the higher headquarters is the main one. The main radio set in the coordination radio nets and radio links is designated by the headquarters organizing the coordination.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM

[Redacted]

[Redacted]

50X1

All requirements of the main radio set must be fulfilled immediately by the radio sets of the radio net (radio link).

39. Attached to the commanding officer of the aviation large unit /I line missing/ must always be radio sets. Radio communications of the commanding officer of the large unit are ensured through these radio sets, one of which must be constantly tuned in to the radio net of the senior commander (higher headquarters) and the other to the radio net of the commanding officer (headquarters) of the large unit (unit).

All the radio operations of the subordinate and coordinating aviation large units (units, subunits) must know the call signs of the radio sets of the commanding officers (commanders) by heart.

40. In order to increase the security of radio communications operations, it is necessary to maintain strict communications discipline and radio control.

The chief of communications is responsible for the organization and maintenance of control over all radio nets and radio links organized by his instructions.

Control over the observance of communications discipline is effected by the main radio sets of the radio sets and radio links, by radio control points, and by specially allocated control radio receivers that record, as a rule, on magnetic tape.

Commanding officers and commanders at all levels must take immediate measures to suppress violations of communications discipline and rules of secure troop control in radio operations.

41. Protection of radio communications from radio jamming created by the enemy is achieved by:

- the organization of several radio circuits on one link, with the use of radio sets with different bands;
- the use of radio equipment with high interference-killing features, and the use of special equipment;
- switching to alternate frequencies with the

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

[Redacted]

SECRET



50X1-HUM



50X1

simultaneous change of call signs;

-- the organization of secure radio nets (radio links) which are used to ensure control in cases of neutralization by the enemy of radio communications in the main radio nets (radio links);

-- the use of more powerful radio sets in the main radio nets (radio links), by the employment of directional antennas, and by changes in the transmission band and in the mode of operation of radio sets;

-- the conducting of radio traffic through intermediate radio sets;

-- the use of bypass routing of radio communications;

-- the detection and destruction of enemy radio jamming stations.

42. The detection of radio jamming stations located on enemy territory is carried out by direction-finding by the means of radio intelligence. The destruction of detected stations is carried out by artillery and missile fire or by aviation strikes on the orders of the higher headquarters.

The detection and destruction of radio jamming stations, dropped into our troop disposition areas by the enemy, are carried out by specially allocated teams.

The destruction of enemy aircraft carrying radio jamming stations on board is carried out by missiles, by antiaircraft artillery and by fighter aircraft.

Radio-Relay Communications

43. Radio-relay means, which combine a number of the positive characteristics of radio and wire means of communications, are one of the basic means of communications and represent great capabilities for ensuring control of aviation large units and units on the ground under complex situations, during a change of aviation bases, and during a change of control points.

As a rule, radio-relay means are used independently to build radio-relay lines. In addition, they can be used

SECRET

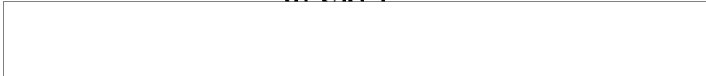


GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

for the augmentation of wire lines and radio circuits and for remote control of medium and high power radio sets.

44. Radio-relay means permit dual multichannel communications to be carried out at a high level of quality and with little dependence on the time of the year, the time of day, and on atmospheric interference.

When organizing and employing radio-relay communications, it is necessary to take into consideration its dependence on the relief of the terrain, the possibility of transmission intercepts, and the creation of radio jamming by the enemy.

45. Depending on the situation and on the availability of forces and means, radio-relay communications can be organized on a link and on an axis. In individual cases it can be organized on a net.

A radio-relay communications link is a method of organizing radio-relay communications between two commanding officers (headquarters), in which communications are effected over a separate radio-relay line set up directly between their control points.

A radio-relay communications axis is a method of organizing radio-relay communications in which the communications of a commanding officer (headquarters) with several commanding officers (headquarters) are carried out over one axial radio-relay line. The main axial line is built along the direction in which the friendly command post (headquarters) is displaced.

Communications channels of an axial radio-relay line branch out at the terminal and intermediate sets and are transmitted to signal centers of subordinate and coordinating large units (units) over wire or radio-relay connecting lines and, in individual cases, with the aid of ultrashort wave radio sets.

A radio-relay communications net is a method of organizing radio-relay communications in which the communications of a commanding officer (headquarters) with several commanding officers (headquarters) of subordinate or coordinating large units (units) are

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

carried out successively with the use of one radio-relay set.

46. In order to organize radio-relay communications, radio-relay communications data are assigned on the order of the higher headquarters: wave lengths and call signs of radio-relay sets, recognition signals, keys for documentation, and the operating schedule.

Radio-relay communications data are changed in accordance with the orders of the higher headquarters.

The employment of arbitrary data in the operation of radio-relay communications is prohibited.

47. Radio-relay communications between two commanding officers (headquarters) can be effected directly or through intermediate radio-relay sets.

Intermediate radio-relay sets are set up in those cases when direct communications cannot be provided because of the considerable distance between the terminal sets, and because of the relief of the terrain, as well as when it is necessary to allocate channels at the intermediate point.

48. On each line of radio-relay communications, the radio-relay set of the senior commander or the higher headquarters is the main one.

The main radio-relay set on radio-relay lines between coordinating large units (units) is designated by the headquarters organizing the coordination. All the requirements of the main radio-relay set must be immediately carried out by all sets of the radio-relay line.

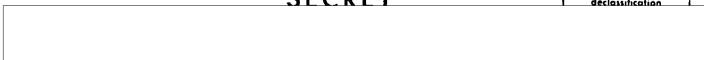
49. When organizing and providing radio-relay communications, it is essential:

-- to distribute the wave lengths among the radio-relay sets in a manner which will avoid mutual interference;

-- to select routes for radio-relay lines and deployment areas for intermediate and terminal radio-relay sets, taking into account the relief of the terrain;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

-- to move radio-relay sets forward to indicated points in a timely manner and to deploy them quickly;

-- to camouflage thoroughly the radio-relay sets from enemy air and ground observation and to take measures to protect them from atomic weapons and other means of mass destruction;

-- to guard radio-relay sets effectively;

-- to effect constant materiel and technical support of the radio-relay sets.

50. Protection of radio-relay communications from enemy radio jamming is achieved by:

-- properly selecting routes for radio-relay lines and places for deploying radio-relay sets;

-- changing operating wave lengths;

-- creating bypass communications links;

-- using high-speed equipment;

-- carrying out radio camouflage measures;

-- changing the height of the antenna and the power of the radio-relay transmitter;

-- changing the polarity and the direction of the antennas.

Wire Communications

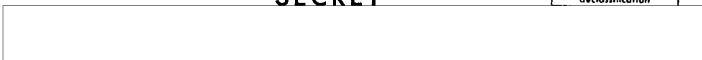
51. Wire communications are widely used to provide internal communications at control points (headquarters) and at airfields. Depending on the availability of forces and means and on the situation, wire communications are also used between control points (headquarters) and airfields.

Wire communications are effected by field and permanent cable and aerial communications lines allocated by the higher headquarters, as well as by organic equipment.

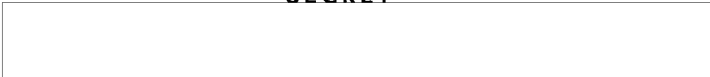
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

52. Wire means of communications ensure a high quality of communications which are not dependent on the time of day or year or on atmospheric interference. They also ensure convenience of conducting communications and relative security of conversations and transmissions /3 or 4 words missing/ with the aid of an apparatus for multiplexing several communication channels.

53. When organizing and providing wire communications, it is necessary to take into account:

-- the bulkiness of the materiel used in constructing (laying) communications lines;

-- the need for a large number of forces and means for constructing (laying), for operational servicing, and for guarding communication lines;

-- the comparatively low speed in the construction (laying) of communication lines;

-- the great vulnerability of communications lines to atomic bursts, aviation strikes and artillery fire of the enemy, and the complexity of constructing (laying) them in contaminated terrain.

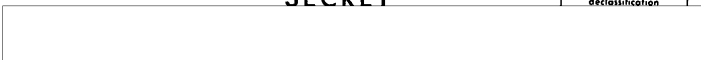
54. Depending on the situation and on the availability of forces and means, wire communications can be organized on a link or on an axis.

A wire communications link is a method of organizing wire communications between two commanding officers (headquarters) in which communications are effected over a wire line laid (constructed) directly between their control points.

A wire communications axis is a method of organizing wire communications in which the communications of a commanding officer (headquarters) with several commanding officers (headquarters) is effected over one axial wire line. The main axial line is laid (constructed) along the direction of the displacement of the friendly command post. As a rule, a wire communications axis is used for communications with the forward command post and with commanding officers (headquarters) of large units (units) operating along the axis of the main strike, with adjacent troops, and with rear area control points; and

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification.



50X1-HUM

SECRET

50X1-HUM



50X1

during a move of the command post (headquarters) to a new location, it is also used for communications with the old command post.

In addition, a wire communications axis can be laid in aviation for the communications of an aviation formation with airfield basing centers for bomber, transport and reconnaissance aviation.

On a communications axis there are organized: auxiliary signal centers, control-testing points, and repeater stations to which connecting communications lines are laid (constructed) from control points of subordinate or coordinating large units (units).

55. In order to safeguard wire communications lines from damage while they are being laid (constructed), use is made of the protective features of the terrain and of trenches and connecting trenches; and at the approaches to signal centers and on routes of transport and tank movement, communications lines are buried in the ground and are thoroughly camouflaged.

Television Communications

56. Television communications are effected with the aid of television equipment over special channels of electrical communications. Television communications permit stationary and moving objectives to be viewed at a distance by receiving their images on a screen.

57. In the troops, television communications are employed to transmit observations on the deployment and movement of friendly and enemy troops, of combat and special equipment /1 to 3 words missing/ by artillery, missile and bomb bursts, and to transmit combat documents (maps, diagrams, photographs and textual documents).

In addition, it can be used to observe the terrain and to transmit images of the persons conducting conversations.

58. Television communications ensure speed and authenticity in the receipt of data on the situation and control over the combat operations of friendly troops.

When organizing television communications, it is

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

necessary to take into account:

-- the dependence of the sharpness of transmitted images on lighting;

-- the possibility that the enemy may intercept transmissions and create interference;

-- the dependence of the range of transmissions on the relief of the terrain or on the flight altitude of the airplane (helicopter) with the television equipment;

-- the dependence of the angle of view on the optical devices employed.

59. In order to organize television communications, a combination of television equipment is employed consisting of television cameras, relay and reception points, and receiving-transmitting points. Also, special communications channels are allocated.

Television cameras are intended for the observation and transmission of images, and the transmission of the speech, of the observer over special channels of electrical communications. They are installed on the terrain (in trenches and slit trenches), on motor vehicles and in armored objectives, as close to the objective being observed as possible. They are also installed in airplanes (helicopters).

Relay points are intended for receiving television and sound transmissions from television cameras and relaying them to television reception points. They are located on the terrain with consideration given to ensuring geometrical visibility between the antennas of television cameras (reception points) and the relay point.

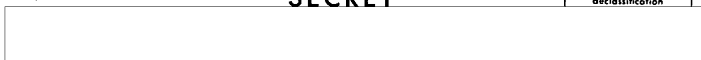
Reception points are intended for the reception of television and sound transmissions. They are installed in control points of large units and formations.

Receiving-transmitting points are intended to provide video communications and the transmission of documents. They are installed at control points.

60. Depending on the situation and on the available means, television communications are organized on

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

television links and on a system of television relay centers.

When organizing television communications on a link, the transmission of images and the accompanying sound are effected directly from the television camera to the reception point.

When organizing television communications on a system of television relay centers, the transmission of images and the accompanying sound are effected from a group of television cameras to the relay center, from which any of the transmissions are relayed to the reception point.

In any method of organizing television communications, the television cameras can be located either for forming a solid line of observation or for the separate observation of small sectors of the terrain (separate objectives).

Special Types of Communications

61. Special types of communications include telemechanic, telemetric and telecode communications carried out on radio, radio-relay and wire communications channels.

62. Telemechanic communications are used to provide semiautomatic or automatic control of piloted and pilotless means from a distance.

63. Telemetric communications are employed for the automatic transmission of the results of geophysical, meteorological and other measurements to control points.

64. Telecode communications are employed for the transmission (reception) of information, coded commands and separate signals between automatic and automated control devices.

Communications by Mobile Means

65. Communications by mobile means are widely used in all types of troop combat activity to deliver combat and other service documents.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

or a circular route.

68. Mobile means of communications are dispatched from message centers in accordance with the timetable for sending documents.

Exceptions to sending documents according to the timetable are made on orders of the chief of communications of the large unit (unit).

69. The safekeeping of combat and other service documents sent through message centers is ensured by:

-- the clear-cut organization of the work of message centers and the strict observance of the rules for sending and receiving documents;

-- guarding the message centers, and the documents en route to being delivered;

-- the delivery of documents strictly along routes established for the mobile means of communications.

In cases of necessity, on orders of the chief of staff of the large unit (unit), a special guard is assigned to persons delivering documents.

70. Landing strips are prepared in the area of the large unit control point in order to send and receive liaison airplanes (helicopters).

Communications by Signaling Means

71. Signaling means are employed in all types of troop combat activity for transmitting short commands /2 to 4 words missing/ orders, target designations, delineation of front lines, support for the coordination of units and subunits, and warnings.

Visual signaling means, sound, infrared and radio-technical means are employed as signaling means.

Signals received visually may be used for communications of airplane (helicopter) crews, between themselves, and with control points (airfields).

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

72. Signals must be simple, easily remembered, and clearly distinguishable from one another. Warning signals must be especially distinct. There must be limitations on the number of signals used.

73. Signals for coordination and mutual recognition are established, as a rule, by the higher headquarters.

Signals which indicate the location of troops and the front line must be known to all coordinating large units (units, subunits) and flight personnel.

Radiotechnical Support

74. Radiotechnical support is organized in all aviation formations, large units and units, taking into consideration the nature of their combat activity. Moreover, the area where an aviation large unit is based contains systems and means of radiotechnical support, and airfields are equipped with systems or individual several words missing.

75. When organizing radiotechnical support, it is necessary to anticipate:

-- the need to create continuous radio navigational and radar fields at definite altitudes within prescribed boundaries;

-- the proper location of the means of radiotechnical support and the capability of controlling them reliably;

-- the protection of the means of radiotechnical support from radio jamming;

-- the possibility of using the radiotechnical support means of coordinating formations, large units and units;

-- the determination of the procedure and operating data of the means of radiotechnical support and their timely delivery to subordinate aviation large units (units, subunits) and flight personnel;

-- the creation of the necessary reserve and the capability of maneuver by the means of radiotechnical support, depending on the situation and the tasks being performed;

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

-- the continuous materiel and technical support of units (subunits) of communications and radiotechnical support.

Signal Centers

76. A signal center is an organizational-technical communications means formation, deployed in a specific place to support the communications of a large unit (unit, subunit).

The most important conditions for ensuring continuous communications are the proper location, the timely deployment, camouflaging, preparation from an antiatomic standpoint and the efficient operation of signal centers.

77. Signal centers are subdivided into field and stationary ones.

Field signal centers are deployed in a designated place for the period of time that they provide communications from that point. In order to save time in deployment and in order to increase maneuverability, mobile field signal centers are employed.

Stationary signal centers are prepared in special premises (structures).

78. As to their designation, signal centers are divided into signal centers of control points and auxiliary signal centers.

79. The signal center of the command post of an aviation large unit (unit) is the main signal center and is deployed so as to ensure the communications of the commanding officer and headquarters of the large unit (unit) with the senior commander and the higher headquarters, with the commanding officers and headquarters of subordinate and coordinating large units (units, subunits), with the forward command post (operational group) of their large unit, with airplanes (helicopters) in the air, and with the command post (headquarters) of the aviation-technical large unit (unit).

80. The signal center of the forward command post is deployed to ensure communications for the commanding officer of the aviation large unit with the senior commander, with the command post (headquarters) of his large

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

50X1

unit, with the commanding officer of the formation (large unit) of the ground forces (navy) being supported or covered, with commanding officers of subordinate and coordinating large units (units, subunits), and with airplanes in the air. The signal center of the forward command post must be highly mobile. When organizing communications from the forward command post, special attention must be devoted to ensuring continuous communications with airfields where subordinate units (subunits) are based.

81. The command post signal center of an aviation-technical large unit (unit) is deployed in order to provide communications for the commanding officer (headquarters) of the aviation-technical large unit (unit) with the senior commander, with the commanding officers (headquarters) of the aviation large units (units) being supported, with the commanding officers (headquarters) of subordinate rear area units (subunits), and with installations.

82. Auxiliary signal centers are deployed to increase the stability and maneuverability of communications, to create bypass radio and radio-relay links and wire communications, to increase the effectiveness of multi-channel radio-relay and wire equipment, and to ensure communications with the commanding officers (headquarters) of large units (units) which are located at a considerable distance from the command post or which are moving.

Auxiliary signal centers are assigned the following tasks:

-- allocating communications channels which are set up on radio-relay and wire communications lines, by links to large units' (units') control points, with which communications are effected through the auxiliary signal center;

-- providing radio-relay and radio communications with commanding officers (headquarters) of large units (units), that are moving;

-- effecting a maneuver by communications channels created on radio-relay, radio and wire lines (links, axes and lateral lines (rokada)) and setting up bypass and tandem communications channels;

-- coupling channels of radio-relay, wire and radio communications.

-35-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

83. Auxiliary signal centers are located in places where it is necessary to concentrate a large number of communications channels and from where it is more convenient to use them for communications with control points of subordinate and coordinating troops: on links and on axial communication lines, at the intersections of the lines of communications of an axis and of links with lateral lines, and in the rear area.

84. During combat, reserve signal centers can be set up, when necessary, in those areas to which the control points of aviation large units (units) will move.

85. A signal center may include:

- a radio group;
- a group of radio-relay sets;
- a telephone station;
- a long distance communications station;
- a telegraph station;
- a signal center terminal room (kross);
- a power supply station;
- a cable desk;
- a message center;
- a landing strip.

86. The equipment which an auxiliary signal has depends on its intended purpose and may include:

- radio-relay and radio sets;
- telephone and telegraph equipment;
- multiplexing and voice-frequency carrier telegraphy equipment;
- switching devices and power sources.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

Depending on the affiliation, the designation and the situation, some elements of signal centers may be consolidated or may be lacking. In addition, other special equipment may be included in the preparation of a signal center.

87. A radio group is intended for ensuring radio communications and consists of radio sets, radio receivers, and switching devices.

The radio means of a radio group can be used separately or in a centralized manner.

In the separate use of radio means, each radio set operates independently in receiving and transmitting over a definite radio net (radio link) directly or through a radio telephone switchboard, irrespective of the work of the other radio sets of the radio group.

In the centralized use of radio means, reception in radio nets (radio links) is conducted at the radio reception point (radio reception center); and for transmission, radio sets (radio transmitters) are used grouped in the radio transmitting point (radio transmitting center) and located at a distance from the radio reception point. Control 1 line missing radio reception point (radio reception center) over connecting lines with the aid of switching devices; here, each transmitter can be operated in any radio net.

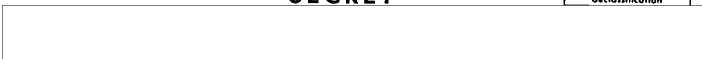
The centralized use of radio equipment permits the ensuring of radio communications with the minimum number of radio transmitters, and the improvement of control over the work of radio communications.

In the centralized use of radio means, it is necessary to anticipate the possibility that the individual radio sets will be operated independently.

88. Radio reception points (individual receivers) and portable radio sets are located directly at the signal center close to the main departments (sections) of the headquarters; automobile radio sets are located in such a manner that they will not disclose the control point of the aviation large unit (unit) and will not create mutual interference.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

89. The radio means of operational groups and of ground control and target designation officers of aviation large units arriving at the control points of combined-arms formations and large units are located in the area of these control points in strict accordance with the directions of the chiefs of communications of combined-arms formations or large units.

90. A group of radio-relay sets is intended for the support of radio-relay communications. Radio-relay sets should be located in a manner that they will not create mutual interference, will not be subject to interference from other means /1 line missing/.

91. A telephone station is intended to provide telephone communications and is equipped with telephone switching equipment.

A telephone station is located in a manner that will permit the internal communications lines to be as short as possible.

When deploying several telephone stations of various arms of troops at one control point, the telephone station of the signal center of the combined-arms formation (large unit) is the central telephone station.

92. A long-distance communications station is intended to provide long distance telephone communications. The following activities are carried out at a long distance communications station: the multiplexing of communications lines by high frequency telephonic equipment; the creation and allocation of audio frequency telegraphic channels; the amplification of long distance low frequency telephone communications and directing them to subscribers.

The long-distance communications station is located in a manner that will permit connecting lines to the terminal room of the signal center and to the telephone station to be as short as possible.

If a long-distance communications station is not to be set up, the amplifier, the high-frequency telephonic equipment, and the audio frequency telegraphic equipment are deployed at the telephone station.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

93. A telegraph station is intended to provide telegraphic communications. It is equipped with telegraphic and facsimile equipment and may be composed of several instrument rooms (apparalnaya). In addition, secrecy equipment for telegraphic communications is installed at the telegraph station.

The telegraph station is located near the operational department (section) of the headquarters.

94. A signal center terminal room is intended to provide the switching of circuits: wires and telegraph channels of wire, radio and radio-relay communications; and it is equipped with line switching and measuring equipment.

Connected into the switchboard of the terminal room are the wire communications lines and the connecting lines from the telegraph station, the long distance communications station (telephone station) the power supply station, a radio group, and a group of radio-relay sets.

95. A power supply station is intended to provide electric power for station equipment located at the signal center. It is equipped with electrical assemblies, storage batteries, electrical rectifiers and distributing devices.

The power supply station is located near the terminal room and the telegraph station.

96. A cable desk is intended to receive telegrams (radiograms) for transmission from departments (sections) of the headquarters and to deliver telegrams (radiograms) to the departments (sections) of the headquarters.

The cable desk is located near the telegraph station or jointly with it.

97. A message center is intended to receive, send and deliver combat and other service documents and consists of a cable desk and a group of mobile communications means.

98. A landing strip is prepared in areas that are convenient for the take-off and landing of liaison airplanes (helicopters) at such a distance from the control point that the arriving and departing liaison airplanes

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

(helicopters) will not disclose the location of the control point.

Camouflaging and Guarding Signal Centers and Stations and

Means of Radiotechnical Support

99. The camouflaging of signal centers and stations and means of radiotechnical support is achieved by:

- locating signal centers and stations and means of radiotechnical support in areas concealed from enemy observation;
- using issued and improvised means of camouflage;
- arranging the approaches of wire lines to signal centers by a cable laid underground;
- using low-lying and underground antennas;
- limiting the movement of persons and transport in the disposition areas of signal centers and means of radiotechnical support;
- strictly observing light discipline.

The camouflaging of signal centers, stations and lines and means of radiotechnical support is effected by the forces and means of the units (subunits) of communications and radiotechnical support. The most difficult camouflage work requiring special preparation is carried out by special rear area subunits.

100. In order to confuse the enemy intelligence and to increase the stability of radiotechnical support, dummy positions of means are created /I line missing/ both by the operating stations and by their dummies.

The selection and preparation of dummy positions are effected in accordance with general camouflage measures.

101. The guarding of signal centers and the means of radiotechnical support is effected according to the general plan for guarding and defending control points

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

and airfields of an aviation large unit (unit). The direct guarding of elements of a signal center and means of radiotechnical support deployed separately is effected by units (subunits) of communications and radiotechnical support.

Signal centers and stations and the means of radio-technical support are guarded around the clock.

Protection from Atomic Weapons and Other Means of Mass

Destruction

102. Protection from atomic weapons and other means of mass destruction is organized for the purposes of: preventing or reducing to a minimum the destruction by the enemy of the forces and means of communications and radiotechnical support; of ensuring their uninterrupted operation; and of preserving the combat efficiency of units and subunits of communications and radiotechnical support.

103. The chiefs of staffs of aviation ² to 7 words missing are responsible for the organization of measures for the protection of the means of communications and radiotechnical support from atomic weapons and other means of mass destruction.

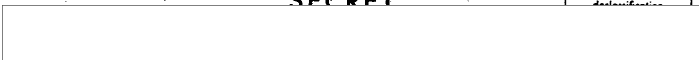
The chiefs of communications and the commanding officers of units (subunits) of communications and radio-technical support are responsible for the exact and timely execution of measures for the organization of protection. They are also responsible for the organization of the actions of the personnel of communications and radiotechnical support units (subunits) after warning signals are given and when removing the aftereffects of an enemy attack.

104. As a rule, in order to protect signal centers from atomic weapons and other enemy means of mass destruction, they are set up in closed structures prepared by the forces and means which carry out the preparation of command posts from an antiatomic standpoint. Shelters are prepared for radar and radio beacon means which are located separately.

105. Protection from atomic weapons and other

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

means of mass destruction includes:

-- warning communications and radiotechnical support units (subunits) and signal centers and stations about the danger of an atomic attack, a chemical attack, radioactive contamination, and the employment of bacterial means by the enemy;

-- setting up shelters for personnel and for the means of communications and radiotechnical support;

-- conducting radiation, chemical and bacteriological reconnaissance;

-- providing units and subunits with means of protection and carrying out measures to protect personnel from injury by toxic and radioactive substances;

-- carrying out sanitary-hygienic and special prophylactic measures;

-- eliminating the aftereffects of the enemy employment of weapons of mass destruction.

106. Warnings are given to communications and radiotechnical support units (subunits) and to signal centers and stations about the danger of an atomic attack, a chemical attack, radioactive contamination and the employment of bacterial means by the enemy, through the duty officer for communications and radiotechnical support (communications duty officer). As soon as it is received, the warning signal is immediately transmitted to the personnel in the prescribed manner.

107. The engineer preparation of shelters and positions for signal centers and stations and for means of radiotechnical support, as well as for the locations of communications and radiotechnical support units (subunits), is the basic measure that ensures the uninterrupted work of communications and means of radiotechnical support and the safeguarding of the combat efficiency of units (subunits) under conditions of enemy employment of atomic weapons and other means of mass destruction.

In the departure area for the offensive, and in the defense, the communications means and the ground radar

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

and radio beacon means of the forward command points of the operational groups, and of the ground control and target designation officers of an aviation large unit must, as a rule, locate in shelters.

During combat operations, when there is not enough time for engineer preparations, signal centers and stations and the means of radiotechnical ^{line} missing with the compulsory use of the protective features of the terrain.

108. In the interests of protecting signal centers and stations and means of radiotechnical support from fires and from the effects of light radiation of an atomic burst, as well as from enemy incendiary means, shelters are equipped from a fire prevention standpoint and are equipped with fire fighting equipment. The terrain in the vicinity of the shelter is cleared of highly inflammable objects and materials.

109. Radiation, chemical and bacteriological reconnaissance are conducted by all communications and radiotechnical support units and subunits while they are carrying out tasks of establishing and supporting communications. They also conduct such reconnaissance in their disposition areas, for which specially trained observers (dosimeter operators) are assigned. In addition, communications and radiotechnical support units (subunits) use the data from radiation, chemical and bacteriological reconnaissance of the headquarters of aviation and aviation-technical large units (units).

110. Protection of the personnel of communications and radiotechnical support units (subunits) from injury by radioactive and toxic substances and by bacterial means is ensured by the skillful and timely use of individual means of protection and of shelters prepared from an antichemical standpoint; also, by controlling the exposure and contamination of personnel and by limiting the time spent in the contaminated area.

During prolonged operations of communications and radiotechnical support units (subunits) in contaminated terrain, it is essential to provide for alternating rest periods for personnel, to organize the feeding of personnel in uncontaminated terrain, and to carry out

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

the periodic relief of subunits.

When carrying out the work of setting up communications and organizing radiotechnical support, contaminated areas of the terrain, depending on the situation and the degree of contamination, are either bypassed or negotiated by using individual means of antichemical protection. As soon as the situation permits after leaving the contaminated area, steps are taken for the sanitary processing of personnel and the decontamination, degassing and disinfection of equipment, armament and transport.

111. For purposes of antibacteriological protection of communications and radiotechnical support units (subunits), the following is anticipated:

- the maintenance of the appropriate sanitary-hygienic conditions in the disposition areas of units and subunits and of centers, stations and means of radiotechnical support;
- the strict observance by personnel of the rules of personal hygiene and of the prescribed manner of using foodstuffs and drinking water;
- the carrying out of preventive inoculations for personnel by order of the senior commander.

112. The removal of the aftereffects of atomic weapons and other means of mass destruction employed by the enemy is done for the purpose of reestablishing as quickly as possible the uninterrupted work of communications and means of radiotechnical support in accordance with the assigned tasks.

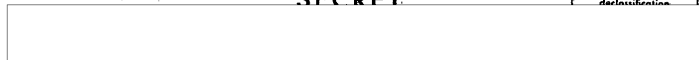
This is achieved by:

- effecting a maneuver by the forces and means of communications and radiotechnical support;
- carrying out emergency repair and rescue work and medical evacuation measures at signal centers, stations, and lines and at the means of radiotechnical support;
- extinguishing fires in signal centers and stations and in disposition areas of communications and

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

radiotechnical support units (subunits);

-- giving immediate aid to the injured and medical observation of personnel who were subjected to bacteriological means or who received a radiation dose above the permissible limits;

-- the sanitary processing of personnel and the decontamination, degassing, and disinfection of armament, equipment, engineer structures, uniforms, equipment and terrain;

-- purifying water and rendering food harmless;

-- conducting dosimetric control;

-- combating insects and other carriers of contagious diseases;

-- replacing personnel, communications equipment and ground means of radiotechnical support of communications and radiotechnical support units (subunits) which were subjected to attacks;

-- restoring the reserve of communications and means of radiotechnical support.

Reconnaissance of the Means of Communications, the Means of Radiotechnical Support and the Terrain

113. Reconnaissance of the means of communications and the means of radiotechnical support is conducted for the purposes of: establishing the availability and the condition of the local means in the new basing area of the aviation large unit (unit) and the possibilities of using them for communications and ground radiotechnical support; discovering equipment and depots left by the enemy; determining the means of communications and the means of radiotechnical support employed by the enemy and his methods of using them; and for discovering radio jamming stations;

Reconnaissance of the terrain is carried out for the purpose of obtaining the necessary information about its special features that influence the establishment and maintenance of communications and the organization

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

[REDACTED]

[REDACTED]

50X1

of radiotechnical support: the configuration, soil, protective features and passability of the terrain; the presence and nature of natural barriers and shelters, roads, and landing strips for liaison airplanes (helicopters); and the presence and nature of areas for the procurement of poles for permanent overhead communications lines.

114. The chief of communications of an aviation large unit (unit) organizes reconnaissance of communications means, of radiotechnical support means, and of the terrain in the new basing area of the aviation large unit, assigns reconnaissance tasks to commanding officers of communications and radiotechnical support units, and issues instructions to subordinate chiefs of communications.

115. Reconnaissance of communications means, of radiotechnical support means and of the terrain is conducted directly [4 to 6 words missing] communications and radiotechnical support when they carry out their tasks, and also by groups (teams) specially assigned by the chief of communications.

In necessary cases, tasks for the reconnaissance of means of communications and radiotechnical support are carried out by airplanes (helicopters) at the request of the chief of communications and on the order of the senior commander.

116. Reconnaissance of communications means, of radiotechnical support means and of the terrain is effected by a direct examination of the airfields of the new basing area and of the terrain. In addition, necessary information can be obtained by studying maps, photographs, and military-geographic descriptions of the area of combat operations; by studying intelligence information and documents of the means of communications and radiotechnical support captured from the enemy; and by participating in the interrogation of prisoners and defectors and in the questioning of the local population.

117. When constructing (laying) communications lines and equipping signal centers, control-testing points and stations, and when distributing means of radiotechnical support, it is necessary to carry out engineer reconnaissance for the purpose of detecting mine barriers in work areas and also to conduct radiation reconnaissance.

-46-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

[REDACTED]

SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

118. Information received from the reconnaissance of communications means, of radiotechnical support means and of the terrain, is taken into account when organizing communications and radiotechnical support, and is given to the higher chief of communications.

New models of communications means, radiotechnical support means, and radio jamming /1 or 2 words missing7 of the enemy, as well as information on their use by the enemy, are immediately submitted to the higher chief of communications.

Communications and Radiotechnical Support Troops

119. Communications and radiotechnical support troops of the air forces are special troops and are designated for the performance of the following basic tasks:

- timely establishment and maintenance of continuous communications that ensure the control of aircraft;
- radar support of the control of aircraft;
- radio beacon support of combat operations (flights) of aviation under ordinary and complex meteorological conditions during day and night;
- ensuring the operations of automated (automatic) systems of aircraft control.

120. The successful execution of tasks assigned to communications and radiotechnical support troops is achieved by:

- high political morale among communications and radiotechnical support troops, their constant combat readiness, a high level of training and skill in operating under conditions of enemy employment of atomic weapons and other means of mass destruction;
- harmony in the operations of communications and radiotechnical support subunits;
- the timely assignment of tasks to communications and radiotechnical support subunits;
- the firm and continuous direction of communications and radiotechnical support troops in the

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

[Redacted]

50X1-HUM

SECRET

50X1-HUM



50X1

performance of their tasks;

-- the timely materiel and technical support of communications and radiotechnical support units (subunits).

121. In the air forces the communications and radiotechnical support troops consist of communications and radiotechnical support troop units (subunits) and communications and radiotechnical support units under army or central subordination.

The composition of communications and radiotechnical support troops also includes units (subunits) of automated control systems, military postal installations and workshops for the repair of the means of communications and radiotechnical support.

122. Communications and radiotechnical support troop units (subunits) are intended for the support of communications and radiotechnical support in aviation (aviation-technical) large units (units) and at airfields.

Army communications and radiotechnical support units are intended for the support of the communications of an aviation formation; and, jointly with troop units (subunits), also for the radiotechnical support of air navigation, bombing, guidance of airplanes (helicopters) to ground (sea) targets (landing strips), and for the detection, recognition and ensuring the guidance of aircraft to air targets.

In individual cases, army units may be used to reinforce communications and radiotechnical support troop units.

123. Communications and radiotechnical support troops are equipped in accordance with their designation, with means of communications and radiotechnical support, and have radio, radio-relay, line, telephone, telegraph, radar, radiotechnical, beacon and military-postal subunits in their composition.

124. When planning communications and radiotechnical support, the basic organizational units are:

-- for radio and radio-relay subunits, the crew (station);

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

-- for telephone and telegraph subunits, the platoon, squad, team (station);

-- for line subunits, the company, platoon, squad, team;

-- for radar subunits, the center, group, post, crew (station);

-- for radiotechnical and beacon subunits, the system, platoon, crew (station);

-- for mobile means subunits, each unit of mobile means (airplane, helicopter, motorcycle, automobile and other means);

-- for radio jamming subunits, the group, point, crew (station).

Jamming of Enemy Radio and Radio-Relay Communications and

Radiotechnical Means

125. The suppression of the work of enemy radio and radio-relay communications and radiotechnical means by jamming represents a part of overall radio countermeasures. Jamming is created in accordance with the general radio countermeasures plan designed to disorganize enemy troop control and to create the most favorable conditions for the combat operation of friendly aviation.

Radio jamming is created in all types of troop combat activities, as a rule on the main axis of operations of friendly and enemy troops and is employed suddenly and in mass.

126. Radio jamming is effected by the forces and means of units (subunits) special designation, and also by crews of airplanes (helicopters) of all arms of aviation which have jamming equipment. In addition, on the order of the higher headquarters, use may be made of adapted organic means of communications and means of radiotechnical support.

Aviation large units (units) may use organic or attached jamming means.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

[Redacted]

[Redacted]

50X1

Necessary initial data on the radio and radio-relay communications and on the organization of the enemy employment of those radiotechnical means that are to be suppressed by jamming, are obtained from all types of intelligence, and mainly from radio intelligence.

127. When jamming, it is necessary to provide for measures that will preclude the disruption of friendly radio and radio-relay communications and of the work of friendly radiotechnical support.

-50-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

[Redacted]

SECRET

50X1-HUM



50X1

Chapter 2

Direction of Communications and

Radiotechnical Support

General Principles

128. Direction of communications and radiotechnical support consists of the timely execution of measures for the organization and support of uninterrupted communications and radiotechnical support during the preparation and course of combat operations.

The chiefs of staffs of all levels effect the general direction of communications and radiotechnical support. The immediate direction is effected by the chief of communications.

Direction of communications and radiotechnical support provides for:

-- the maintenance of constant combat readiness of communications and radiotechnical support units and sub-units and high political morale on the part of personnel;

-- the planning of communications and radiotechnical support;

-- the timely assignment of tasks for establishing communications and organizing radiotechnical support to communications and radiotechnical support units (subunits), as well as to subordinate chiefs of communications;

-- the organization of the preparation of the forces and means of communications and radiotechnical support for the fulfilment of assigned tasks;

-- the organization of uninterrupted operations of communications and radiotechnical support means under various conditions of the situation;

-- the timely restoration of the communications and radiotechnical support reserve as well as the replacement of losses in personnel and in the means of communications and radiotechnical support;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

-- the organization of the protection of forces, means and structures of communications and radiotechnical support from atomic weapons and other means of mass destruction;

-- the execution of measures for the protection of communications and radiotechnical support means from enemy reconnaissance and jamming;

-- the materiel and technical support of communications and radiotechnical support units and subunits;

-- the control over the condition and use of communications and radiotechnical support in aviation large units and units;

-- the organization and the execution of combat and political training of the personnel of communications and radiotechnical support units and subunits.

129. The chief of communications of an aviation large unit (unit) is the immediate chief of the personnel of communications and radiotechnical support units (subunits) that are organizationally part of the large unit (unit) and attached to it.

The chief of communications has the right to issue instructions to subordinate chiefs of communications on questions of communications and radiotechnical support, special preparation, and the materiel and technical support of communications and radiotechnical support units (subunits).

All the work of the chief of communications must be carried out in close coordination with the chiefs of departments (sections) of the staff and with the chiefs of services.

130. The chief of communications must:

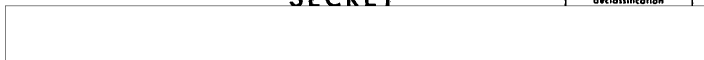
-- know the combat mission of the large unit (unit), the decision made by the commanding officer, the ground and air situation, and the disposition areas of the control points of the senior commander of his own large unit (unit) and of coordinating formations, large units and units;

-- plan communications and radiotechnical support in large units (units) in advance, and also work out orders for communications and radiotechnical support;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

-- assign tasks to commanding officers and officials of communications and radiotechnical support units (subunits) and direct their work;

-- give necessary instructions to subordinate chiefs of communications in a timely manner;

-- control the condition of communications and radiotechnical support in an aviation large unit (unit, sub-unit), the timeliness of transmission (delivery) of combat documents and messages by communications means and the fulfilment of the requirements of concealed troop control when utilizing means of communications;

-- take immediate measures to restore disrupted communications and ensure uninterrupted operations of radio beacon and radar means;

-- organize proper utilization and operation of camouflaging and secrecy devices;

-- develop data for the organization of all types of communications and radiotechnical support and call signs for officials, and participate in the development of pre-arranged message codes and signal tables;

-- organize the protection of radio and radio-relay communications and of radiotechnical support means from enemy jamming;

-- organize reconnaissance of the means of communications and radiotechnical support;

-- organize the protection of forces and means of communications and radiotechnical support from atomic weapons and other means of mass destruction;

-- organize the carrying out of exercises of communications and radiotechnical support with the flight personnel and staff officers;

-- provide communications and radiotechnical support data for flights and overflights to crews flying past;

-- direct the combat and political training of communications and radiotechnical support units (subunits);

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

-- organize the recording of additions and changes to the lists and regulations for the radio beacon support of flights, and inform aviation large units (units) about these additions and changes in good time;

-- study and collate the combat experience of units and subunits on the organization of communications and radiotechnical support and inform the personnel of the general conclusions in a timely manner;

-- plan the support of aviation large units (units, subunits) with means of communications and radiotechnical support, and organize the repair of equipment and check on its constant combat readiness, its proper use, upkeep, storage, and accounting;

-- direct the work of the military postal service.

131. The chief of communications must maintain a working map on which the following are entered: disposition areas of control points, signal centers and means of radiotechnical support; lines of radio-relay and wire communications; routes for the mobile means of communications; message centers; landing strips for liaison airplanes (helicopters); mail exchange points; disposition areas of the communications and radiotechnical support reserve; the line of the front and the dividing lines of formations;

132. The direction of the work on the disposition, deployment and operation of the means of communications and radiotechnical support is the responsibility of the commanding officers of communications and radiotechnical support units (subunits). The direct management of this work is given to the chief of the signal center, the chief of the radar center (post), the communications and radiotechnical support duty officer (communications duty officer) and the chiefs of the axial link and the communications links.

133. The commanding officer of the communications and radiotechnical support unit (subunit) bears full responsibility for the constant combat readiness and the timely 2 to 4 words missing 7 tasks assigned to the unit (subunit).

He is obliged:

-- to know at all times the situation and the condition of communications and means of radiotechnical support;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

-- to prepare subunits for the fulfilment of assigned tasks and to provide them with the essential materiel means;

-- to direct the work performed by the unit (sub-unit) and to control the timeliness and quality of this work;

-- to direct moves of signal centers and means of radiotechnical, support, and their placement and preparation when changing control points and basing areas;

-- to exercise control over engineer preparations of shelters and positions for signal centers and stations and means of radiotechnical support;

-- to organize the protection of the forces and means of communications and radiotechnical support of the unit (subunit) from atomic weapons and other means of mass destruction;

-- to maintain the communications and radiotechnical support reserve in constant readiness for operation;

-- to direct the combat and political training of the unit (subunit) as well as the study and collation of combat experience;

-- to take measures to replenish units (subunits) with personnel, materiel and equipment;

-- to ensure the maintenance of communications equipment and means of radiotechnical support in good repair, their proper safekeeping, operation /2 to 4 words missing/.

134. The staff of a communications and radiotechnical support unit organizes its work in accordance with the requirements of the Manual on the Field Service of Staffs, taking into account the special features of the tasks being carried out by communications and radiotechnical support troops.

Besides its general duties, the staff of a communications and radiotechnical support unit is assigned;

-- the preparation of calculations, diagrams, tables and documents on communications and radiotechnical

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

support in accordance with the instructions of the chief of communications;

-- the supplying of officials of communications and radiotechnical support subunits with maps, instructions, tables of call signs, diagrams, radio data, prearranged message codes, and other documents that are necessary to carry on the service;

-- the accounting of the forces and means of communications and radiotechnical support that are in operation or in the reserve;

-- the organization and maintenance of the guarding and the defense of communications and means of radiotechnical support centers (stations) and their preparation from an antiatomic and antichemical standpoint;

-- the organization of the disposition, camouflaging, guarding, and defense of communications and radiotechnical support units;

-- the organization of the relocation of the unit (subunit) to new disposition areas;

-- the organization of combat and political training of personnel as well as the study and collation of the experience of the unit's work.

135. The chief of a signal center is responsible for the timely deployment and the technically correct preparation, operation and relocation of the signal center. He is also responsible for ensuring conversations and the passage of documents through the signal center. All the personnel who service the signal center are subordinate to the chief of the signal center.

He must:

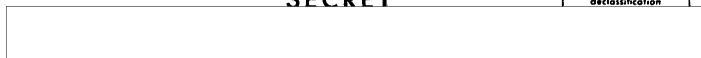
-- direct the deployment, preparation, camouflaging and relocation of all elements of the signal center and organize the internal telephone communications of the control point;

-- direct the work of the signal center personnel, provide them with the documents necessary to carry on service, and look after the condition, maintenance and operation of

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

the means of communications deployed at the center;

-- know the condition of communications; and take immediate measures to restore disrupted communications and report this fact to the chief of communications and to the commanding officer of the unit;

-- take measures to remove the aftereffects of weapons of mass destruction employed by the enemy;

-- control the proper procedure and timeliness of sending, receiving and delivering documents which pass through the signal center and keep a record of them;

-- know how the guarding and the defense of the signal center are organized.

136. The chief of the radar center (post) of an aviation large unit (unit) is responsible for the timely deployment and the constant combat readiness of ground radar means, and for the timely transmission of air situation data to the control point.

On questions of employing radar means for the control of aircraft, the chief of the radar center (post) carries out the instructions of the chief of the command post.

The chief of the radar center (post) is obliged:

-- to know the situation and the task being performed by the large unit (unit);

-- to direct the work of personnel in providing the command post of the large unit (unit) on time with data on air targets and friendly aircraft in the radius of operation of the radar means;

-- to control and ensure the maintenance of radar means in constant combat readiness;

-- to direct the work of the selection of positions and of the relocation of radar means to a new area;

-- to organize and control the guarding and defense, and the camouflaging and engineer preparation, of the positions of radar means;

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

50X1-HUM



SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

-- to organize the protection of radar means from enemy jamming and from weapons of mass destruction;

-- to direct the combat and political training of personnel, and to study and collate the experience of the work of the center (post).

137. The duty officer for communications and radiotechnical support is appointed from the officers (NCOs) of the communications and radiotechnical support unit (subunit). He keeps track of the condition of communications and radiotechnical support; and he is responsible for receiving, sending and delivering combat documents (messages) on time, for switching the radiotechnical support means on and off, and for ensuring that conversations take place on time.

In regard to sending and receiving combat documents, he carries out the instructions of the operational duty officer; and on questions of using the means of radiotechnical support, he carries out the instructions of the command post duty officer.

The duty officer for communications and radiotechnical support must:

-- know the organization and the condition of communications and radiotechnical support in the aviation large unit (unit); and take immediate measures for the restoration of disrupted communications, for the elimination of shortcomings in the work, and for the replacement of faulty means of radiotechnical support;

-- report immediately to the chief of communications concerning any disruption of communications or breakdowns in the functioning of radiotechnical support means, the steps taken to restore communications, and the resumption of operation of communications and radiotechnical support means;

-- know the disposition areas of the control points of the large unit (unit), of the coordinating large units (units) and of the senior commander;

-- control the readiness for operation of the means of communications and radiotechnical support;

-- receive requests for the operation of means of radiotechnical support; report such needs to the chief of

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification.

[Redacted]

50X1-HUM

SECRET

50X1-HUM



50X1

communications and issue commands for switching on these means;

-- know the time of take-off and landing of aircraft for which means of communications and radiotechnical support are ordered;

-- direct the work of the duty shift of the signal center;

-- ensure that conversations are conducted and that combat documents and messages are received and sent (delivered) on time; and also control the work of those means of radiotechnical support which were ordered, including those ordered from on board an aircraft;

-- know the signals for combat alerts and for warnings of an air enemy and of an atomic or chemical attack by the enemy; the procedure for transmitting these signals; and the operating procedure at the signal center when these signals are received;

-- see that camouflaging at the signal center is observed;

-- conduct time checks at the signal center.

The duty officer for communications and radio-technical support must have instructions, a schedule for sending documents, tables of call signs, communications diagrams, diagrams for the placement of radiotechnical means, prearranged message codes and signal tables, the necessary regulations and registers for the radio beacon support of flights, and a list of the personnel permitted to conduct conversations. The communications and radiotechnical support duty officer maintains a daily chart of the condition of communications and a log of radio beacon support of flights.

To aid the duty officer for communications and radiotechnical support, assistants may be appointed for radio and radio-relay communications who will be responsible for the condition of radio and radio-relay communications and who will direct the work of the duty shift of the radio group and the group of radio-relay sets.

When there are no means of radiotechnical support in the large unit (unit), a communications duty officer is appointed.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

138. The officer in command of a communications link (axial link) is responsible for the timely establishment and maintenance of communications on the link (axis).

The officer in command of a communications link (axial link) must:

— know the location of control points with which he is maintaining communications and the direction of their relocation during combat operations;

— carry out reconnaissance of the link along which the communications line will be laid (erected), conduct engineer, radiation and chemical reconnaissance, and carry out reconnaissance of the means of communication;

— lay (erect) wire and radio-relay lines of the communications link (axial link); deploy auxiliary signal centers and intermediate stations on the axis in accordance with the assigned task;

— organize the servicing of lines, the guarding and defense of auxiliary signal centers and stations being deployed on the link or axis, and their engineer preparation and protection from weapons of mass destruction;

— have a communications reserve and constantly take care of [22 lines missing] .

[new heading]

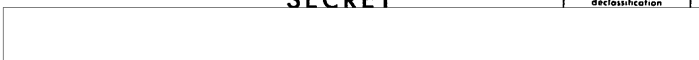
139. [7 lines missing] when determining the locations and the procedure for deploying means of communications and radiotechnical support, as well as when determining measures to ensure the uninterrupted operation of communications, radio beacon and radar means.

In order to plan communications and radiotechnical support, the chief of communications must know the situation, the task of the aviation large unit (unit) and the decision of the commanding officer; he must study the instructions of the chief of staff and the directives on communications and radiotechnical support of the higher headquarters; and he must evaluate the situation on communications and radiotechnical support.

140. The chief of communications receives data on the task and nature of the forthcoming combat operations of the aviation large unit (unit) from the commanding officer or the chief of staff. In addition, he receives data on the situation from departments (sections) of the staff and from the chiefs of services.

SECRET

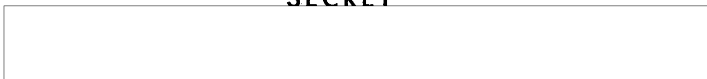
GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

When evaluating the communications and radio-technical support situation, the chief of communications studies and takes into account:

-- the operations of the enemy that influence the stability of communications and radiotechnical support;

-- the combat composition, the basing and the nature of the forthcoming operations of his aviation large unit (unit), as well as the procedure for supporting coordination during combat operations;

-- the condition of communications and radio-technical support in the aviation large unit (unit);

-- the condition and the materiel support of communications and radiotechnical support units (subunits) and the possibility of using local means;

-- the nature of the terrain in the area of the forthcoming operations (relief, natural barriers, roads);

-- the influence of weather and the time of day and year, and the probable condition of the ionosphere;

-- the availability of time for the organization of communications and radiotechnical support;

-- the possibility of using data obtained by the radiotechnical means of ground troops (navy), antiair defense troops, missile troops and other aviation large units and units;

-- the procedure for organizing communications with the higher headquarters and the instructions for support during combat operations.

The chief of communications must always be ready to present his proposals for the organization of communications and radiotechnical support and the location of control points to the commanding officer and the chief of staff.

141. On the basis of the decision of the commanding officer, on the basis of the instructions of the chief of staff and the directives for communications and radiotechnical support of the higher headquarters, and on the basis of the evaluations of the situation, the chief of communications develops a plan of communications and radiotechnical support.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

The procedure for distributing and using radio-technical means is determined jointly with the chief (senior) navigator. When there is time the chief of communications carries out reconnaissance for the purpose of developing in detail on the terrain the conditions of the organization of communications and radiotechnical support.

142. The communications and radiotechnical support plan consists of:

-- in an aviation large unit - a radio communications diagram worked out on a separate form; diagrams of wire and radio-relay communications and of communications by mobile means; diagrams of the locations and operating zones of the means of radiotechnical support; and a chart for the dispatch of documents;

-- in an aviation unit - diagrams of radio and wire communications and a diagram of the locations and operating zones of radiotechnical means of support.

In an aviation-technical large unit a communications plan is developed which consists of: a diagram of radio communications worked out on a separate form; diagrams of wire and radio-relay communications and of mobile means of communications; and a chart for the dispatch of documents.

The diagrams of wire and radio-relay communications and of mobile means of communications and the diagram of the locations and operating zones of the means of radiotechnical support are, as a rule, worked out on maps.

Estimates of the forces and means of communications and of the means of radiotechnical support, plus other necessary data, are presented on diagrams (maps) with a legend.

The communications and radiotechnical support plan is made up in a single copy. It is approved by the chief of staff and is the working document of the chief of communications.

The chief of communications of the aviation large unit (unit) presents the diagrams of the locations and operating zones of the means of radiotechnical support to the higher chief of communications.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET



50X1-HUM



50X1

Under no circumstances should the drawing up of the plan slow down the work of organizing communications and radiotechnical support.

143. The chief of communications of an aviation large unit organizes the work of subordinate chiefs of communications concerning the coordination of communication and radiotechnical support problems between the coordinating units (large units).

This work is ensured to the greatest degree by the personal coordination of problems of organizing communications and radiotechnical support in coordinating units (large units) that have common tasks, or by sending officers of the communications department (section) to subordinate and coordinating units (large units).

All the necessary data on communications and the data on the operation of radiotechnical means must be transmitted to the coordinating units (large units) in a timely manner.

144. When organizing communications and radiotechnical support with a limited amount of forces and means it is necessary:

-- to make broader use of the methods of organizing wire communications along an axis, radio-relay along an axis and a net, radio communications on a radio net, and communications with mobile equipment on circular routes;

-- when possible, to use the radiotechnical means of the ground troops (navy), of the antiair defense troops of the country, of the missile troops, and of other aviation large units (units);

-- to use local means of communications and radiotechnical support;

-- to employ centralized control of radio transmitters and to organize the work of radio sets according to a schedule.

The Assignment of Tasks and the Direction of Communications and Radiotechnical Support During Combat Operations

145. On the basis of the plan of communications

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

and radiotechnical support and of the order of the higher headquarters, the chief of communications of a large unit works out an instruction for communications and radiotechnical support.

The instruction on communications and radiotechnical support is the basic document that includes the necessary directives for the staffs of subordinate large units (units) for organizing communications and radiotechnical support.

The instruction on communications and radiotechnical support indicates:

-- the location and time of readiness of signal centers of control points and the direction of their re-location;

-- the organization of communications with the subordinate large units (units) that provide ground radio-technical means (with whom, by what means and methods communications are organized, where the auxiliary signal centers, radio-relay points and intermediate stations are deployed), the time when communications will be ready and the procedure for supporting them during combat operations;

-- the organization of communications between coordinating large units (units);

-- the organization and procedure for ensuring communications with aircraft and between 2 to 7 words missing;

-- where, when and what ground radiotechnical means must be deployed and prepared for operations, the procedure for using them and for ordering them from the ground and from aircraft in the air;

-- the procedure for using the means of communications and radiotechnical support of the higher headquarters and of adjacent and coordinating large units (units);

-- the procedure for warning subordinate and supporting units about the threat of an air enemy attack, about the danger of an atomic or chemical attack, and about radioactive contamination and the employment of bacteriological means by the enemy;

-- the directives for ensuring secrecy in the operation of the means of communications and radiotechnical

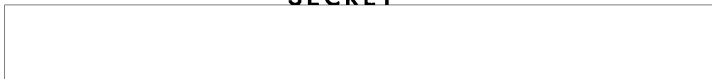
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

means, the procedure for using camouflaging and secrecy devices, and the measures for the protection of radio-technical means from all types of reconnaissance and enemy jamming;

-- the procedure for organizing and using communications and ground radio beacon means during flights;

-- the procedure for moving means of communications and ground radiotechnical means during the time that the aviation large unit is changing its base;

-- the procedure for using local communications and radiotechnical means;

-- time schedules for introducing new communications and radiotechnical support data;

-- the procedure for checking the time;

-- the time and place for exchanging mail;

-- the procedure and time limits for presenting reports on communications and radiotechnical support.

Added to the instruction on communications and radiotechnical support are:

-- a table of the composition of radio nets and radio links, with radio data for communications on the ground and in the air;

-- data for organizing radio-relay communications;

-- data for organizing ground radio communications in subordinate aviation large units (units);

-- the keys for prearranged message codes and code words, and the procedure for using them;

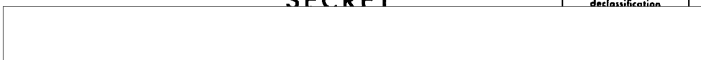
-- the call signs of officials, centers and stations, and indices of flight personnel;

-- a listing of the ground radiotechnical means, indicating their location and their operating data.

146. Data for the operation of communications and radiotechnical support means include;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

-- for radio means - operating frequencies, call signs, the conditions and type of operation, prearranged signals for requests;

-- for wire means of communications - the call signs of telephone-telegraph stations and the numbers of lines and channels;

-- for radio-relay means of communications - the call signs of stations, the frequencies, the numbers of the channels and their designation;

-- for beacon means - the condition and type of operation, and the prearranged signal for requests;

-- for pyrotechnical means - the form of signals, the color of signals, the operating conditions, the call sign, and the prearranged signal for requests;

-- for infrared means - the condition of operation, the call sign, the prearranged signal 2 words missing:

147. The instruction on communications and radiotechnical support is signed by the chief of staff and the chief of communications of the aviation large unit. In the aviation large unit (formation) the data for radio and radio-relay communications and the operating data for means of radiotechnical support may, when needed, be transmitted to the units (large units) in the form of separate directives under the signature of the chief of communications.

148. The instruction on communications and radiotechnical support is sent out to the chiefs of staff of subordinate large units (units) and is submitted to the higher headquarters. Coordinating large units (units) receive excerpts from the instruction which apply to them.

The instruction for communications and radiotechnical support must be sent to subordinate staffs, as a rule, simultaneously with the combat order (combat instruction).

In aviation units (subunits) directives on the organization of communications and radiotechnical support are given orally by the chief of communications; necessary data for the operation of communications and means of radiotechnical support are transmitted to the operators

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

in the form of excerpts from diagrams and from the instruction on communications and radiotechnical support of the higher headquarters.

In order to allow more time for the organization of communications and radiotechnical support, the chief of communications issues preliminary directives.

149. The procedure and operating data of means of radio beacon support are determined by lists and regulations.

The list of operating data and the location of troop means of radio beacon support of flights are worked out and issued by the staffs of the aviation formations.

Regulations for the radio beacon support of flights on aerial routes, plus identical lists of flight support means of airfields outside the routes, are worked out for the aviation of all branches of services.

150. Lists and regulations contain the following information:

- the designation of the means of radio beacon support;
- the coordinates and places where the means are installed, with an indication of nearby populated points or airfields;
- the operating data and the procedure for using and requesting means.

Those means of radiotechnical support that are part of the landing systems are assigned a tie-in with the air strip.

In addition, the lists and regulations, or the supplements to them, include a description, a tie-in, and a sketch of the airfields, as well as diagrams of the cloud cover, the approaches, and the landing schedules.

The necessary means of radio communications and the data for their operation are also included in the lists and regulations.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

Changes in the operating data and in the disposition of troop means of radio beacon support of flights are carried out by the headquarters that issue the lists with an advance report of this 1 line missing of the large units (units) to which the lists were sent.

The lists and regulations are maintained by persons appointed by the order of the commanding officer of the unit (subunit).

151. The chief of communications personally assigns tasks for establishing communications and for organizing radiotechnical support to the commanding officer of the communications and radiotechnical support unit (subunit).

Tasks for the chiefs of signal centers, axial communications links, communications links and radar centers (posts) are assigned, depending on the situation, by the chief of communications or, by his order, by the commanding officer of the communications and radiotechnical support unit (subunit).

152. When assigning a task to a commanding officer of a communications and radiotechnical support unit (subunit), the chief of communications indicates:

- the necessary data on the situation;
- the places, the time of deployment, and the procedure for moving signal centers and means of radiotechnical support;
- with whom, with what means and methods, and by what time communications have to be established;
- the communications and means of radiotechnical support reserve and its location;
- the procedure of engineer preparation, camouflaging, guarding and defense of signal centers, stations and lines and of means of radiotechnical support; and the measures for their protection and for the protection of personnel from weapons of mass destruction;
- the procedure for protecting communications and means of radiotechnical support from enemy reconnaissance

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

and jamming;

-- the procedure for providing officials and communications and radiotechnical support subunits with the documents and data that are essential for the work of communications and radiotechnical means, the time for putting them into operation, and the replacement procedure;

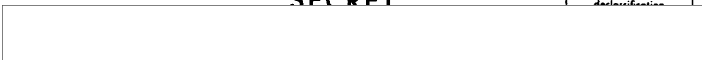
-- the measures for materiel and technical support of communications and radiotechnical support subunits in order to enable them to carry out their assigned tasks.

In addition, the commanding officer of the unit (subunit) is given the disposition areas, the procedure for moving units (subunits), and the measures for combat training.

153. When assigning tasks to the officer in charge of the signal center, the following are indicated:

- the necessary situation data;
- the forces and means allocated for the deployment of the signal center;
- the location, time and procedure of deployment and of engineer preparation and camouflaging of the signal center;
- with whom, with what means and methods, and by what time communications have to be established; the officers in charge of communications links and their tasks for establishing communications;
- the procedure for organizing internal communications of the control point;
- the chart for the dispatch of documents;
- the procedure for changing the call signs of telegraph and telephone stations, and for changing radio data and radio-relay communications data;
- the restrictions on the use of communications;
- the measures for protecting communications from enemy reconnaissance and jamming;

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

-- the procedure for moving the signal center and for transferring communications to the new signal center;

-- the procedure for guarding the signal center;

-- the schedule and procedure for checking communications.

154. When assigning tasks to the chief of a communications link (axial link), the following are indicated:

-- the necessary data on the situation;

-- the forces and means placed at the disposal of the officer in charge of the communications link (axial link);

-- the disposition areas of the control points of the friendly aviation large unit (unit) and the direction of their relocation;

-- with which commanding officer (headquarters) communications are to be maintained, his location, the time by which communications should be ready, and the procedure for providing communications during combat operations;

-- the direction along which communications lines are to be laid (erected), the number of circuits (channels) on it, the places for deploying auxiliary signal centers and intermediate stations, and the procedure for using local means of communications;

-- the sending and receiving procedure for connecting lines which lead from links to a communications axis;

-- the tasks for reconnaissance of means of communications;

-- the call signs of stations and officials;

-- the time limits for submitting reports.

155. When assigning tasks to the officer in charge of the radar center (post), the following are indicated:

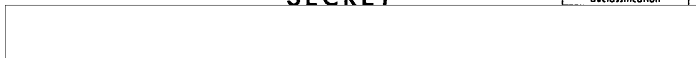
-- the necessary data on the situation;

-- the disposition areas of control points;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

-- the time by which the radar means are to be ready for operation and the procedure for relocating them during combat operations;

-- the restrictions on the operation of radar means and the measures for camouflaging and protecting them from enemy reconnaissance and jamming;

-- the measures for engineer preparation, camouflaging, guarding and defense;

-- the measures for flying around zones of visual observation (when necessary);

-- the procedure for materiel and technical support;

-- the time limits and procedure for submitting reports.

156. When assigning tasks to the officer in charge (commanding officer of a subunit) of an automated (automatic) system, the following are indicated:

-- the necessary data on the situation;

-- the time and place of deployment and the composition and procedure for moving centers (stations, posts, points) of an automated (automatic) system;

-- the procedure for organizing communications;

-- the measures for engineer preparation, camouflaging, guarding and defense;

-- the procedure for materiel and technical support;

-- the readiness of the system for operation;

-- the time limits and procedure for submitting reports.

157. In the course of combat operations, depending on the situation, the chief of communications, introduces necessary changes into the organization of communications and radiotechnical support, directs the work of

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

subordinate /I line missing/chiefs of signal centers and communications links. He also controls the work of subordinate chiefs of communications of large units (units, subunits), and gives them the necessary directives on questions of communications and radiotechnical support.

In this case, particular attention is devoted to:

-- ensuring the uninterrupted operation of communications and radiotechnical support means when moving control points of one's own and subordinate large units (units, subunits), as well as during abrupt changes in the situation;

-- providing communications between coordinating large units (units, subunits);

-- moving out of the communications reserve and the means of radiotechnical support on time to points that are convenient for use and from which they can be brought quickly into operation;

-- providing timely materiel and technical support to communications and radiotechnical support units (subunits) and replacing the expended reserve.

158. The chief of communications of an aviation large unit (unit) submits a report on communications and radiotechnical support to the senior chief of communications by a specifically set time. This report includes:

-- an evaluation of the condition and operation of communications and means of radiotechnical support, interruptions in the operation (the duration and causes) and the measures taken to restore communications and the operation of the means of radiotechnical support;

-- changes in the location of ground radiotechnical means of the friendly aviation large unit (unit);

-- data on the jamming of radiotechnical means by the enemy (on which frequencies, the nature of the jamming, and the degree of influence on operations);

-- losses in personnel and in communications and radiotechnical means;

-- captured communications and radiotechnical means.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

Chapter 3

Political Work in Communications and Radiotechnical Support Units (Subunits)

159. Political work must be directed toward firmly and consistently implementing the policy of the Communist Party within the Armed Forces, raising the combat effectiveness and combat readiness of the communications and radiotechnical support unit (subunit), strengthening the political morale and military discipline of personnel, and successfully executing the tasks of establishing and maintaining uninterrupted communications and organizing radiotechnical support during combat operations.

Political work under combat conditions is organized on the basis of the decisions of the Central Committee of the CPSU and the Soviet Government, orders and directives of the Supreme High Command, and directives and orders of the Chief Political Directorate of the Soviet Army and Navy. The substance of political work under various conditions of combat activity is also determined by the combat orders of commanding officers, by the nature of combat, and by special features of the situation.

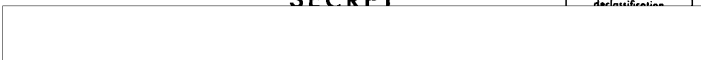
160. The commanding officer of a communications and radiotechnical support unit (subunit) is completely responsible for the political work in the unit (subunit) and for the political morale and military discipline of the personnel.

The deputy commanding officer for political matters organizes and conducts political work directly and is responsible to the unit (subunit) commanding officer and to the political organ for the state of the political work. He is obligated to direct the work of subunit commanding officers and political workers on the political and military education of their subordinates, striving for the successful performance of the tasks confronting the communications and radiotechnical support units (subunits).

161. All commanding officers (commanders) are obligated personally to conduct political and military education of their subordinates daily, relying on the Party and Kom-somol organizations, in this work and fully utilizing their

SECRET

GROUP 1 Excluded from automatic downgrading and declassification



50X1-HUM

SECRET

50X1-HUM



50X1

influence for the successful performance of the tasks confronting the communications and radiotechnical support unit (subunit).

Contact with subordinates, the comprehensive study of their political, combat, and moral qualities, personally setting an example for bravery and valor - these represent the constant duty of all commanding officers (commanders) and political workers.

162. The tasks of political work in a communications and radiotechnical support unit (subunit) are:

- rallying personnel around the Communist Party and Soviet Government; explaining to servicemen the leading and guiding role of the Communist Party;

- educating the enlisted men, noncommissioned officers and officers in the spirit of Soviet patriotism and unlimited love and devotion to the Socialist Fatherland, the Communist Party and the Soviet Government; in the spirit of friendship of the peoples of our country and of proletarian internationalism; in loyalty to the oath of allegiance, and personal responsibility for the defense of their Fatherland - the Union of Soviet Socialist Republics;

- explaining to personnel the reasons for, the nature, and the political goals of the war and the problems confronting the Armed Forces; explaining the international and the internal situation of the USSR, the superiority of the Soviet social and governmental system over the capitalist system, as well as widespread propaganda of the combat successes of the Armed Forces at the front and the labor exploits of the Soviet people in the rear;

- instilling in enlisted men, noncommissioned officers, and officers a hatred toward the enemy, faith in the righteousness of our cause and victory over the enemy, high offensive spirit, courage, initiative, ability to endure staunchly all the burdens and hardships of the combat situation, and readiness to defend the interests of the Soviet State under any circumstances and at any price;

-- maintaining in the personnel a spirit of constant readiness to act manfully and decisively in conditions of enemy employment of atomic weapons and other means of mass destruction, provide, under any conditions, the commanding

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

officer and his staff with uninterrupted communications with troops, and radiotechnical support of the control of aviation combat operations; maintaining in strict secrecy all measures concerning the employment of atomic weapons and other means of mass destruction;

-- mobilization of personnel for the timely and qualitative fulfilment of the work of equipping and using centers, stations, and lines of communications for the disposition and use of the means of radiotechnical support, as well as for the rapid shifting of communication centers and means of radiotechnical support;

-- strengthening one-man command, educating personnel in the spirit of conscientious obedience of commanders and respect for them, unquestioning and precise fulfilment of the orders of commanding officers (commanders) and constant readiness to protect them in combat;

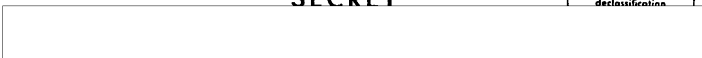
-- developing in military personnel, a faith in the strength and power of their weapons, a sense of responsibility for mastering and caring for equipment and materiel, constant striving to improve their combat skill and increase their competence, as well as practical habits in working with means of communications and radiotechnical support in conditions of radio jamming created by the enemy; explaining to personnel the necessity of studying the equipment and organization of communications and radiotechnical support of the enemy;

-- training enlisted men, noncommissioned officers, and officers in the spirit of the combat traditions of the Armed Forces, of their own large unit and unit, in the spirit of allegiance to the colors of the unit and the striving to cherish it as the apple of one's eye; strengthening military comradeship, mutual support, and help in combat;

-- educating personnel in the spirit of combat 4 to 6 words missing / Socialist Camp and propagandizing their combat successes;

-- publicizing heroic deeds of military personnel, as well as selfless, skillful actions, and actions with initiative and examples of successful fulfilment by units (subunits) of communications and radiotechnical support of tasks assigned to them; being concerned with timely encouragement and recommendation for awards to those who have

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

distinguished themselves in combat;

— educating into the personnel high vigilance and a sense of personal responsibility for safeguarding military and state security, for the secure execution of all measures of organizing communications and radiotechnical support, strict observance of discipline, precluding cases of enemy eavesdropping and interception of official conversations;

— protecting one's unit (subunit) from penetration by spies and diversionists, suppressing and exposing enemy propaganda and any enemy provocations;

— instilling in personnel a high sense of responsibility for safekeeping, accounting for, and timely dispatch and delivery of combat and official documents to addresses;

— mobilization of the personnel of military-postal establishments for uninterrupted postal support of troops, for the timely delivery of personal letters, newspapers, magazines and other types of mail to military personnel;

— taking care of uninterrupted support of personnel with all the necessities of life and combat, especially ammunition and rations, as well as providing rest and meeting the everyday material and cultural needs of enlisted men, noncommissioned officers, and officers;

— taking care of timely medical assistance and evacuation of the wounded and the sick from the battlefield, as well as organization of the burial of Soviet soldiers who have fallen in battle for the Fatherland;

— establishing and maintaining correct mutual relations between military personnel and the local population; taking care to preserve historical monuments and cultural treasures, located in the area of the unit's combat operations.

163. Political work in a communications and radio-technical support unit (subunit) must be purposeful and continuous.

This is achieved by:

— the timely assignment of tasks for political work and by instructing commanding officers and political

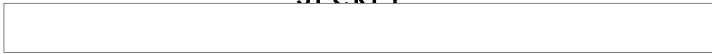
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

workers regarding the substance, forms, and methods of this work with personnel;

-- the political workers knowing the decisions that have been made and orders that have been given concerning the organization of communications and radiotechnical support;

-- the constant enlisting of a large number of Communists, members of the Komsomol, and the combat aktiv of the subunits for participation in the political work;

-- the commanding officers (commanders) and political workers daily influencing their subordinates personally;

-- strengthening Party and Komsomol organizations by correct distribution and exemplary behavior of Communists and members of the Komsomol in combat;

-- knowing the requirements and frame of mind of the personnel and by reacting to them in good time.

164. The deputy commanding officer for political matters, on the basis of the assigned task and the combat order issued to the large unit (unit, subunit), works out measures for political work during the preparation for and conduct of the operation (combat), and organizes its fulfillment.

The more complex and intense the combat situation, the more actively does the political work in a communications and radiotechnical support unit (subunit) have to be conducted.

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

Chapter 4

Supplying Troops with Equipment, Communications Materiel
and Means of Radiotechnical Support.

Technical Support

General Principles

165. The continuity of communications and radio-technical support depends, to a significant degree, on the timely and complete supply of the communications and radio-technical support units and subunits with equipment, materiel, operating and repair materials, and spare parts, as well as on the timely and efficient organization of technical support.

166. Supplying the communications and radio-technical support units and subunits with equipment and essential materiel, as well as providing them with materiel means of the other types of supply is organized and accomplished by the rear services of the aviation formation, and for ground radar means - by the artillery armament service of the front.

Supplying Equipment, Communications Materiel and
Means of Radiotechnical Support

167. Supplying units and subunits with equipment, materiel, expendable [4 to 6 words missing] apparatus, sets of spare parts, and sources of power is effected in accordance with the planned order on the basis of tables and norms in effect.

168. In order to fulfill the requirements of communications and radiotechnical support units (subunits) the following are used:

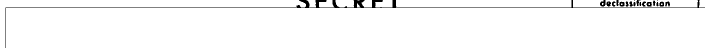
-- equipment and materiel being supplied in accordance with the order of chief of communications, the chief of the aviation formation rear services and the chief of the artillery armament service of the front;

-- equipment and materiel stockpiled in local economic organizations;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

— equipment and materiel (friendly and enemy) collected on the battlefield.

169. The items of equipment supply, communications materiel and radiotechnical support include;

- radio sets and radio receivers;
- radio-relay sets;
- ground radar detection and guidance stations;
- equipment for radar recognition and for preventing jamming;
- radar altimeters and range finders;
- automatic control and guidance systems equipment;
- radio reconnaissance and radio jamming equipment;
- field television equipment;
- telegraph, phototelegraph, and telephone equipment;
- high frequency telephone and voice-frequency telegraph equipment;
- secrecy devices telephone, telegraph, and phototelegraph transmissions;
- mobile signal centers;
- auxiliary equipment and measuring devices;
- sources of electric power supply for means of communications and radiotechnical support;
- field telephone, telegraph, and connecting cables;
- line materials for construction (laying) of permanent and field overhead and cable communications lines;
- means for mechanizing the work of constructing laying communications lines;

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

- mobile communications shops;
- radio direction-finders;
- homing radio stations;
- radio beacons;
- radiotechnical aircraft landing systems;
- navigation-landing beam systems for landing aircraft;
- ground stations of radiotechnical navigational systems;
- ground precision bombing and target approach stations;
- technical lighting equipment of airfields;
- light beacons and searchlight stations;
- means of visual signalling;
- spare parts, semiconductor and electrovacuum devices, materials, tools, and accessories for maintaining, storing, and repairing communications and radiotechnical support equipment.

170. The requirements for equipment and materiel is determined on the basis of the combat task of the aviation large unit (unit), tables in effect, and supply norms.

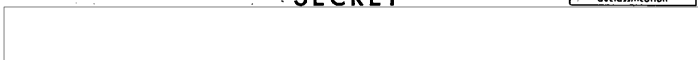
171. The chief of communications of the aviation formation works out a supply plan for all organic means of communications and radiotechnical support for the aviation and aviation-technical large units (units) that are supplied by the aviation formation. The plan for supplying these means is approved by the commander of the aviation formation.

For the remaining materiel the supply plan of the aviation formation is worked out by the departments in charge of supply jointly with the chief of communications, and is approved by the chief of the rear services.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

The chief of communications of the aviation and aviation-technical large unit and the commanding officer of the communications and radiotechnical support unit (subunit) make up estimates for supplying the units and subunits with equipment and materiel.

172. Organic communications and radiotechnical support technical materiel is issued from depots, including the depots of the chief of communications and the chief of the artillery armament service of the front, as well as from depots of the aviation-technical large units according to requisitions of supplying services in accordance with the orders of the chief of communications of the aviation formation (large unit). Issue of other equipment is carried against orders and requisitions of the supplying services.

173. The delivery of equipment and materiel is carried out by all types of transport:

— to aviation large units and units — by the means of the aviation-technical large units (units);

— to separate communications and radiotechnical support units subordinate to the army by the transport of these units.

To get motor vehicle means of communications and radiotechnical support a representative of the communications and radiotechnical support unit (subunit) is dispatched with automobile drivers.

174. Stockpiling of equipment and materiel in local administrative organizations, establishments, and industrial enterprises by communications and radiotechnical support units (subunits) may be carried out at the direction of the chief of communications of the aviation formation within the limits of funds approved and allotted for this purpose, and may be spent only for planned supply in accordance with the established norms.

175. The organization of the collection of friendly and enemy equipment and materiel in the area of combat operations is the duty of all chiefs of communications and commanding officers of communications and radiotechnical support units (subunits).

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

[Redacted]

50X1-HUM

SECRET

50X1-HUM



50X1

The collection of equipment and materiel is carried out by teams appointed by order of the commanding officer of the aviation-technical large unit (unit), which, without fail, include communications and radiotechnical support specialists 4 to 6 words missing7.

Collected materiel is concentrated in depots where, if necessary, it is subjected to decontamination, degassing, and disinfection, and it is sorted out and inventoried according to type and degree of serviceability.

Serviceable equipment and materiel are, by permission of the senior communications chief, used as replacements, and those in need of repair or surplus are given to the depots on the order of the aviation formation rear services.

176. At radio, radio-relay, radiotechnical, and power-supply stations (charging units), a minimum level supply of fuel and lubricants is created within established limits which is used only by permission of chief of communications of the aviation large unit (unit), and in individual urgent cases, - with the permission of the commanding officer of the communications and radiotechnical support unit (subunit).

Technical Support

177. Technical support in units (subunits) consists of organizing and fulfilling the proper use, servicing, and storing (safekeeping) of means of communications and radiotechnical support, as well as carrying out their timely repair and evacuation.

178. Constant good repair and readiness for work of the communications and radiotechnical support equipment are ensured by precise adherence to the operating instructions, by carrying out timely periodical inspections (routine maintenance work) and checking technical status, by having spare parts and materials for their maintenance and repair, and by timely repair.

179. Technical support is organized by the commanding officers of communications and radiotechnical support units (subunits) in accordance with instructions of senior chiefs and the requirements of instructions and manuals for technical service.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

In regard to problems of technical support, the chief of communications indicates to the commanding officer of the communications and radiotechnical support unit (subunit):

— the procedure and the time limits for preparing means of communications, means of radiotechnical support, and motor vehicle transport for the performance of impending tasks;

— the procedure for employing repair subunits, their tasks, and the location and time of their deployment during the preparation and in the course of combat operations;

— the procedure for using local enterprises and materials for repair of communications equipment and means of radiotechnical support;

— the procedure for evacuating communications equipment and means of radiotechnical support.

180. The deputy commanding officer for technical matters of the communications and radiotechnical support unit works out a unit technical support plan in accordance with the instructions of the chief of communications (commanding officer of the unit).

The technical support plan usually indicates:

— the measures for the preparation of means of transport and repair subunits for performing tasks and the scheduled time of their readiness;

— a list of means of communications and radiotechnical support subject to repair by the personnel of the unit repair elements, the volume and the time limits for performing repair work;

— the means of communications and radiotechnical support subject to repair by the personnel of the repair elements of aviation formations and repair enterprises of the artillery armament service of the front;

— the time limits and the order for carrying out periodical inspections (routine maintenance work);

— the procedure for evacuating defective and damaged equipment and turning it over to repair units.

SECRET



GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

The technical support plan is approved by the commanding officer of the unit.

181. The deputy commanding officer for technical matters, in compliance with the technical support plan, submits requisitions to the supplying elements for the requisite materiel.

182. The repair of means of communications and radiotechnical support, depending on the nature of the defects is subdivided into routine maintenance, field maintenance, and general overhaul.

183. As a rule, routine maintenance is carried out by the personnel of crews, teams, and details, and by the units' (subunits) communications and radiotechnical support repair shops.

Field maintenance is carried out in mobile communications repair shops and repair enterprises of the aviation formations, and for radar means — in repair enterprises of artillery armament of the front.

General overhaul of all means of communications and radiotechnical support is carried out in repair enterprises of the Air Forces, as well as in coordination with the chief of communications of the front — in repair enterprises of the front.

General overhaul of radar means of detection, recognition, and guidance is carried out in repair enterprises of the Chief Artillery Directorate.

184. Routine maintenance of motor vehicles on which communications and radiotechnical support equipment is installed is carried out by the forces of communications and radiotechnical support units (subunits) with the use of complete assemblies that are provided by the rear services of the aviation formation (large unit). Field maintenance and general overhaul of the chassis of these motor vehicles is carried out in repair enterprises of aviation formations for the repair of special motor vehicle transport.

185. Motor vehicle means of communications and radiotechnical support are shipped to mobile repair shops of aviation formations, to aviation-repair enterprises of the Air Forces, and also to the repair enterprises

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

of the front as, a rule, by motor vehicles that are in good repair.

186. Motor vehicle, communications and radiotechnical support equipment, depending on the situation, may be sent to the aviation-repair enterprises at the order of the chief of the Air Forces rear services by motor vehicles with defects which, after the removal of communications and radiotechnical support equipment, are turned over for repair to the repair units (plants) of the motor vehicle-tractor service.

187. Routine maintenance of radio sets and radio centers mounted on armored personnel carriers is carried out at the repair shops of units, and field maintenance and general overhaul — in mobile shops of communications and radiotechnical support aviation formations and at aviation-repair enterprises of the Air Forces.

When armored personnel carriers with medium power radio sets or with radio centers are in need of general overhaul, the radio equipment is removed, if possible, and forwarded for repair to aviation-repair enterprises of the Air Forces and the armored personnel carriers — to the appropriate repair units (to plants).

188. Routine maintenance and field maintenance of all types of gasoline generators and power supply units mounted on automobile and special diesel engines is carried out by the personnel of the communications and radiotechnical support units (subunits), and also by mobile shops of communications and radiotechnical support of aviation formations with the use of prepared assemblies provided by the rear services of the aviation formation (aviation-technical large unit).

General overhaul of all types of power plants (small displacement, automobile, and diesel engines) is carried out at motor vehicle repair bases (plants) of the aviation formation and the rear services of the Air Forces.

Field maintenance and general overhaul of electrical machinery and generators which are part of the communications equipment are carried out in the aviation-repair enterprises of the Air Forces.

Field maintenance and general overhaul of power units of ground radar equipment are carried out in repair

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

enterprises of the front and in central repair elements of the ground forces at the order of the artillery armament service of the front.

189. In order to speed up the repair of communications equipment and means of radiotechnical support in field conditions, repair brigades from the composition of the communications and radiotechnical support mobile shops are sent out directly at the order of the chief of communications of the aviation formation to the communications and radiotechnical support units (subunits).

190. Defective means of communications and radiotechnical support are evacuated to the repair elements by the forces and means of the communications and radiotechnical support units (subunits).

Evacuation of means of communications and radiotechnical support equipment to aviation-repair enterprises of the Air Forces and repair elements of the front with defective motor vehicles is carried out by the forces of the evacuation units of the motor vehicle-tractor service of the front.

191. Communications and radiotechnical support equipment are sent for repair in the following manner:

— to unit communications shops — at the order of the deputy commanding officer for technical matters;

— to mobile communications and radiotechnical support shops of the aviation formation — at the order of the chief of communications of the aviation formation;

— to an aviation-repair enterprise of the Air Forces (formation) — at the order of the chief to whom the repair enterprise is subordinated;

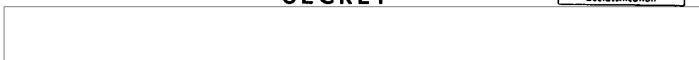
— to communications and artillery armament stationary repair enterprises of the front — at the order of the chief of communications troops and the chief of the artillery armament service of the front;

— to centrally subordinated stationary repair enterprises of communications and artillery armament — at the directive of the chief of the communications troops armament and supply directorate and the chief of the artillery armament repair and supply directorate of the

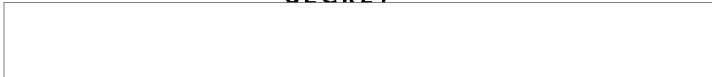
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

Chief Artillery Directorate.

192. The communications and radiotechnical support equipment sent for repair to the mobile communications and radiotechnical support shops of the aviation formation are not removed from the unit (subunit) records, and after repairs are returned to the same units (subunits).

193. Means of communications and radiotechnical support sent for repair to stationary repair enterprises of the front and enterprises of the Air Forces are removed from the unit (subunit) records, with the exception of radiotechnical landing systems, powerful radio and radio-relay sets, and ground radar detection and guidance equipment that are not removed from the unit (subunit) records, and are returned to the same units (subunits) after repairs.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

Chapter 5

Military Postal Service

194. The military postal service is intended to provide postal communications for large units, units, installations, and personnel of the Armed Forces of the USSR among themselves, with the population of the country, and with civilian establishments and organizations.

The military postal service is responsible for: receiving, transporting, and delivering dispatched mail, periodicals and other printed publications addressed to large units, units, warships, installations, and personnel of the Armed Forces, as well as the handling and dispatching of military correspondence and parcels to its destination.

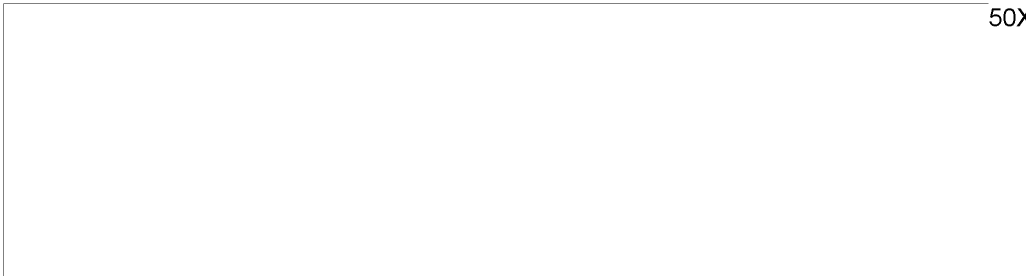
195. All types of outgoing mail are urgent military cargo and must be delivered unhindered to their destination within established periods of time.

Military postal service motor vehicles must bear a special identification symbol (a white diagonal strip on both sides of the vehicle). Postal service motor vehicles have the right of way on all automobile roads and the right to pass columns.

196. Management of military postal service work is effected /4 to 6 words missing/ the organization and ensuring uninterrupted postal service for troops.

Delivery of military mail is effected by chiefs of military-postal service installations in accordance with the directive of the chief of communications.

50X1-HUM



SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1
50X1-HUM



When registering with a postal enterprise of the Ministry of Communications USSR the mail certificate is presented to this enterprise only to make a notation of registration or deregistration and is held in the headquarters of the unit.

200. Military postal service performs its tasks through military-postal installations of the front (combined-arms armies) and military mailmen of the units.

The basic military-postal service installations are: military-postal sorting points, military-postal bases, and military-postal stations of large units and garrisons.

Military-postal sorting points and military-postal bases organize exchange points for exchange of mail with military-postal stations.

A military-postal base is usually located in the area of the combined-arms formation rear area control point.

In aviation (aviation-technical) large units only military-postal stations are organized.

Military-postal stations of aviation (aviation-technical) large units carry out exchange of mail with the

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

exchange points of the front (combined-arms army) and with military mailmen.

Military mailmen are appointed by orders of unit commanding officers and chiefs of installations from among the best trained enlisted men and noncommissioned officers. Military mailmen arrive at military- /4 to 6 words missing/ correspondence in accordance with the schedule approved by the chief of communications of the large unit.

201. In the army the exchange points are located in forward sectors of army military motor vehicle roads or at the military-postal stations of corps headquarters and are moved to a new location in such a way as to ensure regular exchange of mail within established time limits.

Military-postal stations can detail a post office from their composition to service the command post and to exchange mail with military mailmen of first echelon units of the large unit. The post office is located in the area of the large unit command post.

202. In all types of troop combat activity delivery of military correspondence, parcels, and printed publications to large units and units is carried out:

— from the military-postal sorting points and military-postal bases to their exchange points or, depending on the situation, directly to the military-postal stations of large units — by means of military-postal sorting points and military-postal bases;

— from the exchange point to the military-postal stations serviced by it — by the means of military-postal stations;

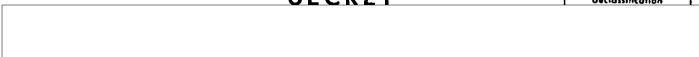
— from the military-postal stations of large units to military units and installations — by means of military units and installations.

203. In order to ensure uninterrupted postal service, the chief of communications of the aviation (aviation-technical) large unit carries out the following measures:

— timely registration of the military-postal station and units of the large unit with the military-postal base or the military-postal sorting point, and deregistration from them when departing;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET



50X1-HUM



50X1

— establishes the location of the military-postal station, the procedure for moving its working hours, and the time limits for exchanging mail with military mailmen.

— supervises the work of the military-postal station and military mailman, the accuracy of the addressing of military correspondence and the timely return of correspondence, received at the addresses of departed units, to the military-postal base or to the military-postal sorting point;

— when necessary, takes measures to reinforce the military-postal station with means of transport.

204. The chief of communications of an aviation (aviation-technical) unit is responsible for the postal service of his unit.

It is his duty to:

— register the unit with the military-postal station or the postal enterprise of the Ministry of Communications USSR, and deregister when the unit departs;

— make sure that the unit personnel understand the requirements concerning the procedure for addressing and carrying on personal correspondence;

— organize timely receipt of personal mail, newspapers, and magazines, by the military mailman and their delivery to unit personnel;

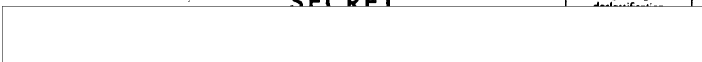
— establish the procedure and times for distributing correspondence, newspapers, and magazines to personnel of the headquarters [2 to 4 words missing];

— maintain control over the work of the military mailman and the proper addressing of military correspondence sent and received by the unit personnel;

— ensure organized delivery of money orders and parcels addressed to the unit personnel.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

Section Two

Communications and Radiotechnical Support in Large Units

(Units) of the Air Forces

Chapter 6

Organization of Communications in Aviation and
Aviation-Technical Large Units and Units

General Principles

205. The mobile nature of combat operations of aviation large units and units, the dispersed disposition of control points and air bases, and their considerable distance from operational objectives determine the following basic features of the organization and support of communications in aviation large units and units:

— the necessity to provide communications simultaneously between control points, control points and with airplanes (helicopters), and between airplanes (helicopters) in flight;

— the broad employment of radio communications, which constitute practically the only means of communications with airplanes (helicopters).

— strict limitation, including total prohibition to transmit over means of radio communications during combat flights in individual sectors of the flight path;

— the necessity to provide simultaneous radio communications with a considerable number of small groups and individual aircraft, as well as between cooperating aviation large units (units, subunits) on the ground and in the air;

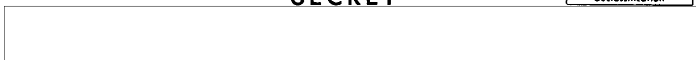
— the complexity of ensuring radio communications with aircraft operating at low altitudes and over long distances;

— the necessity to organize and maintain communications between cooperating large units (units, subunits, groups) of branches and arms of aviation, as well as with

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

supported or covered formations (large units) of the ground forces, and cooperating large units (units) of the missile troops and antiair defense troops;

50X1

— the constant readiness of communications to provide control of their own aircraft as well as of aircraft of cooperating aviation large units (units);

— the need for communications with means of radiotechnical support;

206. Communications, organized in the Air Forces are divided into ground and air communications.

Ground communications include all types of communications between ground aviation control points, supporting and servicing large units (units, subunits, installations), and between headquarters, as well as of control points of aviation large units (units) with control points of cooperating formations (large units) of the ground forces (navy), missile units (large units) and antiair defense troops. Besides, ground communications include all types of internal communications at the control points and in the headquarters of large units (units).

Air communications include all communications between ground control points and airplanes (helicopters), between airplanes (helicopters) in flight, and also between airplanes (helicopters) and ground means of radiotechnical support.

207. The organization of communications in an aviation large unit (unit) is determined by: the nature of assigned tasks and the conditions for their fulfilment; the conditions of basing; the disposition of control points (headquarters) of the large unit (unit) itself, subordinate cooperating and supporting large units (units, subunits); the type and number of airplanes (helicopters) brought in for combat operations (flights); the availability of communications personnel and means, and the time available to organize communications; and the degree of preparedness of communications units and subunits. Besides, the organization and work of communications are influenced by the nature of the terrain, the climate, and the time of the year and day.

208. When organizing communications in an aviation large unit (unit), special attention must be given to providing continuous control of aviation in the course of combat operations. For this it is necessary to make provisions for:

-93-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

— ensuring uninterrupted communications of aircraft in the air with any control point of their aviation large unit (unit), and control points of the formation, from which control may be effected;

— ensuring uninterrupted aviation and ground communications when moving control points and when changing the base of an aviation large unit (unit, subunit, based at a separate airfield);

— ensuring communications with cooperating formations, large units, and units;

— the procedure for ensuring communications with the forward command post, operational groups of the aviation large unit, and guidance and target designation officers;

— measures for protecting communications forces and means from atomic weapons and other means of mass destruction;

— measures for protecting communications means from reconnaissance and enemy radio jamming;

— a reserve of communications forces and means.

209. In the aviation large unit communications are organized at the command post and at the forward command post, and also between airplanes (helicopters) in the air. Besides, the communications forces and means of an aviation large unit may be allocated for the organization of communications to the commanding officer, to operational groups, and to guidance and target designation officers located at control points of cooperating formations and large units.

In an aviation unit communications are organized at the command or take off-command (command-dispatching) post and between airplanes (helicopters) in the air. Communications forces and means are also allocated for internal communications at the airfield.

In an aviation subunit based at a separate airfield, communications are organized from the take off-command (command-dispatching) post and between aircraft in the air. Communications forces and means are also allocated for internal airfield communications.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

210. At an aviation large unit command post communications are organized:

- with airplanes (helicopters) in flight;
- with the command post (forward command post) of the aviation large unit;
- with command posts of subordinate aviation units;
- with the forward command post and operational groups of the aviation large unit;
- with the command post of the aviation-technical large unit (unit);
- with ground means of radiotechnical support.

When necessary, communications with supporting or covering formations (large units) of the ground forces (navy), and with cooperating aviation large units (units), large units (units) of the missile troops, and troops of anti-air defense, may be organized at the large unit command post.

211. From the forward command post of an aviation large unit communications are organized:

- with airplanes (helicopters) in flight;
- with the aviation formation command post (forward command post);
- with the aviation large unit command post;
- with command posts of subordinate aviation units and with take off-command (command-dispatching) posts of subunits based at separate airfields;
- with guidance and target designation officers and operational groups of the aviation large unit, who are located in the ground forces (navy) large units (formations) that are being supported;
- with the forward command post of the combined-arms formation being covered or supported.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

Depending on the situation and the tasks being performed, communications from the forward command post of the aviation large unit may also be established:

— with command posts of cooperating fighter aviation large units and control of points of anti-air defense troops;

— with the auxiliary guidance points and the nearest radar posts of anti-air defense of the country.

212. As a rule the operational group of the aviation large unit must have communications:

— with aircraft in flight;

— with the command (forward command) post of the aviation large unit;

— with the guidance and target designation officers;

— with the forward command post of the aviation formation and with command posts of subordinate aviation units (when necessary).

213. Guidance and target designation officers of the aviation large unit must usually have communications:

— with aircraft operating on behalf of the aviation large unit that is in flight and is being supported;

— with the forward command post (operational group) of the aviation large unit;

— with the commanding officer (headquarters) of the large unit being supported.

214. At the command post of the aviation unit communications are organized:

— with aircraft in flight;

— with the command post (forward command post) of the aviation large unit and, when necessary, with the operational group of the aviation large unit;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

-- with the commanding officers of subordinate subunits;

-- with the commanding officer (headquarters) of the aviation-technical unit (subunit);

-- with the take-off command post (command-dispatching post) of a unit or subunit based on a separate airfield;

-- with ground means of radiotechnical support;

-- with the control point of the anti-aircraft weapons covering the airfield.

Besides, forces and means may be allocated at the command post of the aviation unit for communications with cooperating aviation units, as well as for receiving reports from the nearest anti-air defense radar post of the front.

215. The take-off command post (command-dispatching post) of a unit (subunit based at a separate airfield) must have communications:

-- with airplanes (helicopters) when they are on the airfield, as well as during the take off, landing, and flights in the area of the airfield;

-- with the command post of the aviation unit;

-- with the duty man in charge of aircraft landings;

-- with ground means of radiotechnical support.

The take-off command post (command-dispatching post) of a subunit based at a separate airfield may have communications with the forward command post (operational group) of the aviation large unit.

216. As a rule, at all control points of an aviation large unit (unit) radio equipment must be available for reception of warning signals in the radio network of anti-air defense of the front.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

[Redacted]

50X1-HUM

SECRET

50X1-HUM



50X1

The Organization of Ground Communications in Aviation Large Units and Units

217. In the course of combat operations, with frequent shifting of control points of aviation large units (units), the basic means of communications are radio and radio-relay means.

218. Radio communications in an aviation large unit (unit) are effected in radio networks and radio links organized at the order of the headquarters of the large unit (unit) and at the order of higher headquarters in such a way as to have the basic radio networks and radio links of the aviation large unit (unit) remain in the course of combat operations without any substantial changes. In all cases, besides the operating radio networks and radio links secret radio networks and radio links are organized.

219. In each aviation large unit radio links (networks) of headquarters voice or teletype communications are organized in the composition of radio stations of the large unit headquarters and the headquarters of subordinate units (subunits).

Besides, in an aviation large unit, depending on the tasks being fulfilled, other radio networks (links) are also organized including:

— the radio network of the commanding officer of the aviation large unit (call for aviation) made up of the radio stations of the large unit commanding officer, the large unit headquarters, the chief of the operations group and the commanding officers of subordinate units and subunits based at separate airfields;

— the radio network of aviation large unit control points made up of radio stations of the aviation large unit commanding officer, the command post, the forward command post, operational groups (guidance and target designation officers), and command posts of commanding officers of subordinate units and subunits based on separate airfields.

220. Radio stations (radio receivers) of aviation large units may, by order of higher headquarters and the headquarters organizing cooperation, be included in the

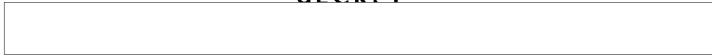
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

following ground radio networks and radio links:

- radio networks of the aviation formation (large unit) commander (commanding officer);

- the radio network (radio link) of voice radio communications of the higher headquarters;

- radio link (network) of teletype communications of the higher headquarters;

- the radio network to call for aviation;

- the aviation-dispatcher radio network of the formation (large unit);

- the formation (large unit) duty radio network;

- the formation radio network for multiple-call transmissions of priority signals;

- the formation radio network for information on meteorological conditions;

- the control point radio network of the formation fighter aviation;

- the radio network (radio link) for cooperation;

- the radio network for warning the antiair defense of the front;

- the radio network of emergency airfields;

- the radio networks (radio links) for decentralized warning of radar posts of the front (navy, the antiair defense troops of the country);

- the radio networks of the aviation formation (large unit) rear services;

- the radio networks of the higher headquarters to communicate through the chain of command.

221. In each aviation unit, the following radio networks are organized:

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

— the radio network of the unit commanding officer composed of the radio stations of the command post, the take-off command post (command-dispatcher post) of the unit, and commanders of subordinate subunits;

— the internal communications radio network of the airfield composed of the radio stations of the command post, of the take-off command post (command-dispatcher post) of the commanding officers of the servicing and supporting units (subunits).

222. Radio stations (radio receivers) of aviation units, by order of the aviation large unit headquarters, may be included in the following radio networks (radio links);

— the radio network of the commanding officer of the aviation large unit (for requesting aviation);

— the voice or teletype communications radio network (radio link) of the aviation large unit headquarters;

— the radio network of the fighter aviation control points of the aviation formation;

— the coordination radio network;

— the formation radio network for information on the meteorological situation;

— the radio network for warning the antiair defense of the front;

— the radio network of the formation for multiple-call transmission of priority signals;

— the emergency airfield radio network;

— the radio network of the higher headquarters for communications through the chain of command;

223. In each aviation subunit based at a separate airfield an internal airfield communications network is organized composed of radio stations of the take-off command post (command-dispatcher post) and of commanding officers of subordinate, supporting, and servicing subunits;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

Radio stations (radio receivers) of aviation subunits based at a separate airfield include, by order of the aviation unit headquarters, the following radio networks (radio links):

— the radio network of the commanding officer of the aviation large unit (for requesting aviation);

— the radio network of the aviation unit headquarters;

— the radio network of the fighter aviation control points of the formation.

224. Radio-relay communications in an aviation large unit are organized by utilizing organic radio-relay means and radio-relay channels allocated by the higher headquarters.

Communications may be established:

— with command posts of subordinate units;

— with command posts of cooperating aviation large units (units) — over communications channels allocated by the headquarters organizing the cooperation or through signal centers of the higher headquarters;

— with the forward command post of the friendly large unit — over communications channels allocated by the combined-arms communications chief or through signal centers of combined-arms and higher aviation headquarters;

— with ground means of radiotechnical support — through signal centers of subordinate aviation units and the higher headquarters;

— with the headquarters of the aviation-technical large unit (unit).

Besides, in large units of fighter and fighter-bomber aviation, the radio-relay communications may be established with organic or attached ground detection, recognition, and guidance radar stations (centers, posts) and the nearest radar stations (posts) of the anti-air defense of the front (navy, anti-air defense troops of the country).

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

225. Radio-relay communications of an aviation large unit with the senior commander (higher headquarters) and cooperating large units (units) are organized by order of the higher headquarters.

In individual cases radio-relay means are used to establish trunk lines from signal centers of the aviation large unit and to remote control-testing points, at which communications links (channels) are allocated to the aviation large unit for building up wire communications lines and for establishing radio-relay inserts (vstavka) in them, as well as for control of radio transmitters inside the centers.

226. Wire communications in an aviation large unit are organized under any conditions. Depending on the availability of forces and means, wire communications may be established:

- with the command posts (headquarters) of subordinate units;
- with the command posts (headquarters) of cooperating formations and large units (units);
- with the command post (headquarters) of the aviation-technical large unit (unit);
- with the ground means of radiotechnical support.

Wire communications of the aviation large unit control points with the aviation-technical large unit (unit), the emergency airfields, the senior commander (higher headquarters), and cooperating large units (units), are as a rule, over lines (channels) allocated by the higher headquarters.

227. Wire communications in an aviation unit (subunit based at a separate airfield) are established:

- with the commanders of subordinate subunits;
- with the command posts of jointly based aviation units;
- with the aviation-technical unit headquarters;
- with the ground means of radiotechnical support;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET



50X1-HUM



50X1

-- with the control point of the anti-aircraft means protecting the airfield, as well as with the nearest radar post (station) of the anti-air defense troops.

228. When two or more aviation units (subunits) are based at the same airfield, the procedure for using communications is established by the senior aviation commander.

229. Communications by mobile means in an aviation large unit (unit) with subordinate units (subunits) are organized and supported by the forces and means of the aviation large unit (unit) by links and circular routes, irrespective of the availability of other types of communications.

Communications, by mobile means, of an aviation large unit (unit) with the senior commander (higher headquarters) and with cooperating large units (units) are organized by order of the higher headquarters of the headquarters organizing cooperation. Liaison airplanes and helicopters are, as a rule, used as mobile communication means.

Organization of Inflight Communications in Aviation Large Units and Units

230. The basic and practically the only means of communications with aircraft in flight is radio. In addition to radio, in order to provide communications with aircraft, in individual cases signalling by ground lights, aircraft navigation lights, the fire of aircraft weapons, and other means and methods of signalling may be used.

Aircraft inter-com devices are used in multiplace aircraft to provide for internal conversations between crew members and for intercommunication through the aircraft radio stations.

231. The responsibility for maintaining uninterrupted communications between aircraft crews in the air and for the proper use of aircraft means of communications rests with the crew commander.

When a group of aircraft is flying in general combat formation, the responsibility for communications of

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

the group of aircraft with ground control points rests with the group commander, in case of an independent flight of a crew or when it leaves the general combat formation — with the chief of the aircraft crew.

232. In order to ensure stable radio communications with aircraft crews, communications chiefs must give special attention to the distribution of frequencies, radio concealment and carrying out measures to protect radio communications from enemy reconnaissance and radio jamming.

233. In order to ensure uninterrupted control of aviation units, subunits, and individual crews in the air, and to avoid mutual radio interference in group flights, only the group commander (leader) is allowed to transmit over the radio in order to transmit commands and reports that are necessary for the fulfilment of assigned tasks.

The remaining crews only use their receivers and have the right to communicate with ground control points or with their own commanding officer located in the air only in case of separation from the combat formation, when circumstances threatening the safety of the flight arise, or of an unavoidable forced landing (ejection), the sudden discovery of an air enemy, and also when answering an inquiry of the commanding officer.

During the operations of individual aircraft, each crew maintains communications with the ground control point independently.

234. In order to ensure concealment of air bases, secrecy of take-off, assuming the combat formation, the flight along the route, and surprise of approach to the target, as well as to ensure secrecy of shifting of bases by aviation units (large units), the use of all transmitters of radio stations located in aircraft must be strictly limited, and in some cases completely forbidden.

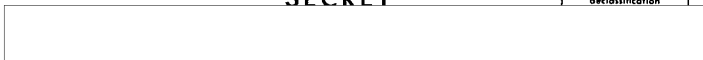
235. Depending on the equipment of the aircraft and of the ground control points, inflight radio communications may be effected by radiotelephone, radiotelegraph, or by a remote signal system.

236. Communications by radiotelephone are used by aircraft crews during take-off, assembly, landing and flights in the area of the airfield between the crews in

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

the course of a combat flight, when guiding aircraft to aerial and ground targets (landing operation zones), for controlling aircraft and transmitting information to them, when aircraft crews speak to the ground control points of cooperating large units (units), and when shifting control from one control point to another.

In fighter and fighter-bomber aviation, the radio-telephone represents the only means of inflight radio communications. Radiotelephone communications are usually effected by the crew chief.

237. Radiotelegraph communications are used in aviation large units (units) of long range, bomber, military-transport, and reconnaissance aviation in order to ensure control from ground control points of the aircraft crews on the flight paths and in the target area, beyond the range of the ultrashort wave communications band. In the aircraft this type of communications is effected One line missing.

238. Remote signalling communications are used for the transmission of information, control, and command signals that are received visually or by sound.

239. Control of aircraft in flight is provided for in the radio networks organized by the aviation large unit (unit) headquarters, as well as in the general radio networks organized by higher headquarters.

Radio data (frequencies, radio station callsigns, recognition signals and keys) for the organization of inflight communications of the aviation large unit (unit, subunit) as well as the procedure and operating conditions of radio means, in the course of supporting the flights, are established by the higher headquarters.

240. In order to ensure control, the following radio networks are, as a rule, organized in each aviation large unit:

-- radio networks for the control of aviation subunits, units, and large units for guiding aircraft to air and ground (sea) targets (landing operation zones), as well as for ensuring control of crews within combat formations; aircraft radio stations of the subunit, unit, large unit and control points of the large unit (unit),

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

and when necessary, also the radio stations of the control points of senior commanders are included in these radio networks; in them it may also be possible to effect aircraft control during the take-off, landing, and flights in the area of the airfield;

— the long distance communications radio network of the aviation unit (large unit) for control of aircraft along the flight path and in the area of operational objectives made up of aircraft radio stations and unit (large unit) control points;

— take-off command radio networks of aviation units for control of aircraft during take-off, landing, and flights in the areas of their airfields; these radio networks include radio stations of aircraft and control points of the units;

— the radio network of aerial reconnaissance of the aviation large unit for control of crews conducting aerial and weather reconnaissance in support of operations of subordinate aviation units and subunits, and for receiving reconnaissance data from reconnaissance aircraft crews; these radio networks include aircraft (helicopter) radio stations and radio stations of the large unit (unit) control points;

— tanker aircraft control radio networks made up of the radio stations of aircraft being refueled and the tanker aircraft;

— radio networks for the control of aircraft of the military-transport aviation guidance groups make up of the radio stations of the guidance group aircraft, of the control points of large units, and radio navigational systems.

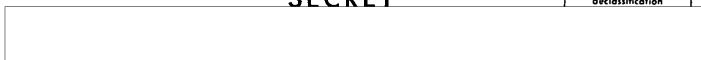
241. Inflight communications in units and subunits of auxiliary aviation operating within the boundaries of the front are as a rule, organized by the headquarters of the aviation formation. Control of auxiliary aviation flights beyond the boundaries of the front is effected in the general radio networks of plotted air routes .

242. Inflight communications in aviation subunits (units) included in the composition of the ground forces are organized by the chiefs of communications of combined-arms formations (large units). Moreover the necessary data

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

(frequencies) for the organization of communications are allocated by the chief of communications of the aviation formation.

243. General radio networks of inflight communications are organized for control of aviation flights within the territory of the country (theater of military operations, front), ensuring the safety of flights and cooperation between aviation large units (units, subunits), as well as cooperation of aviation with formations (large units) of ground forces (navy), and large units (units) of missile and antiair defense troops.

The general aviation radio networks include:

- the control and cooperation radio networks of fighter aviation of the front and of the fighter aviation of the antiair defense troops of the country;
- the control and cooperation radio network of fighter (fighter-bomber) aviation of the aviation formation;
- the radio network for cooperation of fighter aviation with other types of aviation;
- the cooperation radio network of bomber aviation;
- the cooperation radio networks of aviation with formations (large units) of the ground forces (navy), and with large units (units) of missile troops and antiair defense troops of the country;
- the radio networks of operational and tactical aerial reconnaissance of the aviation formation;
- the radio direction-finding networks;
- the radio network of radio direction-finding bases;
- the emergency-rescue service radio network;
- take-off command radio networks of the territory of the country (theater of military operations, front);
- the radio networks for flights on air routes.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

244. Control and cooperation radio networks of fighter aviation of the front and fighter aviation of the anti-air defense troops of the country are designated for control of fighters and for cooperation between them when conducting joint combat operations. These radio networks include the aircraft radio stations and radio stations of ground control points of fighter aviation.

245. The control and cooperation radio network of fighter (fighter-bomber) aviation of a formation is intended for target designation and guidance of fighters (fighter-bombers) to air and ground (sea) targets, as well as for the handing over of the control of fighters (fighter-bombers) from one control point to another. This radio network includes aircraft radio stations and radio stations of control points of the aviation formation, and, when necessary, also control points of fighter (fighter-bomber) aviation large units and units.

246. The radio network for the cooperation of fighter aviation with other types of aviation is intended for communications in the air between crews, as well as for communications of crews with ground control points of coordinating large units (units) of fighter, long range, front bomber, and fighter-bomber, torpedo and minelaying, reconnaissance, and military-transport aviation. This radio network includes radio stations of aircraft and control points for coordinating aviation large units (units).

Communications in this radio network are, as a rule, effected on the frequency of the fighter aviation control network.

247. The radio network for coordination of bomber aviation is intended for communications between aircraft crews in the air, as well as for communications of the crews with ground control points of long range, front bomber, torpedo and minelaying, and military-transport aviation. These radio networks include aircraft and control points for the coordination of aviation large units (units).

248. Radio networks for coordination of aviation with formations (large units) of the ground forces (navy) and with large units (units) of missile and anti-air defense troops are intended for communications between aircraft crews in the air and control points of coordinating troops (ships); these radio networks include radio stations of

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

[REDACTED]

[REDACTED]

aircraft, control points, operational groups of aviation large units, and guidance and target designation officers who are located with the troops (on board ships) engaged in coordinated action.

50X1

249. The aerial reconnaissance radio network of an aviation large unit is intended for control of reconnaissance aircraft and for receiving reconnaissance data from them. This radio network includes radio stations of reconnaissance aircraft and of the control points of the aviation large unit and aviation reconnaissance units. When necessary, this radio network may include radio receivers of control points of aviation large units and formations (large units) of the ground forces (navy), and the large units (units) of missile troops for whose benefit the aerial reconnaissance is being conducted.

250. The radio network of the tactical aerial reconnaissance of an aviation formation is intended for control of reconnaissance aircraft and for receiving reconnaissance data from them. This radio network includes radio stations of reconnaissance aircraft, control points of the aviation formation, control points of aviation reconnaissance units, as well as the radio receivers of aviation large units and formations (large units) of ground forces (navy), and the large units (units) of missile troops for whose benefit the reconnaissance is conducted.

251. Radio direction-finding networks are intended for communications of aircraft crews with radio direction-finders. These radio networks include radio stations of aircraft and of radio direction-finding points of airfields. When necessary radio stations of control points of aviation units are included in the radio network.

252. The radio network of the radio direction-finding bases of an aviation formation is intended to support pilotage. These radio networks include radio stations of aircraft and radio direction-finding command posts.

253. The emergency-rescue service radio network is intended for communications of the emergency-rescue 4 to 6 words missing/ ships allocated for the rescue of crews that have made an emergency landing or bailed out. This radio network includes radio stations of the emergency-rescue service, and of aircraft, helicopters, and ships allocated for the rescue of crews.

-109-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

254. The territorial take-off command radio networks of the country (theater of military operations, front) are intended for control of aircraft during take-off and landing on all military airfields. These radio networks include radio stations of aircraft and airfields of all types of aviation.

255. The radio networks for flights on air routes are intended for control of all branches and arms of aviation during flights in the course of the changing of bases by aviation large units (units, subunits), during the flight of individual aircraft and groups of auxiliary aviation, as well as when ferrying aircraft from industrial centers to air bases of the aviation formation.

These radio networks include radio stations of aircraft, command posts of aviation formations and large units, radio stations of plants and intermediate (air route) airfields, as well as airfields of the bases of aviation formations (front).

The Organization of Communications in Aviation-

Technical Large Units and Units

256. Communications in an aviation-technical large unit (unit) are established:

- with commanding officers (headquarters) of subordinate units and subunits;
- with rear area installations, units, and forces;
- with commanding officers (headquarters) of the supported aviation large units (units);
- with the rear area control point of the aviation formation.

257. Radio communications of an aviation-technical large unit with subordinate aviation-technical units, depots, and other rear services installations are organized within the radio networks that comprise the headquarters radio stations of the aviation-technical large unit and radio stations of subordinate units, depots, and rear services installations.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

In addition, radio stations (radio receivers) of the aviation-technical large unit also included in:

- the radio network (radio link) of voice or teletype communications of the rear area control point of the aviation formation;
- the duty radio network of the aviation formation;
- the radio network of the rear services of the aviation formation;
- the front warning radio network;

258, Radio communications of an aviation-technical unit with subordinate subunits and the commanding officer of the aviation unit being supported are organized within the airfield intercom radio network. Prior to the arrival of the aviation unit at the airfield the reception of data in the warning radio network of the front (navy, troops of anti-air defense of the country) is effected directly by the aviation-technical unit, and with the arrival of the aviation unit at the airfield - via the aviation unit command post.

259. Radio-relay communications in an aviation-technical large unit may be established:

- with subordinate aviation-technical units;
- with commanding officers (headquarters) of the supporting aviation large units.

Radio-relay communications with subordinate aviation-technical units are effected by the forces and means of the aviation-technical large unit. In order to support these communications, channels in radio-relay communication lines of the aviation large unit may be allocated.

Radio-relay communications of an aviation-technical large unit with an aviation large unit rear area control point and the commanding officers (headquarters) of the supported aviation large units, are effected by the forces and means of the aviation formation.

260. Wire communications of an aviation-technical large unit with subordinate units are effected on permanent lines (channels) of communications allocated by the higher headquarters.

-111-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

Wire communications with the rear area control point of an aviation formation and with commanding officers (headquarters) of supported aviation large units are effected over permanent communications lines (channels), allocated by the higher headquarters.

If such lines (channels) are not allocated, then the wire communications are effected through signal centers of the aviation large units (units) being supported.

Wire communications, of an aviation-technical unit with subordinate subunits and with the commanding officer of the aviation unit being supported, are organized over a field (permanent) airfield intercom cable line by the forces and means of the aviation-technical unit.

261. Communications by mobile means in an aviation-technical large unit (unit) with subordinate aviation-technical units, depots, and installations, are organized by links and circular routes by the forces and means of the aviation-technical large unit (unit).

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

Chapter 7

Radiotechnical Support in Aviation Large Units and Units

General Principles

262. Radiotechnical support in an aviation large unit (unit, subunit) is organized and effected by means of organic and attached forces and means, as well as by employing radiotechnical support means of other aviation large units (units) and radiotechnical means of antiair defense troops.

263. Ground means of radiotechnical support are subdivided into stationary and mobile ones. In an aviation large unit, (unit, subunit) primarily mobile means are used.

Ground means of radiotechnical support operate in a complex with appropriate equipment available on aircraft (helicopters).

264. The most important conditions for organizing radiotechnical support are: proper selection of positions and their engineer preparation; fast deployment, camouflaging, and concealment of means of radiotechnical support from enemy observation and enemy destruction; uninterrupted operation, and protection from enemy radio jamming.

Means of radiotechnical support must be in a state of constant readiness for operation. Three stages of readiness of these means for operation are established.

Readiness No. 1 (first readiness).

The equipment of the radiotechnical means has been checked out, tuned in, and is completely ready for operation and for immediate switching on. Power supply units have been warmed up. Communications are ready for operation, means of radio communications and radio direction finding are receiving. All personnel of the duty shift are at their respective work stations.

Readiness No. 2 (second readiness)

The equipment of radiotechnical means has been checked out, tuned in, and is completely ready for operation

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

and for immediate switching on. Power supply units have been warmed up. Communications are ready for operation. When wire communications are not available, radio communications and radio direction finding means are receiving. A skeleton duty crew is at its work stations. The rest of the personnel are either working, studying, or resting in places designated by the commanding officer.

Readiness No. 3 (third readiness).

Means of radiotechnical support are deployed at positions. The equipment of these means and radio communications is completely ready for work, is checked out, and is switched off. Power supply units have been lubricated and refueled. Personnel are working, studying, or resting in places designated by the commanding officer.

265. The degree of readiness of means of radiotechnical support for operation and the time for transferring these means from one readiness to another are determined by the commanding officer of the aviation large unit (unit).

Putting into operation all or part of the means that are at first or second readiness is carried out at the command of the commanding officer (chief of staff) of the large unit (unit), the flight control officer, the commander of the command post, or upon request from an aircraft.

266. Radiotechnical support includes radio aid and illumination, and ground radar, support.

Radio Aid and Illumination-
Technical Support

267. Radiotechnical support represents a complex of measures for equipping airfields, airways, and the territory where the aviation formation is based with radio aid and illumination means, and organizing uninterrupted operation of these means used for takeoff and forming of combat formations of aircraft in the air, control and regulation of flights, meetings of coordinating aviation subunits (groups), piloting of aircraft, guiding aircraft (helicopters) to ground (sea) targets and to landing operation zones, bombing zones, zones of landing (dropping) of landing forces (cargoes), guiding aircraft (helicopters) to the airfield area, and their landing in complex meteorological conditions during the day and night, and for designation of friendly troops (front line).

-114-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM

50X1

268. The basic means of radio aid and illumination support are:

- radiotechnical systems of long-range navigation;
- radiotechnical systems of short-range navigation;
- aircraft landing systems;
- radio rangefinder bombing systems;
- long-and short-range radio direction finding points and bases;
- precision approach radar and radio broadcasting stations;
- radar responder beacons;
- technical illumination and pyrotechnical means.

269. A radiotechnical system of long-range navigation is an organizational-technical complex composed of three or more stations installed on the territory of the country for air navigation and for guiding aircraft to ground targets (objectives).

270. A radiotechnical system of short-range navigation is an organizational-technical complex of equipment, installed at airports and on the territory of the aviation formation bases in order to ensure air navigation, guiding of aircraft to stationary ground targets, and to landing airfields, as well as to support the landing of aircraft.

271. An aircraft landing system is an organizational-technical complex of communications, radiotechnical, and technical-illumination equipment installed at airfields for supporting the take-offs, control and regulation of the flights of aircraft in the airfield area, guiding them to the airfield, and supporting landings under difficult meteorological conditions during the day or night.

272. A radio rangefinding (rangefinding) bombing system is an organizational-technical complex of navigation and communications stations installed at two to four points on the basing territory of an aviation formation to support landing force (cargo) drops, air navigation and guiding aircraft to the target areas (landing zones) and bombing areas, and for determining coordinates of ground objectives in aerial photography.

-115-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

273. A long-range radio direction-finding base is an organizational-technical complex composed of two or three or more radio direction-finding centers installed on the territory of the country in order to determine the location of aircraft during long-range flights and for transmitting these data to the aircraft or to the command post.

274. A short-range radio direction-finding base represents an organizational-technical complex of two or three or more radio direction-finding points established on the territory of the aviation formation base for determining the location of aircraft (helicopters) and transmitting the information to the aircraft or to the command post.

275. A radio direction-finding point (center) consists of radio direction-finders and radio stations installed on the basing territory of an aviation formation for taking bearings on an aircraft radio station and transmitting the meaning of the bearings to the aircraft (helicopter) or to the command post.

276. The precision approach radar radio stations are installed at airfields and the basing territory of the aviation formation for control of the route, and for guiding aircraft (helicopters) to the target areas (landing zones), and guiding them to landing airfields.

277. Radar responder beacons are used for marking individual objectives, for target designation, and for designation of landing zones.

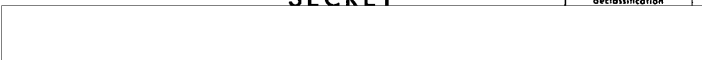
278. Technical illumination means are installed at airfields for illuminating take-off-landing strips, for creation of artificial landmarks used during take-off, landing, and moving of aircraft (helicopters) on the airfield during complex meteorological conditions and at night as well as for marking airfield and points on the aviation basing territory.

279. Pyrotechnical means are employed at airfields, on the basing territory of the aviation formation, and in areas of aviation combat operations, for signalling, guiding aircraft (helicopters) to the target area and to the landing zones, for marking points on the ground, and for the creation of artificial landmarks.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM



50X1

280. When organizing and carrying out radio aid and illumination support, the following is envisaged:

— preparing the basing territory of the aviation formation, the airfields, and airways with radio aid and illumination means, maneuvering them in the course of combat operations (flights) depending on the tasks being fulfilled by the aviation, basing conditions, and the developing situation [2 or 3 words possibly missing];

— determining the procedure for employing radio aid and illumination means, operating data, and their transmission to aviation large units, units, subunits, and to the entire flight personnel;

— timely transmission of the data obtained with the help of radio aid and illumination means to the appropriate control points and to airplane (helicopter) crews located in the air;

— ensuring uninterrupted operation and proper use of radio aid and illumination means.

281. The procedure for organizing the outfitting of airfields and the basing territory of an aviation formation with means of ground radio aid and illumination support is determined on the basis of:

— the tasks and composition of aviation in the forthcoming combat operations (flights);

— the conditions under which aviation large units (units, subunits) are based at airfields:

— the tactical-technical data of the means of radio aid and illumination support available in the armament;

— the need to create continuous radar and radio navigation fields at certain altitudes within designated boundaries;

— the need to exclude mutual interference during the operation of radiotechnical means;

— the need to cover the combat operations area with operational zones of the radiotechnical means;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

— the availability of means and the need to create a reserve of radio aid and illumination means and operating frequencies 2 or 3 words missing 7;

— the amount of time available for the organization of radio aid and illumination support.

282. In order to support the flights (cross-country flights) over airways radio aid and illumination support means are employed which may be used during the flights (cross-country flights) regardless of their departmental designation.

283. The equipping of the basing territory of the aviation formation with ground radio aid and illumination support means is done in accordance with the distribution plan, worked out by the chief of communications jointly with the chief navigator and confirmed by the chief of staff of the aviation formation.

The distribution of means is effected so as to provide the airplane (helicopter) crews with the possibility of simultaneous use of several different types of means. The distribution of means and the assignment of data for their operation are carried out taking into account the need to avoid mutual interference.

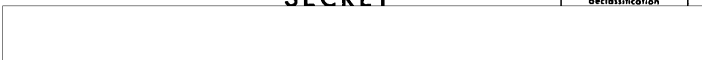
The selection of working positions and the placing of radio aid and illumination means is effected by communications chiefs of aviation large units and commanding officers of communications and radiotechnical support units on the basis of directives of the aviation formation (large unit) headquarters.

284. To support the take-off and assembly of aircraft and for guiding them to the landing airfield and ensuring their landing means of mobile or stationary landing systems and individual radio aid and illumination means one or more words missing 7 are placed at airfields and on the approaches to the airfields.

285. The distribution of the equipment of stationary and mobile landing systems on an airfield and on the approaches to it is carried out in accordance with standard diagrams that are identical for the aviation of all departments. Distribution of the remaining means of radio aid and illumination support is determined by the large unit (unit) commanding officer.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

286. When equipping airfields with landing systems it is necessary to envisage:

— ensuring safe landing of aircraft under any conditions of the situation, during the day and night, including conditions of jamming created by the enemy;

— carrying out radio and light discipline measures;

— ensuring uninterrupted control of all radio aid and illumination means and landing systems from the take-off command post (command-dispatcher post) of the airfield.

287. The selection of operational sites for the installation of landing systems means, the overflight of the operating zones of the means, and checking their proper disposition at the airfield are effected by special commissions assigned by commanders of aviation formations and commanding officers of large units.

The commanding officer of an aviation large unit (unit, or subunit based at a separate airfield) must organize periodic overflights of radio aid and illumination means in accordance with the instructions in force, and carry out a systematic check of operational quality of these means.

288. Radio aid and illumination means operate during the period of time that is determined by the regulations (lists), as well as by order. The order for the operation of radio aid and illumination means is effected simultaneously with the requests for support of the flight (cross-country flight) or from aboard the aircraft (helicopter).

289. Activation of the operation of the radio aid and illumination is effected in accordance with the schedule indicated in regulations (lists), as well as at the order of the flight control officer, the communications chief, or the duty officer for communications and radiotechnical support. When a request for the operation of radio aid and illumination means is made from onboard an airplane (helicopter), the means are turned on immediately.

290. Air navigation, approach to the airfield (target) area, and the landing of the aircraft by instruments with the help of means of radio aid and illumination support are carried out independently by airplane (helicopter) crews.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

The duty shift responsible for the operation of radio aid and illumination means constantly observes the established regime and procedure of their operation in accordance with the instructions in effect.

Duty operators of radio direction-finding points (bases) determine the bearings of aircraft radio stations, establish the azimuth (coordinates) of the airplane and transmit the results of radio direction-finding to the aircraft or to the command post (command-dispatcher of take-off command post of the aviation unit or subunit based at a separate airfield).

291. Control of air traffic in the area of the airfield (airport) and rendering assistance to the crew in the approach and the calculation of the landing are carried out by the flight control officer or his deputy (the landing control officer), using the landing system radar.

The aircraft crew must carry out the commands of the chief flight control officer or his deputy (landing control officer), accurately and in good time, while observing the necessary flight safety measures.

The duty operators of the search and dispatcher radar-sets detect aircraft, identify them, establish their position, and transmit the necessary information to the flight control officer or to his deputy for use in regulating aircraft traffic.

292. The maneuver of means of radio aid and illumination support is carried out for:

- equipping airfields and combat operation areas when shifting bases of large units and units;
- replacement of means rendered useless as a result of combat losses or technical disablement;
- supporting air navigation, bombing, control, air drops, and landing of aircraft in conditions of radio jamming created by the enemy;
- marking sectors for flying over the front lines.

The procedure for maneuvering with means of radio aid and illumination support is established by the commander (chief of staff) of the aviation formation (the large unit

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

commanding officer) on the basis of the suggestions given by the communications chief and the chief (senior) navigator, and is reflected in the communications and radiotechnical support plan.

Ground Radar Support

293. Ground radar support includes a complex of measures on the deployment and organization of uninterrupted operation of ground radar means employed for the detection and identification of aerial targets, establishing their coordinates, and directing friendly aircraft to the air enemy.

294. Ground means of radar support include:

- radar detection and guidance stations;
- range-only radar and radar altimeters;
- radar identification stations.

295. Ground radar means are located in the area of the aviation large unit (unit) control points, and are used to perform the following basic tasks:

- detecting aerial targets, establishing their coordinates (azimuth, range, and flight altitude) and characteristics (the approximate numbers, types, combat formations, and other data);
- establishing whether or not the aerial targets belong to friendly armed forces, as well as their individual identification;
- direction of fighters by station indicators, a plotter, or with the aid of computers.

Besides the performance of basic tasks, ground radar means may be used for control of airplane (helicopter) flights, ensuring the meeting of coordinating subunits (crews) in the air; weather reconnaissance (detecting thunderstorm centers, thunderclouds, cloudbursts, and radioactive clouds); detecting areas of airfields and launching pads (sites) of enemy missile weapons by areas where targets systematically appear and disappear.

296. Employment of radar means is organized in accordance with the decision of the aviation large unit (unit) commanding officer and at the order of the higher headquarters.

-121-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

297. Radar detection and guidance means, supporting control points of the aviation large unit (unit), and as a rule, having, a different wave band, are organizationally technically joined into a radar center (post).

298. The total complex of radar centers (posts) of the control points of an aviation formation, large unit, and unit makes up the radar support system of the aviation formation. This system is a component part of the general ground radar support system of the front.

The control points of aviation large units (units) usually receive the first information concerning aerial targets from the radar centers (posts) of the anti-air defense troops of the front (country).

299. The disposition of radar center (post) means in the area of the aviation large unit (unit) control point must ensure:

— the creation of the necessary radar field that permits the detection, identification, and tracking of the air enemy (targets) at the maximum range, and the accurate and timely direction of friendly fighters to it;

— the resistance of the means of the center to radio jamming;

— the possibility of using a minimum number of the radar means that have been put into operation;

— the possibility of using radar means of coordinating aviation large units (units) and anti-air defense troops;

— the reliable camouflage of radar means from enemy aerial, ground, and radio reconnaissance, security, defense, and engineer preparation of positions for protection against the effects of means of mass destruction.

When locating the means of a radar center (post) one should also take into account the level of industrial and mutual interference, the presence of access roads, water supply sources, operating communications channels (lines), and power supply lines.

300. When selecting positions for the radar center (post) it is necessary to take into consideration:

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

— the possibility of deploying means in an operational condition;

— the availability of areas which are level and free of rises and falls of terrain, angles of coverage and shielding obstacles that are inadmissible for a given type of radar means;

— the necessary removal distance from the control point.

The proper selection of positions for the means of a radar center (post) is ensured by the study of their deployment area on a large-scale map. (aerial photographs), and by reconnaissance and topographic work on the terrain.

301. The means of the radar center (post), besides the basic positions, must always have prepared alternate positions that satisfy the same requirements as the basic ones. The alternate positions must be selected within the area designated for the radar center (post), taking into consideration the possible shifting of the control point.

Shifting of the means of a radar center (post) from basic to alternate positions is effected at the decision of the aviation large unit commanding officer.

302. Concealment of radar support means from air, ground, and radio reconnaissance consists of disguising the work and camouflaging the disposition of radar means.

303. The disguising of the work of radar means from radio reconnaissance may be effected by:

— limiting or completely forbidding the operation of new types of radar means;

— limiting the retuning of frequencies;

— switching on the minimum number of means when detecting and tracking aerial targets;

— reducing emissions in the direction of the enemy;

— concealing the effectiveness of the influence of radio jamming on radar means;

— limiting the operating time of radar interrogators;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

— the use of dummy radar means.

304. The camouflaging of the disposition of radar means from air and ground reconnaissance is achieved by:

- utilizing protective features of the terrain;
- selecting positions to the side of typical radar ground landmarks, especially contrasting ones from the radar standpoint;
- employing special reflectors to distort radar landmarks located close to the positions of radar stations;
- engineer preparation of positions;
- using organic and improvised camouflage means.

Preparation and engineer equipping of the positions (basic, alternate, and dummy) are carried out by the forces and means of the aviation-technical unit and of the engineer units and subunits, and by using the personnel communications and radiotechnical support units and subunits.

305. The operating range and the accuracy of the work of radar center (post) means deployed at the basic or alternate position are checked by an overflight carried out in accordance with the instructions in effect, and when special equipment is available — by the method of no overflights..

Depending on the situation, the overflight of the zones of operation of the radar center (post) means may be carried out by aircraft especially assigned for this purpose, as well as incidentally while they are performing combat tasks.

306. Coordination in employing friendly radar means and the radar means of coordinating large units (units) and antiair defense troops is achieved by:

- combining control points of coordinating large units (units);
- organizing communications and using available channels and means of communications remote control and radio relay lines for mutual information on the air situation, composition, disposition, and time limits and the operating procedures of radar means;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

- transferring control of aircraft from certain aviation control points to others;
- coordinating problems of organizing radar detection fields.

307. The continuity of the operation of the radar support system in conditions of enemy employment of radio jamming is achieved by means of creating a concealed system by reserving part of the radar means.

The disposition of the concealed system of radar means must ensure the possibility of their employment by the same control points that control the operating system.

The time limits for readiness and the operating procedure of the operating and concealed systems are established, as a rule, by order of higher headquarters.

308. When organizing and effecting radar support, measures must be planned and carried out for the protection of radar means from enemy radio jamming.

Measures for the protection of radar means from enemy radio jamming are subdivided into organizational and technical ones.

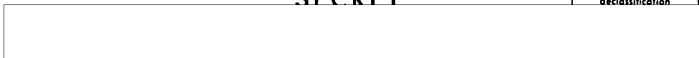
309. The organizational measures envisaged when planning radar support include:

- the tuning in of the same type of means on various operating frequencies within the limits of their wave bands;
- the simultaneous employment of means operating on different wave bands;
- the creation of a reserve of means with bands that differ from those in operation, and activation of the reserve in case of absolute necessity;
- the use of radar means of coordinating aviation large units (units) and anti-air defense troops, not subjected to radio jamming;
- the establishment of a procedure for employing the means that ensures the maximum concealment of their operation;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

310. The technical measures include:

- the employment of equipment and devices for radio jamming protection;
- the altering of working procedures and the adjustment of equipment with the goal of improving the conditions for isolating the useful signal against the background of jamming;
- switching off the channel effected by radio jamming while providing for reception on other channels (on multi-channel stations).

Technical measures for the protection of radar means from interference are effected by personnel in accordance with the nature and [one line missing].

311. When organizing operations of the means of radar support for detection and tracking of enemy missile weapons the following should be taken into account:

- the high rates of speed and the range of missile flight altitudes;
- the relatively small reflecting surfaces of targets that hinders their detection at long ranges;
- the probability of appearance of, single targets, as a rule, dispersed along the routes;
- the difficulty of identifying and determining the characteristics of the targets,

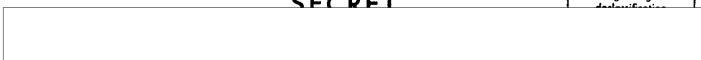
In order to detect, track, and intercept pilotless means of air attack it is essential to envisage the possibility of simultaneous operation of the means of the radar centers (posts) located along the axis and on the flanks of the effected flight paths of these targets.

312. The operation of ground radar means is supported by duty shifts. The composition of the duty shifts and the duties of the personnel are determined by appropriate instructions.

The smooth operation of the duty shifts of radar stations and crews of command posts, the timely assigning of tasks to them, and the continuity of control of the operation of radar

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM

[REDACTED]

[REDACTED]

50X1

sets, represent the most important conditions for ensuring successful combat with the air enemy.

313. When assigning a task to the duty shift of a radar center [2 or 3 words missing] operating made of sets, the most important axes (sectors) of observation, probable flight paths and altitudes of the air enemy, and the speed of transmitting data about aerial targets and friendly aircraft. In some cases, a radar set is assigned a definite sector for observation of the air situation.

314. The turning on of ground radar means is effected in accordance with a chart approved by the chief of communications, or at the order of duty officer at the aviation large unit (unit) command post.

Information concerning all detected targets is transmitted from radar stations for the aviation large unit (unit) control point. Subsequent tracking of targets, elaboration of their characteristics, and the tracking of friendly aircraft are carried out in accordance with directives received from the control point.

315. The search for the air enemy is conducted in a designated sector or by way of all-around observation. Upon detecting the targets, the radar station team (crew) must determine, within the shortest possible time, the coordinates and characteristics of the targets, identify them, and transmit data concerning these targets to the control point of the aviation large unit (unit).

When directing aircraft to aerial targets, at the radar stations [2 or 3 words missing] a mode of operation is used which assures reliable simultaneous [one word missing] of the air target (targets) and the direction [one line missing].

316. When directing aircraft, the crew of the radar center (post) of the station must:

— keep track of the air enemy and, using friendly aircraft, quickly determine their coordinates and transmit them immediately to the control point of the aviation large unit (unit);

— establish and report in good time to the control point of the aviation large unit (unit) the disappearance from the screens of images of the aerial targets and the aircraft being directed, separation or the appearance of new targets, change

-127-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

[REDACTED]

SECRET

50X1-HUM



50X1

of flight attitude of targets, as well as friendly aircraft, and also use of radio jamming by the enemy;

- support uninterrupted operation of radar means;
- observe the established procedure for radio communications and radio traffic regulations;
- report in good time to the command post the departure of air enemy or friendly aircraft from the observation zone of radar sets.

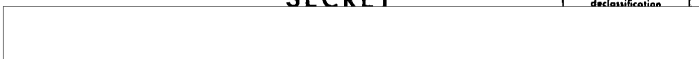
317. Relocation of ground radar means during the course of combat operations is effected by decision of the aviation formation headquarters, depending on the movement of control points in such a way as to ensure maintenance of a solid radar field and reliable control of the aviation large units (units) covering the main grouping of troops of the front (army).

-128-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM



50X1

Chapter 8

Communications and Radiotechnical Support

When Changing the Bases of Aviation

318. The tasks of communications and radiotechnical support when relocating the bases of aviation are:

— equipping territory, control points, and airfields at the new basing location with means of communications and radiotechnical support;

— organizing and carrying out the relocation of communications and radiotechnical support means to new basing areas, and their timely readiness for operation;

— providing the commanding officer and the staff with uninterrupted communications with air and ground echelons of the large unit (unit, subunit), and with new airfields;

— control of airplanes and helicopters by radiotechnical means, and keeping the commanding officer (staff) informed on the whereabouts of the crews in flight from the old base to the new, and on the air situation;

— rendering assistance to the crews in flight in air navigation and approach to the airfields of the new basing sites;

— providing support in landing of airplanes (helicopters) on new airfields;

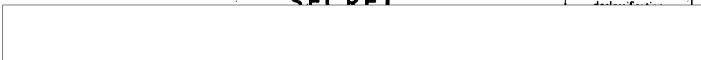
319. In preparation for relocation of basing, the communications chief of the aviation large unit (unit) must:

— ascertain which air centers (airfields) the aviation large unit (unit, subunit) is being relocated to, the proper sequence, time schedule, and itinerary of the relocation to the new basing sites of ground and air echelons, and intermediate and emergency airfields;

— ascertain the sequence and time of relocation of control points, and their locations in the new basing area, as well as organization of control during the course of basing relocation;

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM



50X1

— establish which aviation-technical large units (units) will support the aviation large unit (unit) in the new basing area;

— ascertain which communications and radiotechnical means are being relocated to the new site and which are remaining at their old locations, and the procedure of their further use;

— establish the time of readiness of communications and radiotechnical means at the new site;

— determine which communications and radiotechnical means of other large units deployed along the routes of basing relocation may be utilized;

— establish which aviation large units (units, subunits) communications are to be organized with at the new basing site, and what are the time schedules;

— [one word missing] features of operation of means of communications and [2 or 3 words missing] during relocation;

— determine the procedure of radio concealment during basing relocation.

320. For equipping the territory, control points, and airfields in the new base area with communications and radio-technical support means, reserve forces and equipment, as well as part of the forces and equipment transferred from the previous base area are used. Interruption of communications and termination of operation of radio technical support means in the previous basing area are carried out upon clearance from higher headquarters.

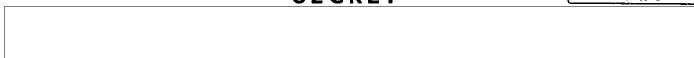
321. Communications during basing relocation may be maintained by radio, radio relay, wire, and mobile means of communications. Employment of one or the other means of communications is established by the higher headquarters on the basis of the existing situation. In all cases of employment of technical means of communications, especially those of radio and radio relay, radio concealment and security of basing relocation must be strictly observed.

322. Radio relay and wire communications between the new and old basing areas are effected via the communications center of higher headquarters. In some cases radio relay or wire channels may be assigned by order of higher headquarters for establishing direct communications between the new and old basing areas.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

323. Mobile means are used for organizing communications between new and previous basing areas, as well as for communications with ground echelons along the route of their movement.

324. During relocation by ground [line missing] by rail-road, water, or air transport, communications with them can be maintained through active communications channels of railway and water transport, and through the channels of radio communications of transport aviation.

325. Means of communications and radiotechnical support needed for the support of airplane (helicopter) flights during basing relocation are determined by the chief of staff of the aviation large unit (unit) upon the recommendation of the chief air navigator and chief of communications. A request for operation of means along the route of basing relocation is made by the communications chief through higher headquarters.

326. In order to provide continuous control of aircraft during the period of relocation of control points, it is necessary to have at the communications centers of the aviation large units means of radio and radio-relay communications which will ensure communications during the move.

327. When relocating bases of aviation large units (units, subunits) to other airfields within the boundaries of the front, radio communications with airplanes (helicopters) in flight are maintained within the inflight networks of aviation large units and units. The nature of radio traffic within these networks during the relocation flights must not differ from the nature of radio traffic during combat flights. For control of flying echelons and relocation flight support, use is made of means of communications and radiotechnical support of air navigation and landing control of one's own as well as other large units (units) of the aviation formation deployed in the flight zones.

328. During basing relocation flights of aviation large units (units) to the new airfields which are located beyond the boundaries of one's own front, radio communications with the aircraft, and radiotechnical support of the flight, are carried out according to the data found in the effective regulations and lists of radio aid and illumination technical support of flights, using means of communications and radiotechnical support along the relocation flight routes regardless of their departmental assignment.

-131-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

50X1-HUM



50X1

329. Take-off of the aircraft for the new basing area is approved only after confirmation is received of operational readiness of the requested means of communications and radio-technical support, and after the acquaintance of the personnel with the data and procedure for using these means in the course of the flight is verified.

330. When organizing relocation of means of communications and radiotechnical support it is necessary to:

— determine the composition of the forward detachment, and organize its preparation and dispatch to the new basing area;

— determine the sequence of taking down and relocating the means to the new place of disposition;

— work out a diagram of location of the means in the new basing area;

— select positions and organize deployment of the means in the new basing area;

— determine which means of communications and radio-technical support of other large units, deployed along the routes of basing relocation, can be activated or support of control of flight echelons and support of relocation flights in the course of [one line missing].

331. During the course of relocation of means of communications and radiotechnical support, it is necessary to:

— control the taking down and relocation of means;

— render necessary material-technical assistance to the units and subunits of communications and radiotechnical support being relocated;

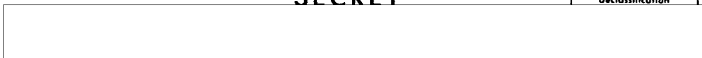
— carry out, when necessary, a maneuver of means in the course of basing relocation;

— control the operation of means assigned by other large units for support of control and flights of air echelons during the course of basing relocation.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET



50X1-HUM

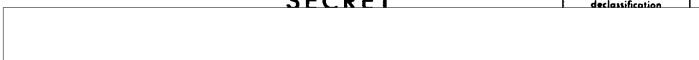


50X1

332. Upon completion of basing relocation and deployment of means of communications and radiotechnical support in the new basing area, the communications chief of the aviation large unit (unit) submits a report to the higher communications chief on radiotechnical means ready for operation, indicating their respective locations, operational data, and the setup of the operating plan.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

SECRET

50X1-HUM

50X1

Chapter 9

Automatic and Automated Control Systems

333. In view of the sharp increase of flying speeds of aircraft, the appearance and rapid development of missiles of different classes, and the transition by aviation to operations (flights) with numerous small groups and single aircraft under any meteorological conditions, during the day or night, reliable and continuous control of aviation is best ensured by the employment of automatic and automated control systems.

334. An automatic or automated control system represents an organizational-technical complex of ground and airborne means of automatic equipment, telematics, telemetering, communications, and radiotechnical support. The means of automation of these means of control are based on electronic computers.

The automatic [remainder of line missing] of control [remainder of line missing] by formations, large units [remainder of line missing] assure:

- rapidly [remainder of line missing] to the user [remainder of line missing];
- [line missing] on fulfilment of assigned tasks (results of combat operations);
- assembly, accumulation, processing, and storing of various information on enemy troops, as well as friendly troops;
- making operational-tactical calculations necessary for aircraft control;
- control of group and single airplane (helicopter) flights;
- direction of aircraft to aerial and ground targets, as well as the direction of missiles of the "surface-to-air" class to aerial targets;
- retargeting of aviation;

-134-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

SECRET

[Redacted]

50X1-HUM

[Redacted]

50X1

— direction of aircraft (helicopters) to areas of air-fields for landing;

— landing of aircraft (helicopters) under various meteorological conditions,

335. Ground means of automatic and automated systems are installed at control points, communications centers, and radar centers (posts).

Airborne equipment of the systems is installed on board aircraft (helicopters) and missiles.

336. Digital electronic computers included in automatic and automated systems are meant for:

— assembly, accumulation, processing, and storing of information needed for operational-technical calculations and references (information-logic machines);

— for production on an earlier [1 or 2 words missing] program of operational- [3 or 4 words missing] necessary for [4 or 5 words] of operations [line missing];

— for fulfilling various calculations in headquarters of aviation formations and large units (general-purpose machines).

Aside from that, analog electronic computers may be employed in control systems for handling a number of very specialized computation problems.

337. The telemechanics means of automatic and automated control systems provide automatic and semiautomatic remote control and command by various control system devices.

338. The telemetering means of the automatic and semi-automatic control systems provide for the measurement by remote control of various values by automatic or semiautomatic reduction and transmission to control points or directly to aircraft (helicopters) and missiles in the air, of the findings of measuring instruments and output indicators.

339. Exchange of information between various means of automatic and semiautomatic control systems is fulfilled through the lines of telemechanic, telemetering, and tele-code communications.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

[Redacted]

50X1-HUM

SECRET

50X1-HUM



50X1

Besides, in the control systems, for exchange of information between the teams of control points and crews of aircraft (helicopters), use is made of telephone, telegraph, [one word missing] and remote signal communications.

340. Means of radiotechnical [one word missing] of automatic and automated machines [one word missing] of control of air forces [2 to 3 words missing] of detection [3 or 4 words missing], of coordinates of aerial and ground targets, as well as for individual identification and determining of coordinates of friendly aircraft (helicopters) and missiles.

341. Planning and organizing the employment of automatic and automated systems of control are carried out by the aviation formation staff in accordance with the decision of the commander and directives of higher headquarters.

The ground means of automatic and automated control systems are placed on the territory of the aviation formation base in such a way as to provide uninterrupted control of aviation.

342. Selection of positions and placing of ground means and equipment of the automatic and automated control systems are organized by the communications chief of the aviation formation in compliance with the plan confirmed by the commander (chief of staff).

Besides, units and subunits of radiotechnical support are charged with the task of ensuring uninterrupted operation of all the equipment included in the ground means of automatic and automated control systems.

343. Communications and radiotechnical support, when employing automatic and automated control systems, are organized in compliance with [one word missing] regulations stated in [two words missing].

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM



SECRET

50X1-HUM

50X1

AVERAGE WORK NORMS WHICH MUST BE USED AS A
BASIS IN PLANNING COMMUNICATIONS AND TECHNICAL
SUPPORT, AND ASSIGNING TASKS TO UNITS (SUBUNITS) OF
COMMUNICATIONS AND RADIOTECHNICAL SUPPORT

1. Means of Communications

1. Setting up vehicular radio stations (depending on the type of antennas being used):

High power 1 to 10 kilowatt R-110	6 to 10 hrs.
Medium power .1 to 1 kilowatt R-102	up to 1 hr.
R-118, R-820, R-830	up to 30 min.
Low power up to .1 kilowatt R-829	up to 15 min.

2. Setting up portable radio sets R-105, R-106, and R-809
up to 5 min.

3. Setting up radio-relay stations:

Heavy type: R-400	up to 1.5 hrs.
R-400M, R-402	up to 2 hrs.
Light type (two half sets)	up to 40 min.
(one half set)	up to 20 min.

4. Laying of field cable lines of communications:

Heavy cable by a section	2 to 3 km p/h
Telegraph cable by a section	3 to 4 km p/h
Telephone cable by a section	4 to 5 km p/h
Telephone cable by a team	2 to 3 km p/h

5. Construction of a permanent overhead communications line, one circuit being installed per working day (10 hrs)

By a platoon	2 km
By a company	5 to 6 km

6. Construction of a permanent overhead communications line, with one circuit being installed per working day (10 hrs) using mechanized means of line installation work:

By a platoon	3 to 4 km
By a company	9 to 12 km

-137-

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification.

50X1-HUM

SECRET

50X1-HUM

[Redacted]

[Redacted]

7. Installing one circuit on existing poles by a platoon in one working day (10 hrs)

50X1

8 to 10 km

8. Operating maintenance of permanent overhead communications lines by a platoon is 60 to 100 km with possible installation along the line of one monitoring-testing point and three monitoring telephone posts.

9. Setting up communications centers mounted in mobile installations:

Command post of a large unit up to 1.5 hrs.

Forward command post of a large unit up to 30 min.

2. Radio Aid and Illumination-Technical Means

1. Setting up mobile radio range-finding bombing systems (Rym-b" and DBS-2m)

up to 1.5 hrs.

2. Setting up mobile radiotechnical systems of short-range navigation (RSEN-2)

up to 3 hrs.

3. Setting up mobile approach radio sets PAR-7 and PAR-8

up to 1.5 hrs.

4. Setting up mobile radio direction finders ARP-6

up to 1 hr.

5. Setting up mobile radio direction finders R-301

2 to 3 hrs.

6. Setting up mobile aircraft landing system OSP

3 to 5 hrs.

7. Setting up mobile aircraft landing system SRP

1 to 1.5 hrs.

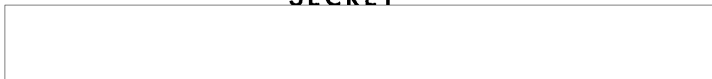
SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

50X1-HUM

[Redacted]

SECRET



50X1-HUM



50X1

8. Setting up mobile landing radio-beacon group PRMG-2
up to 1.5 hrs.

9. Setting up light beacons KNS-1P and APM-90
up to 30 min.

3. Radar Means

1. Setting up mobile radar detection and control stations,
and mobile radar range-finders (P-30, P-35)
4 to 5 hrs.

2. Setting up mobile radar detection stations P-15
10 min.

3. Setting up mobile detection, control, and target
designation radar stations and height finders (P-10, PRV-10)
up to 1.5 hrs.

4. Setting up mobile radar stations P-12M
up to 1 hr.

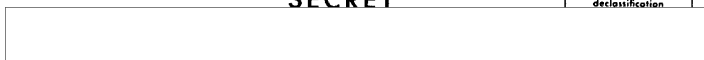
5. Setting up mobile control points of air forces
fighter aircraft RL-30P
up to 2 hrs

The rate of speed of communications and radiotechnical support subunits' work at night, in winter time, and in conditions of difficult terrain is reduced by 25 to 40 percent.

The time needed for setting up radio aid and illumination-technical and radar means is given without considering the time needed for selection and preparation of sites.

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification



50X1-HUM

50X1-HUM

Page Denied